AMENDMENT 5

TO THE

REEF FISH FISHERY MANAGEMENT PLAN

FOR THE REEF FISH RESOURCES OF

THE GULF OF MEXICO

Includes

Regulatory Impact Review

And

Initial Regulatory Flexibility Analysis

FEBRUARY 1993

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Abbreviations Used in This Document

ABC	Allowable Biological Catch
BRD	Bycatch Reduction Device
COE	Corps of Engineers
Council	Gulf of Mexico Fishery Management Council
CPUE	Catch Per Unit Effort
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
EEZ	Exclusive Economic Zone
FMP	Fishery Management Plan
GMFMC	Gulf of Mexico Fishery Management Council
NEPA	National Environmental Protection Act
NMFS	National Marine Fisheries Service
OY	Optimum Yield
Plan	Reef Fish FMP for the Gulf of Mexico
RD	Regional Director (NMFS Southeast Regional Office)
RFSAP	Reef Fish Scientific Stock Assessment Panel
SAFMC	South Atlantic Fishery Management Council
SEFC	Southeast Fisheries Center, Miami, Florida (NMFS Southeast Region)
SMZ	Special Management Zone
SEIS	Supplemental Environmental Impact Statement
SPR	Spawning Potential Ratio
TAC	Total Allowable Catch
TED	Turtle Excluder Device
YPR	Yield Per Recruit

1. PUBLIC REVIEW

A total of eight public hearings were held to obtain public comments on this plan amendment with one additional hearing held during the Gulf Council meeting on Wednesday, November 18, 1992, in Sarasota, Florida. The public comment period for this amendment ended on November 9, 1992.

The public hearings, with the exception of the one conducted during the Council meeting, were held at the following dates and places beginning at 7:00 p.m.:

October 19, 1992 American Legion Hall, 5610 College Road, Key West, Florida
October 20, 1992 Naples Depot Cultural Center, 1051 5th Avenue South, Naples, Florida
October 21, 1992 Plantation Inn and Golf Resort, 9301 West Fort Island Trail, Crystal River, Florida
October 22, 1992 Apalachicola Bay Chamber of Commerce, Rainey House, 128 Market Street, Apalachicola, Florida
October 26, 1992 Best Western Beachfront Inn, 5914 Seawall Boulevard, Galveston, Texas
October 27, 1992 Howard Johnson Lodge, 201 North Canal Boulevard, Thibodaux Louisiana
October 28, 1992 Gulf Coast Research Laboratory, J. L. Scott Marine Education Center and Aquarium Auditorium, 115 East Beach Boulevard, Biloxi, Mississippi
October 29, 1992 Baldwin County Electric Membership Corporation, 19600 State Highway 59, Summerdale, Alabama

LIST OF AGENCIES AND PERSONS CONSULTED

Gulf of Mexico Fishery Management Council:	Standing and Special Reef Fish Scientific and Statistical Committee Reef Fish Advisory Panel
Coastal Zone Management Programs:	Louisiana Mississippi Alabama Florida
National Marine Fisheries Service:	Southeast Fisheries Center Southeast Regional Office
Alabama Department of Conservation and Natural Resources:	Marine Resources Division

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2. HISTORY OF MANAGEMENT

The Reef Fish Fishery Management Plan was implemented in November 1984. The implementing regulation, 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 exception that

for-hire boats were exempted until 1987 and each angler could keep five undersize fish; and, (3) data reporting requirements.

The National Marine Fisheries Service (NMFS) has collected annual commercial landings data since the early 1950s, recreational harvest data since 1979, and in 1984 initiated a dockside interview program to collect more detailed data on commercial harvest. Consequently, just recently has quantitative assessment of the population levels of major reef fish species been possible. 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 potential ratio (SPR). The 1988 assessment also identified shrimp trawl bycatch as a significant source of mortality.

The Council, through Amendment 1 to the Reef Fish Fishery Management Plan, implemented in 1990 a 5 fish recreational bag limit and a 11.0 million pound commercial quota for groupers that together were to reduce fishing mortality by about 10 percent and begin rebuilding the population. The commercial quota was subdivided into a 9.2 million pound shallow-water quota and a 1.8 million pound deep-water quota. The commercial quota and recreational bag limit for red snapper was set at 3.1 million pounds and 7 fish, respectively, which represented a 20 percent reduction in the average landings for 1985-1987. The amendment also implemented a framework procedure to specify total allowable catch (TAC) and allow for annual management changes in the reef fish fishery. The amendment defined overfishing as a level of fishing that reduces the spawning potential ratio (SPR) below 20 percent. The framework procedure specified Allowable Biological Catch (ABC) and TAC must be set to achieve a SPR of 20 percent by the year 2000 for an overfished stock.

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

At the direction of the Council, the Reef Fish Scientific Assessment Panel (RFSAP) met in March 1990, and reviewed the 1990 NMFS Red Snapper Stock Assessment. The recommendation of the panel (Muller et al, 1990) at that time was to close the directed fishery because the ABC was being harvested as bycatch of the shrimp trawl fishery. No viable alternatives were identified that would achieve the 20 percent SPR goal by the year 2000 without closure of the directed fishery and a significant reduction in trawl bycatch (i.e., 75 percent). However, no means existed under the provisions of the Shrimp FMP or through available gear technology for reducing trawl bycatch.

NOAA General Counsel subsequently ruled that the shrimp fishery trawl bycatch could be regulated through the Reef Fish FMP since red snapper were being impacted. The RFSAP was reconvened in June 1990. They developed six management scenarios combining measures for reduced allocations to the directed fishery (including zero), shrimp fishery closures and trawl bycatch reductions (GMFMC June 1990). None of these alternatives achieved a 20 percent SPR by year 2000. In July 1990, the Council considered these scenarios plus 67 others prepared by staff. The Council selected as its preferred option a 1.0 million pound commercial quota and recreational bag limit of 2 red snapper, with a shrimp fishery closure from May 1 through July 31 and with additional reductions in bycatch beginning in 1993. The Council also instructed staff to begin drafting an amendment to the Shrimp FMP that would generically address trawl bycatch reduction of finfish, with emphasis on certain species. The draft regulatory amendment (GMFMC August 1990) containing the preferred option was presented at 12 public hearings attended by 4,500 persons, primarily shrimp fishermen.

In September 1990, the Council concluded (based on scientific advice) that red snapper could not be restored in less than the biological generation time for the species and directed staff to prepare a plan amendment (3) to extend the target date for stock restoration for various alternative dates not to exceed 1.5 times the generation time (i.e., to year 2011). They also concluded that the proposed shrimp closure (May 1 through July 31) would

create serious economic disruption for the shrimp fishery. The Council, therefore, submitted a regulatory amendment to establish a red snapper commercial quota at 2.5 million pounds and a recreational bag limit of 6 fish as TAC for 1991 (GMFMC October 1990). The regulatory amendment also proposed trawl bycatch mortality of red snapper be reduced by 50 percent beginning in 1993. On November 1, 1990, the RD notified the Council that the regulatory amendment was being held in abeyance, partially because the reauthorization of the Magnuson Act prevents the Secretary of Commerce from implementing rules affecting trawl bycatch until 1994.

In November 1990, the Council reconsidered TAC and respecified it by revised regulatory amendment as a commercial quota of 2.0 million pounds and a bag limit of 2 red snapper with proposed reduction in bycatch of 50 percent to begin in 1994 (GMFMC November 1990). The Council also requested that a new target date of the year 2007 be implemented by emergency rule.

In January 1991, the RD requested the Council reconsider the TAC, address new stock information and adjust the recreational/commercial allocation ratio which was not in conformance with Amendment 1. The Council deferred the action until March 1991, to allow the public to review the new information. The fishery opened in January under the existing rule of Amendment 1 for quota (3.1 million pounds) and bag limit (7 fish).

The regulatory changes to set and implement the 1991 TAC under the Amendment 1 framework procedure were proposed in a March 1991, Regulatory Amendment, implemented in July 1991 (GMFMC March 1991). The 1991 Regulatory Amendment set a red snapper TAC of 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 pounds). It also contained a proposal by the Council to effect a 50 percent reduction of red snapper bycatch in 1994 by the offshore EEZ shrimp trawler fleet, to occur though 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 by the year 2007.

Amendment 3, implemented in July 1991, provided additional flexibility in the annual framework procedure by allowing the target date for rebuilding an overfished stock to be changed depending on changes in scientific advice. 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 spawning potential goal established in Amendment 1.

In July 1991, the Council submitted a regulatory amendment to increase the 1991 commercial quota for shallow-water grouper by 700,000 pounds that were not taken under the 1990 quota (fishery was closed prematurely based on projected landings). This rule was implemented in November 1991 (GMFMC July 1991). In September 1991, the Council reviewed the stock assessment for red grouper (Goodyear and Schirripa, 1991), the RFSAP report (Muller et al 1991) and proposed by regulatory amendment an increase in the shallow-water grouper quota of 1.6 million pounds (GMFMC November 1991). This rule was implemented in May 1992.

In 1992, a relatively strong year class (1989) entered the fishery and resulted in high catches of red snapper and harvest of the commercial quota (2.04 million pounds) in just 53 days. To relieve the socioeconomic hardships associated with the 1992 derby season (i.e., a ten-month closure), the Council requested an emergency reopening of the commercial red snapper fishery under a 1,000-pound trip limit until May 14, 1992, when it would reconvene and reconsider the situation. The Southeast Fisheries Science Center estimated that up to 1.39 million pounds could be caught under the 1,000-pound trip limit without affecting the rebuilding schedule. The Secretary of Commerce reopened the fishery from April 3, 1992, to May 14, 1992; this resulted in an additional commercial catch of approximately 600,000 pounds of red snapper.

Amendment 4, implemented in May 1992, changed the time of year that TAC is specified, included additional species in the management units, and established a three-year moratorium on the issuance of additional commercial vessel permits.

In August 1992, the Council received an updated red snapper stock assessment from NMFS (Goodyear 1992). At the direction of the Council, the Reef Fish Stock Assessment Panel and the Socioeconomic Panel met in August to review the stock assessment and issue recommendations for a 1993 TAC and measures for implementation. The Standing and Special Reef Fish Scientific and Statistical Committees and the Reef Fish Advisory Panel met in September to review the stock assessment and reports from the two previous panels, and the Council reviewed the reports and recommendations of all of the groups at its meeting in September 1992. The regulatory amendment submitted to NMFS includes the Council's proposed red snapper TAC of 6.0 million pounds for 1993 (GMFMC October 1992).

The Council also requested NMFS implement by emergency rule trip limits for commercial vessels fishing for red snapper to extend the 1993 harvest over a longer period than occurred in 1992. Draft Amendment 6 was prepared to extend that rule beyond the termination date of the emergency rule.

In November 1992, NMFS requested the Council readdress the provisions of its proposed emergency rule by submitting an alternative or additional supporting rationale for the original proposal. The Council complied and resubmitted the request that red snapper commercial vessel trip limits be implemented by emergency rule.

3. DESCRIPTION OF FISHERY

The reef fish fishery is a multi-species fishery in which catches and landings for individual trips consist of several to many species. The fishermen principally target groupers and snappers, and occasionally amberjacks. Species regulated by the FMP include all groupers (15), all snappers (14), the sea basses (3), amberjacks (2), almaco jack, banded rudderfish, white grunt, red porgy, and gray triggerfish (see Amendment 1). A large number of species associated with reefs, particularly the tropical species associated with the Florida coral reef complexes are not managed and generally not targeted but are taken incidentally by some gear and frequently discarded.

Amendment 1 provides a detailed description of the fishery (through 1987) and of the condition and issues related to habitat associated with the fishery. Grouper stocks comprise the largest component of the fishery that is currently landed and are principally harvested from the shelf off west Florida. Red grouper is the predominant species in this complex accounting for 69 percent (by weight) of Gulf-wide commercial landings and 29 percent of recreational landings (GMFMC, 1991). This stock is in excellent condition (Goodyear and Schirripa, 1991). The grouper fishery is currently managed with a limit on the annual harvest level (17.5 million pounds) that maintains spawning potential ratio (SPR) near 40 percent (levels below 20 percent SPR are considered indicative of overfishing) (Muller et al., 1991). Total allowable catch (TAC) has been set at 11.4 million pounds annually for the commercial sector and 6.1 million pounds for the recreational sector. Neither sector harvested their quota in 1991, nor are projected to in 1992.

Red snapper makes up another major component of the reef fish fishery. That stock is overfished with an estimated SPR on the order of 1 percent (Goodyear 1992). Annual commercial landings from the U.S. shelf (principally off Louisiana and Texas) have declined from a level of about 7 million pounds from 1964 to the mid-1970s, to a level of 3.2 million pounds for the 1988-1990 period (Figure 1, Table 1). Combined annual landings for commercial and recreational fishermen declined from about 15 million pounds for the 1979-1983 period to about 4.7 million pounds in 1990. This fishery is subject to a program to restore the stock by year 2007 (Amendments 1 and 3). However, achieving that goal is conditional on reducing mortality of juvenile red snapper

from shrimp trawls by about 50 percent (Amendment 3). Currently, TAC is set at 6.0 million pounds for the fishery. Limiting harvest to this level will restore the stock by the current target date (2009) if the trawl-induced mortality reduction goal is achieved. A major NMFS/industry research program is underway addressing reduction of finfish bycatch by trawls (Hoar, et. al, 1992).

Historically, the reef fish fishery began in 1865 targeting red snapper and developed a national market and demand for the species. This national demand resulted in a relatively higher value for red snapper that has continued over the years although the value of other reef fish (primarily grouper and other snapper) has increased relative to the value of red snapper (Figure 3, Table 3b)

Figure 1 depicts average red snapper landings and total reef fish landings (including red snapper) at Gulf ports for each five-year period from 1960 through 1990. During the early portion of this period, U.S. fishing vessels fished in the waters off Mexico and, to a more limited extent, off Central America. Access to the fishing grounds of Mexico was terminated in 1981 as a result of creation of Mexico's economic zone which in 1975 was extended 200 miles seaward of its shoreline. U.S. vessels were gradually phased out of this fishery by Mexico. In 1965, (Figure 1) red snapper caught from foreign waters accounted for about one-half of the landings at U.S. Gulf ports. U.S. landings of red snapper declined between 1965 and 1980 in direct relation to this declining foreign catch. Total reef fish landings similarly declined from 1965 to 1975, but generally increased after that time as vessels targeted other species (primarily grouper).

The number of vessels in the reef fish fishery declined between 1965 and 1970, but increased significantly between 1970 and 1985 (Figures 1 and 2). The loss of the foreign fishing grounds resulted in transfer of all vessel effort to U.S. waters of the EEZ and red snapper effort primarily to the Louisiana/Texas shelf. This, coupled with the increase in the number of vessels from 1970 through 1985, greatly increased effort in the U.S. Gulf EEZ.

Figure 2 depicts the number of vessels by primary gear type. The number of hand-line (bandit rigs[1], rod and reel, etc.) vessels increased from an average of 346 in 1970 to 648 in 1980 and then declined slightly through 1991 (Table 2). Longline vessels entered the fishery in 1979. The number of longline vessels increased from an average of 122 for 1980 to 286 for 1991 and primarily targeted grouper (Figure 2, Tables 2 and 2a). Vessels utilizing other primary gear (including fish traps) increased dramatically in average numbers from 43 in 1985 to 351 in 1991. Total vessels in the reef fish fishery increased from an average of 868 in 1985 to 1,234 in 1991. However, values for vessels for 1960-1985 represent vessels counted by port agents whereas values for 1991 in Figure 1 and Table 2 (average of 1990-1992) represent vessels (fishing craft greater than 29 feet) holding permits to fish commercially for reef fish and likely includes vessels that do not fish for reef fish and many that fish occasionally or on a part-time basis. The knowledge that the Council was considering a limited access program for the fishery may have resulted in speculative entry with some persons obtaining permits without intending to fish. For example, data on vessel permits for 1991 indicated that only 22 percent of the vessels fished solely for reef fish. Another 58 percent fished for reef fish and other species. The remaining 20 percent did not list the reef fish fishery as one of their four best fisheries (NMFS, 1992). Irrespective of whether the 1991 average is inflated, Figure 1 shows a significant increase in the number of vessels since 1975 while red snapper average landings were declining from 7.7 million pounds in 1975 to 3.3 million pounds in 1990, and total reef fish average landings were increasing only moderately from 18 million pounds in 1975 to 21 million pounds in 1990.

Figure 4 depicts the average total economic ex-vessel value over the 1960-1990 period for total reef fish landings (including red snapper) and Table 3 for red snapper alone. Total average annual ex-vessel value (in

[1]Bandit rigs are short, heavy fishing rods mounted on vessel sides with a large diameter (>12 inches) open reel turned by hand or power; because the large diameter and direct drive, retrieval rate of line is relatively fast, i.e., more than 3 feet per turn.

dollars of the year of landing) for reef fish (including red snapper) increased from $3.7 million in 1960 to $36.6 million in 1990, but average real value (adjusted for inflation) increased to only $10.9 million by 1990.

4. PROBLEMS REQUIRING A PLAN AMENDMENT

This amendment addressed a socioeconomic problem related to current use of fish traps as harvesting gear in the reef fish fishery. The problem (or perceived problem) surfaced during the last year, partially in response to actions by the South Atlantic Fishery Management Council (SAFMC) to prohibit the use of fish traps in the EEZ along the Atlantic coast of Florida, including the Florida Keys. The issue also appeared to relate to a conflict between user groups, principally the marine life fishermen who harvest live ornamental tropical reef fishes for the aquarium trade (approximately 150 fishermen) and trap fishermen. The marine life fishermen were concerned over incidental harvest by traps of the ornamental species on which their industry is dependent.

Opponents of traps include recreational and commercial fishermen, conservationists, and environmentalists. Proponents principally consist of the trap fishermen. Opponents have charged that traps are nonselective gear that result in ecological damage to the fishery stocks by subjecting immature target species and bycatch species to unnecessary mortality due to embolism as traps are retrieved and from ghost fishing from lost traps. They indicate the traps frequently cause environmental damage to the habitat, such as being set on coral reef complexes. Some fishermen consider traps as unfair competition since the traps fish 24 hours for each day they are set, which raises concerns over overfishing of localized areas. Opponents also raise concerns over enforceability of limitations on trap numbers and required construction characteristics (e.g., degradable panels, etc.) since many fishermen leave their traps constantly deployed at sea. Proponents contend that traps are an ecologically safe and effective gear, that they are no more nonselective than hook and line and result in less embolism than bandit rigs due to slower retrieval rates. The Council readdressed the regulation of fish traps in this amendment after reviewing the issues cited above.

Alabama has a general permit for construction of artificial reefs in three offshore tracts covering about 820 square miles of bottom. Individuals are allowed to construct low profile, unmarked reefs after environmental inspection of reef material by state personnel. Somewhat in excess of 5,000 reefs have been constructed, changing the fish fauna from that associated with sand bottoms to a reef-associated fauna. Red snapper is a principal species on the reefs. A problem arose under the 1992 federal emergency rule limiting daily commercial trip limits to 1,000 pounds, when vessels using bandit rigs and jigging rigs harvested from these areas because of their close proximity to shore. This created concern among persons involved in the construction of the reefs that the small individual reefs would be overfished if this occurs again. The Council in this amendment considered special management zones for all or a part of these tracts where harvesting gear will be regulated.

The FMP requires that all reef fish for which there is a minimum size be landed with heads and fins intact to facilitate measurement for compliance with size limits. However, this restriction does not apply to fish without a size limit, and these fish may be filleted at sea. Once a fish has been filleted, it cannot be identified to species. Therefore, the Council proposes to require all fish except oceanic species be landed with heads and fins intact to allow enforcement of size limits and prevent overfishing.

Commercial vessel permits are reissued annually to permittees who can document that more than 50 percent of their earned income was derived from commercial or charter fishing in one of the two previous calendar years. In 1992, the entire commercial allocation of red snapper was taken within 53 days. The red snapper commercial fishery was reopened on an emergency basis for 42 days under a 1,000-pound trip limit. Because of the short duration of fishing and the fact that red snapper are the predominant reef fish in the western Gulf of Mexico, the Council had concern that some fishermen historically targeting red snapper may have had no alternative but to

seek other employment for most of 1992 and, therefore, would not meet the income criteria for that year. The Council readdressed the income requirement for permits in this amendment.

The red snapper fishery is overfished and is subject to a restoration program under the FMP. The stock condition has been slightly improved through restrictions placed on fishing over the past three years. The 1989 and 1990 year classes of red snapper are much more abundant than those of the previous seven years (Goodyear 1992). Because these year classes are so dominant in the population the Council is proposing increasing the minimum size limit over a six-year period which will increase the yield per recruit and aid in restoration of the stock.

Mutton snapper aggregate in large schools to spawn. The last remaining major spawning aggregation off South Florida occurs on Riley's Hump, a small oceanic plateau southwest of the Dry Tortugas, Florida. The fish are especially vulnerable to harvest when they are aggregated for spawning. The Council proposes to prohibit fishing on Riley's Hump during the peak spawning months of May and June.

5. PROPOSED ACTIONS

Actions proposed in this amendment are:

a. Restrictions on use of fish traps in the fishery.
b. Establishment of special management zones where gear that may be used is restricted.
c. Requiring all fish be landed with heads and fins intact.
d. Changing the income requirements for holding a vessel permit.
e. Changing the minimum size limit for red snapper.
f. Closure of a spawning aggregation site for mutton snapper.

6. MANAGEMENT OBJECTIVES OF THE FMP

The management objectives of the FMP, as amended, are as follows:

1. The primary objective and definition of Optimum Yield (OY) for the Reef Fish Fishery Management Plan is any harvest level for each species which maintains, or is expected to maintain, over time a survival rate of biomass into the stock of spawning age to achieve at least a 20 percent spawning potential ratio (SPR) population level, relative to that which would occur with no fishing.

2. To reduce user conflicts and nearshore fishing mortality.

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

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

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

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

7. To maximize net economic benefits from the reef fish fishery.
8. To conserve reef fish habitats and increase reef fish habitats in appropriate areas and provide protection for juveniles while protecting existing and new habitats.

Definition of Overfishing

The following is the definition of overfishing contained in the Reef Fish Fishery Management Plan (FMP).

1. A reef fish stock or stock complex is overfished when it is below the level of 20 percent SPR.

2. When a reef fish stock or stock complex is overfished, overfishing is defined as harvesting at a rate that is not consistent with a program that has been established to rebuild the stock or stock complex to the 20 percent SPR level.

3. When a reef fish stock or stock complex is not overfished, overfishing is defined as a harvesting rate that, if continued, would lead to a state of the stock or stock complex that would not at least allow a harvest of Optimum Yield on a continuing basis (SPR).

7. PREFERRED AND ALTERNATIVE MANAGEMENT OPTIONS

A. FISH TRAP RESTRICTIONS

a. General Trap Discussion (See Appendix A)

A recent review of the scientific literature on fish traps in the Western Atlantic area by Kelley (1990) is included in Appendix A.

b. The Gulf of Mexico Trap Fishery

The use of fish traps in the Gulf of Mexico off Florida has existed since at least the 1950s. Fishermen principally targeted black sea bass. Landings peaked at about 300,000 pounds in 1968 when 38 vessels using 800 traps were in the fishery (FMP, Table 3). Landings of black sea bass steadily declined reaching 33,000 pounds in 1976, and about 3,000 pounds in 1987 (Amendment 1 Table 8.19). Part-time fishermen (probably stone crab fishermen) began targeting grouper with traps in 1975 with five vessels, landing about 15,000 pounds of grouper. Landings of grouper continued to increase reaching 962 thousand pounds in 1985 when total landings of reef fish from traps were about 1.1 million pounds (Table 4) and declined somewhat for the 1986-1991 period (Table 7).

Table 4 presents the number of vessels and traps and landings from traps of grouper, snapper, and other reef fish for the period 1978-1985. Landings of red snapper rarely occurred during this period. The number of vessels and traps are based on annual canvass interviews by NMFS port agents. These data show an increase in vessels from 32 in 1978, to 60 in 1985, but no comparable increase in traps which were reported to be 1,800 in 1985, i.e., a slight decrease.

The Council required a vessel permit for all vessels fishing traps beginning in early 1985. Unfortunately, the permit was a perennial one rather than an annual permit. By October 24, 1985, 132 vessel permits and 7,432 trap tags had been issued (Joann Turner, NMFS, Personal Communication). By June 6, 1989, total vessel permits and trap tags issued had increased to 545 and 39,786, respectively (Joann Turner, NMFS, Personal Communication). That represented the cumulative numbers issued over the five-year period, including replacement tags for those lost. Basically, it made determination of vessels actively fishing impossible. In 1987, NMFS polled the 377 permit holders and, of the 254 respondents, determined that 94 were actively fishing with 89 from Florida. However, there were 135 non-respondents in this survey and no effort was made to statistically sample the non-respondents. Some may not have responded since they would be issued logbooks. NMFS

followed this mail survey with a canvass of vessels by port agents who identified 45 active vessels in the fishery in Florida (Table 5).

In 1990, the Council required annual vessel permits for all trap fishermen and for all vessels fishing commercially for reef fish. During that year, 208 permittees indicated that fish traps were included in the gear utilized by the vessel. The application form was revised to require applicants to list gear by their importance to their fishing operation. For 1991, 154 permittees listed fish traps as their principal gear and 194 for 1992. (Perry Allen, NMFS, Personal Communication). Of these permittees, 109 in 1991, and 166 in 1992, indicated their principal fishery was either for stone crab or spiny lobster, or both (Table 6). This suggests that the great majority of trap fishermen permitted are also either stone crab or spiny lobster fishermen (i.e., 70 and 86 percent for 1991 and 1992, respectively) who either fished fish traps during the closed season for crab and lobster or obtained permits that would allow them to do so. The spiny lobster level of fishing effort is so high that normally 90 percent of the annual landings are taken in the first five months. Similarly, stone crab fishermen usually conclude their effective season within four to five months. Both groups of fishermen diversify into other fisheries for the remainder of each year.

Table 7 presents landings data from fish traps for 1986 through 1991. During this period total landings increased reaching about 1.5 million pounds by 1991. During 1991, a total of 87 fishermen reported catches by fish traps and during 1992, 96 persons reported (through November 19). That number may represent the best estimate of fishing vessels in the fishery since permittees are denied renewal of the permit for failure to turn in logbooks to NMFS.

Table 7 lists landings by area of capture (statistical zones) and by species categories. Two recent trends are shown by the data, particularly that for 1991. The trap fishery off Florida has progressively extended northward with 19 percent of landings recorded from statistical zone 7 (Crystal River-Cedar Key, Florida area) by 1991. The other trend is that species other than grouper and snappers have progressively made up a greater percentage of the landings (37 percent by 1991). Dominant species groups in this other category (listed in order by weight) were grunts, porgies, sea bass and triggerfish. Red grouper made up 92 percent of grouper landings in 1991. Dominant snappers in 1991 landings were lane, mutton, vermilion, yellowtail and gray. Red snapper accounted for about 1 percent of 1991 snapper landings.

c. Management Options[2]

Preferred Option 1: Require that traps be tended at sea by the vessel when fishing and returned to shore at the end of each fishing trip. Each trap must be individually buoyed. Possession of magnesium pop-up devices is prohibited.

Discussion and Impacts:

a. Ecological: This system of fishing was utilized by Collier County, Florida, fishermen from Everglades City and Chokoloskee (Taylor and McMichael 1983). Public testimony at hearings indicated that most Gulf trap fishermen, except those fishing from Florida Keys ports, tended their traps and returned them to shore after each trip. The system alleviates many potential ecological problems associated with trap fishing. There are few lost traps to ghost fish, i.e., less than 5 percent annually. The traps are pulled every hour or so during daylight and soaked overnight while the crew is sleeping. This generally should have eliminated mortality associated with long confinement periods (i.e., soak periods of 1 to 20 days for Monroe County) and should result in greater survival rates for released fish harvested in the traps.

[2] Environmental effects for each option are discussed in the Supplemental Environmental Impact Statement (SEIS).

In the Monroe County, Florida fishery conducted in the Atlantic, when traps were retrieved, four percent of all fish were dead or injured. Fifteen percent of angelfish and butterflyfish were injured. No fish were dead on retrieval of traps, and less than 0.1 percent were injured in the Collier County, Florida fishery (Taylor and McMichael 1983). A scientist from Mote Marine Laboratory (Roger DeBruler, Personal Communication) monitored fish trap catches off Collier and Lee Counties during 1991. In that 10-day trip 92 traps were continuously deployed and retrieved with soak times ranging from 3 to 20 hours. Of the 3,681 finfish caught but not retained for landing (i.e., bycatch and undersized target species), 7 were dead, 1,024 were used as bait, and 2,650 were discarded overboard, usually after puncturing the air bladder. Of the discards, 97 percent swam down and less than 0.1 percent were observed to have been eaten by birds. This contrasts with the 53 percent swim down rate for the Monroe County study in Atlantic waters (Taylor and McMichael 1983) and a 78.5 percent swim down rate for a NMFS study (Harper, et al, In press) that included stations off the Atlantic coast from Miami, Florida south and around the Keys to a station west of the Dry Tortugas, Florida.

Butterflyfish and angelfish constituted only 0.6 percent of trap catch in the Mote study off Collier and Lee Counties. All were alive when harvested and swam down, except for one fish eaten by birds (DeBruler, Personal Communication).

b.Socioeconomic: This system should alleviate social concerns over the lack of enforceability of current rules allowing traps to be continuously deployed at sea, since traps would be returned to shore after each trip and could be inspected as to the number being fished and compliance with required construction characteristics. During public hearings in areas where fishermen normally tended traps and returned them to shore (i.e., Naples through Apalachicola, Florida) the fishermen indicated their traps were frequently inspected by enforcement agents. This type of fishing does require all traps to be baited and rebaited for every set, so cost for bait would be higher for some fishermen (principally those fishing from Florida Keys ports). The requirement that each trap be individually buoyed will affect principally those fishermen fishing from the Florida Keys. These fishermen currently fish their traps in "trawls" (strings of 8 to 10 traps with lines between them) with buoys attached at each end of the "trawl." They estimate the line required to buoy a trap in 120 feet of water around Dry Tortugas, Florida to be 840 feet (scope of 7 to 1). For 100 traps 84,000 feet of line would be required. Seven fishermen operating out of Key West, Florida are estimated to be affected (Bill Moore, Reef Fish AP, Personal Communication)

Preferred Option 2: Place a three-year moratorium on vessels that can fish traps by establishing a fish trap endorsement to the vessel permit and limiting such endorsement to permittees who turned in logbooks indicating landings from fish traps in 1991 and/or 1992 through November 19, 1992. The permits with endorsements would be nontransferable for the duration of the moratorium.

Discussion:

In 1990, it became a requirement of the FMP that permittees issued logbooks for reporting fishery statistics for each trip must submit logbook reports during each year or their permit would not be reissued in the following year. The moratorium would limit the fish trap endorsements to the vessel permit to those reporting landings from traps in 1991 (87) and 1992 through November 19, 1992 (96) as reported on fishing vessel logbooks received by SEFC on or before November 19, 1992. The total number of endorsements will likely be slightly in excess of 100 (i.e., some may have fished traps in 1991 and not 1992 or vice versa). The cut off date of November 19, 1992, was selected to prevent a proliferation of persons seeking eligibility by fishing traps after that date when the Council announced

the moratorium (before an audience of about 100 persons, most of whom were associated with the trap fishery). The FMP rules require logbook forms to be submitted to NMFS within seven days following a trip.

The trap vessel moratorium would apply for three years after implementation of the rule unless the time period is modified by subsequent amendment. The fish trap endorsements would be issued for the permitted vessel for which the logbook records indicated landings from traps during either of the two years and not to an operator. The fish trap endorsement to vessel permits would be nontransferable to other persons, during the three-year moratorium; however, the owner of the permitted vessel may replace the vessel. These provisions may also be modified by subsequent amendment addressing limited access.

Impacts:

a. Ecological: The moratorium would limit the fishery to current participants, until the Council has better information on the ecological impacts of the trap fishery in the Gulf of Mexico. The Council has requested NMFS place a high priority on collecting observer data and conducting research on the Gulf fishery. There is little information available on the Gulf fishery, except for studies in the area of the Dry Tortugas, which is more ecologically similar to the Atlantic (i.e., subject to Gulf Stream currents and near coral complexes, etc). The one observer data set available to the Council for the Gulf (Roger Debruler, Mote Marine Laboratory, Personal Communication) suggested the ecological impacts on the resources were different from the Florida Keys area, where most research has been conducted.

As indicated in Section 7.A.b. which discusses the Gulf fish trap fishery, the number of participants, gear deployed, and landings have increased over time. Comparison of these data for 1991 to that in the FMP EIS (prepared in 1981) shows the following trends, the number of vessels has increased from 51 to 87, the number of traps from 2,488 to about 8,700, landings from traps has increased from 2 percent of total reef fish landings to 6.8 percent. Other trends cited in that section indicate the fishery has expanded northward off the Florida west coast and that species other than grouper and snapper make up a much larger portion of the landings (with dominant species being grunts, porgies, sea bass and triggerfish). Therefore, the Council felt it advisable to cap the fishery while additional information is gathered and evaluated. The Council, through Amendment 4, stated its intent to consider limited access for the reef fish fishery, and this action is consistent with that stated intent. The Council has been exploring with the industry, over the last year, the feasibility and provisions a limited access system for the red snapper component of the fishery.

From the information on the Gulf fishery available, the Council concluded that trap fishing was having little impact on the physical environment or on the resource. Continuation of the same level of participation would not adversely impact the environment. Deployment of fish traps (about 9,600 in 1992) on the bottoms as compared to spiny lobster traps (about 900,000) and stone crab traps (about 500,000) which are weighted with concrete was concluded to have a minimal impact on the bottom. The same is true in comparison to shrimp trawls used on the bottoms in the same general areas of the trap fishery. Similarly mortality of undersized target and bycatch species taken in traps is minimal in comparison to mortality associated with otter trawls and likely in comparison to other gear used in the reef fish fishery (both in terms of lower gear mortality rates and less gear deployed).

b.Socioeconomic: The Council rejected the tentative preferred option of the draft amendment to prohibit fish traps (see discussion under that rejected option). Instead the Council modified the current rules, including the proposed measure of this preferred option. This option, by including the current participants, is anticipated to have a minimal social and economic impacts on the fishermen. Persons who did not participate in the fishery during the last two years or who did not comply with the reporting requirements would be excluded from the fishery for the three-year period. Some trap fishermen residing in and prohibited from fishing the SAFMC area who had anticipated fishing the Gulf may fall into this category.

Rejected Option 1: Status Quo - Retain current trap rules.

The current rules are as follows:

O A vessel permit is required and applicant must demonstrate that more than 50 percent of earned income is from commercial or charter fishing;

O A moratorium on issuance of additional permits in the reef fish fishery exists until May 8, 1995;

0 Traps cannot be fished in the stressed area (Figure 5);

o Permittee is limited to 100 traps per vessel;

o Traps fished inshore of the 50-fathom contour may not exceed 33 cubic feet in volume;

o 144 square inch opening with a cover hinged or fastened with degradable fasteners (3/16 inch jute string or magnesium) must be on a side opposite each funnel;

o Two sides must have at least two 2 x 2 inch escape windows;

o Minimum mesh sizes are 1 x 2 inch or 1.5 x 1.5 inch or 1.5 inch hexagonal mesh;

o Each trap must be buoyed or a series of traps fished in a "trawl" must be buoyed at each end; buoys may be used with "pop-up" magnesium releases;

o Traps must be pulled or tended only during daylight.

Discussion and Impacts:

The Council rejected retaining just the status quo, and through this amendment, proposes to modify the current rules (status quo) through preferred options (1) and (2) above. These options propose that traps are to be tended at sea, individually buoyed and returned to shore after each trip. A moratorium is also proposed to limit trapping to current participants while the Council considers limited access for the fishery and while additional information is gathered on the fishery in the Gulf.

a.Ecological: The Council established the stressed area to prohibit fish traps and other efficient gear from competing with fishermen in the nearshore waters, which it felt was stressed (subject to growth overfishing) due to a high recreational fishing effort. It addresses FMP management objective (2) to reduce conflicts and nearshore fishing mortality. The stressed area boundary was set further offshore near areas of high human population density (e.g., off Ft. Myers to the Tarpon Springs, Florida, area). The stressed area and trap rules of this option were selected in the original FMP and Amendment 1

over alternative options to ban the use of traps. The stressed area was set well beyond Florida jurisdiction (nine nautical miles) to facilitate state enforcement of the prohibition on traps. The closest distance to the outer stressed area boundary from the following Florida fishing ports is as follows: Key West (28 nautical miles), Marathon (63 nautical miles), Everglades City (50 nautical miles), Madeira Beach (49 nautical miles), and Crystal River (60 nautical miles). The effectiveness of the stressed area rule and other rules of the FMP related to traps was largely contingent on compliance by the fishermen, since enforcement must be carried out at sea. This is because some fishermen deployed their traps constantly at sea and likely used pop-up buoys. Fishermen from the Everglades City area in Collier County carried their traps to sea, attended them, and returned the traps to shore on each trip (Taylor and McMichael, 1983). The preferred options would require this for the entire fishery.

The escape window size under current rules retains fish 7 to 8 inches in length or larger, depending on shape. The scientific literature on ingress and egress in Appendix A indicated that some species swim in and out of the funnels, it also indicated some do not. Harper and McClellan (1983) noted that the larger predators, including grouper, generally did not leave via the funnel. When traps are hauled off the bottom most fish become disoriented and do not exit and are hauled to the surface. Fish with deep profiles, such an angelfish, tilefish, spadefish, and butterflyfish were particularly retained by the traps (Taylor and Michael 1983).

b. Socioeconomic: No new impact would affect fish trap fishermen by retaining the status quo alternative.

Rejected Option 2: Require larger mesh in traps utilizing one or more of the following:

a.Require two sides of trap to be of 2 x 4 inch mesh,

b.Require entire trap to be of 2 x 4 inch mesh,

c.Require bottom to be of 2 x 4 inch or larger mesh,

d.Require four or more vertical escape windows to be either 2 x 5 inches or 1-1/2 x 5 inches,

Discussion and Impacts:

The Council rejected options to alter the mesh sizes primarily because the larger 2 x 4 inch mesh would have allowed escapement of legal size (≥ 8 inches TL) vermilion and lane snappers which have become more important components of Gulf landings from traps. The mesh sizes under suboption (d) would have allowed legal size grouper to escape.

a. Ecological: The Council previously considered suboptions (a), (b), and (c) in Amendment 1. Suboption (d) was suggested by trap fishermen giving testimony at the July 1992 meeting as a method of allowing angelfish and other fish with deep body profiles to escape while the traps were actively fishing. Bohnsack, et al. (1989) noted that present specified minimum mesh sizes (1 x 2 and 1.5 x 1.5 inches) appear to do little to reduce bycatch (i.e., status quo option). The current escape windows (2 x 2 inches) under status quo allow the escapement of fish with fork length of 7 to 8 inches for body shapes similar to grunts and snapper (Harper and McClellan, 1983). Fish of similar sizes with deep profiles, such as angelfish, tilefishes, etc., are retained. Taylor and McMichael (1983) indicated that over 15 percent of angelfishes and butterflyfishes were injured in trap catches examined. However, available information indicates these species, important to marine life fishermen, are not a major component of Gulf trap catches.

A 2 x 4 inch mesh would select for gray snapper and white grunt larger than 15, and 12 inches fork length respectively, and red grouper greater than 14 inches total length (Sutherland et al., 1987). This would allow escapement of gray snapper larger than the minimum size (12 inches TL). The use of larger mesh sizes for escapement appears more important when traps are allowed to be deployed for many days by providing for egress of confined fish. Requiring traps be tended and returned to shore eliminates periods of long deployment and reduces the potential for lost traps.

b. Socioeconomic: Fishermen in previous testimony to the Council have maintained that the smaller mesh sizes yield greater catches due to the shading effect of smaller mesh. Bohnsack et al (1989) examined catch and value by size of mesh and found the 2 x 4 inch mesh was equally productive to .5 x .5 inches and 1 x 2 inch meshes; only the 1.5 inch square and hexagonal meshes produced a more valuable catch. The hexagonal mesh produced about $5.50 per haul, whereas 2 x 4 inch mesh produced $4.75 per haul; no statistical analyses were provided to determine if these differences are statistically supported. However, the study examining economic value of catches by mesh size (Bohnsack, et al 1989) was conducted off southeast Florida and species taken in 2 x 4 inch mesh traps (27 samples) was almost entirely different from those taken in the Gulf fishery off Collier and Lee Counties, Florida (DeBruler, Mote Marine Laboratory, Personal Communication). Species composition (by weight) taken by Bohnsack, et al (1989) were mutton and cubera snapper, 31 percent; orange filefish, 29 percent; blue angelfish, 12 percent; gray angelfish, 6 percent; French and queen angelfish, 3 percent; hogfish, 6 percent; yellow jack, 2 percent, grunts (margate and sailors choice), 2 percent; with littlehead porgy, scorpionfish, parrotfish and stingray making up the remainder. Target species in the Gulf catches by weight (DeBruler, Mote Marine Laboratory, Personal Communication) were red grouper, 78 percent; lane snapper, 14 percent; jolthead porgy and pinfish, 4 percent; vermilion snapper, 2 percent; with gag, gray snapper and triggerfish making up the remainder. Gulf bycatch species differed also with only orange filefish (19 specimens) and French anglefish (14 specimens) being common to both studies.

Costs to the fishermen for the suboptions vary significantly: suboption (b) would essentially have a cost similar to banning fish traps, i.e., almost all traps would have to be replaced; suboption (a) would allow existing traps to be modified by replacing mesh on two of the six sides; and suboption (c) on only one size. The larger escape windows of suboption (d) could be made simply by cutting out some meshes.

Rejected Option 3: Move the stressed area boundary further offshore to coincide with the boundary of the prohibited area for longlines and buoy gear:

a. off Florida
b. for entire Gulf

Discussion and Impacts:

The Council rejected this option because it would increase the operating cost for fishermen (longer distance to travel), slightly increase vessel safety hazard (because of the longer distance) and because the prohibition on trapping in the stressed area was deemed an adequate areal control on trapping (see stressed area discussion under status quo option).

a. Ecological: This option would have moved the use of fish traps, roller trawls, and power heads offshore to the same waters that reef fish longlines and buoy gear are allowed. The prohibited area for longlines is the 20-fathom contour off Florida to Cape San Blas (point 13 on Figure 6) and the 50-fathom contour from there to the Mexican border. In Southwest Florida and the Florida Big Bend area it

would have moved fish trapping much further offshore. However, the option would increase embolism mortality of fish and would result in greater loss of fish unless most of the catch is legal size, target species. Data from Goodyear and Schirripa (1991) suggest most grouper would be of legal size. If suboption (b) were selected, it would move this gear beyond 50 fathoms in the Central and Western Gulf, reducing significantly the likelihood of taking red snapper which are seriously overfished.

b. Socioeconomic: This option would have increased the operation cost for vessels continuing to fish because of the greater distances in some areas of the Gulf. For example, minimum distance to the longline/buoy prohibited area boundary for some Florida ports are as follows: Key West (61 nautical miles), Marathon (99 nautical miles), Everglades City (50 nautical miles), and Crystal River (87 nautical miles). In the western Gulf, boundaries for fish traps would change from the 10-fathom contour off Louisiana and the 30-fathom contour off Texas to the 50-fathom contour. However, there are very few fish trap permit holders in these states. The greater distance offshore would, to some extent, increase the hazard related to vessel safety.

By moving the stressed area boundary to coincide with that for longlines and buoy gear, enforcement cost would have been potentially reduced since aerial and vessel surveillance would be necessary only for one prohibited area rather than two.

Rejected Option 4: Limit the number of vessels that can fish traps by:

a. Establishing a moratorium on permits authorizing fishing with traps to 1992 permit holders with that designation as their principal gear or;

b. Establishing a limited entry ITQ system for trap fishermen.

Discussion and Impacts:

The Council rejected these options and selected instead a moratorium with eligibility based on permittees reporting fish trap landings by logbook [see Preferred Option (2)].

a. Ecological: Suboption (a) recognizes under the FMP that there is a three-year moratorium on issuance of any more commercial vessel permits. It would limit the use of traps to those persons who, in 1992, checked the application blank to indicate that they would use traps as their principal gear. In 1992, 166 persons indicated their vessel would use traps, usually along with other gear, however, only 96 of them reported landing from traps. In 1991, 109 persons indicated their vessel would use fish traps, however, only 87 of them reported landings from traps in the logbooks. The option would have capped the number of trap fishermen, limiting participation to those who indicated they would use traps.

Suboption (b) would establish a limited access system using individual transferable quotas for trap fishermen selected. Landing levels from 1991 and/or 1992 logbooks could be used to subdivide total fish trap landings for those years between eligible participants, and possibly further subdivided by species groups (i.e., groupers, snappers, etc.). However, since the Council will consider a limited access system for the fishery during the current three-year moratorium on vessel permits, it was deemed to be more advisable to consider such limited access for traps at that time.

b. Socioeconomic: Either of the suboptions would allow persons with an economic dependency on traps to continue fishing. This would essentially eliminate the economic losses that would have occurred from the option of banning traps.

Rejected Option 5: Limit the number of traps per vessel to:

a. 50
b. Number of trap tags requested in 1992

Discussion and Impacts:

The Council rejected these options and concluded that the current rule (status quo) allowing use of 100 traps per vessel was necessary for fishermen to maintain an economically viable operation.

a. Ecological: A reduction in traps would have reduced mortality of bycatch an sublegal size target species. However the Council concluded that in the Gulf Fishery for vessel tending traps such mortality was not excessive [see discussion of ecological impacts under Preferred Option (1)].

b. Socioeconomic: Suboption (a) may adversely impact fishermen utilizing and dependent on more than 50 traps. Suboption (b) is essentially the same as status quo.

Rejected Option 6: Prohibit the use of fish traps in the EEZ of the Gulf of Mexico.

Discussion and Impacts:

The Council identified this option as its tentative preferred option in the draft amendment. The draft amendment cited as a basis supporting that position both scientific and anecdotal information, that in subsequent consideration was judged to apply to traps fished in close proximity to the coral reef complexes and for traps constantly deployed at sea. The Council has proposed, through this amendment, that traps not be constantly deployed but that they be attended and returned to shore after each trip. Limited scientific information (DeBruler, Mote Marine Laboratory, Personal Communication) and testimony presented at public hearings indicated the Gulf fishery is quite different in terms of bottom habitat affected, bycatch and target species taken, survival of released fish, and method of fishing (i.e., most fishermen already returned traps to shore after each trip). Based on these differences the Council rejected this proposed option.

a. Ecological: This option would have eliminated all ecological impacts associated with the use of traps. However, the Council has concluded that these impacts from the current fishery are minimal (see discussion of impacts under other preferred and rejected options). The Council also proposes through this amendment to prevent expansion of the fishery until the ecological characteristics are better documented.

b. Socioeconomic: From solely a social standpoint, many organizations and much of public sentiment support banning fish traps. Marine life fishermen, who collect aquarium specimens, have expressed concerns that the trap harvest and discard of bycatch species impact the abundance of stocks they collect. There is also a social perception that traps left continually deployed at sea are illegally fished. However, NMFS recorded only 40 fish trap violations during 1988-1991, and the Florida Marine Patrol recorded only 13 fish trap violations out of 28,632 marine associated violations during 1986-1990.

Among public allegations were charges that more traps are being fished per vessel than allowed (100), that required construction characteristics are modified at sea, that degradable hinges or

fasteners are not used, that traps are being fished illegally in the stressed area or in Florida waters, etc. Enforceability of these areas of public concern are enhanced by Preferred Option (1).

Banning fish traps would have resulted in an annual loss of revenue to trap fishermen of about 1.5 million pounds of landings (1991) valued at about $1.70 per pound (Table 3b), or about $2.5 million. The actual loss of revenue would have been less than this amount would have since the fishermen would likely switch to other gear such as bandit rigs. Banning traps would have resulted in the loss of the value of the traps, the use of which is prohibited in Florida waters and the South Atlantic EEZ. The value of a new trap is approximately $85.00 and the depreciated average value $48.50 (SAFMC Snapper/Grouper Amendment 4 RIR). The actual number of traps used in the Gulf is unknown. If the 96 fishermen reporting landings in 1992 each had the maximum number of traps, there would be 9,600. If there was one trap for each trap tag issued in 1992, there would be 12,064. It is likely that both of these values exceed the actual number of traps. Assuming that 9,600 represents the actual number of traps, the industry loss at the average depreciated value would be $465,600.

B. SPECIAL MANAGEMENT ZONES

Special management zones (SMZ) are established where certain gear is prohibited or certain rules apply. Examples are the Habitat Areas of Particular Concern (HAPC) under the Coral FMP where the use of all gear interfacing with the bottom is prohibited (e.g. trawls, traps, etc.) or spawning aggregation sites where all fishing may be seasonally prohibited. This amendment addresses two actions for management zones, one off Alabama, and a general framework procedure for establishing such zones in the future by regulatory amendment.

1. Alabama Special Management Zones

The Alabama Department of Conservation and Natural Resources (ADCNR) has a general Corps of Engineers permit for three EEZ offshore tracts located generally south and east of the mouth of Mobile Bay (Figures 7 and 8). Under the terms of the permit, individuals may construct low profile, unmarked reefs at any point within the tracts. Inspection of reef material by state personnel for environmental sanitation (no oil, etc.) is required. After placing the reef, the individual is the only person with the LORAN coordinates for the reef. The person must sign a release recognizing that any other person may fish the reef after it is established, should they locate it. Recreational fishermen, charterboat fishermen and some local commercial fishermen have established a total of more than 5,000 individual reefs in the tracts. The charterboat industry has created a large portion of the reefs. The tracts also include reefs established by the state consisting of liberty ships, barges, vessels, bridge rubble, and a toppled oil platform. The three tracts cover approximately 820 square miles. Tract A (100 square miles) ranges in depth from 12 to 16 fathoms and contains rubble from the Dauphin Island bridge (3 miles long) removed after hurricane Frederick. Tract B (360 square miles) ranges in depth from 14 to 32 fathoms and contains five liberty ships. Tract C (360 square miles) ranges in depth from 20 to 400 fathoms and contains a sunken oil platform in the deeper depths.

Charterboat fishermen residing in Baldwin County, Alabama, began construction of artificial reefs in federal waters off that county shortly after World War II, after noticing the effectiveness of coastal shipping sunk by German submarines in attracting reef fish. Many fishermen had scores of unmarked reefs offshore that they fished periodically to satisfy customers when pelagic species were unavailable. At their request the state of Alabama placed 250 automobile bodies offshore in

1953 and added 1,500 bodies in 1957 (Swingle, 1974). Both individual fishermen and the state through its artificial reef program continued to place environmentally safe material offshore under U.S. Army Corps of Engineers (COE) permits. Material used to construct these reefs typically consists of automobile bodies, washing machines, dryers, etc. The life span of this type of material is usually 4 to 7 years. Therefore, new material must be added periodically. The general COE permits for the tracts were obtained from 1986 through 1989 (Figure 8). Obtaining the general permits greatly increased reef construction by fishermen, under supervision by the state.

Preferred Option: Require that persons fishing all three tracts (A, B, and C) for reef fish be limited to gear with no more than 3 hooks.

Discussion: The intent of the Council was that persons fishing the area recreationally or commercially for reef fish, which has historically been with hook and line (i.e. rod and reel, and more recently, bandit rigs), be limited to three terminal hooks on the line. Spear fishing would continue to be allowed (equivalent to one hook). Longlines used for targeting reef fish are prohibited from fishing inshore of 50 fathoms under the FMP. This rule currently prohibits the use of such longlines on the reef tracts except for the extreme offshore portion of tract C (see Figures 6 and 7 and Table 10, for coordinates). The use of longlines to target reef fish has not been known to occur in that area (Minton, ADCNR, Personal Communication). The intent of the Council was that reef fish longlines not be used in the SMZ reef tracts. To accomplish this, point 16 of the reef fish longline restricted area (Table 10) will be moved from 29° 29.0$_{\circ}$ north and 87° 27.5$_{\circ}$ west to the outer limit of tract C at 29° 15.75$_{\circ}$ north and 87° 32.0$_{\circ}$ west (i.e., 13 nautical miles further offshore) and return to a new point (16a) at 29° 25.0$_{\circ}$ north and 87° 44.0$_{\circ}$ west (Figure 15).

Under the rules of the FMP, longlines used to target other species (e.g., pelagic longlines used for tuna fishing) may be fished inshore of the boundary of the reef fish longline restricted area, but fishermen utilizing such gear in the area are limited to possession of the bag limits for reef fish, which cannot be sold. This rule would continue to apply to the waters of the reef fish longline restricted area, including the SMZ reef tracts.

Under FMP rules entangling nets and trawls are prohibited for use in a directed fishery for reef fish. Persons on vessels with this gear on board are limited to the possession of bag limits for reef fish, which cannot be sold. This rule would continue to apply to EEZ, including the SMZ reef tracts. However, it is highly unlikely that shrimp trawls would be utilized in these areas, since it was always a relatively nonproductive shrimping area and if used trawls would likely become entangled with reef material. Entangling nets are used along the beaches well inshore of the reefs.

Impacts:

a. Ecological: During 1992, when the Secretary of Commerce at the Council's request established by emergency rule a commercial 1,000-pound trip limit per vessel for red snapper, numerous vessels with bandit rigs and some with jigging rigs harvested red snapper from these reef tracts, (Minton, ADCNR, Personal Communication). Presumably, these vessels targeted the tracts because of their nearness to shore which allowed them to make more frequent trips during the short period the trip limit was in place. Each small reef supports only a limited snapper population which can be easily fished out. Persons constructing the reefs usually carefully regulate their harvest, fishing each reef at infrequent intervals to conserve the population and to allow fish to grow to larger sizes. The reefs cannot support a major commercial effort, such as occurred in 1992, but do support small localized commercial efforts by local fishermen who constructed some of the reefs. The Council is proposing vessel trip limits for 1993 as a method of extending the harvest period under

the 1993 commercial quota for red snapper so that prices paid to fishermen remain higher. The state of Alabama, as the permit holder for the reef tracts requested the rule limiting gear for one or all of the tracts to prevent pulse overfishing under trip limits, and as being consistent with their artificial reef program. The conservative harvest of these red snapper populations is consistent with the Council's program for rebuilding the stock of red snapper.

The offshore area in which the Alabama reef tracts have been established contains no known coral reefs. The southern portion of reef tract B contains a small outcropping with a relief of 5 to 10 meters. Associated with this are about 50 areas of outcropping with relief less than 5 meters, some of which are less than 10 feet in length (Laswell et al, 1990) This is what is known locally as the "Trysler Grounds" (Tatum, ADCNR, Personal Communication). The remainder of the bottom is homogenous, featureless, sandy bottom. With the exception of the small rocky reefs constituting the Trysler Grounds there were no natural reefs off Alabama. The artificial reef program carried out over the past 40 years which accelerated with the creation of the general permits has greatly increased the availability of reef fish off Alabama. The large number of individual reefs created in the tracts has converted the fish fauna of the area from predominantly species associated with sand bottoms to those associated with reefs, including particularly red snapper. Because of the large number of individual active reefs (5,000 to 7,000, i.e., exact number "active" unknown because of short life span of 4 to 7 years for reefs) a large, localized population of red snapper has been established in the area that yields much higher charter vessel CPUE than other Gulf areas (NMFS, Channel 68).

The issue of whether construction of artificial reefs contribute to increased production of reef fish or simply congregate them has long existed. If the latter case is true, then such reefs would potentially have a detrimental impact on restoration of an overfished stock by making fish more available for harvest and any benefits gained toward restoration would be dependent on controlling fishing effort on the reefs.

For both natural and artificial reefs a large portion of the fish biomass is dependent on food by foraging in areas surrounding the reef. Night and day-time observations of a tropical coral reef in the Virgin Islands by glass-bottomed barge indicated that most of the population moved off the reef at night to feed (W. Swingle, Personal Communication). The herbivores and omnivores moved off to surrounding seagrass flats to feed, followed by many piscivorous species who stationed themselves behind low relief objects near the grass flats. Fish remaining on the reef were primarily those feeding on coral or associated symbiotic algae and some predators such as moray eels. During daylight almost all of the fish returned to the reef.

Since adult reef fish tend to congregate around reefs or other objects with relief above the bottom, the absence of such habitat can limit the abundance of many species despite the fact they forage off the reef. Possibly this occurs because the range they forage over is limited by necessity to return to the reef each day. Placing artificial reefs in areas where there is little or no bottom relief appears to create a foraging range previously not utilized by the reef fish. This likely results in a change of the species diversity of such an area to be predominantly reef-associated species. This probably results in part of the forage fish originally inhabiting the area being converted into reef fish biomass, where previously that did not occur, thus increasing production. This certainly appears to be the case for the Alabama reef tracts (Figure 10). Figure 10 depicts benthic surveys conducted under contract to Minerals Management Service for red snapper and indicates annual abundance levels in the north-eastern Gulf to be several hundred times higher for the area of the Alabama artificial reef tracts than for other areas.

b. Socioeconomic: The Council selected a preferred option applying the gear restriction to all of the tracts. Recognizing that it will be beneficial in restoring the stocks to limit effort on the reef, the Council is proposing that no more than 3 hooks be utilized. Goodyear (1992) pointed out that under a reduced stock level handline type gear (rods and reels and bandit rigs) can catch a large portion of the smaller local stocks, even to the last remaining fish and, therefore, catch per unit effort is not usually a good indicator of stock size. He pointed out that the number caught is related, in part, to how rapidly this gear can be deployed and retrieved. The number of hooks used in each deployment also affects the number caught.

Historically, the only natural reefs in the nearshore waters off Alabama (Trysler Grounds) were commercially fished primarily by charter vessels during their off season (fall/winter months). The commercial reef fish vessels based in the area (i.e., Pensacola, Florida, Alabama, and Mississippi) during the 1970's and 1980's were principally distant water operations fishing off the Texas/Louisiana shelf, Mexico (until 1981) and occasionally central America (Reef Fish FMP). Those operating from Alabama rarely fished the Trysler Grounds (Tatum, ADCNR, Personal Communication). However, vessels occasionally fished further offshore of northwest Florida and east Alabama in statistical zone 10 (Figure 9) with annual catches of red snapper from the zone during the 1980's and 1990's ranging between about 400 to 100 thousand pounds (Goodyear, 1992 - Tables 18, 19, and 20).

Historically, the artificial reefs were placed off Alabama primarily by the charter vessels and through charter associations. Automobile bodies placed offshore in the 1950's (which have long since deteriorated) by the state of Alabama was at the request of the charter association. They also initiated the Congressional action that resulted in Liberty ships being available to Gulf states for reefs. Under the general Corps of Engineers permits for the Alabama reef tracts most of the reefs were constructed by the charterboat industry, followed by recreational fishermen. Comparison of the 1992 reef fish commercial vessel permits (201) for vessels based in the area (Pensacola, Florida, through Biloxi, Mississippi) with the artificial reef file maintained by the state of Alabama under the general permits for reef construction, indicated only eleven commercial permit holders (all from Alabama) had placed reefs in the tracts (Tatum, ADCNR, Personal Communication). Ten of these were charter vessel operators who held commercial permits. Some additional reefs may have been constructed by commercial vessel operators prior to the general permits (before 1986) or under individual permit from the Corps of Engineers. Most of the effort and expense related to creating reefs, and replacing them as they deteriorate, has been by charter and recreational fishermen. A contractor from Orange Beach, Alabama indicated he had placed about 7,000 automobile bodies offshore since 1986 usually for a fee of $180 per automobile (David Walters, Personal Communication). About 60 to 70 percent were transported each year for charter vessel customers and 30 to 40 percent for recreational customers. Most of the cars were placed in tract C. Total cost over the period was in excess of $1 million.

Interviews with charter vessel operators in the Orange Beach, Alabama area indicated during the period the commercial red snapper fishery was open during 1992 (the first 53 days and from April 3 to May 14 under the 1,000 pound trip limit) that fishing activity in the reef tracts was about 60 percent private, 30 percent charter, and 10 percent commercial, including out of state boats (Tatum, ADCNR, Personal Communication). Some of the Alabama charter vessels fished commercially. During 1992 Alabama commercial landings of red snapper was 62,000 pounds and total catch reported from statistical zone 10 (all offshore waters between 87 degrees and 88 degrees west - Figure 9) was 130,000 pounds (Goodyear, 1992 - Tables 17 and 18).
Most commercial vessels in the Gulf utilize bandit rigs which are more efficient (i.e., faster retrieval rate and usually many more hooks). The preferred option would continue to allow bandit rigs to be

fished in the reef tracts but with only three hooks. The intent is to continue to allow both commercial and recreational fishing on the tracts, but to regulate gear consistent with the availability of fish. The Council recognized that most bandit rigs cannot be easily disconnected and stowed, especially hydraulic rigs. The preferred option does not eliminate the use of other gear in the reef tract areas to fishermen who have traditionally used the area (see Discussion section above on gear limitations proposed), with the possible exception of longlines utilized for targeting reef fish which would be prohibited in the tracts. The use of this gear is currently prohibited in all the tracts except the outer seaward portion of tract C, i.e., seaward of 50 fathoms (see Figures 6 and 7). The use of such longlines in tract C has never been reported, and likely would have been reported by other fishermen if the gear was utilized (Minton/Tatum, ADCNR, Personal Communication). Most longlines for reef fish are used in the grouper fishery off Florida.

The measures limiting gear require enforcement at sea. However, as there are always numerous vessels fishing the tracts, especially the two nearshore ones, it is anticipated that these fishermen will report any observed violations to enforcement agencies who could intercept the vessels. However, prosecution would require the violation be documented. The Council's Law Enforcement Advisory Panel concluded rules could be enforced for the SMZs.

In order for any entity to obtain a permit for construction of artificial reefs they must apply to the Corps of Engineers (COE) and, in some instances, to appropriate state agencies. The permit application for a reef or reef-complex is broadly distributed to all affected federal and state agencies (including EPA which has authority over ocean dumping and water quality) and to the public including fishermen and fishing associations that may be affected. Based comments received by the COE on the application and/or on analyses by its staff, the COE makes a determination whether the proposed project requires an EIS or EA or declares a FONSI (finding of no significant impact). As part of this process the material for reef construction is examined for potential impact to the environment. Fifteen years ago, material for reefs off Alabama was inspected by agents of EPA, COE, Fish and Wildlife Service and the state fishery resource and pollution control agencies, and usually by all of these agents. More recently these agencies have coordinated such inspections with usually a state or federal agency completing the inspection.

For the Alabama reef tracts (as for most other artificial reefs in the southeast) the COE prepared cumulative EAs as each tract or portion there of was permitted. The EAs cited no adverse effects on the physical environment, including the water quality or other elements of the environment required to be considered under NEPA. Because these EAs have already considered the projects and cumulative impacts under NEPA this amendment incorporates them by reference. (Copies are available from the Council or COE, Mobile District office.) The SEIS addresses the impacts of the SMZ.

<u>Rejected Option 1</u>: Require that persons fishing be limited to use of certain gear that utilize no more than three hooks for the following reef tracts:

a. The two northern tracts (A and B); or
b. One or more of the tracts; or
c. Status quo - none of the tracts.

<u>Rejected Option 2 for Allowable Gear:</u>

Gear allowed by persons fishing the reef tracts selected above will be hand-held rod and reel only, and:

a. Other prohibited gear aboard a vessel must be stored or not rigged for fishing, or
b. Vessels with other prohibited gear must transit the reef tract without stopping to fish.

Discussion and Impacts:

These options were rejected by the Council because they felt it was important to limit the gear utilized in directed fisheries for reef fish by recreational and commercial fishermen to all three tracts and not to restrict commercial fishermen to the use of hand-held rods. The three-hook requirement was judged to be appropriate to limit fishing power (fishing efficiency of a gear) by vessels on the small reef fish aggregations of these small artificial reefs (frequently consisting of a single automobile body), that are easily overfished. Most commercial reef fish vessels are equipped with power assisted bandit rigs which allow a small crew to fish efficiently. The Council's intent was to continue to allow both commercial and recreational fishing in the proposed SMZs, under the three-hook restriction. Rejected Option (2) would have prohibited the commercial fishermen from either using bandit gear or from fishing while that gear was on board.

a. Ecological: Rejected Option (1) (c), the status quo, would have continued to expose the small artificial reefs to higher fishing power, especially under the pulse fishing situations created by the Council by requiring red snapper commercial quotas and vessel trip limits to restore the stock. These situations result in the affected persons trying to catch their share for each trip as rapidly as possible and making as many trips as possible before the quota is taken. The small populations of the reefs may be overfished, eliminating or reducing harvest potential of the affected reefs for the remainder of the year. Options (1) (a) and (b) were rejected because the majority of reef placement since 1986 has been in tract C (see Socioeconomic Impact discussion under Preferred Option).

b. Socioeconomic: Option (2) was rejected because it would have prevented commercial vessels with bandit gear or gear other than hand-held rods from fishing or would have created a significant burden and expense associated with removal and storage of this gear each time a vessel fished the area. Most commercial vessels make trips of many days duration and fish many areas during a trip. Removal and storage of the gear while fishing the SMZ tracts and then re-rigging the gear for fishing other areas would be a burdensome problem.

Option (1), including status quo (no SMZs), was rejected because fishermen constructing the reefs have created a unique, productive fishing area, with high population densities and at considerable cost (see Socioeconomic Impact section of Preferred Option). The reefs, which benefit restoration of red snapper, have an effective life span, before deteriorating, of 4 to 7 years and must, therefore, be continuously replaced. A perception of allowing unfair harvesting practices by one user group will likely result in persons constructing reefs being less willing to bear that cost. Suboptions (a) and (b) under Option (1) were rejected because reefs have been place in all three tracts with emphasis on tract C.

2. Framework Procedure for Special Management Zones

The SAFMC Snapper-Grouper FMP includes a framework measure for establishing special management zones by regulatory amendment. This measure, as modified by the Council, is as follows:

SPECIAL MANAGEMENT ZONES (SMZ)

Upon request to the Council from the permittee (possessor of a Corps of Engineers permit) for any artificial reef or fish attraction device (or other modification of habitat for the purpose of fishing), the modified area and an appropriate surrounding area may be designated as a Special Management Zone (SMZ), with rules that prohibit or regulate the use of specific types of fishing gear that are not compatible with the most effective use of the area. This may be done by regulatory amendment under the following criteria and procedure:

1. A monitoring team[3] will evaluate the request in the form of a written report considering the following criteria:

   a. Fairness and equity of proposed rules.

   b. Promotes conservation of the resource.

   c. Does not result in excessive shares.

   d. Ensures SMZs are consistent with the objectives of the FMP, the Magnuson Act, and other applicable law.

   e. Considers the natural bottom in and surrounding potential SMZs and impacts on historical uses.

   f. Determine the environment impacts and cumulative impacts on the environment of each SMZ, after consideration of the Environmental Assessment (EA) prepared by the Corps of Engineers in issuing the permit for the reef site.

2. The Advisory Panel (AP) and/or Scientific and Statistical Committee (SSC) will review the report and associated documents and advise the Council. The Council Chairman may schedule meetings of the SSC and AP for this purpose. The Council Chairman will also schedule public hearings in the area affected.

3. The Council, following review of the team's report; supporting data; the SSC, AP, and public comments; and other relevant information, may recommend to the Southeast Regional Director of the National Marine Fisheries Service (RD) that a SMZ with appropriate proposed rules on fishing be approved. Such a recommendation would be accompanied by all relevant background data.

4. The RD will review the Council's recommendation, and if he concurs in the recommendation, will propose regulations in accordance with the recommendations. He may also reject the recommendation, providing written reasons for rejection.

5. If the RD concurs in the Council's recommendations, he shall publish proposed regulations in the Federal Register and shall afford a reasonable period for public comment which is consistent with the urgency of the need to implement the management measure(s).

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[3]Monitoring Team - The Team will be comprised of members of Council staff, Fishery Operations Branch (Southeast Region, NMFS) and the NMFS Southeast Fisheries Science Center and other members appointed by the Council.

Preferred Option : Adopt the framework measure in the FMP.

Rejected Option : Status quo - do not adopt the framework measure.

Discussion and Impacts:

a. .Ecological: Adoption of the measure would give the Council the option to reject or accept and implement other special management zones by regulatory amendment rather than by amending the FMP. Applying certain gear restrictions may be beneficial to maintaining and restoring stocks or local abundance in certain areas. Each case could be decided based on its own merits and the ecological impacts assessed at that time. However, adoption of the framework measure may encourage additional reef construction.

b. Socioeconomic: Adoption of the measure may result in a proliferation of requests for SMZs, greatly taxing the Council's time and budget. Specific socioeconomic impacts would be determined for each proposed designation of a SMZ. These would be included in the EA or EIS submitted with the regulatory amendment.

c. Environmental: No impacts by adoption of measure. Specific impacts would be determined for each proposed designation of a SMZ. Therefore, impacts are not discussed in the SEIS. As indicated in the discussion for Alabama SMZs a EA is usually prepared for each artificial reef project by the COE and would be considered by the monitoring team and Council in assessing environmental impacts.

C. LANDING REQUIREMENTS

Preferred Option: Require all finfish taken or landed from the EEZ, excluding oceanic migratory species, be landed with heads and fins intact. (Possession of fish in other forms for bait[4] on a vessel is allowed.)

Rejected Option 1: Require that all reef fish species in the fishery be landed with heads and fins intact (i.e., whole but eviscerated).

Rejected Option 2: Status quo - requirement applies only to reef fish with minimum size limits.

Discussion and Impacts:

The Council selected as its preferred option the requirement that all finfish, other than oceanic migratory species managed under the authority of NMFS, be landed with heads and fins intact (fish may be eviscerated, gilled and scaled). Oceanic migratory species include sharks, tuna, swordfish, and the billfishes which are subject to other rules under NMFS FMPs. Sharks, tuna, and swordfish must be headed at sea to preserve the quality of the flesh and some species are subject to minimum

[4]For purposes of the measure, bait includes: (1) Packaged, headless fish fillets, with skin attached, of species of low exvessel value which are frozen, refrigerated, or salted in brine containers, and (2) Small pieces (2 or 3 inches or smaller) or strips (3 x 9 inches or smaller) cut from fillets with skin attached and packaged in cold storage or held in brine containers. Species normally utilized for reef fish bait include, but are not limited to, ladyfish (skipjack), Atlantic mackerel, blue runner, crevalle and other similar jacks, bonito (little tunny), bluefish, mullet, and other species that normally can be distinguished by their skin from regulated species.

carcass lengths under these FMPs. The Council is proposing this option because under current rules most fish can be filleted at sea which creates a problem in enforcing size limits and closed seasons that apply to certain species. The Council's preferred option is consistent with landing rules of most Gulf states.

a. Ecological: Currently under the Reef Fish and Mackerel FMPs, all species with minimum size limits must be landed with heads and fins intact (i.e., whole but eviscerated). This is required so that compliance with the minimum size can be monitored. The size limits are very important in increasing yield per recruit for certain stocks and prohibiting landing of sexually immature fish for certain other species. Minimum sizes are not applied to all species since that type of management is not currently required for some stocks. However, by not applying the requirement to all finfish, fishermen may legally fillet unregulated species at sea. After a fish has been filleted, it becomes very difficult or impossible to determine which species it is, providing an opportunity to land illegal fish. Therefore, the council's preferred option is to require all fish, except oceanic migratory species, be landed with heads and fins intact to enhance compliance and enforcement of size limits and quota closures.

b. Socioeconomic: The preferred option is unlikely to cause any adverse economic impact. Almost all commercial landings, with the exception of some oceanic migratory species, consist of whole fish that are landed whole but gutted. Most Gulf states also require all fish (with exceptions for sharks and certain other large fish) to be landed whole but eviscerated. Mississippi requires all saltwater fish be landed with heads and fins intact. Louisiana and Texas apply that requirement to all fish other than very large species. Florida applies the same requirement to most fish, e.g., all reef fish, drums, coastal migratory pelagics, etc. Extending the requirement to fish from the EEZ facilitates state enforcement and closes a loophole in enforcement of federal size limits and quota closures.

D. PERMIT REQUIREMENTS

As indicated in the amendment section on Problems Requiring a Plan Amendment, the FMP currently requires that for a vessel permit to be reissued annually the applicant must be able to demonstrate that more than 50 percent of his/her income was derived from commercial or charter fishing in one of the two previous calendar years. Because of the short duration of the 1992 commercial fishing season for red snapper and the potential that a similar fishing pulse may rapidly harvest the 1993 red snapper commercial quota, some commercial fisherman may lose the right to participate in the fishery by being unable to meet that qualification in 1994. Therefore, the Council considered the following alternatives:

Preferred Option: Status Quo - No change, retain the current requirement.

Rejected Option 1: Require that permittees meet the earned income requirement based on records from one of the three previous calendar years.

Rejected Option 2: Allow permittees to disregard income earned in 1992 in meeting the current requirement for renewal of a permit.

Discussion and Impacts:

The Council selected as its preferred option status quo (no change). This option was selected because the Council is proceeding with development of a limited access system for the red snapper fishery which would have the effect of limiting participation in an already overcapitalized fishery.

Therefore, they rejected options that would have altered the current permit criteria, liberalizing participation requirements, and because those requirements may change under the limited access system.

a. Ecological: Rejected Options (1) and (2) would have made the income requirement more liberal possibly resulting in more vessels remaining in the fishery, which is already overcapitalized. This would be unlikely to have a measurable ecological impact on fish stocks regulated by annual quotas, since fishing for those stocks would be terminated on reaching the quotas. It may have had an impact on other unregulated species through greater fishing pressure, thereby hastening the time when quotas for those stocks are necessary.

b. Socioeconomic: Rejected Options (1) and (2) were proposed to alleviate potential socioeconomic impacts on fishermen who may be displaced from the fishery in 1994 under the current rule. This would occur if the fishing derby which occurred in 1992 reoccurs in 1993 and if fishermen affected were required to take other employment for a greater part of those years resulting in more than 50 percent of their earned income being from the other employment. This is more likely to occur in the western Gulf where red snapper is the predominant species and the opportunity to target other species is more limited. The Council's proposed red snapper rule for 1993 while attempting to spread out the landings over a greater portion of the year, also proposes to allocate a greater portion of the commercial quota to vessels with historical records of participation in the red snapper fishery. Therefore, many permittees entering the fishery in 1992 may not meet the income requirements for a permit in 1994 based on landings of reef fish. However, many of these permittees are in other fisheries, such as shrimping, and would qualify based on that income.

   Rejected Option (1) would allow permittees to qualify for renewal of permits in 1994 based on records for any one of the three calendar years preceding the renewal date (birth date of permittee) for their permit. This option would be consistent with the time period of the commercial vessel permit income requirement for king and Spanish mackerel. It is the more liberal of the options, in that the three-year qualification period would be permanent.

   Rejected Option (2) would retain the two-year qualification period, but allow the permit applicant to exclude 1992 in meeting the requirement. The Preferred Option would retain the current requirement, and thereby consideration of income earned in 1992 and 1993 as a basis for renewal of the permit. It may displace some fishermen from the fishery. However, this may (or may not) occur under the limited access system for red snapper being considered by the Council if it is implemented in 1994.

E. RED SNAPPER MINIMUM SIZE

Increasing the minimum size while reducing fishing mortality through the stock restoration program will increase the yield per recruit obtained from the fishery provided the gains are not negated from release mortality of undersized fish. Goodyear (1992) indicated that biomass yield would be maximized by delaying harvest until the fish reach 19 to 21 inches (TL) and reducing instantaneous fishing mortality (F) to about 0.2 (18 percent annual mortality) (Figure 11). Currently instantaneous fishing mortality for the directed fishery was estimated to be slightly above F=0.4 (about 34 percent annual mortality) and overall stock mortality much higher due to shrimp trawl bycatch of juveniles. Obviously attaining the fishing mortality rate that would maximize yield per recruit is a long-term goal under the restoration program.

Immediately increasing the size limit to the level that would maximize yield per recruit, while benefiting the resource, would not be practical since it would adversely impact the directed recreational and commercial fishermen which are harvesting principally smaller fish (see Figures 12 and 13, respectively). However, the year class strengths for 1989 and 1990 were significantly higher than for the previous seven years (Figure 14), with the 1989 year class being about four times higher (Goodyear, 1992). Since these were the first two year classes subject to conservation actions taken through Amendment 1, it is anticipated that future year classes will also be higher than those for 1982 through 1988. Therefore, it is proposed to increase the size limit gradually toward maximizing yield per recruit and thus increasing yield from the biomass.

Preferred Option: Change the minimum size limit for red snapper as follows:

- **to 14 inches (TL) in 1994, and**
- **to 15 inches (TL) in 1996, and**
- **to 16 inches (TL) in 1998.**

Rejected Option: Status Quo - No change, the size limit remains at 13 inches (TL).

Discussion and Impacts:

a. Ecological: Increasing the size limit will eventually increase yield per recruit and biomass yield from the stock, thereby benefiting the restoration program. As indicated by Figure 11, a 16 inch size limit would be entering the yield per recruit isopleth that would maximize yield (i.e., see inner concentric area of figure) if release mortality did not exceed 33 percent and F is reduced. During 1992 most of the recreational and commercial harvest was from the 1989 year class, i.e., three year old fish. Those fish averaged about 13 inches (TL) at the beginning of 1992 (Table 9). By the beginning of 1993, the 1989 and 1990 year classes will average about 16.7 and 13.1 inches (TL), respectively (Table 9). Because of the dominance of the 1989 year class (Figure 14) a large part of the landings will be fish above the current 13 inch (TL) size limit. By 1994 when the 14 inch (TL) size limit is implemented the 1989 and 1990 year classes will average about 19.8 and 16.7 inches (TL), respectively. Currently, release mortality is estimated at 33 percent, but if it were higher (e.g. 50 to 60 percent) some gain in the number of fish not harvested under a 16 inch (TL) minimum size would still be achieved. In as much as restrictive quotas will be required for much (or all) of the restoration period, fishermen should be able to take their quotas without dependence on the size classes below 16 inches (TL). A recent analysis by Goodyear (SEFSC) of the effect of the proposed size limit increases on SPR indicated a 20 percent level of SPR would be achieved sooner, or conversely, a shrimp trawl bycatch reduction of 50 percent could be implemented later than 1994 (Memo Brown to Kemmerer, NMFS, 12/1/92).

b. Socioeconomic: Although the Council has the authority to change the size limit by regulatory amendment annually through the FMP procedure for specifying TAC, it chose to implement the change by plan amendment. The Council did this so the public would have the opportunity to comment on the option and be apprised of the changes well in advance of implementation. This knowledge should result in better compliance. It also provides the states with advance notice so that their regulatory agencies can implement compatible rules through their rule-making procedures. That will enhance the enforceability of the size limits.

   It is anticipated by the years of the size limit changes that neither the recreational or commercial sectors will be impacted in ability to harvest their quotas due to insufficient numbers of legal size fish being available (See Table 9 for growth rates).

A size limit of 16 inches (TL) would eliminate one of the commercial market categories for red snapper (i.e., the 1 to 2 pound size class). Historically, under the unregulated fishery, ex-vessel prices for the to 2 pound size class were occasionally higher in some landing localities and at some times of the year. This size class would be eliminated by 1998, possibly to some extent affecting ex-vessel value of vessel landings at certain times of the year. However, current demand results in higher prices for other size classes. The elimination of the 1 to 2 pound size class is expected to result in imports replacing that size class in the United States market.

F. MUTTON SNAPPER SPAWNING AGGREGATIONS

At public hearings on Amendment 5 the Council presented management options to regulate the recreational and commercial harvest of mutton snapper in the Gulf of Mexico. Specifically, the Council sought public comment on proposals to have a Gulf-wide spawning season closure during May and June, and to prohibit all fishing activity during May and June in the region of Riley's Hump, an area near the Dry Tortugas, Florida, (Figure 16) which is known to have major mutton snapper spawning aggregations. The Council also presented other alternative options for regulation of mutton snapper harvest.

Mutton snapper (Lutjanus analis) are occasionally found from the Gulf of Maine to Brazil, but are most common in the eastern Gulf of Mexico (NOAA 1985). This NOAA atlas depicted the recreational and commercial fishing grounds in the Gulf to be limited to the Florida Keys area. Mutton snapper can reach a maximum size of 34 inches to 40 inches and may live for 15 to 20 years (Mason and Manooch 1985, Palazon and Gonzalez 1986, Pozo 1979). Mutton snapper frequently inhabit open waters; both adults and juveniles may associate with grass beds, but the adults also live on or near patch reefs of coral and rock rubble and sponge patches (Bortone and Williams 1986). Spawning probably occurs during an extended period which may last from May to November (Claro 1983, Mason and Manooch 1985, Palazon and Gonzalez 1986, written and verbal testimony received by the Gulf Council from fishermen). In the Gulf of Mexico, the peak spawning months appear to be May and June.

Snappers generally spawn in groups (Thompson and Munro 1974, Thresher 1984). Fishermen in Gulf waters have observed mutton snapper spawning aggregations during full moon periods around sunset May and June. In U.S. Gulf waters the only known spawning aggregation is in the area of Riley's Hump near the Dry Tortugas. The Gulf Council has received testimony from fishermen that other aggregations have existed in the past, in particular, in the vicinity of Western Dry Rocks, near Key West. However, these particular aggregations were targeted and are no longer found in that area. Testimony by fishermen at public hearings indicated minor aggregations occur along the outer reefs on the Atlantic side of the Florida Keys.

The summary of recreational mutton snapper harvest from 1987 to 1991 is in Tables 11 and 12. This harvest has been almost evenly split between the Gulf of Mexico and the South Atlantic off Florida. From 1979 to 1991, the annual mutton snapper recreational harvest in the Gulf of Mexico ranged from 29 thousand fish to 369 thousand fish, peaking in 1984 (GMFMC 1989). However, since 1984 the recreational harvest of mutton snapper has declined dramatically. From 1981 to 1984 the annual recreational harvest averaged 230 thousand fish. From 1985 to 1988 the average decreased to 64 thousand fish. In 1989-1991 the average annual harvest dropped to 48 thousand fish, a decline of 24 percent from 1985-1988 levels and 80 percent from 1981-1984 harvests. Although spawning aggregations are reported during May and June, the greatest harvests have occurred in the winter months, with November through February accounting for 64 percent of the total mutton snapper Gulf of Mexico harvest (Figure 17).

South Atlantic recreational harvest of mutton snapper off Florida has also seen a decline in recent years, from an average of 87 thousand fish in 1987 through 1988 to an average of 60 thousand fish in 1989-1991, a 31 percent decrease. In contrast to the Gulf of Mexico, South Atlantic recreational harvest displays a bimodal landings distribution, with a primary peak in summer and a second peak in winter (Figure 18). For 1987 through 1991, the months of May-June accounted for 52 percent of the South Atlantic recreational harvest, and another 23 percent was harvested in November-December. Riley's Hump is very close to the GMFMC/SAFMC jurisdictional border (see Figure 16). If fishing trips in the Riley's Hump area were counted as Atlantic trips, then additional harvest during periods of spawning aggregations would not appear in Gulf of Mexico statistics, but would instead appear in South Atlantic statistics.

Commercial landings for mutton snapper were obtained from Florida trip ticket data provided by Florida DNR. Note that all Monroe county landings are considered to be Gulf of Mexico landings. Over 98 percent of the commercial mutton snapper catch is taken from waters adjacent to Florida (GMFMC 1989). Since 1986 landings in Florida have remained fairly stable, ranging from 242 thousand pounds to 362 thousand pounds (in 1987). Unlike the recreational harvest, commercial landings have shown no obvious trend upward or downward (Table 13, Figure 19). The commercial sector has harvested 65 percent of the mutton snapper since 1985 (GMFMC 1989). Figure 20 shows the average monthly mutton snapper landings for 1986-1991. For most of the year, other than May and June, average monthly landings are fairly stable, ranging from 12 thousand to 22 thousand pounds. However, in May and June, average landings increase to 60 to 62 thousand pounds. For the period 1986-1991, May-June landings accounted for 39 percent of mutton snapper landings. The May-June landings peak is from Monroe County landings. If Monroe County landings are removed from the statistics, the remaining Gulf Coast landings do not show any increased harvest in May-June (Figure 21, Table 14). Monroe County accounts for 64 percent of mutton snapper landings during the non-spawning months, but 90 percent of mutton snapper landings during May and June.

Existing Regulations

In the Gulf of Mexico EEZ, mutton snapper have a 12 inch total length minimum size limit, and must be landed with head and tails attached. Recreational fishermen have an aggregate bag limit of 10 snapper (including mutton) other than red, lane, and vermilion. Charter and headboats may possess two day's bag limit on trips longer than 24 hours. There are no quotas or closed seasons, however, a federal reef fish permit is required to harvest commercial quantities of mutton snapper. Within the "stressed area", the use of fish traps, roller trawls and power heads is prohibited. (Riley's Hump is outside of the stressed area, which extends to the 10 fathom contour in the region near the Dry Tortugas.)

In the South Atlantic EEZ, there is also a 12 inch total length minimum size limit, and mutton snapper must be landed with head and tails attached. Recreational fishermen have an aggregate bag limit of ten of all snappers combined except for vermilion, which has a separate bag limit (a maximum of two of the aggregate can be red snapper). Charter and headboats may possess two day's bag limit on trips longer than 24 hours, or three day's bag limit on trips longer than 48 hours. A federal snapper-grouper permit is required to harvest commercial quantities of mutton snapper. There is a spawning season closure in May and June, during which commercial fishermen are limited to the recreational limit for mutton snapper.

Within Florida state waters, there is also a 12 inch total length minimum size limit, and mutton snapper must be landed with head and tails attached. Recreational fishermen have an aggregate bag limit of ten of all snappers with a bag limit. A saltwater products license with a restricted species endorsement

is required to harvest commercial quantities of mutton snapper. The only allowable gears for harvest are hook and line, spear, gig or lance (except powerheads, bangsticks, or explosive devices).

Preferred Option : Close the region of Riley's Hump[5] to all fishing activity during the months of May and June.

Rejected Option 1: Do not have a complete closure of Riley's Hump. Fishing for species other than mutton snapper would continue to be allowed during May and June.

Rejected Option 2: Status quo.

Discussion: The region is just inside the Gulf Council's jurisdictional waters, about five miles from the SAFMC jurisdiction, and less than three miles from the Florida Keys National Marine Sanctuary. Riley's Hump is the only known remaining area of mutton snapper spawning aggregation in U.S. Gulf of Mexico waters. Spawning aggregations in other areas have been observed (Don DeMaria, Reef Fish Advisory Panel, Personal Communication) off the Turks and Caicos, Bahama Islands in April 1992. However, long-term tagging returns indicate that adult mutton snapper show little movement. The Council proposes a complete prohibition on all fishing on Riley's Hump during the peak of the spawning season which would eliminate release mortality and would increase ease of enforcement. This would provide the greatest possible protection for the mutton snapper spawning aggregation. No information is available on release mortality of mutton snapper. The Council has chosen to use a release mortality of 33 percent for red snapper for purposes of stock assessments. Riley's Hump is a shallow water area or plateau (minimum depth 80-90 feet rising from 200 feet), which could increase the survival of released mutton snapper.

Impacts:

a. Ecological: Protection of fish from exploitation during spawning periods is important only if the fish are more vulnerable to harvest during the spawning period or the spawning act, than at other times of the year. Some of the reef fish form dense aggregations during the spawning act. During periods of these aggregations the fish become more vulnerable to harvest as the aggregations are targeted by fishermen. Nassau grouper, a Pan-Caribbean species, has been significantly reduced in abundance over that area partially as a result of fishing on aggregations (Sadovy, in press). Mutton snapper aggregations in the Florida Keys area have been fished by recreational and commercial fishermen for years, and some aggregations have been substantially reduced (e.g., at Western Dry Rocks).

   An assessment of the mutton snapper stock in the Gulf has not been completed. However, analyses completed for the SAFMC jurisdiction indicated a SPR level between 38 and 51 percent (Huntsman, NMFS, Personal communication to Steven Atran). Huntsman pointed out these levels conflict with perceptions of the fishermen that mutton snapper are declining and suggested samples for these determinations may have been biased through collection of larger specimens.

   Even though the SPR may be relatively high for the Florida Keys population, it is appropriate to protect the spawning aggregation, since the fish are more vulnerable to fishing at that time. The

[5] For purposes of this measure, Riley's Hump is defined as the area inside the following coordinates (see Figure 16): Point A (24° 32.2' N., 83° 8.7' W.), Point B (24° 32.2' N., 83° 5.2' W.), Point C (24° 28.7' N., 83° 8.7' W.) and Point D (24° 28.7' N., 83° 5.2' W.).

Council's preferred option would do that during the peak spawning months of May and June and not over entire period spawning has been observed to occur (i.e., May through November). Mutton snapper, like many reef fish, are batch spawners, extruding eggs as they ripen over an extended period. However, for many batch spawners egg release is much higher during the spawning peaks, often when environmental conditions first become favorable. May and June appear to be the peak period for the Riley's Hump area.

b. Socioeconomic: The Council's preferred option would prohibit any fishing on the Riley's Hump area during May and June. This was selected, rather than rejected Option (1), because enforcement is more easily accomplished (i.e., aerial surveillance can be utilized) and, because of the large aggregations, many mutton snapper would be caught incidentally and be subject to release mortality.

Testimony at hearings indicated many spiny lobster and stone crab fishermen fished Riley's Hump when their fisheries were closed (April through July) and were dependent on fishing during those months. These fishermen would have to fish other (likely less productive) areas during May and June.

Alternatives Related to Seasonal Closures

Preferred Option: Status quo. Do not have a closed season for mutton snapper.

Rejected Option 1: Close the mutton snapper fishery to all fishing during the peak spawning season of May and June.

Rejected Option 2: Restrict the commercial sector to the recreational bag limit of mutton snapper during May and June. (This option is identical to the SAFMC regulation.

Rejected Option 3: Implement Option 1 or 2 but with a different season.

Discussion and Impacts:

The Council selected status quo as its preferred option because closure of Riley's Hump, the only identified spawning area in the Gulf, appeared to provide adequate protection of the spawning population. A Gulf-wide closure [rejected Option (1)] would have enhanced enforcement but, was deemed not appropriate because NOAA (1985) identified the directed fishery for mutton snapper to occur only in the Florida Keys area of the Gulf and because there was no stock assessment available on the Gulf resource. Limiting all participants to a bag limit (ten fish) during May and June [Rejected Option (2)] would have allowed persons to continue to fish Riley's Hump during the peak spawning period, partially negating the benefits of the area closure.

a. Ecological: Rejected Options (1) and (2) would have reduced harvest of mutton snapper over the entire Gulf of Mexico during the peak spawning months associated with the Florida Keys area. However, spawning peaks may occur at other times in other parts of the Gulf due to different environmental conditions [Rejected Option (3)]. That information is not available. The statistical information on landings indicates the directed fisheries in the Gulf for mutton snapper occurs only off South Florida. Therefore, large spawning aggregations are more likely in that area and many are likely protected by the SAFMC rule [Rejected Option (2)].

b. Socioeconomic: There are no effects related to adoption of status quo. Rejected Option (2) would have restricted fishing by only the commercial sector during peak spawning months.

Alternatives Related to Size and Bag Limits

Preferred Option: Do not change the minimum size limit or set a species bag limit.

Rejected Option 1: Increase the minimum size limit for mutton snapper from 12 inches to 17 inches total length.

Rejected Option 2: Increase the minimum size limit for mutton snapper from 12 inches to 20 inches total length.

Rejected Option 3: Set a recreational daily bag limit of two (or some other number) mutton snapper.

The Council selected status quo as its preferred option after deciding to wait until it had better assessment information on mutton snapper and until the Florida Marine Fisheries Commission had considered rules regulating mutton snapper in Florida waters. Mutton snapper in Cuba are reported to first exhibit indications of sexual maturity at about 17 inches total length (GMFMC 1989). It is therefore likely that 12 inch mutton snapper in the Gulf of Mexico are not yet mature. However, increasing the minimum size limit might eliminate the recreational fishery for mutton snapper in grass flats and near shore areas. When the Council decided to set a 12 inch size limit in Amendment 1, it felt that the combination of size and catch limits together would provide protection against overfishing. Mutton snapper presently have no species bag limit but are included in an aggregate daily bag limit of 10 snappers.

a. Ecological: There was insufficient scientific data to assess the impacts of the rejected options; therefore status quo was adopted as the preferred option.

b. Socioeconomic: There was insufficient scientific data to assess the impacts of the rejected options; therefore status quo was adopted as the preferred option.

8. ENVIRONMENTAL CONSEQUENCES

Environmental consequences of each proposed and alternative action are summarized in the text for that action and discussed in more detail in the Supplemental Environmental Impact Statement (SEIS) for this amendment.

9. OTHER APPLICABLE LAW

Impact on Other Fisheries

No impacts on other fisheries are anticipated from the proposed actions.

Habitat Concerns

Reef fish habitats and related concerns were described in the FMP and updated in Amendment 1. No changes affecting the fishery are known to have occurred since that time.

Vessel Safety Considerations

There are no fishery conditions, management measures, or regulations contained in this amendment that would result in the loss of harvesting opportunity because of crew and vessel safety effects of adverse weather or ocean conditions. The affected persons can fish throughout each year and select fishing periods dependent on weather. Therefore, there are no procedures for making management adjustments in the amendment due to vessel safety problems because no person will be precluded from a fair or equitable harvesting opportunity by the management measures set forth.

No vessel will be forced to participate in the fishery under adverse weather or ocean conditions as a result of the imposition of management regulations set forth in this amendment. Therefore, no management adjustments for fishery access will be provided. There are no procedures proposed to monitor, evaluate, and report on the effects of management measures on vessel or crew safety under adverse weather or ocean conditions.

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.

This amendment is consistent with the Coastal Zone Management programs of the states of Alabama, Florida, Louisiana, and Mississippi to the maximum extent possible; Texas does not have an approved Coastal Zone Management program. This determination has been 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, and Louisiana.

Paperwork Reduction Act

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

The Council proposes, through this amendment, to establish no additional permit or data collection programs that require submission of information by the public. Therefore, no increased reporting burden on the public or cost to the government will be incurred through this amendment.

Federalism

No federalism issues have been identified relative to the actions proposed in this amendment and associated regulations. The affected states have been closely involved in developing the proposed management measures and the principal state officials responsible for fisheries management in their respective states have not expressed federalism related opposition to adoption of this amendment. Therefore, preparation of a federalism assessment under Executive Order 12612 is not necessary.

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APPENDIX A

Extracts from Kelley's (1990)

Review of Scientific Literature

on Fish Trapping in

the Western Atlantic Area

ADVANTAGES OF FISH TRAPS

The extensive use of fish traps in the Caribbean and restricted areas around Florida is easily understood. Traps are inexpensively and easily constructed and can be made of durable, easily repairable materials. The cost can be recouped in as little as 4 to 5 hauls (Munro, 1973; Craig, 1976). Traps are easy to use and require little skill to fish, although the most successful fishing does depend on the fisherman's skill in locating productive fishing grounds. Traps can be fished from small or large boats and pulled by hand or mechanical means. Trap fishing also allows fishermen to pursue other interests or hold other jobs while the gear is fishing unattended and if foul weather precludes hauling, traps can be left for extended periods of time.

Traps capture a wide range of species of fish that are not caught by other types of gear (Luckhurst and Ward, 1986; Munro, 1973; Stevenson and Stuart-Sharkey, 1980). They also allow the economical exploitation of low density fish stocks and allow fishing where other methods are uneconomical or have become uneconomical because of overfishing (Munro, 1973; Kipness and Williams, personal communication). This last fact accounts in part for the controversy presently surrounding the use of fish traps in the United States.

Traps can be fished over a wide range of depths, bottom types, and conditions. Because traps fish passively and are not towed, they are particularly suited to coralline tropical seas where use of trawls and other nets are precluded or restricted by the presence of hermatypic corals (Munro, 1973). In most coral reef areas, fishing with traps is limited to individually buoyed traps on vertical lines. Here, even use of trawls of traps (as series of 3-10 traps attached at intervals along a length of a line) is difficult because lines can become entangled in coral and gear can be easily lost or damaged (Munro, 1973)...

The depth and location of traps can be varied to target different species assemblages, although this requires some knowledge and skill on the part of the fisherman (Craig, 1976; Luckhurst and Ward, 1986). Another advantage of fish traps is the fact that most of the fish caught are alive and in good condition.

Many of the reasons listed above make fish traps a convenient scientific tool for surveys of fish populations. A large area can be surveyed in a day using fish traps and the catch is alive for biological sampling (Miller and Hunte, 1987). The main disadvantage of fish traps is their bulk, which restricts the mobility of the fishermen. To overcome this disadvantage, stackable traps have been designed that increase the trap-carrying capacity of a fishing vessel. This allows commercial operations to be economically feasible in distant waters. This is particularly important in the Caribbean where near-shore areas are frequently over-exploited and becoming increasingly uneconomical to fish.

TRAP LOSSES

There are many reasons why fish traps are lost both inshore and offshore. A common reason is gear failure, which includes pot warp (line) parting, the buoy separating from the pot warp or the buoy breaking up. This gear failure can be caused by normal wear and tear, powerboat propellers, and sea turtles or sea gulls biting the buoys or pot warp. Theft is also a major cause of lost traps in many areas. Losses occur because of setting the traps too deep or on too steep a slope. Storm surge and wave action can cause loss of traps, particularly in shallow inshore waters. Traps without buoys are less susceptible to storm damage, but may be moved from a site by currents or wave action and become unretrievable. In coralline areas, the buoy lines may become entangled on coral, chafe, and break. Offshore, losses are primarily caused by large vessels cutting or dragging gear, gear failure, and storms. Strong currents submerging buoys or sweeping traps away from the locations where they were set and traps becoming entangled with other fishing gear and anchors have also been cited as causes of trap loss.

The percentage of traps lost varied considerably among studies by both area and depth fished. Wolf and Chislett (1974) reported pot losses of 10-20% per trip in exploratory efforts in deep water shelf edges in the Virgin Islands. They attributed these losses to pots tumbling down steep slopes. While trap fishing off Boca Raton, Florida, Craig (1976) had a trap loss approaching 20% for a period of six months, with at least some loss due to theft. In Broward County, Florida trap fishermen, had an average of 20.3% annual loss due mainly to strong currents, entanglement and theft. Dade County, Florida trap fishermen reported losing 1-5 traps per trip, with an annual loss of 100%. Losses were due to theft or loss of buoys. Traps (sic) theft was such a problem that traps were brought back to port at the end of each fishing day in Dade (Sutherland and Harper, 1983). Munro (sic) County, Florida trap fishermen had estimated average annual trap losses of 63%. The losses were mainly from currents and severance of buoys by large ships in deep water and from vandalism inshore. Trap loss was not a problem in Collier County, Florida with an annual loss of only 5%. This was possibly due to the fact that fishermen brought back traps to the dock after each trip (Taylor and McMichael, 1983). About 85% of traps used off Key Biscayne, Florida in a study on mesh selectivity by Sutherland et al. (1987) were lost with most losses attributed to theft. Trap loss due to theft and vessels cutting of fouling lines was reported as a major problem in the Virgin Islands (Swingle et al., 1970; Olsen et al., 1974; Sylvester, 1972).

In Jamaica, Munro and Thompson (1973) had such a theft problem in their study that the use of buoyed traps had to be abandoned. While losses due to theft, storms, and vessels can not easily be controlled, the trap fishermen can inspect gear frequently for wear and tear and use more durable materials.

SPECIES COMPOSITION

...Despite the great abundance of fishes on Florida reefs, until recent years, only a few species had been targeted for food purposes. As a result, the commercial harvest of fish was directed almost entirely towards Lutjanids (snappers) and Serranids (groupers). However, in South Florida, there is a growing consumer demand for non-traditional food fish, especially among ethnic caribbean (sic) groups. These non-traditional food fishes include squirrelfish, bigeye, sand tilefish, goatfish, spadefish, angelfish, parrotfish, triggerfish, scrawled filefish, and acanthurids. These species bring about one-half the usual market price as more traditional species such as grouper and snapper in south Florida (Sutherland and Harper, 1983) and, unlike the Caribbean, some species are not saleable at all (Craig, 1976).

TRAP PLACEMENT

A number of authors noted that traps set adjacent to reefs are more effective than traps set at a distance from reefs (Munro et al., 1971; High and Beardsley, 1970; Godcharles, 1970; Stevenson and Stuart-Sharkey, 1980; Hartsuijker and Nicholson, 1981; High and Beardsley, 1970). Sylvester and Dammann (1972) found that distances as little as five feet from an underwater feature such (sic) a ledge and coral head could make a difference in the number and species caught.

High and Beardsley (1970) found that traps set in close proximity to reefs were particularly effective in catching reef fishes with restricted home ranges. Hartsuijker and Nicholson (1982) developed this concept further in their research. They used the occurrence of small serranidae, which have reef restricted home ranges, as parameters for predicting the distance between traps and reef patches.

Most fishermen prefer to set traps near rocky ledges, reef structures or steep drop-offs (Sutherland and Harper, 1983; Taylor and McMichael , 1983; Stevenson, 1978; Olsen, 1980; Sylvester and Dammann, 1972; Godcharles, 1970; Munro, 1971). However, Craig (1976) found high relief rocky areas produced unwanted reef species such as tangs, parrots, and angelfish (he was targeting Lutjanids). Olsen (1980) also noted that the fishermen in the Dry Tortugas avoided coral reef areas as unproductive of target fish and destructive to their gear. Hartsuijker and Nicholson (1981) pointed out that small individuals made up a higher percentage of the catch when traps were placed nearer a reef. High and Beardsley (1970) and Hartsuijker and

Nicholson (1981) found traps set in close proximity to reefs were more effective in catching reef fish with restricted home ranges.

Hartsuijker and Nicholson (1981) noted that in areas with dense coral coverage, placement of traps relative to bottom irregularities (coral heads or ledges, for example) would probably not contribute to the trap catch rates. However, with low density coverage, a careful setting of traps near reef structures would significantly contribute to the economic viability of the fishery. According to Hartsuijker and Nicholson (1981), the effective distance between traps and reef structure should be between 10 and 30 meters.

Using a submersible for observation, Sutherland et al. (1983) found the number of juveniles in and around derelict traps appeared to be related to the distance between traps and the nearest reef area, fish were absent or rare near traps on or adjacent to reefs and present in traps on "barren" sand sea floor areas. Craig (1976) obtained his best results when deploying traps in open sandy environments. He noted that they became the most prominent bottom feature and were approached by fish almost immediately. In contrast, Taylor and McMichael (1983) noted that when traps in their study were set on sandy bottom, they had poor catches.

Large differences in catch are found from various depths as well as from differences in proximity to structures. With depths over 27.4 m, catch rate appeared to be inversely related to depth in Sutherland and Harper's (1983) studies in South Florida. However, in the U.S. Virgin Islands, Wolf and Chislette (1974) reported spectacular results were obtained with heavily baited traps in deep water and they noted that, overall, the majority of the good catches were made at night in generally deeper waters. Larger fish were also found in deeper water by Dammann (1970) and Taylor and McMichael (1983). Munro and Thompson (1973) also made several attempts at utilizing traps in water up to 250 meters with promising results.

Stevenson and Stuart-Sharkey (1980) indicated that fish traps in shallower water of Puerto Rico caught numerically more fish but the average fish weighed less that (sic) those caught in deeper water. While their results indicated that 30 m was the optimum depth for trap fishing, they qualified the results by stating that the effects of depth, design, and soak on mean catch rates were interdependent.

INGRESS AND EGRESS

Movement in and out of traps reflects behavior and response of various species to the traps (Kumpf, 1980). Several authors have observed egress from open-mouth traps (Munro, 1974; Craig, 1976; Sylvester and Dammann, 1972: Luckhurst and Ward, 1986). Divers report that fish behavior around pots follows consistent patterns (Sylvester and Dammann, 1972). Territorial fish have been observed swimming in and out of pots. Luckhurst and Ward (1986) observed behaviorally active surgeon fish which are well adapted to living around and within the complex reef system escaping and re-entering traps. They interpreted the repeated ingress and escapement of individual fish from traps with straight-neck funnels and use of the trap as a shelter site. They noted that at least the six species they reported (L. griseus, H. isabelita, H. ascensionis, H. sciurus, D. bermudensis and Acanthurus spp.) are able to come and go at will. Few escapements were recorded in traps with horseneck funnels.

While most information on ingress and egress has been gathered in the field, Harper and McClellan (1982; 1983) used holding tanks in their studies. They found that within a few days, all species tested, except the large predators (groupers, nurse sharks, jacks, and green morays), found the exit funnels. Not only did the fish learn to exit, but an equilibrium state occurred with frequent movements in and out of the trap. It was also noted that small prey-fish, such as grunts and snapper, found the exit sooner when a predator entered the trap. Eventually, only the predator remained and no other species of fish entered the trap.

INJURY AND MORTALITY

Sutherland and Harper (1983) found 20.6% of the trapped fish in their study sustained injuries caused by gas expansion, physical contact with traps, and predators. The most common injury (74.8%) was internal gas expansion caused by reduced ambient pressure as the fish were hauled to the surface. Symptoms of gas expansion injuries include inability to submerge, air bubbles within the eye or bulging eyes, internal organs or swim bladders extruded through the mouth or anus, and bleeding. They reported a mortality rate of 2.9% of the trap caught fish, or an average of 1 dead for every 3.2 traps hauled. Mortalities averaged 1.8% during eight months of the study and 7.5% during a 2 month period when fish kills were reported of (sic) southeastern Florida.

Injuries and mortalities related to trap capture were recorded by Harper and McClellan (1982) in 745 fish. Data was kept both in the field and for 699 of the surviving fish for seven additional days in holding tanks. They reported 2.7% of the fish were dead and 11.1% of the fish were injured at the time of capture. The types of injuries reported were damage from gas expansion, abrasions or frayed fins from physical contact with the trap, and disorientation/whirling syndrome that was attributed to temperature shock, or gas expansion, or both. The two most common injuries were abrasions in 48.2% of the injured fish and embolisms in 32.5% of the injured fish (from gas expansion). Harper and McClellan noted, however, that most fish with minor injuries recovered in holding tanks within 2-5 days. A total of 563 (80.5%) of the fish survived the seven days that the fish were in the holding tanks.

Bohnsack et al. (in press, as cited in Sutherland, 1989) found 2.2% of the fish in their studies dead at the time of capture. Both the Harper and McClellan (1982) and the Bohnsack et al. studies were conducted off Key Biscayne, Florida.

In Collier County, Florida, where traps soaked for less than one hour, few injuries were recorded. The highest injuries (27%) in that study [off Monroe County] were recorded in fish captured in traps soaked for 20 days (Taylor and McMichael, 1983). They suggested that occurrence of injuries and death were probably related to the length of time fish were confined in traps and the depth fished. Taylor and McMichael reported 0.9% trap mortality.

Taylor and McMichael (1983) also monitored released sub-legal and non-targeted species of fish for one minute and indicated that 53% swam downward. The survival rate of those is unknown, but they speculated that at least some died because of injuries. Of the fish that died, 20% died immediately from gas expansion or stress or were eaten by sharks or birds. In a similar study, Sutherland and Harper (1983) indicated that 87% of the fishes swam down after release from traps.

Munro, Reeson, and Gaut (1971) stated that almost all fishes retained in traps off Jamaica for periods approaching two weeks showed signs of wounds from predators or abrasions from the wire mesh, often with secondary fungal infections. In Bermuda, secondary infections were reported to be the primary cause of trap mortality in several species including D. bermudensis, Scarus spp., Sparisoma spp., and H. sciurus (Luckhurst and Ward, 1986). Few dead fish were observed in Jamaican traps (Munro, Reeson and Gaut, 1971; Munro, 1974). The carcasses of dead fish remained in the traps for only a short times (sic) before disappearing (Luckhurst and Ward, 1986; Munro, Reeson and Gaut, 1971; Munro, 1974).

Some species of fish frequently were not able to survive confinement in fish traps. Great Barracuda (Sphyraena barracuda) and sand tilefish (Malacanthus plumieri) did not survive in traps according to Sutherland and Harper (1983). Ward (1983) also noted that great barracuda, cubera snapper, yellow jacks, and lemon sharks died shortly after entering traps in pursuit of prey. The scarids, S. croicensis and S. chrysopterum, were observed dead or dying within 2-3 days of their entry into traps (Luckhurst and Ward, 1986).

GHOST TRAPS AND DERELICT TRAPS

Fish traps that fishermen cannot locate and retrieve or that are abandoned, but still capable of catching fish, are referred to as ghost traps. Ghost traps have long been a subject of concern, but opinions have changed considerably since Olsen et al. (1978) made their observations. They noted that if traps were lost, mortality of juvenile and forage species could decimate a fishing ground. They suggested that considerable mortality could take place over the 1-2 years before the mesh corroded away, and indicated corrosion time would be longer and mortality would be greater for small sizes of mesh. A more recent study made by Harper and McClellan (1983) estimated the average fishing life of eight traps observed off Key Biscayne to be from 5.5 to 157 days before becoming unable to capture fish. While the decay and catch rates of ghost traps are not well documented, at least some evidence indicates that lost traps quickly become damaged and ineffective (Sutherland et al., 1978). Most of the reports of injury and mortality by ghost traps appear to be anecdotal. However, an underwater video was presented to the South Atlantic Fisheries Management Council on June 11, 1990 that documented dead and injured fish in ghost traps in the Florida Keys. The video was presented by Fernand Braun in an effort to persuade the council to ban fish traps. Also, in the Harper and McClellan (1983) study, 19.2% of the 130 fish known to enter their traps were reported to die.

Derelict traps are lost or abandoned traps that are incapable of catching fish due to structural damage or deterioration. Derelict traps have small holes or breaks in the wire mesh, gaps between ceiling and floor panels and walls, or entire panels deteriorated or missing (Smolowitz, 1978).

Traps become derelict in a number of ways. Predator damage, wire mesh corrosion, escape windows opening, and materials fastened to escape devices decomposing have all been documented.

Munro et al. (1971) speculated that lost traps that have accumulated large numbers of fish may be attacked and rendered ineffective by large predators such as nurse sharks (Ginglymostoma cirratum). Harper and McClellan (1983) found the funnel openings enlarged with the prongs bent back and speculated that the damage was by large predators attempting to escape. Seams were also split by predators such as cubera snapper (Lutjanus cyanopterus), great barracuda (Sphyraena barracuda), yellow jacks (Caranx bartholomae), and lemon sharks (Negaprion brevirostris) in Harper and McClellan's study. He found mortality of these large predators to be high. In Craig's study (1976) escapement through trap holes caused by predators became a problem if traps were not hauled after 5 or 6 days. Fish are rarely caught in traps with holes or breaks in the mesh (Craig, 1976; Sutherland and Harper, 1983; Ward, 1983). Even small holes or breaks in the wire mesh apparently render them ineffective as fish traps.

Using a submersible for observation, Sutherland et al. (1983) found juvenile fish numerous in and around derelict traps. The derelict traps and other man made objects appeared to serve as artificial reefs on "barren" sand sea floor areas (Sutherland et al. 1983; Harper and McClellan, 1983). Sutherland et al. (1983) observed that fish were absent or rare near traps on or adjacent to reefs.

TRAP DESIGN AND GHOST FISHING

Various methods have been proposed to alleviate the concerns of ghost traps. Since trap design is one of the keys as to whether a ghost fishing situation will be created (Smolowitz, 1978), many of these methods deal with trap design. Designs to prevent ghost fishing were primarily developed for northern or temperate invertebrate (lobster) fisheries.
Degradable sections of hinges that rot in a specified time period are one such design requirement that has been adopted by both the Gulf of Mexico and South Atlantic Fishery Councils. When the degradable link fails, the trap no longer fishes. The self destruct devices are designed to prevent or reduce ghost fishing without reducing efficiency of the trap or significantly increasing the costs.

Kumpf (1980) conducted a limited experiment to determine the durability and suitability of 4 types of materials for self-destruct devices that were inexpensive, available locally, and simple to replace. He tested unoiled jute, sisal, 16 gauge, and 18 gauge galvanized wire in his experiments. The unoiled jute and sisal

lasted 42 days while the galvanized wire was still intact at the end of the 120 days of the testing. He noted the galvanic couplings with a short life spans (sic) are available or could be manufactured if there was a sufficient demand.

Several problems are encountered in the use of self-destruct panels and hinges. They are not readily accepted by fishermen because of possible catch losses and the time lost in repair or replacement. The trap may land with the degradable panel facing down. And, time for degradable panels or hinges to deteriorate may be longer than predicted. Corrosion of metal hinging materials occurs more slowly in colder, slower moving water and biodegradable materials take longer to break down in deeper water where there are fewer organisms to attack the materials.

Gordon Sharp, a Florida Marine Patrol officer in Key West, stated that he found 95% of the traps he has seized in areas closed to trap fishing to be constructed illegally. The primary construction violations he found were uses of non-degradable hinge materials such as rubber, nylon or stainless steel or the use of illegal thicknesses of jute.

Escape vents for sublegal fish are another design element demonstrated to reduce the catch of and damage to sublegals (Smolowitz, 1978). Smolowitz also noted other advantages to the use of sublegal vents such as improving the quality of the catch and increasing trap efficiency. Fewer fish in the traps should result in fewer injuries, and in areas with large populations, sublegal escape vents should allow more legal sized fish to be caught. Currently, a minimum of two, 2 x 2 inch escape vents are required on each of two sides of a trap (four total) by the Gulf of Mexico Fishery Council.

One design feature that has received little attention is the trap funnel. The funnel size, shape, mesh size, and type of funnel (straight or horseneck) all have effects on retention of trapped fish and would therefore have an effect on the ability of a ghost trap to retain fish (see trap design and structure).

FIGURE 1. LANDINGS OF RED SNAPPER AND REEF FISH & NUMBER OF VESSELS

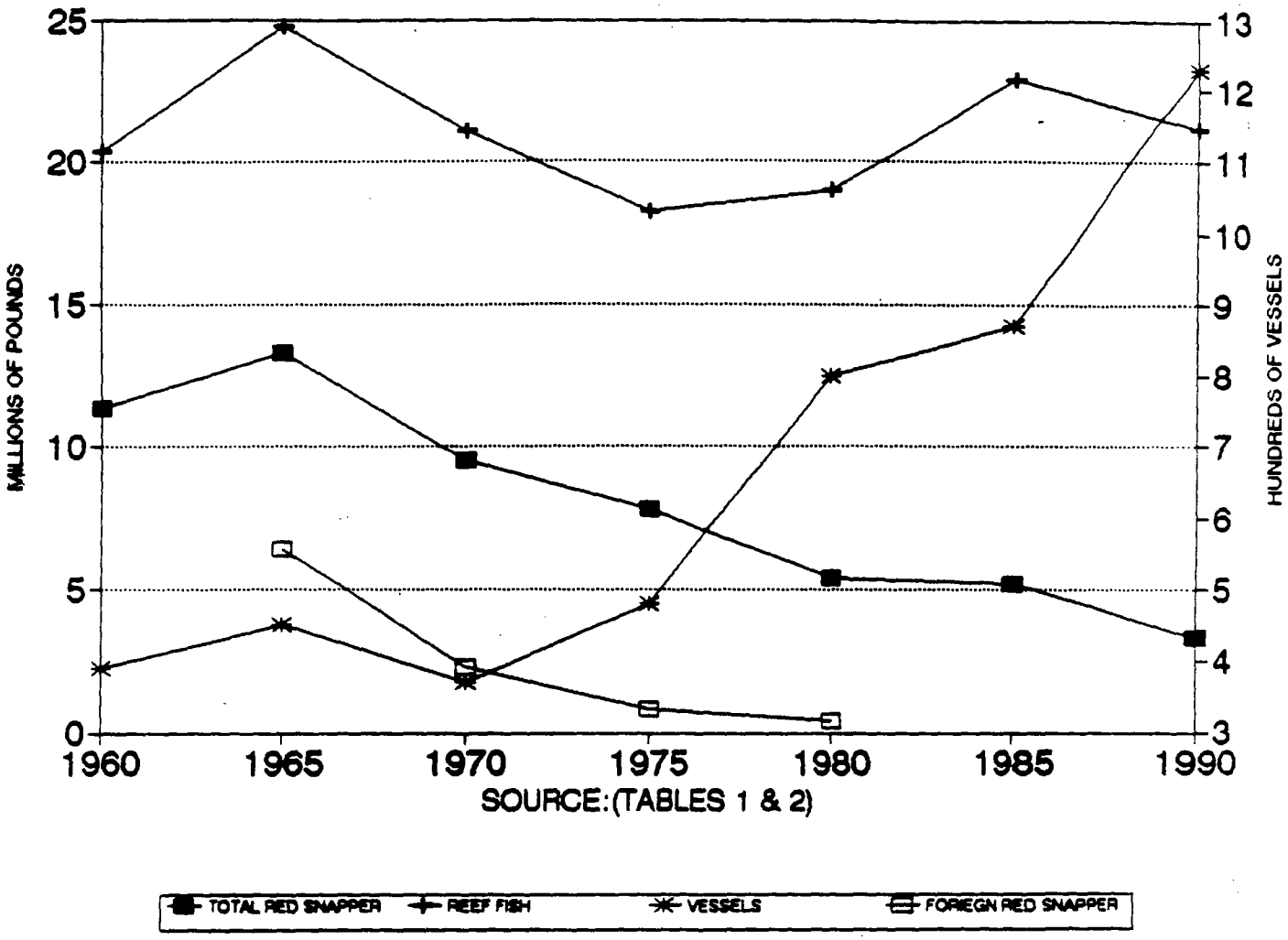


FIGURE 2. AVERAGE NUMBER OF VESSELS
IN THE REEF FISH FISHERY

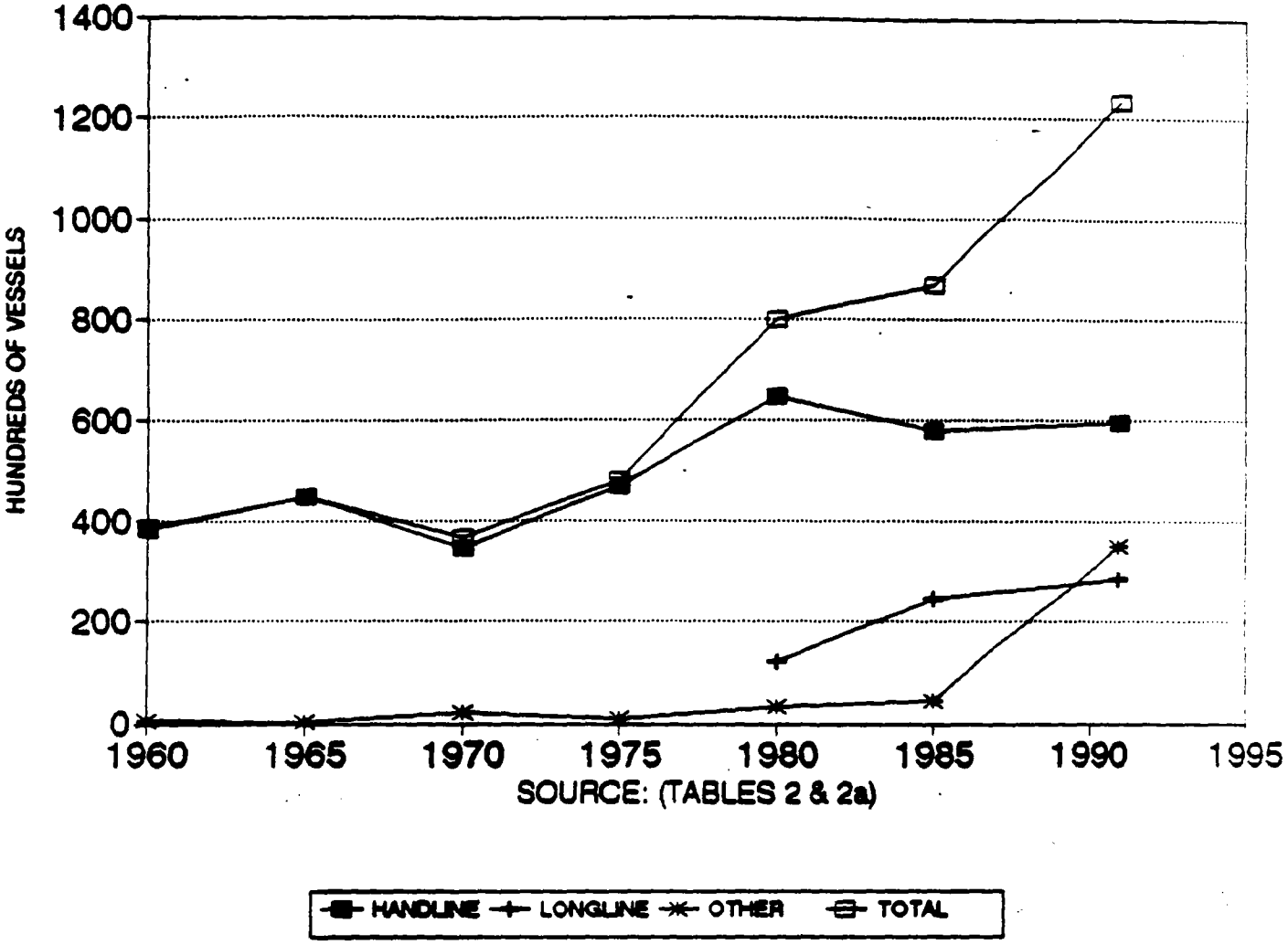


FIGURE 3. REAL AND EXVESSEL PRICE PER POUND FOR RED SNAPPER AND REEF FISH

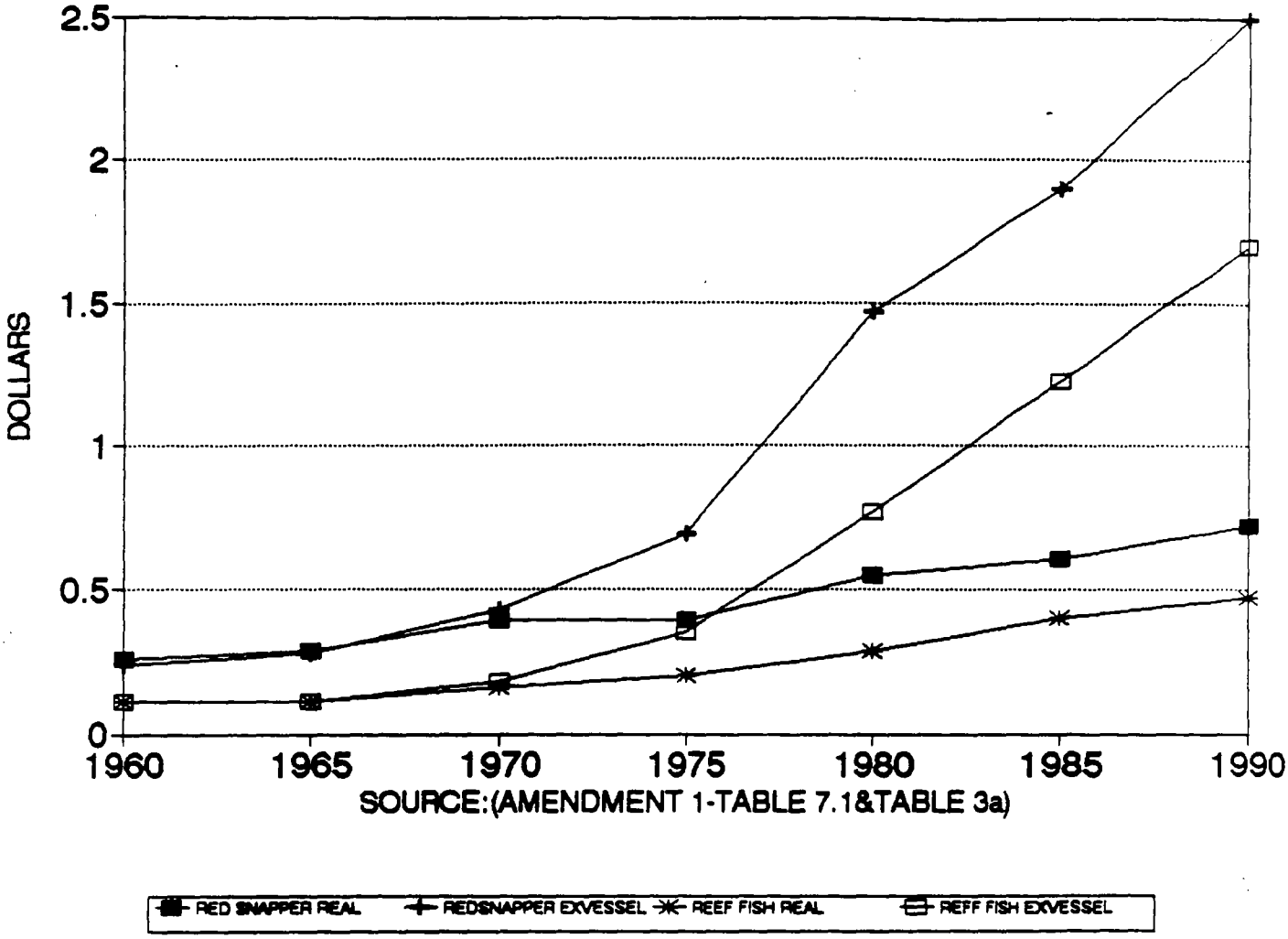
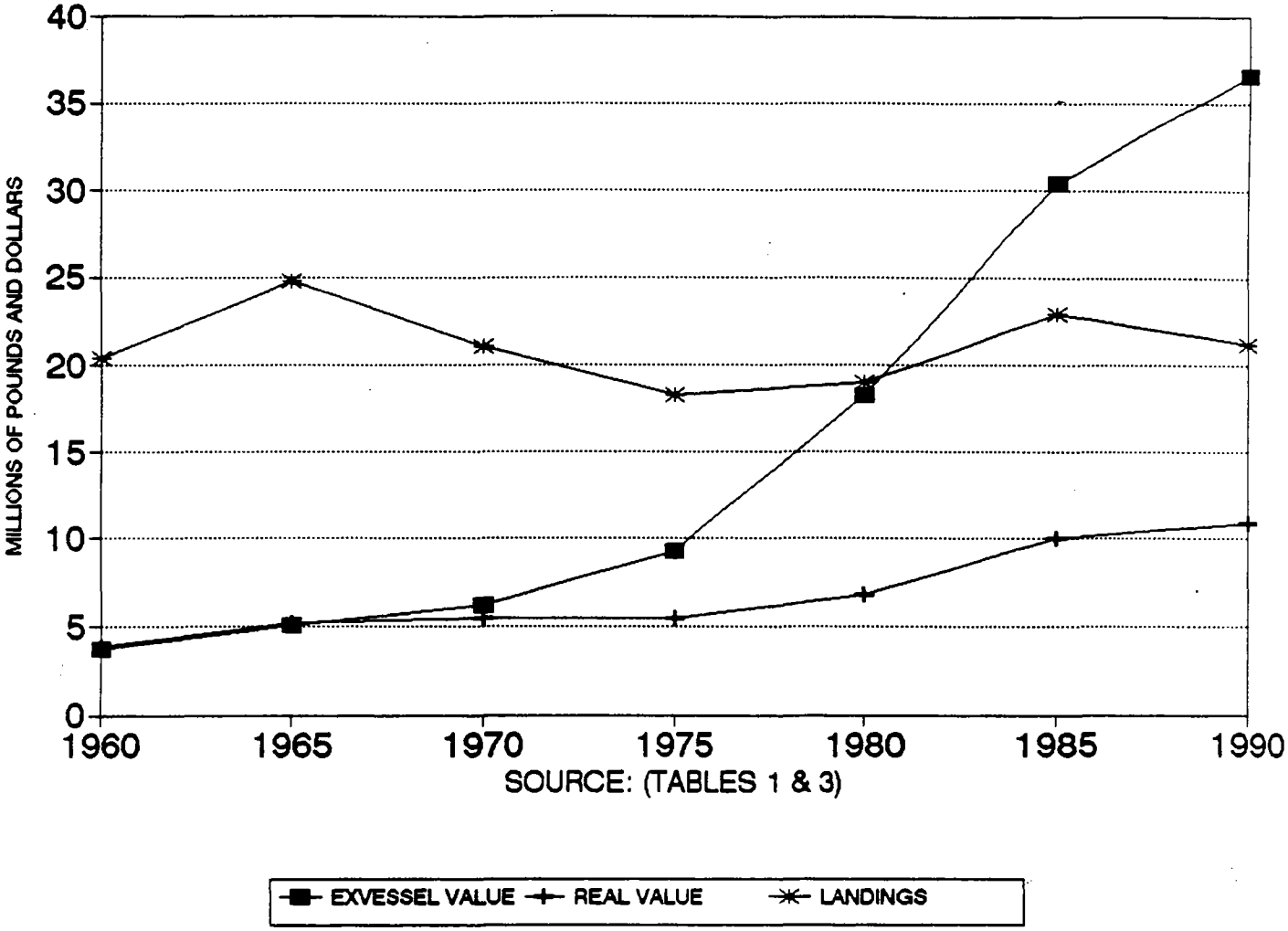


FIGURE 4. REEF FISH LANDINDS AND EXVESSEL & REAL VALUE



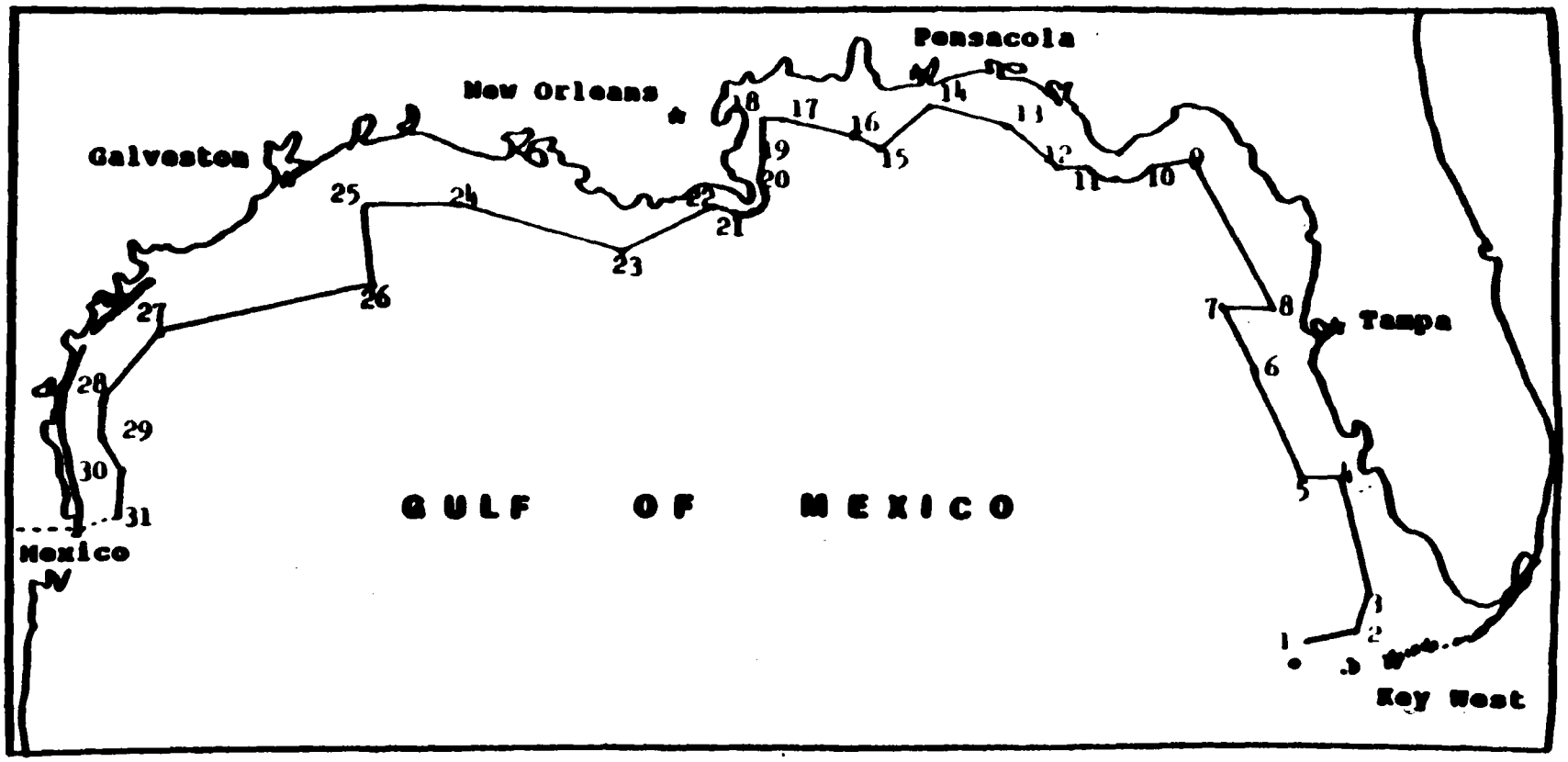


Figure 5. Seaward Limits of the Stressed Area.

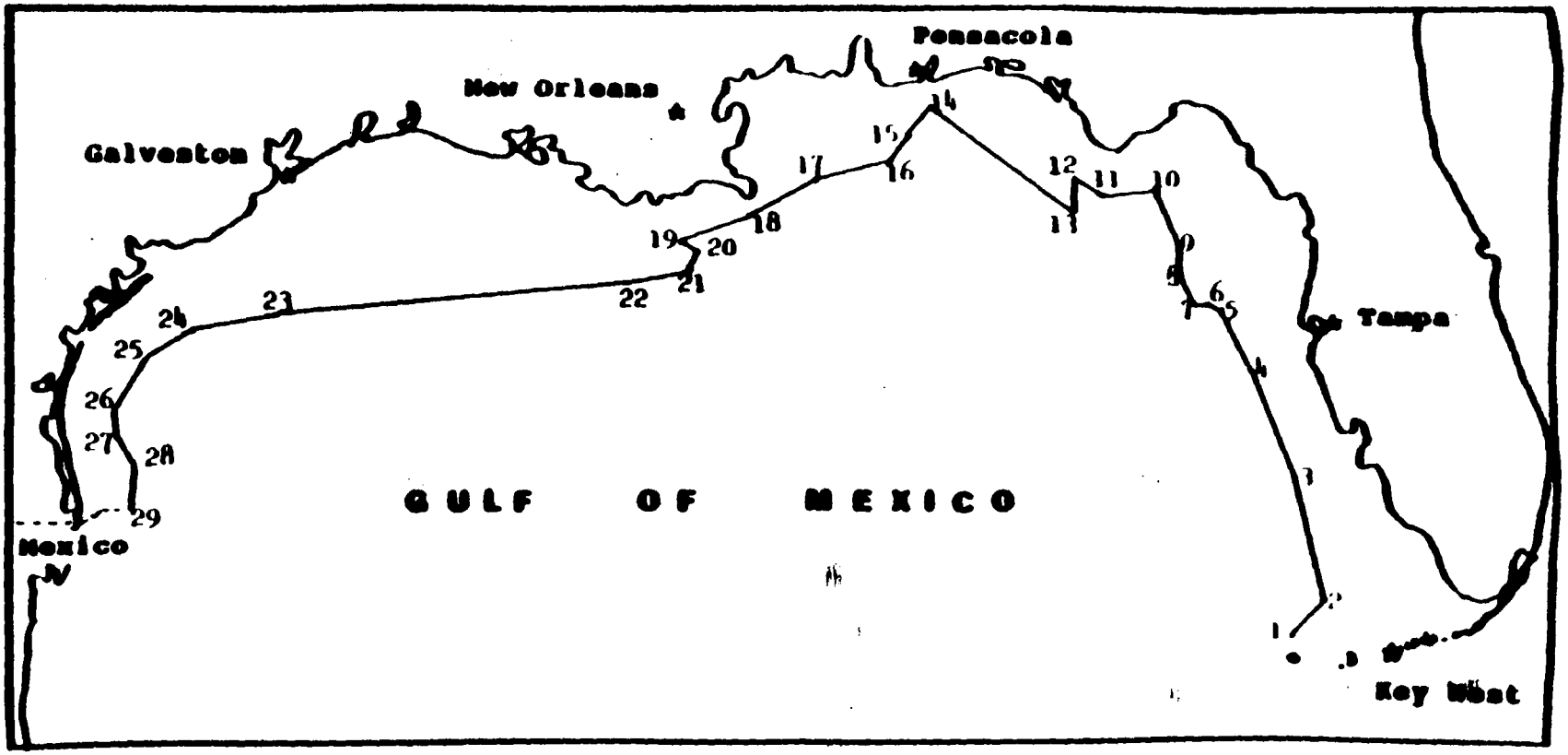


Figure 6. Seaward Limits of the Longline and Buoy Gear Restricted Area.

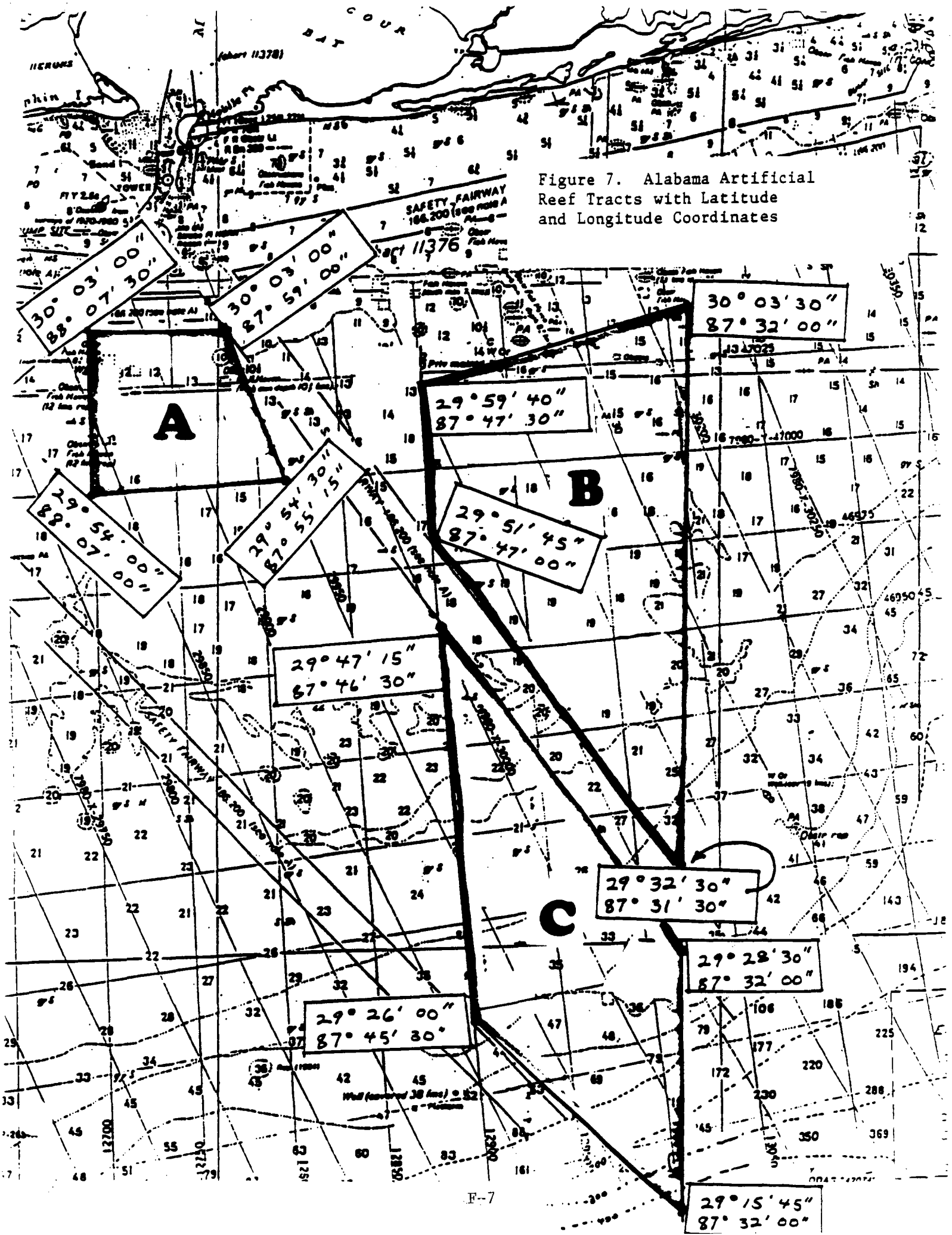


Figure 7. Alabama Artificial Reef Tracts with Latitude and Longitude Coordinates

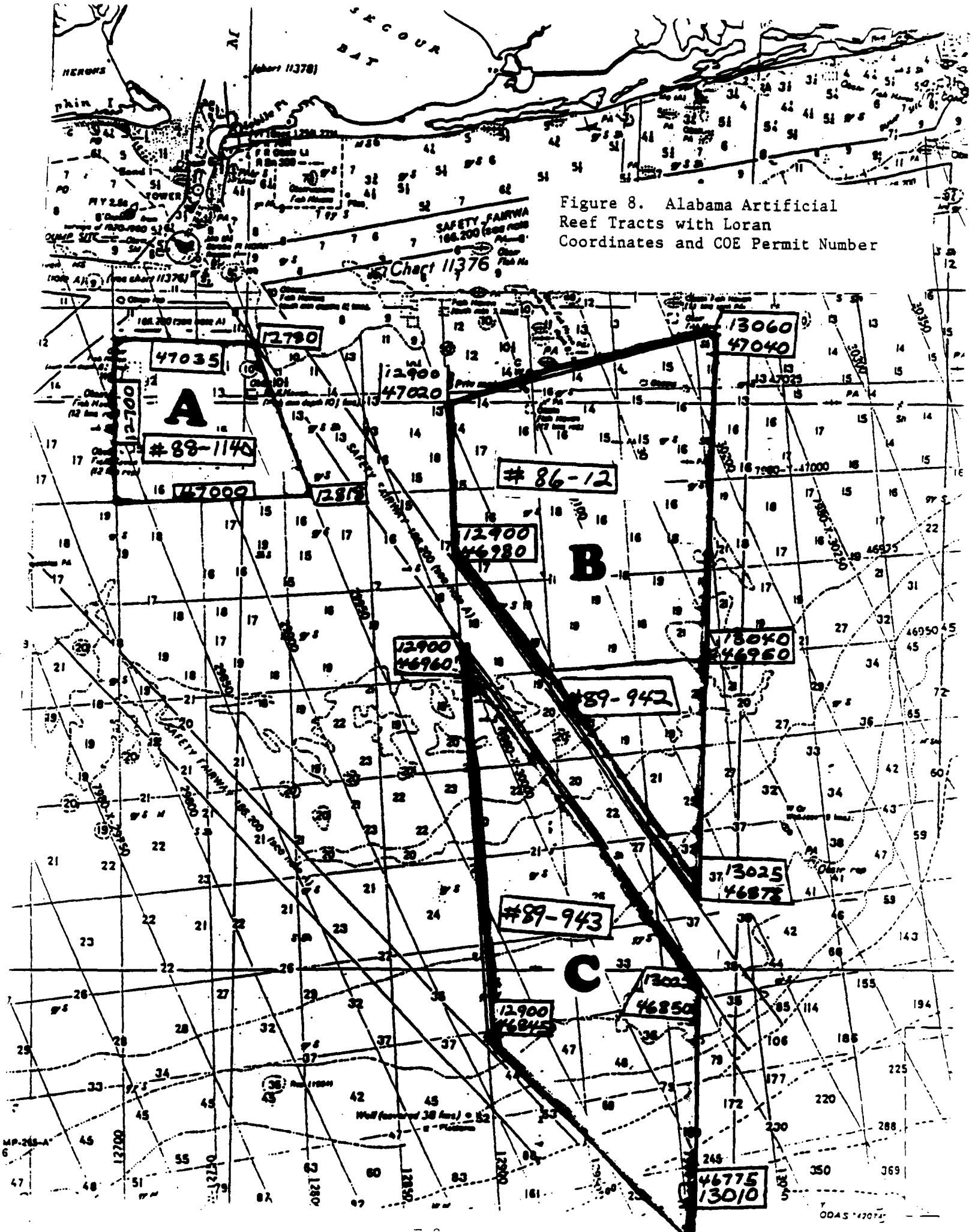


Figure 8. Alabama Artificial Reef Tracts with Loran Coordinates and COE Permit Number

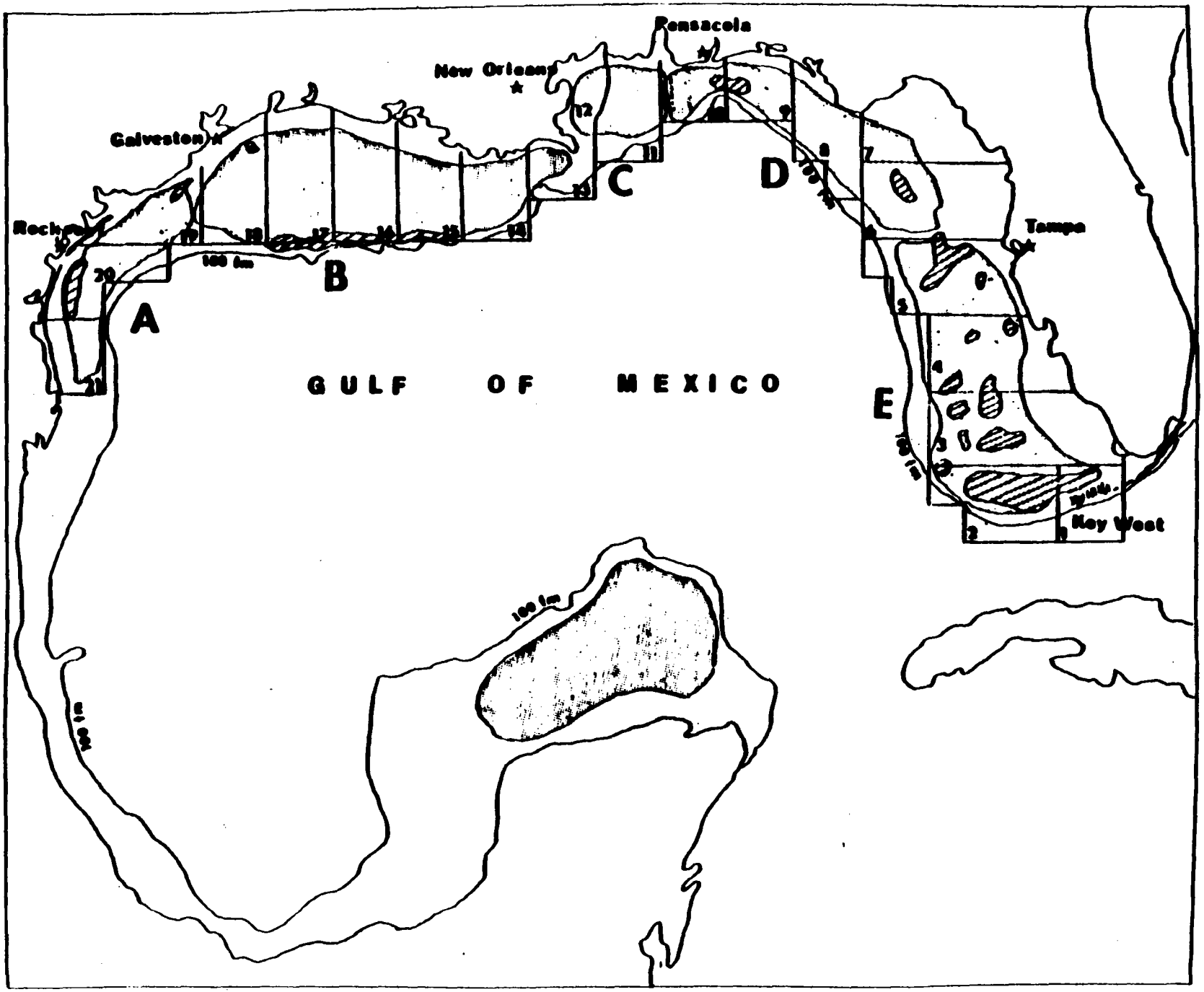


Chart of Gulf of Mexico historical red snapper fishing grounds and statistical reporting zones (A = Western zone, B = Galveston Lumps, C = Delta, D = Middle Grounds, E = Tortugas)

FIGURE 9

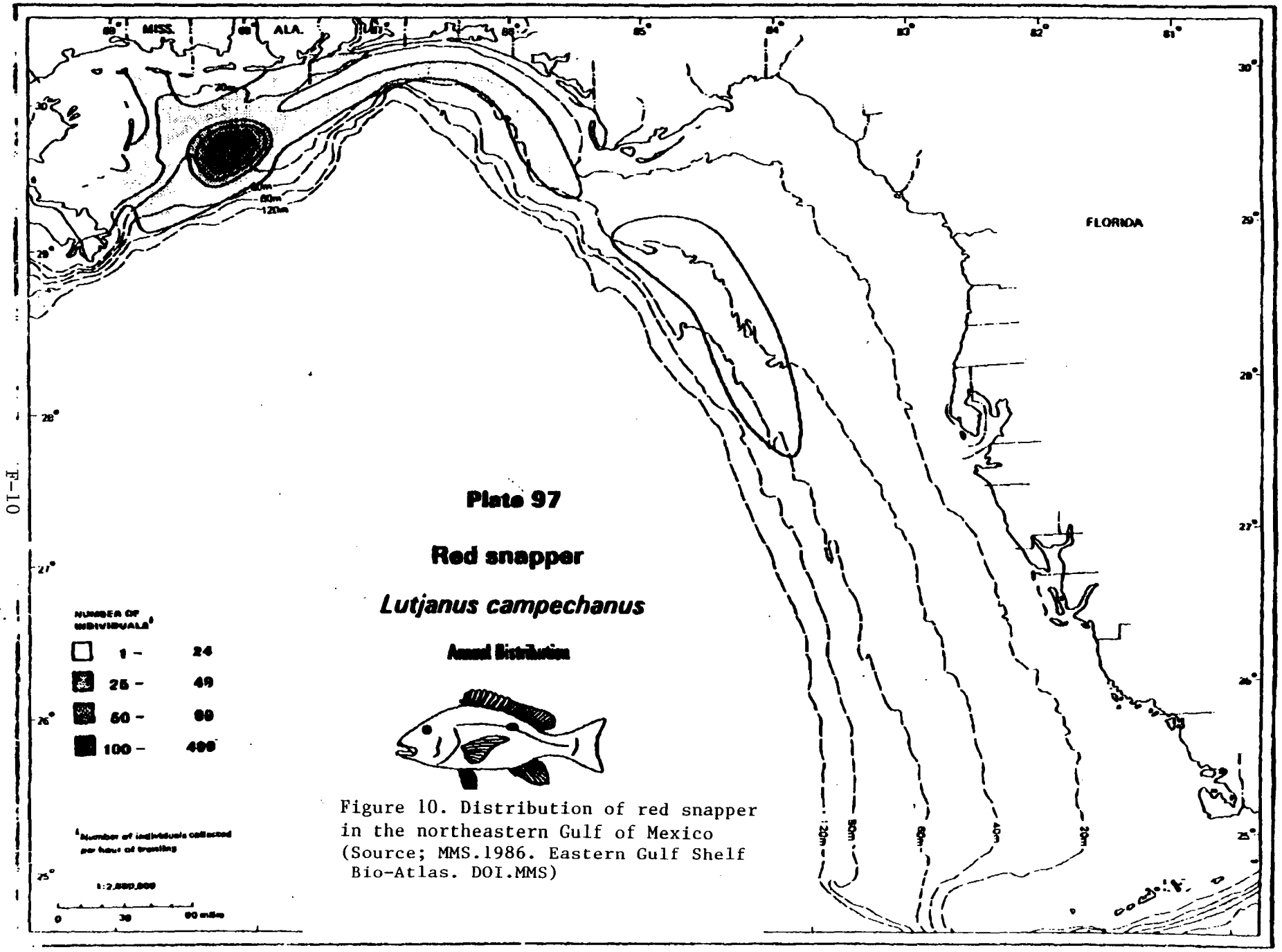


Figure 10. Distribution of red snapper in the northeastern Gulf of Mexico (Source; MMS.1986. Eastern Gulf Shelf Bio-Atlas. DOI.MMS)

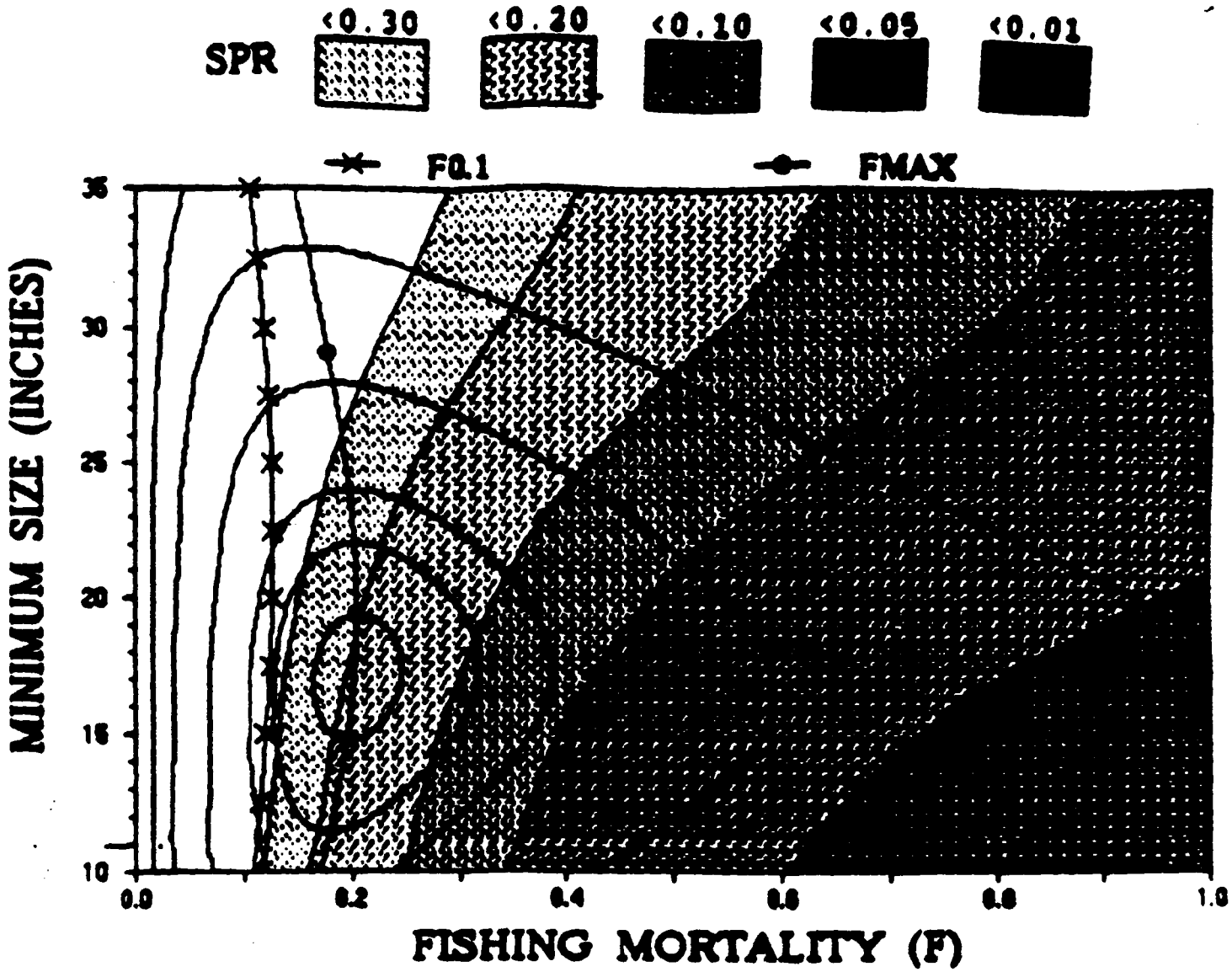


Figure 11 Yield and SPR for red snapper in the absence of any shrimp trawl discard mortality as a function of minimum size and F for a release mortality of 0.33.

Source: Goodyear (1992)

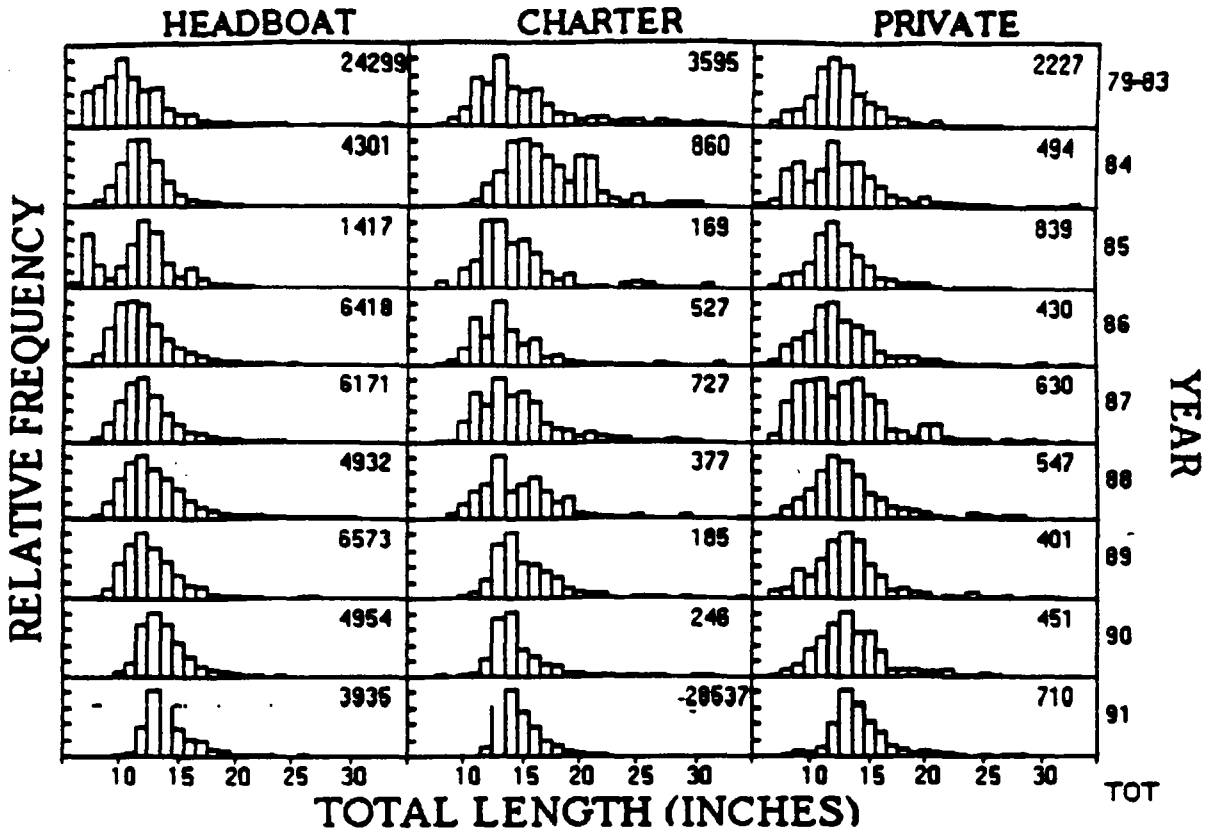


Figure 12 *Length frequencies of the recreational harvest by mode and year.*

Source: Goodyear (1992)

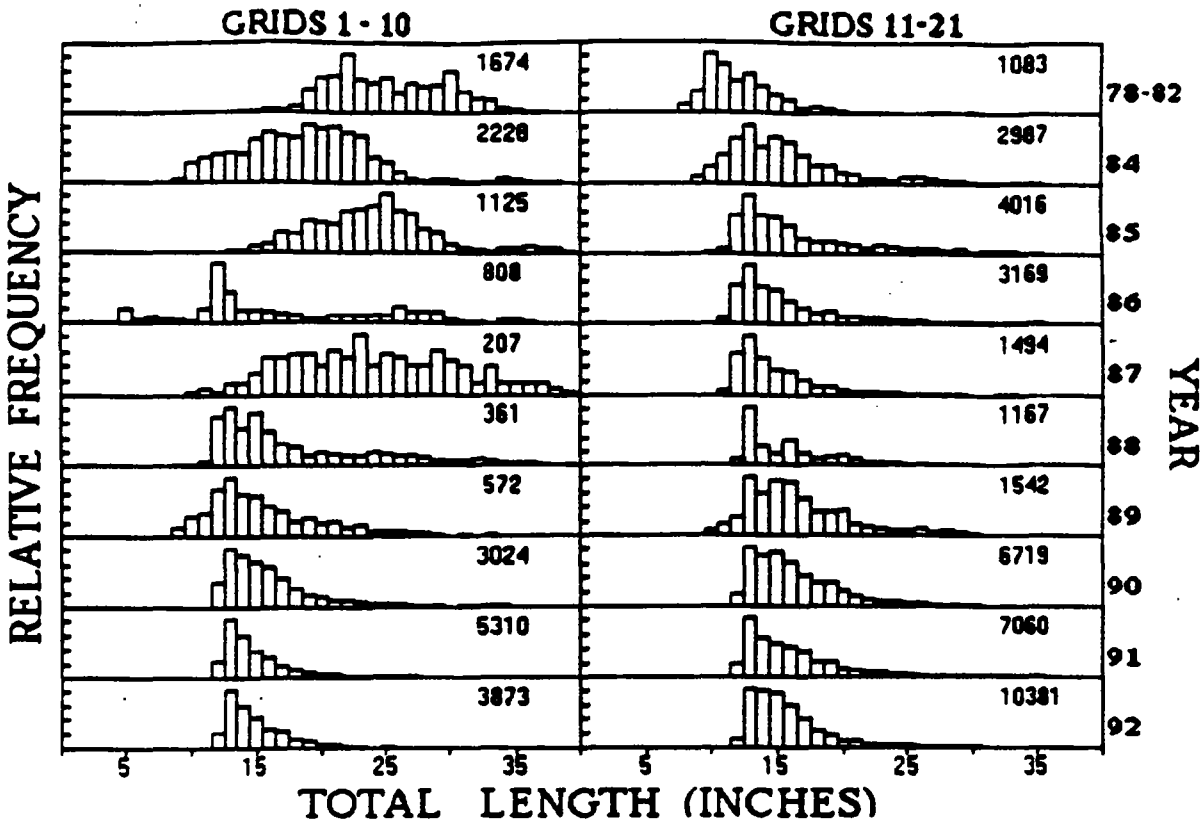


Figure 13 *Length frequencies of red snapper caught by handline by area, 1978-1992.*

Source: Goodyear (1992)

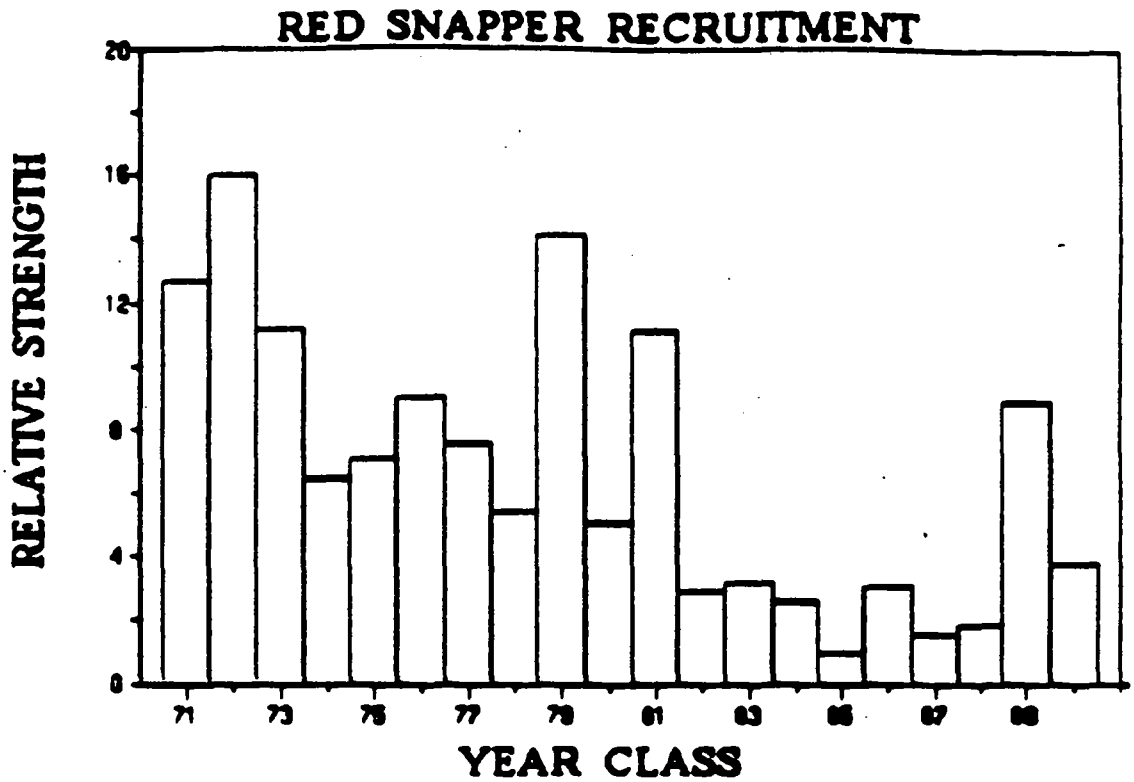


Figure 14 Year class strength estimate for red snapper 1971-1990.

Source: Goodyear (1992)

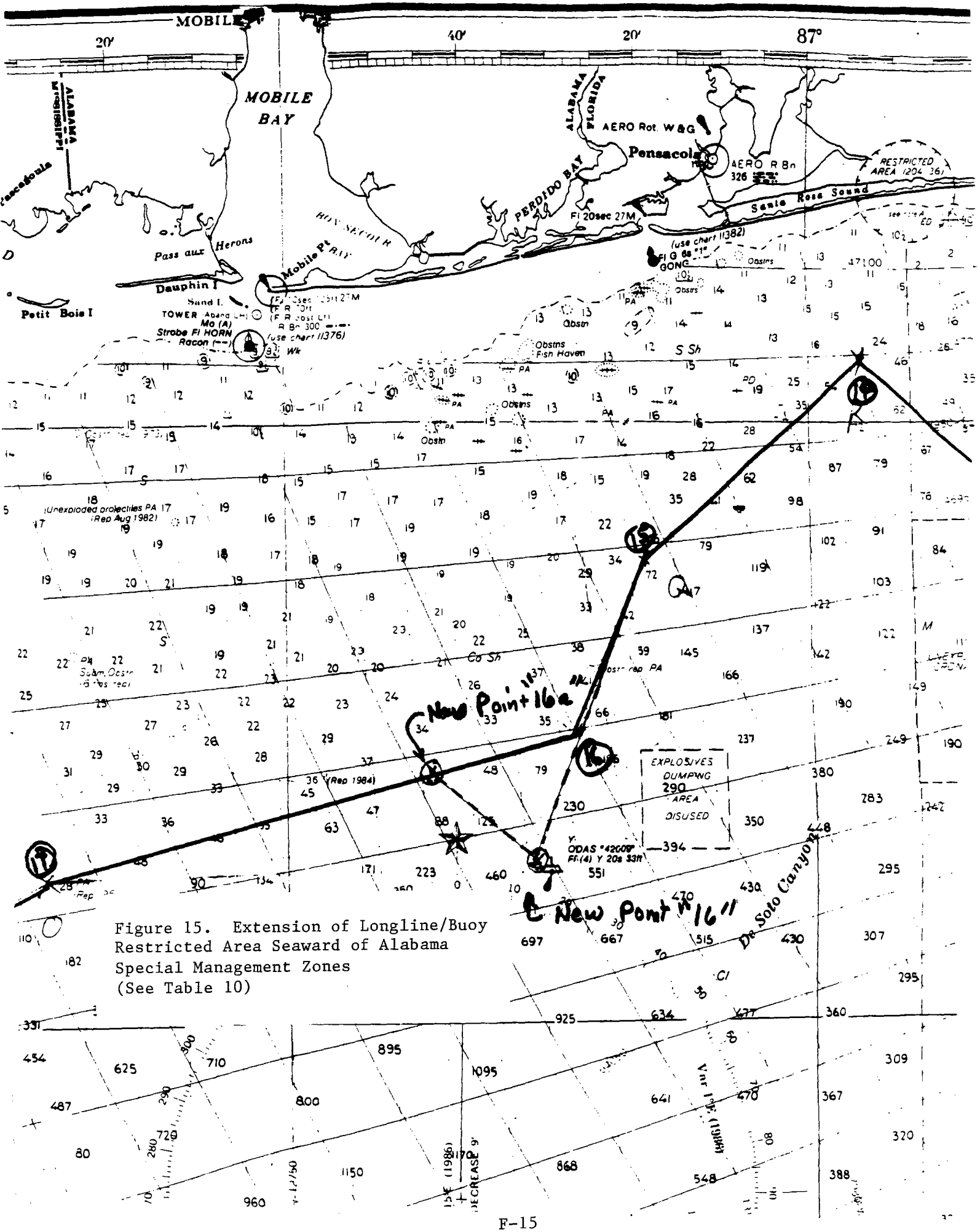


Figure 15. Extension of Longline/Buoy Restricted Area Seaward of Alabama Special Management Zones (See Table 10)

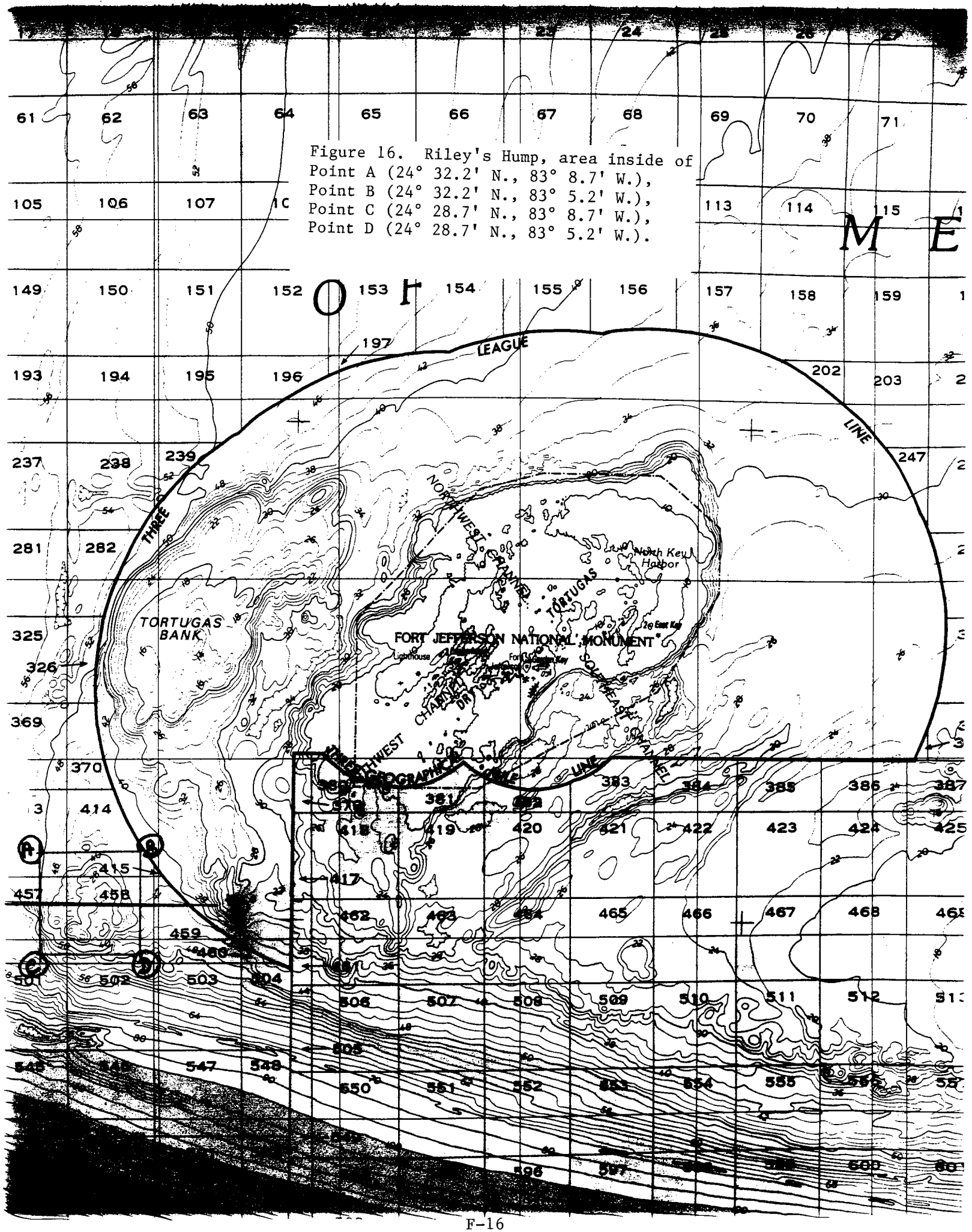
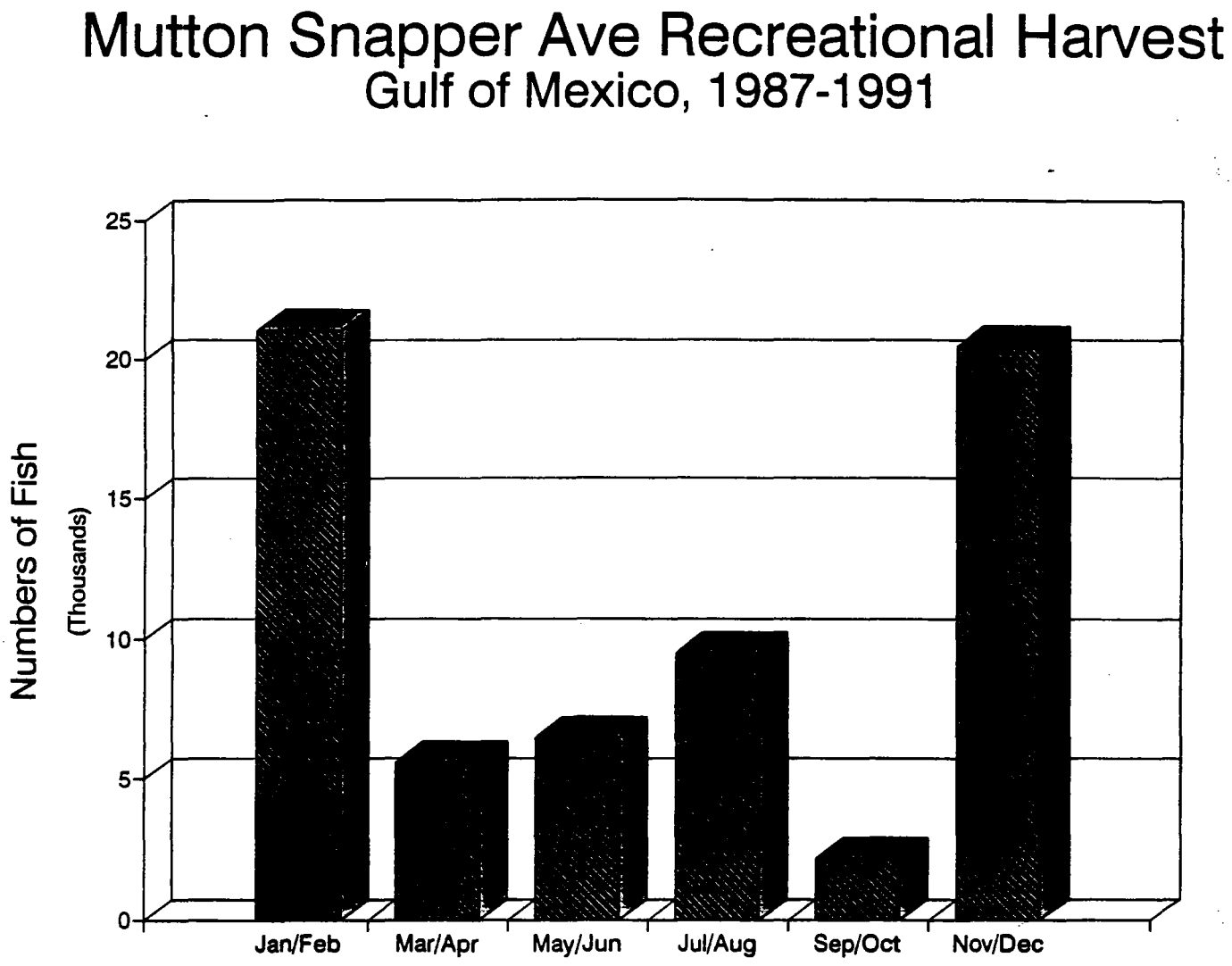


Figure 16. Riley's Hump, area inside of
Point A (24° 32.2' N., 83° 8.7' W.),
Point B (24° 32.2' N., 83° 5.2' W.),
Point C (24° 28.7' N., 83° 8.7' W.),
Point D (24° 28.7' N., 83° 5.2' W.).

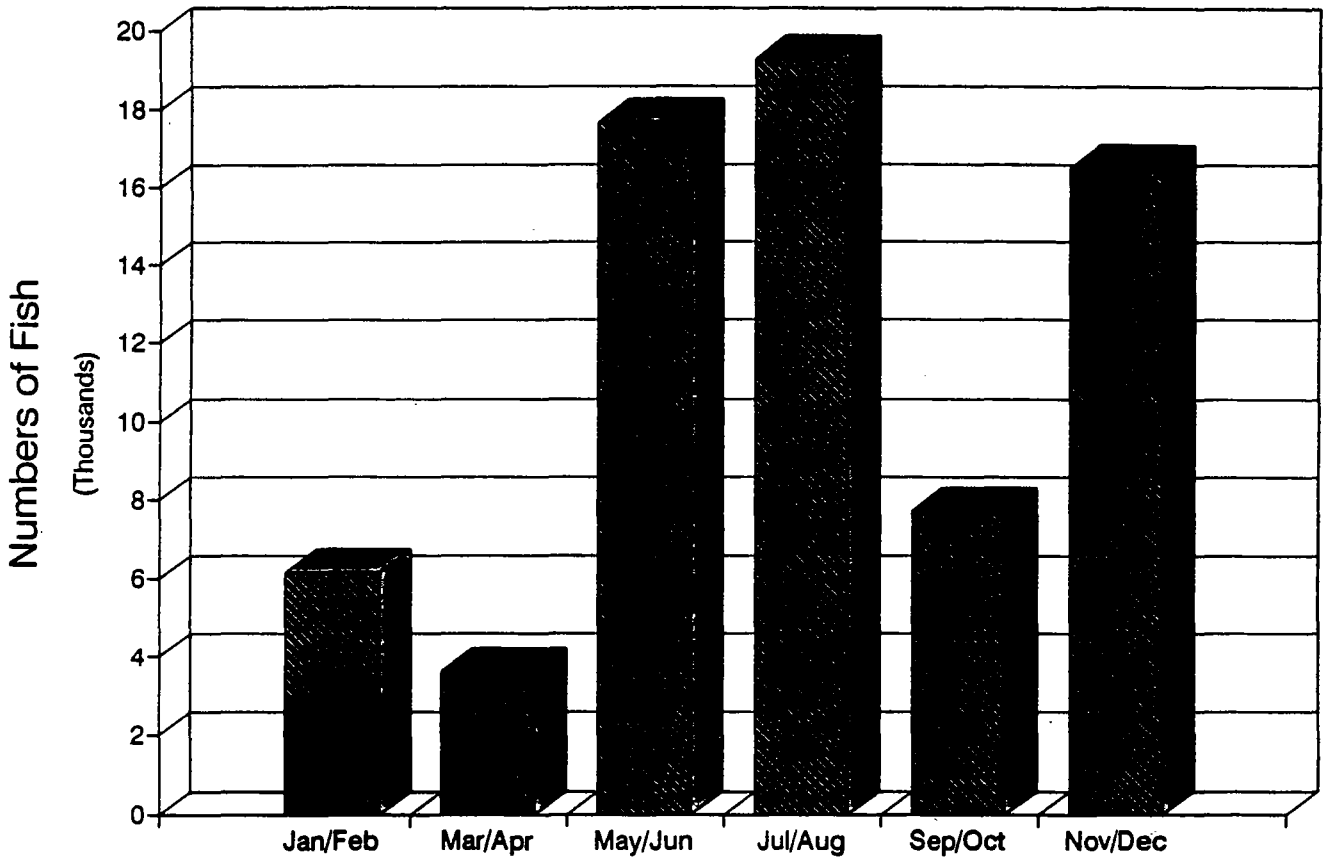
Figure 17



Source: 11

Figure 18

Mutton Snapper Ave Recreational Harvest
South Atlantic, 1987-1991

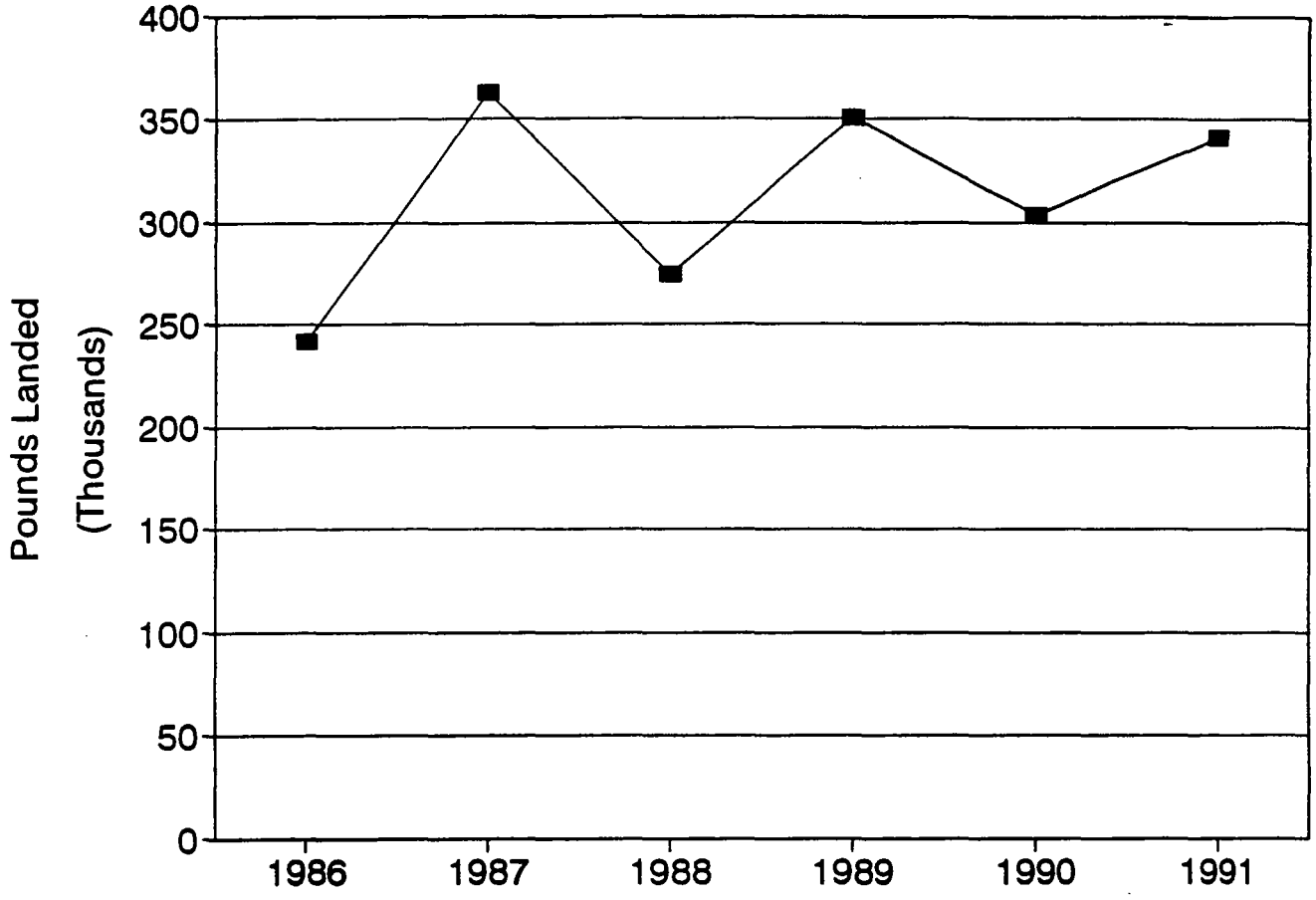


Source: Table 12

Figure 19

Annual Commercial Mutton Snapper Catch

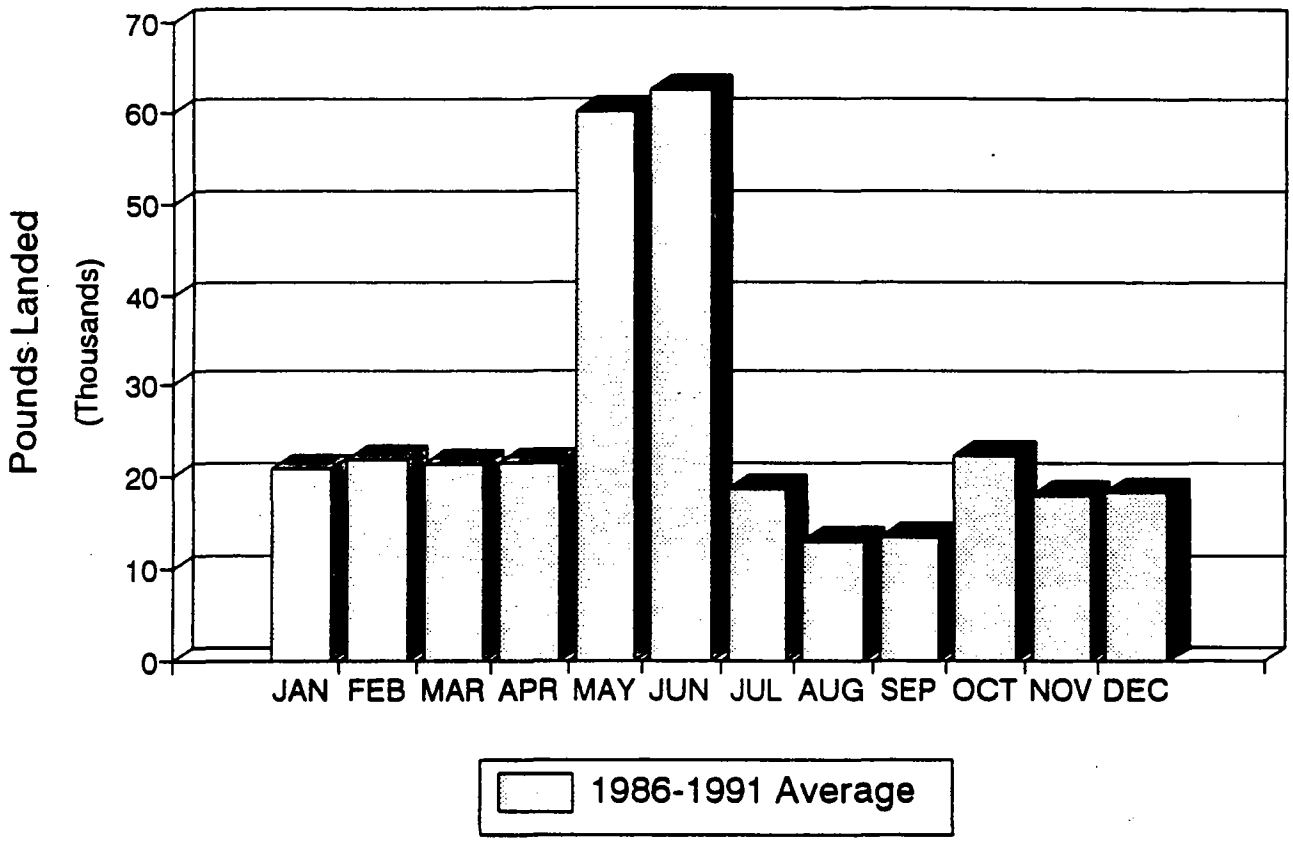
Gulf of Mexico - Including Monroe Cty



Source: Table 13

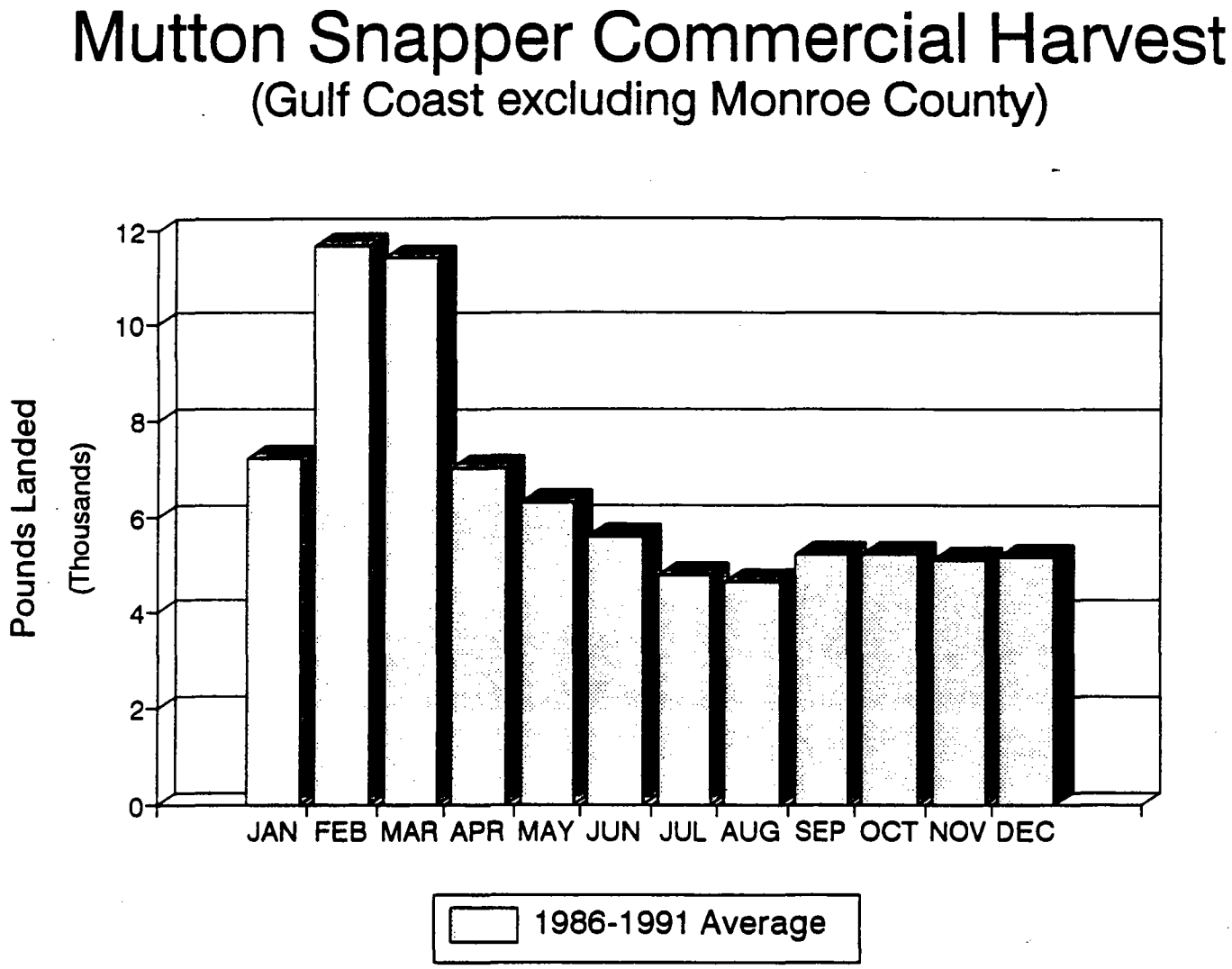
Figure 20

Mutton Snapper Commercial Harvest
(Gulf Coast including Monroe County)



Source: Table 13

Figure 21



Source: Table 14

Table 1

Average Landings[1] (Thousands of Pounds) of Red Snapper and Reef Fish in Gulf Ports and Portion (Thousands of Pounds) of Red Snapper Caught from Foreign Waters

Year	Red Snapper Landed	Red Snapper Caught From Foreign Waters	Reef Fish[2] Landed
1960	11,362	[3]	20,385
1965	13,349	6,422[4]	24,169
1970	9,541	2,299	21,064
1975	7,762	759	18,334
1980	5,417	431	19,037
1985	5,239	[5]	22,858
1990[6]	3,287		21,240

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[1]Five-year average with year the midpoint of the period, e.g., 1960 value is for 1958-1962 period.

[2]Includes red snapper landings.

[3]Data not available before 1964.

[4]Four-year average for 1964-1967.

[5]Mexico prohibited U.S. vessels after 1981.

[6]Three-year average ending in 1990, i.e., for 1988-1990 period.

Table 2

Average Number of Vessels in the Reef Fish Fishery
1960-1992

Year[1]	Handline	Longline	Other	Total
1960	385	-	3	388
1965	447	-	1	448
1970	346	-	20	366
1975	472	-	9	481
1980	648	122	31	801
1985[2]	580	245	43	868
1990-1992[3]	598	286	351[4]	1,234

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Sources: FMP Appendix Table 29 (1957-1974), Fishery Statistics of U.S. (1975-1977), Amendment 1 Tables 7.17 and 7.18 (1978-1986).

[1]Five-year average with year the midpoint of the period.

[2]Four-year average ending in 1986.

[3]From vessel permit file; charter vessels and fishing craft under 30 feet not included (see Table 2a).

[4]77 percent are fish trap vessels.

Table 2a

Number of Vessels[1] Permitted in the Reef Fish Fishery
By Gear Type[2], 1990-1992

Year	Handline[3]	Longline	Other	Total
1990	486	368	368	1,222
1991	675	245	306	1,226
1992	633	244	378	1,255
Average	598	286	351[4]	1,234

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Source: (NMFS Permit File).

[1]Charter vessels and fishing craft less than 30 feet not included. Total permits issued: 1990 (1,622); 1991 (1,762); and 1992 (1,964).

[2]Principal gear listed by permit applicant; many listed multiple gear types.

[3]Includes bandit rigs and rod and reel.

[4]77 percent are fish trap vessels.

Table 3

Ex-Vessel and Real[1] Value (Thousands of Dollars)
of Gulf Landings of Reef Fish and Red Snapper

	Reef Fish[2]		Red Snapper	
Year[3]	Ex-Vessel	Real	Ex-Vessel	Real
1960	3,673	3,879	2,761	2,915
1965	5,098	5,247	3,799	3,911
1970	6,195	5,598	4,010	3,627
1975	9,320	5,516	5,403	3,228
1980	18,316	6,837	7,696	2,904
1985	30,440	9,968	10,144	3,318
1990[4]	36,553	10,937	7,753	2,332

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Source: (Amendment 1 Table 7.1; NMFS Statistics)

[1]Real value is ex-vessel value adjusted for inflation by dividing the consumer index for all commodities (1967 = 100).

[2]Includes value of red snapper.

[3]Five-year average with year the midpoint of the period.

[4]Three-year average ending in 1990.

Table 3b

Real[1] and Ex-Vessel Annual Price Per Pound
Paid to Fishermen for Red Snapper and Other Reef Fish

Year	Red Snapper Price		Reef Fish Price	
	Real	Ex-Vessel	Real	Ex-Vessel
1960	$0.26	$0.24	$0.11	$0.11
1965	$0.29	$0.28	$0.11	$0.11
1970	$0.39	$0.43	$0.16	$0.18
1975	$0.39	$0.69	$0.20	$0.35
1980	$0.55	$1.47	$0.29	$0.77
1985	$0.61	$1.90	$0.40	$1.23
1990	$0.72	$2.50	$0.49	$1.70

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[1]Real value is ex-vessel value adjusted for inflation by dividing producer price index for all commodities (1967 = 100).

Table 4. Number of vessels, traps and landings from traps for Gulf of Mexico, 1978-1985.

Year	Vessels	Traps	LANDINGS (1,000's pounds)			
			Groupers	Snapper	Other Reef Fish	Total
1978	32	2,102	315	82	54	451
1979	38	2.284	149	161	37	347
1980*	36	1,434	99	93	22	214
1981	35	1,404	106	72	27	205
1982	13	534	125	45	15	185
1983	18	540	50	64	8	122
1984	43	1,290	675	55	21	751
1985	60	1,800	962	72	25	1,059

Source: Amendment 1, Tables 7.13 through 7.18

* Beginning in 1980 fish traps were prohibited in south Florida waters

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Table 5. 1987-1988 Canvass of reef fish trap fishing vessels/boats in the Southeast Florida and Gulf of Mexico by NMFS port agents.

Area	Total Number of Vessel Permits	Active	Fishing Status Inactive	Unknown	Vessels not in Area
Collier	86	22	17	11	36
Lee	18	0	0	6	12
Sarasota	6	0	0	2	4
Manatee	3	0	0	3	0
Monroe	149	9	7	70	63
EC FL	12	7	0	1	4
WC FL	60	7	0	33	20
Panama City	7	0	4	3	0
Apalachicola	8	0	1	4	3
Louisiana	8	0	8	0	0
Total	357	45	37	133	142

EC FL is the area on the east coast covering Martin, St. Lucie, and Indian River Counties.

WC FL is the area on the west coast of Florida in Collier County around Everglades City and Naples.

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Table 6. Reef Fish permit information on the importance of fish traps to fishing operations of permittees, purchasing trap tags and the importance of stone crab and spiny lobster fisheries to those Florida permittees.

Home Port	Year	IMPORTANCE OF TRAPS[1]					AVERAGE OF TAGS REQUESTED			
		1	2	3	4	TOTAL	1	2	3	4
AL	1991			1		1			20	
	1992									
FL	1991	152	40	31	16	239	50	29	26	16
	1992	194	38	36	23	291	50	28	23	33
LA	1991	2	3	2	2	9	55	17	100	35
	1992		2	1	2	5		100	10	60
MS	1991		1			1		25		
	1992									
TX	1991		1	8	1	10		10	5	20
	1992		1	1	1	3		10	10	5
TOTAL	1991	154	45	42	19	260				
	1992	194	41	38	26	299				

[1] 1 = Principal gear used by vessels, etc.

FISHERY	YEAR	FISHERY IMPORTANCE[2]				
		1	2	3	4	TOTAL
Stone Crab	1991	60	13	10	5	88
	1992	104	14	10	9	137
Spiny Lobster	1991	10	3	9	2	24
	1992	14	5	2	3	24
Both Above	1991	39	5	6		50
	1992	48	4	2	1	55
TOTAL	1991	109	21	25	7	162
	1992	166	23	14	13	216

[2] 1= Principal fishery vessel is engaged in, etc.

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Table 7. Annual Landings (Thousands of Pounds) by Fish Traps from Statistical Zones (Percent in Parentheses) and Number of Vessels for 1986-1991

YEAR	VESSELS	STATISTICAL ZONE(S)[1]				TOTAL
		1 & 2	3 & 4	5 & 6	7	
1986	79	246 (27)	657 (72)	3 (0.4)		905.9
1987	92	134 (24)	411 (75)	3 (0.5)		548.3
1988	100	176 (26)	401 (60)	5 (0.7)	83 (12)	664.8
1989	94	535 (44)	572 (47)	19 (2)	77 (6)	1,204.3
1990	NA	419 (42)	315 (32)	64 (6)	193 (19)	990.3
1991[2]	87[3]					1,455.0

YEAR	LANDINGS			
	GROUPER	SNAPPERS	OTHER	TOTAL[4]
1986	896	83	35	1,014
1987	617	57	62	737
1988	698	96	83	877
1989	782	221	233	1,236
1990	498	202	287	987
1991	739	184	532	1,455

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[1]See Figure 9 for Statistical Zones.

[2]Catch by Statistical Zone not available.

[3]Vessels reporting landings by log book; values for other years from canvass.

[4]Total not same for totals above since it includes some landings from south of Florida Keys which are excluded above.

APPENDIX B

Public Hearing Comments
on
EA/RIR/Amendment 5
to
Reef Fish FMP

Hearing	Pages
Key West, Florida	B-2
Naples, Florida	B-6
Crystal River, Florida	B-14
Apalachicola, Florida	B-17
Galveston, Texas	B-19
Biloxi, Mississippi	B-21
Summerdale, Alabama	B-26
Council Meeting	
- Sarasota, Florida	B-30

ccm: 10-22-92

D R A F T

M I N U T E S

GULF OF MEXICO FISHERY MANAGEMENT COUNCIL

REEF FISH AND MUTTON SNAPPER PUBLIC HEARING

KEY WEST, FLORIDA

OCTOBER 19, 1992

ATTENDANCE:

Philip Horn
Wayne Swingle
Camilla Moyer

36 Members of the Public were in attendance

The hearing was called to order by Chairman Philip Horn at 7:05 p.m., at the American Legion Hall in Key West, Florida. He presented the opening statement which included the seven National Standards. The hearing was held to allow public comment on a proposed amendment to the federal fishing rules for reef fish and a proposed rule to protect spawning aggregations of mutton snapper through spawning season fishing closures. Written comments would be accepted until November 9, 1992, and the public were invited to testify before the Council on any of the proposed changes during the November 18th session of the Council to be held in Sarasota, Florida, beginning at 8:30 a.m. The public may again comment directly to the Secretary of Commerce when the proposed regulations are published. This comment period is open for 45 days.

Mr. Swingle presented the details of the proposed changes.

The public was invited to comment:

Stephen Moore, fifth generation commercial fisherman from Davie, Florida, felt the Government was determined to put commercial fishermen out of business. He spoke against the elimination of fish traps and for retaining the status quo. He had been in the wire trap fishery for the last fourteen years, and felt this fishery was already heavily regulated. He stated fish trappers only accounted for 6.8 percent of the total snapper/grouper harvest. He contended the recreational fishery was controlling decision-making and felt they were responsible for much of the damage to the fishing grounds. He maintained that the survival rate of fish returned to the water from fish traps was very high. He noted that commercial fish trap fishermen were interested in preserving habitat since their livelihood depended upon it. Recreational fishermen, on the other hand, he described as a "subsidized predator". He felt the chief problems in the fishery were pollution, both from run-offs and dumping, and loss of habitat.

Bill Parks, commercial diver (17 years) and fisherman, did not consider unfair competition to be the primary issue for anyone who utilized the resource. He noted that angelfish were regularly caught in fish traps and that traps left out for extended periods of time caused high fish mortality. Foul weather contributed to the

loss of many fish traps which then became ghost traps, which could survive for more than a year and decimate fishing grounds. He felt much of the scientific literature cited on pages 6 thorough 12 was incorrect. He objected to the argument that areas already heavily fished displayed increased efficiency when fish traps were introduced, stating there was no justification for this practice. Wave surge action and currents affected the condition of fish caught and retrieved from traps. Placement of traps near reef structures resulted in a larger take of food fish species, but also a larger amount of ornamental species, were often subsequently used as bait or died from decompression as traps were raised to the surface. Deep water fish trapping impacted previously untouched areas, which possibly had served as a stabilizing factor to guarantee healthy future stocks. Fish traps did not discriminate between targeted and non-targeted species and the trap fishery was difficult to police and enforce. After conducting tests, Mr. Parks concluded that mesh sizes would have to be 2.8 inches wide and 9 inches tall in order to allow an angelfish to escape, releasing snapper and grouper which were being targeted.

Peter Gladding, commercial fisherman from Key West, Florida, supported Mr. Parks statements. He felt 17-inch mutton snapper were too small (approximately two pounds) to be harvested. He supported closing Riley's Hump to mutton snapper fishing, but opposed closing Riley's Hump to all fishing, though he did not fish there himself. Many fishermen caught large yellowtail in the same area that mutton snapper spawned and depended on this fishing ground for their livelihood.

Simon Stafford, stone crab and lobster commercial fisherman, asked that Council use the best information available before making decisions. He felt much of the information used by the Council was anecdotal information and not scientific information.

Mike Laudicina, from Key West, Florida, commercial fisherman since 1969, and member of the Gulf Council's Spiny Lobster Advisory Panel, Florida National Marine Sanctuary Advisory Council, and the O.F.F., stated mutton snapper spawned all over the Keys area in small aggregations. Riley's Hump was one of the largest spawning areas, but not the only one. When he worked as a collector of live mutton snapper two years ago for the University of Miami for spawning research, they obtained fish about 12 miles to the east on a small reef. He had fish trapped from South Carolina to the Caribbean and opposed banning traps and requiring they be returned to shore after each trip. Traps were to be prohibited in the sanctuary only because they were prohibited outside of the sanctuary. He felt solving pollution problems should take precedence over gear restrictions. He felt lack of enforceability was a poor reason to consider banning traps.

Mr. Braun, fishing guide from Big Pine Key, Florida, spoke against fish trapping, citing a statement by an enforcement officer at a South Atlantic Council meeting that 90 percent of traps checked were in violation of existing regulations. He indicated angelfish were a large part of the bycatch.

Richard MacKinnon, from Islamorada, Florida, represented O.F.F. and was a participant in the wire fish trap fishery. He referred to a 1984 decision memorandum by NOAA that a ban on fish trapping in Florida would be in violation of the Magnuson Act. He felt the present Secretary of Commerce was exerting influence to force banning of fish traps. He believed enforcement in the fish trap fishery was not a real problem and few violations had occurred. The O.F.F. supported a 12-inch size limit on mutton snapper. He stated that enforcement was no reason to ban traps. He supported requiring they be returned to shore after each trip. He pointed out that fouled lost traps stop catching fish.

Daniel H. Harvey, commercial tropical fisherman from Tavernier, Florida, had also done hook-and-line fishing and fish trapping. Gray angelfish were the most predominantly caught angelfish in fish traps and were the least commercially valuable. He maintained that lost fish traps disintegrated over time and lost their effectiveness. He felt setting the mutton snapper size limit at 12 inches would cause fish slightly undersized to be discarded though the trauma and embolism experienced as they were brought to the surface would cause them to die after release. He supported closing fishing for mutton snapper on Riley's Hump during

the spawning season , but opposed banning fish traps. He felt recreational fishermen were being favored at the expense of the commercial fishery.

Tom Blythe, commercial fisherman of 20 years from Marathon, Florida, stressed that when the federal government banned fisheries in the United States, money and jobs were lost for its citizens and were transferred to other countries. He felt the ornamental fish industry had been responsible for the decline of blue and queen angelfish which were very scarce. He claimed the gray angelfish remained numerous because of their inferior commercial value. He favored the status quo on fish traps and had no comment on mutton snapper.

Larry Meyer, a wire trap fisherman from Pompano Beach, Florida, opposed the banning of fish traps in the Gulf of Mexico. He did not think Riley's Hump should be closed since mutton snapper spawned in other areas of the Gulf and this action would harm fishermen who targeted other species (such as yellowtail) in this area. He indicated only two South Atlantic area fishermen moved to fish the Gulf. He felt most data were anecdotal and many Gulf fishermen tended their traps.

Bill Moore, a commercial fisherman from Big Pine Key, Florida, representing Monroe County Comm. Fishermen, Inc., did not believe mutton snapper were overfished. He felt an SPR number should be assigned to the species in order to prove this contention. The mutton snapper fishery was necessary for Keys fishermen in order to survive summer closures for lobster and crab and he opposed the May and June closure off Riley's Hump. He felt mutton snapper spawned in other areas of the Gulf and supported the status quo. He felt fish traps were already over-regulated, especially since they comprised the smallest component of the fishery. He advised not relying on South Atlantic data in making management decisions for the Gulf of Mexico waters. He felt Florida Bay should be opened up and the stressed area line be moved inshore. Red grouper size limits should be lowered to 16 inches to increase and allow the quota to be achieved. He stated the mesh on fish traps needed to be no larger than 2-inch by 2-inch in order to catch fish. He felt Amendment 5 was over-reacting to a non-existent problem and the options were too restrictive. He indicated the illegal traps observed by the Marine Patrol officer were all being fished in illegal areas.

Rick LaFlair, commercial fish trap fisherman, contended that fish traps in deeper waters caught no ornamental fish. He recommended requiring fish trappers to fish in waters 100 feet in depth or greater. He maintained that if fish traps were utilized according to existing regulations they should not become ghost traps when lost. He stated that in all his years of fishing, he had never received a violation despite being boarded and inspected by the Coast Guard on various occasions. He felt the Gulf Council's proposed amendment was more reasonable than that of the South Atlantic Council, but urged discussing and working out a compromise with the fish trap industry.

Tony Lanasa, commercial fish trapper from Key West, Florida, supported closing the mutton fishery during the spawning season. He felt present trap enforcement was adequate. He believed discussions between fish trap fishermen and management could bring about successful resolutions to problems.

Jerry Ward, a commercial fish trapper from Marathon, Florida, stated if the boundary line were moved further offshore it would be beyond the range he could successfully fish. He noted that his traps had been directly in the path of Hurricane Andrew and had survived the storm. His main loss of traps was from theft and if they were deployed properly (with jute fasteners) they would not become ghost traps. His traps had been inspected by the U.S.Coast Guard for jute fasteners.

Anthony L. Iarocci, commercial fisherman, felt a limited entry system for traps needed to be implemented. He supported closing fisheries during spawning seasons in general. He did not believe an ITQ procedure would be appropriate for the Gulf area and was concerned that monopolies could occur in such a system. If necessary, the number of traps could be limited. He supported allowing fishing on Riley's Hump but prohibiting harvest of mutton snapper.

E. P. Worthington, Jr., representing the O.F.F. in Marathon, Florida, opposed closing Riley's Hump on the basis that mutton snapper were not seriously threatened and lobster and crab fishermen relied on the mutton snapper fishery during their closed season. He supported the 12-inch size limit for mutton snapper and did not believe it should be increased. Most mutton snapper caught in the inshore waters ranged between 14 to 18 inches. He stated that a marine sanctuary proposed for the Keys area planned to implement the strictest regulations of those in effect by the state of Florida, Gulf Council, and South Atlantic Council. He noted that fish traps were a tool, that used properly, were an effective method of harvesting fish. He noted 99 percent of fishermen fish traps legally. He recommended forming a species committee with grouper fishermen and developing a workable plan of operation. He stressed that South Atlantic waters differed from that of the Gulf of Mexico and management decisions should not be made based on South Atlantic Council data. He indicated Gulf waters were different and few traps were lost. He suggested the penalties for violations be increased. He felt emphasis should be on the 90 percent of Florida residents who ate the fish caught in Gulf waters as opposed to the 5 percent who recreationally fished these areas.

Leo Cooper, commercial dealer from Marathon, Florida, objected to implementing more regulations in the mutton snapper fishery. He recommended observing results of restrictions recently placed on the South Atlantic fishery. He spoke against an ITQ system. He requested the Council provide a socioeconomic impact analyses for mutton snapper.

Robert Sierpiejko, commercial fisherman from Geiger Key, Florida, felt recreational fishermen were given unfair advantages under the present management system. He believed too many fish were imported, adding to the trade deficit, and that these fish were not inspected properly and sometimes brought in illegally. Some imported fish were prone to carry infection, causing illness when consumed. He spoke in support of fish traps. He suggested alternating mutton snapper closures between the South Atlantic and the Gulf of Mexico. He felt the state of Florida management group unfairly dominated the fisheries.

Peter Bacle, representing Stock Island Lobster Company, Key West, Florida, stated that most mutton snapper were caught by lobster and crab fishermen during their closed season and were an important source of their income. The fish houses were also dependent on this fishery. A significant drop-off of mutton snapper stock had been observed over a period of many years. Even though production in the South Atlantic had declined, 20,000 to 25,000 pounds of mutton snapper were processed by his fish house. The Riley's Hump area provided a stable and unchanging supply of mutton snapper. He did not support a closure for this area, though he suggested raising size limits for mutton snapper.

Billy Niles, commercial fisherman from Summerland Key, Florida, opposed banning fish traps and the closure of Riley's Hump during the spawning season. He felt the mutton snapper fishermen (50 boats) would be unnecessarily deprived of their livelihood.

Bobby Pillar, commercial fisherman from Summerland Key, Florida, representing Lower Keys Chapter of O.F.F., described Riley's Hump as an area of water ranging in depth from 120 to 200 feet, situated 15 to 20 miles southwest of the fort. Many boats which fished as far as 40 miles west returned to this area for anchorage and to avoid being overrun by passing freighters. When boats were anchored together in this one area the freighters bypass these vessels. With present regulations prohibiting passing through South Atlantic waters with a load of mutton snapper they must travel from Riley's Hump, (often battling high winds) around the fort and Pulaskie light, to the new grounds, to the northwest channel before landing. The other route would be much shorter, passing up the reef to home.

MEETING ADJOURNED AT 10:00 P.M.

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ccm: 10-29-92

DRAFT

MINUTES

GULF OF MEXICO FISHERY MANAGEMENT COUNCIL

REEF FISH AND MUTTON SNAPPER PUBLIC HEARING

NAPLES, FLORIDA

OCTOBER 20, 1992

ATTENDANCE:

Wayne Swingle
Camilla Moyer

21 members of the public were in attendance

The hearing was called to order by Mr. Wayne Swingle at 7:15 p.m., at the Naples Depot Cultural Center in Naples, Florida. Mr. Swingle presented the opening statement which included the seven National Standards. The hearing was held to allow public comment on a proposed amendment to the federal fishing rules for reef fish and a proposed rule to protect spawning aggregations of mutton snapper through spawning season fishing closures. Written comments would be accepted until November 9, 1992, and the public were invited to testify before the Council on any of the proposed changes during the November 18th session of the Council to be held in Sarasota, Florida, beginning at 8:30 a.m. The public may again comment directly to the Secretary of Commerce when the proposed regulations are published. This comment period is open for 45 days.

Mr. Swingle presented the details of the proposed changes.

The public was invited to comment:

Marty Harris, commercial fish trap fisherman who fishes off Naples, Florida, felt research data was taken from localities outside Gulf waters, including the east coast of Florida, Jamaica, Virgin Islands, and Bermuda and time periods ranged from 1970 through 1983. He contended Gulf fish trappers operated over different types of bottom, in which coral reefs did not occur. The Gulf bottom fished by trappers consisted of sand/shell or rock bottom. Fish trappers had begun fishing 35 to 50 miles offshore, travelling from 100 miles north or south of Collier County. There were no ghost traps in this area due to the biodegradable panels presently in use, which would disintegrate within two weeks. He objected to increasing mesh size in fish traps, claiming legal fish, such as lane and vermilion snapper and useable bycatch would escape. He landed 20- to 25,000 pounds of these snappers annually. A 2x5-inch window would allow legal grouper to escape. He stated that most bycatch he had released had survived. Species regarded as trash fish by some, had a market among certain ethnic groups and provided additional income to fishermen. Tropical fish were rarely found in these localities. Fish trappers must negotiate with shrimpers for designated areas to lay traps. Crab traps remained on the same bottom for up to eight months, causing more environmental damage, while fish traps off Collier County were customarily removed every two hours and did minimal damage to seagrass. However, he contended that shrimp boats did considerable harm to seagrass beds.

He pointed out there was more bycatch taken in one shrimp trawl haul than he caught in a 10-day trip with traps. He recommended that all fish trappers be required to bring their traps in each day and allow the Marine Patrol to inspect them. He felt if permits were issued that allowance should be made for fishermen who had caught under the required amount to qualify due to extenuating circumstances. He felt recreational fishermen contributed to stock loss by inappropriate handling of released fish. He stated if grouper size limits were changed to 18 inches sportsmen could catch more, and commercial fishermen could meet their quota more quickly. This would benefit fishermen since expenses would accumulate over a shorter space of time and bycatch of undersized fish should also be reduced. He contended hook-and-line and bandit fishing were less efficient than trap fishing and was not a reasonable option for fishermen. It was expensive to change gear and regulations often prevented targeting other species. He suggested using jute on the trap door as an alternate escape route for lost traps, in addition to the blow-out panel. He supported conducting a three to five-year study after regulations are implemented to determine the effects of these actions before adopting new restrictions.

Roger DeBruler, Jr., (see attached statement) a biologist for Mote Marine Laboratory from Englewood, Florida, had accompanied a crew of fish trappers on a fishing trip. He testified that great care had been taken to return bycatch safely to the water. Most of these fish had survived, with the exception of a few which had been taken by birds. Some of the fish exhibited puncture marks indicating they had been caught and released at a previous time. He questioned the use of data from other areas and believed information on a species should be generated from the location in which they live in order to be factual.

Willette Turner, of Turner Seafood, Inc., Naples, Florida, stated that if further regulations were instituted on fish trapping it would force their company out of business.

Al Pflueger, of North Miami, Florida, representing O.F.F., recommended maintaining the status quo on mutton snapper. He spoke against closing Riley's Hump, stating mutton snapper were not declining. He also recommended the status quo on fish trapping, feeling that current regulations were fair and prevented monopolies from forming. He opposed increasing the mesh size on traps because larger openings released targeted species. He indicated 2x3-inch mesh would allow 12-inch yellowtail and all lane and vermilion snapper to escape. He felt limiting the number of vessels in the fish trap fishery was unfair but supported establishing an ITQ system, since it would enable those already in the fishery to remain. He recommended retaining the status quo on numbers of traps (100). He stated that, as a professional fisherman, he needed gear in order to compete against recreational fishermen. He cited the South Atlantic Council ruling that commercial fishermen could only use hook-and-line gear, which was the same as allowed to recreational fishermen. He equated this to telling a farmer he must use a hoe in place of a tractor.

Richard Nielsen, Jr., former commercial trap fisherman (South Atlantic) from Dania, Florida, commented that the Gulf Council SSC had suggested moving the stressed area inshore to five fathoms. He felt if fish stocks were considered to be stable enough for this action, he did not understand why removing fish traps was under discussion. He opposed larger mesh sizes, contending it would render traps useless. He felt fish surfacing in a trap rather than by hook-and-line had a better chance to survive since it was not fighting a hook but was swimming up. Off of Broward County a 10-month study determined that 87 percent of released fish (from traps) swam down. He commented that two submersible studies had been done on the Southeast Coast of Florida which were not mentioned in Draft Amendment 5. These ghost trap studies were done on extensively fished areas, one in the Dry Tortugas, and the other in the Miami area, and indicated very low numbers of ghost traps. He planned to bring copies of these reports to the November Council meeting in Sarasota, Florida. He spoke in support of jute ties. Three years ago the Regional Director of NMFS, Joseph Angelovic, in a memorandum, concluded prohibiting fish traps would be a violation of two of the National Standards in the Magnuson Act. He stressed that the Magnuson Act had not changed but NMFS leadership in Washington, D.C. had. He felt that difficulty of enforcement in the fishery was a phoney issue. He suggested regulations stating that two major fishery violations would cause a fish trap permit to be revoked. He felt that by setting buoys on every trap they could be easily spotted and stolen. He

responded to a statement on page 11 by Gordon Sharp (Florida Marine Patrol/Key West): "he found 95 percent of the traps he has seized in areas closed to trap fishing to be constructed illegally." He asked why the officer expected a person fishing in a closed area would be an honest fisherman using correct procedures. Only one percent of reef fish landed were taken in fish traps, which was a small fishery comprising 87 vessels. He questioned statements such as "widespread abuses among fish trappers", stating there was no firm data to support this contention. NMFS documentation revealed an average of only one or two violations per year. He opposed closing Riley's Hump since there was no evidence that mutton snapper were overfished in the commercial sector. Declines in the recreational fishery could be attributed to the targeting of other species, such as red grouper, which were now plentiful.

Jerry Ward, commercial fisherman from Marathon, Florida, reiterated that Gulf and Atlantic waters could not be compared, and that using data from the Atlantic gave an inaccurate picture of conditions in the Gulf of Mexico. His mate had previously accumulated 25,000 hours of diving time when working as a tropical fisherman. He had asked Mr. Ward to give testimony that fish traps in the Gulf were not catching tropical fish in significant quantities.

Mike Bailey, commercial fisherman and fishing guide, Collier County, stated that the recreational fishery had spent large amounts of money on attorneys lobbying the Gulf Council. He felt insufficient time was allowed for previous regulation changes to take effect and that 87 fish trappers was an insufficient number to create widespread problems in a fishery.

Billy Sandefur, fish house owner, Ft. Lauderdale, Florida, maintained that the most valuable mutton snapper was a two to four-pound fish. Increasing the size to 20-inches would eliminate the 2 to 4 pound class of fish. Large mutton snapper were hard to sell in the summer and he recommended maintaining the status quo on size limits. He opposed banning fish traps, questioning the motives for such action. He reiterated that fish trappers had very low numbers of violations by NMFS own records. He observed that the SSC comments on the proposal to move the stressed area line inshore indicated the reef fish stock was considered to be stable.

John Kenny, former commercial fisherman and member of O.F.F., Pembroke Pines, Florida, supported statements made during this hearing. He suggested adding a second biodegradable panel on traps. He felt the livelihoods of commercial fishermen were under attack. He recommended the retention of the 12-inch mutton snapper size limit, the status quo on Riley's Hump, and supported allowing each fisherman 100 fish traps.

Dan Olson, commercial fisherman and member of O.F.F., Lake Worth, Florida, recommended the status quo on fish traps, leaving Riley's Hump open, and retaining the 12-inch size limit for mutton snapper. He concurred with testimony from other meeting participants.

PUBLIC HEARING ADJOURNED AT 8:52 P.M.

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REEF FISH OBSERVATION REPORT

By Roger DeBruler

The commercial fishing vessel "My 3 Ladies" left the port located in Naples, Collier County, Florida, at 0900 hours on March 27, 1991. "My 3 Ladies" is a fifty-two foot vessel equipped for trap fishing. Her crew of three included Captain Marty Harris; First Mate and Cook Sam Pollard; and crewman William Oosterga. Travel time was 4.5 hours to the location of traps left from the previous fishing trip. The traps were left due to an engine breakdown, and the boat was forced to return to port. Each trap was approximately two feet wide by four feet long by three feet tall, and made of one inch by three inch steel wire mesh. The number of traps was ninty-three, but one was lost during the seven day soaktime (ninty-two traps were used between of March 27 and April 7).

The traps were baited with mullet (*Mugil cephalus*) and sometimes with by-catch fish that were deemed usable (Table 1). The mullet seemed to work best in attracting the target species (Table 2). The traps were retrieved and deployed from the back of the boat on the cue of the captain, who was monitoring the bottom and the number of fish on an electronic fish finder. These traps were usually laid down in lines of fifteen to twenty-three along the latitude-longitude lines. The soaktimes depended on several variables; the captain, time it took to retrieve and deploy the traps, bottom topography, and number of fish, but normally ranged from three to twenty hours. The traps were rebaited during the retrieval. Fish that were caught were removed from the trap, sorted and placed in a plastic container by species. After the line of traps were run, the fish were iced down whole in a large ice chest. The traps were then deployed at a new location. Every two days the fish were gutted and placed on ice in the hold of the boat.

Fifty-one by-catch species were caught. The air bladders on most were punctured. Most fish swam back under the surface; some fish floated (Table 3). The method used to puncture the air bladders was at the discretion of the crewmen; puncturing both stomachs and sides of fish was used. There is a need to standardize the procedure of deflating the air bladders of fish. Scars were observed on the stomachs of some Red Grouper (*Epinephelus morio*). Also, there

is a need for a survival/tagging study in these deeper waters. This would benefit both fish and fishermen. Only Red Grouper (*Epinephelus morio*) were found with roe. By-catch and undersized target fish were thrown back within two minutes of leaving the water.

The fishing depth ranged from one-hundred to one-hundred-twenty feet. Fishing took place off of Lee, Collier, Monroe Counties (Table 4).

Table 1. By-catch deemed usable as bait from 3/27/91 to 4/6/91

Species
Bar jack (*Caranx ruber*)
Black sea bass (*Centropristis striata*)
Crab (*Portunus sp.*)
Blue runner (*Caranx crysos*)
Creval jack (*Caranx hippos*)
Flame crab (*Calappa flammea*)
Jolthead porgy (*Calamus bajonada*)
Lane snapper (*Lutjanus synagris*)
Octopus (*Octopus sp.*)
Pigfish (*Orthopristis chrysoptera*)
Pinfish (*Lagodon rhomboides*)
Sand perch (*Diplectrum formosum*)
Tomate (*Haemulon aurolineatum*)
Vermillion snapper (*Rhomboplites aurorubens*)
White grunt (*Haemulon plumieri*)

Table 2. Number and weights of target species captured from 3/27/91 to 4/7/91

Species	Number Caught	Weights in lbs
GAG (*Mycteroperca microlepis*)	1	9
Gray snapper (*Lutjanus griseus*)	9	13
Gray trigger (*Balistes capriscus*)	14	45
Jolthead porgy (*Calamus bajonada*) / Pigfish (*Orthopristis chrysoptera*)	176	167
Lane Snapper (*Lutjanus synagris*)	816	583
Red grouper (*Epinephelus morio*)	473	3220
Vermillion snapper (*Rhomboplites aurorubens*)	130	82

Table 3. Quantity and condition of by-catch species captured and released from 3/27/91 to 4/7/91

Species	Number of fish	Condition	By-catch
Wenchmen (Pristipomoids aquilonaris)	2	bait	2
Vermillion snapper (Rhomboplites aurorubens)	2/6	swam/bait	8
Smooth puffer (Lagocephalus laevigatus)	3	swam	3
Remora (Echenis naucrates)	71	swam	71
Pinfish (Lagodon rhomboides)	52	bait	52
Eel worm (Myrophis punctatus)	2	dead	2
Lane snapper (Lutjanus synagris)	139/1/7	bait/bird/swam	147
Bar jack (Caranx ruber)	5	bait	5
Tomate (Haemulon aurolineatum)	143	bait	143
Bucktooth parrot (Sparisoma radians)	7	swam	7
Southern puffer (Sphoeroides nephelus)	1/45	bird/swam	46
Scrawled cowfish (Lactophyrs quadricornis)	78	swam	78
Black drum (Pogonias cromis)	1	swam	1
Orange filefish (Aluterus schoepfi)	19	swam	19
Octopus (Octopus sp.)	4	bait	4
Jackknife (Equetus lanceolatus)	5/38	floater/swam	43
Gray snapper (Lutjanus griseus)	1	swam	1
Inshore lizard fish (Synodus foetens)	6	swam	6
Spotfin butterflyfish (Chaetodon ocellatus)	1/8	bird/swam	9
Nurse shark (Ginglymostoma cirratum)	4	swam	4
French angel (Pomacanthus paru)	14	swam	14
White grunt (Haemulon plumieri)	39/9	bait/swam	48
Jolthead porgy (Calamus bajonada)	23/4	bait/swam	27
Flame crab (Calappa flammae)	87	swam	87
Creval jack (Caranx hippos)	20	bait	20
Crab (Portunus sp.)	9/227	bait/swam	236
Brown moray eel (Gymnothorax moringa)	5	swam	5
Gray trigger fish (Balistes capriscus)	97	swam	97
Blue runner (Caranx crysos)	3	bait	3
Pigfish (Orthopristis chrysoptera)	19/7	bait/swam	26
Planehead filefish (Monacanthus hispidus)	113	swam	113
Sand perch (Diplectrum formosum)	554/27	bait/swam	581
Red grouper (Epinephelus morio)	5/76/1753	decompose/ float/swam	1834
Bandtail puffer (Sphoeroides spengleri)	17	swam	17
Amberjack (Seriola dumerili)	1	swam	1
Spider crab (Libinia emarginata)	2/64	bait/swam	66
Basket starfish (Astiophyton muricatum)	1	swam	1
Spanish lobster (Scyllarides nodifer)	18	eaten	18
Spiny lobster (Panliarus argus)	5	eaten	5
Spadefish (Chaetodipterus faber)	1	swam	1
Burrfish (Chilomycterus schoepfi)	1	swam	1
Box crab (Calappa sp.)	4	swam	4
Fringed filefish (Monacanthus ciliatus)	4	swam	4
Toadfish (Ospanus beta)	1	swam	1
Starfish (Oreaster reticulatus)	14	swam	14
Starfish (?)	1	swam	1
Junonia (Scaphella junonia)	1	swam	1
Tulip (Fasciolaris sp.)	3	swam	3
Gag (Mycteroperca mircolepis)	1	swam	1
Black sea bass (Centropristis striata)	6	bait	6
Giant Hermit crab (Petrochirus diogenes)	3	swam	3

Table 4. Latitude and Longitude numbers of the fishing locations between 3/27/91 to 4/7/91.

N2544-W8231	N2544-W8230
N2601-W8268	N2544-W8231
N2601-W8267	N2545-W8233
N2601-W8264	N2544-W8232
N2621-W8235	N2544-W8234
N2631-W8236	N2545-W8232
N2621-W8237	N2544-W8233
N2605-W8244	N2545-W8235
N2603-W8243	N2544-W8235
N2601-W8232	N2544-W8233
N2537-W8230	
N2535-W8238	
N2537-W8229	
N2537-W8234	
N2536-W8231	
N2539-W8229	
N2538-W8226	
N2533-W8229	
N2536-W8229	
N2538-W8230	
N2544-W8229	

kjs: 1/5/93

MINUTES

GULF OF MEXICO FISHERY MANAGEMENT COUNCIL

REEF FISH PUBLIC HEARING

CRYSTAL RIVER, FLORIDA

OCTOBER 21, 1992

ATTENDANCE:

Gilmer Nix
Wayne Swingle
Kyla Seals

Approximately 31 Members of the Public were in attendance

The hearing was called to order by Chairman Gilmer Nix at 7:00 p.m., at the Plantation Inn and Golf Resort, Crystal River, Florida. He presented the opening statement which included the seven National Standards. The hearing was held to allow public comment on Draft Amendment 5 to the Reef Fish Fishery Management Plan, and a proposed rule to protect spawning aggregations of mutton snapper through spawning season fishing closures. Written comments would be accepted until November 9, 1992, and the public was invited to testify before the Council on any of the proposed changes during the November 18th session of the Council to be held in Sarasota, Florida beginning at 8:30 a.m. The public may again comment directly to the Secretary of Commerce when the proposed regulations are published. This comment period is open for 45 days.

Mr. Swingle presented the details of the proposed Draft Amendment 5 to the Reef Fish Fishery Management Plan.

The public was invited to comment:

Marshall Milam, commercial fisherman from Ocala, Florida, supported the use of fish traps. He reported all bycatch was alive at the time of release, and the majority swam down to the bottom. He felt the majority of mortality was from bandit rigs, and favored an increase in the mesh size limit for fish traps.

William Doles, Blue Channel Fisheries, Inc., Crystal River, Florida, stated he had seven red grouper vessels fishing with bandit rigs and all the vessels possessed fish traps which they occasionally used to fish with. Mr. Doles criticized data in the amendment, he felt much of the information did not apply to the Gulf of Mexico because it was information from 20 years ago. He felt the amendment was not distributed to the public in a timely manner prior to the hearings which did not allow for thorough review from the public. Mr. Doles stated he traveled 70 miles to the stressed area.

John Patrick, commercial fisherman from Williston, Florida, opposed the use of fish traps noting he fished from bandit rigs. He expressed concern regarding fishing mortality from lost fish traps. Mr. Patrick reported a loss of 26 traps in November 1991, and felt degradable hinges (jute) were not effective because a substantial amount of fish were killed.

Terry Patterson, commercial fisherman from Crystal River, Florida, supported the use of fish traps noting he fished with fish traps. He criticized the data in the amendment stating it did not apply to the Gulf of Mexico. He felt the Council should conduct a current study in the Gulf of Mexico prior to implementing regulations. Mr. Patterson opposed changes in the mesh size because it would result in bycatch of snappers, seabass, and grunts escaping. He reported angelfish were rarely caught as bycatch, and occasionally gray angelfish were caught as a bycatch. Mr. Patterson felt ghost traps were not a problem because fishermen used degradable material for fasteners. He opposed moving the stressed area boundary further offshore because it was currently 70 miles. He favored the implementation of a limited entry for the fish trap fishery, and supported status quo on trap numbers which was 100.

Milton Chambers, commercial fisherman from Hudson, Florida, supported the use of fish traps. He stated traps caused less mortality of undersized grouper as opposed to bandit rigs noting only one or two fish die each trip and that the fish swam to the bottom. He felt shrimp trawls and stone crab traps impacted the bottom, whereas fish traps did not.

Jim Kofmehl, commercial fisherman from Crystal River, Florida, supported the use of fish traps. Mr. Kofmehl reported he was member of the Stone Crab Advisory Panel, and had been a fish trap fishermen for approximately 20 years. He felt fish traps caused less mortality than bandit rigs and electric reels because each trap was buoyed and returned to shore. He stated that he lost only one fish trap in 1991 which was returned by another fisherman. Mr. Kofmehl stated ghost trap fishing was minimal because the traps were returned to shore after each trip. He noted the jute fasteners deteriorate in a approximately two weeks which resulted in them being replaced. Mr. Kofmehl felt the Council should place observers on the fish trap vessels prior to making their decision.

Marty Harris, commercial fisherman from Tallahassee, Florida, stated his residence was in Tallahassee; however, he fished out of Naples, Florida. He pointed out 2-inch by 4-inch mesh size would release all bycatch species such as lane and vermilion snapper, grunts, etc. Mr. Harris felt 2-inch by 5-inch escape windows would release six pound grouper. He stated there was virtually no fish traps lost because they were all returned to shore after each trip. He noted the fish traps had degradable panels, and the coral reef bottoms were not fished because the bottoms were low rock or mud. Mr. Harris informed he fished the same area as the shrimp and stone crab fishermen noting the shrimp vessels did more environmental damage as compared to the fish traps. Mr. Harris supported the use of fish traps, and felt they should be required to be returned to shore after each trip. He felt the amendment was unrelated to the Gulf of Mexico. He reported an observer (Mr. DeBruler, Mote Marine Laboratory) had been on his vessel and indicated almost all the bycatch swam down to the bottom after being punctured. Mr. Harris supported status quo on the number of fish traps which was 100 per vessel. He opposed moving the stressed area offshore, noting it would force many fishermen out of business. He stated the stone crab fishermen depended on the fish trap fishery as an income source for six months. Mr. Harris suggested the red grouper size limit be reduced to 18 inches.

David Curtis, stone crab fisherman from Steinhatchee, Florida, stated he fished for red grouper with traps during the summer months and returned his traps to shore after each trip. He stated that he targeted red grouper on hard flat bottoms because he could not use a hook-and-line effectively on these bottoms. Mr. Curtis favored status quo on the use of fish traps. He felt that species other than grouper were one-third of the catch. He felt the proposed mesh size would allow these species to escape. Mr. Curtis felt enforcement of fish traps was not a problem because all the fish trap fishermen were inspected with traps

on board their vessels. He opposed moving the stressed area offshore, noting it would force smaller boats out of the business. He felt the fish traps caused minimal damage to the environment, and only a few traps compared to the numbers of crab and lobster traps. Mr. Curtis stated the mortality of bycatch species was low because most of them swam to the bottom. He favored a limited entry system for the fish trap fishery.

Carl Page, commercial fisherman from Hudson, Florida, stated he operated a fish trap boat, and bycatch was used for bait or released. He reported that he returned his traps to shore after each trip. He felt the fish traps did not cause environmental damage to the bottoms noting that bandit rigs caused a substantial amount more damage. Mr. Page opposed moving the stressed area further offshore, and opposed changing the mesh size. He reported that he used jute on doors and lost only two or three traps because they puncture the air bladder on undersized fish, noting they swam to the bottom. Mr. Page felt the Council should conduct workshops with the fish trap fishermen prior to proposing any regulations. He stated there was minimal embolism mortality because the fish swam up inside the trap.

Thomas Gaitanis, Dunnellon, Florida, supported the prohibition of the use of passive gear. He felt the Council should not allow an increase in traps, however, should reduce the numbers and consider a limited access system for the fish trap fishery.

MEETING ADJOURNED AT 8:30 P.M.

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MINUTES

GULF OF MEXICO FISHERY MANAGEMENT COUNCIL

REEF FISH PUBLIC HEARING

APALACHICOLA, FLORIDA

OCTOBER 22, 1992

ATTENDANCE:

Roy Williams
Wayne Swingle
Kyla Seals

3 members of the public were in attendance

The hearing was called to order by Mr. Wayne Swingle at 7:00 p.m., at the Apalachicola Bay Chamber of Commerce in Apalachicola, Florida. Mr. Swingle presented the opening statement which included the seven National Standards. The hearing was held to allow public comment on a proposed amendment to the federal fishing rules for reef fish and a proposed rule to protect spawning aggregations of mutton snapper through spawning season fishing closures. Written comments would be accepted until November 9, 1992, and the public were invited to testify before the Council on any of the proposed changes during the November 18th session of the Council to be held in Sarasota, Florida, beginning at 8:30 a.m. The public may again comment directly to the Secretary of Commerce when the proposed regulations are published. This comment period is open for 45 days.

Mr. Swingle presented the details of the proposed Draft Amendment 5 to the Reef Fish Fishery Management Plan.

The public was invited to comment:

Barney Amerson, Sr., commercial fishermen, Apalachicola, Florida, felt the amendment was not specific enough, and would like to have special management zones for Florida similar to that for Alabama for building reefs. He felt it was unfair that the recreational fishermen could fish the same amount as the commercial fishermen, and felt that the regulations should be more equitable. He contended that the regulations should not be changed as frequently as in the past, noting it was difficult for people to keep up to date with the regulations when they were continuously being changed.

Robert Nimmo, Captain Nimmo's Supply House, Apalachicola, Florida, felt the majority of the problems with the fish population were related to habitat, noting the records and charts indicated better management and effort in the habitat zones used off of Alabama had a great increase in fish production. He commented in the inshore waters, the number of places to catch reef fish were limited due to the increase in recreational and charter boat fishing. He felt the focus should be on increasing the population in the reef fish fishery with special management zones such as the ones used in Alabama.

Marty Harris, commercial trap fisherman, Tallahassee, Florida, who fishes off Naples, Florida, felt research data was taken from localities outside Gulf waters, including the east coast of Florida, Jamaica, Virgin Islands, and Bermuda from time periods ranging from 1970 through 1983. He recommended the Council obtain current data from the Mote Marine Laboratory which was currently involved in grouper research.

Mr. Harris objected to increasing mesh size in fish traps, claiming legal fish, such as lane and vermilion snapper and useable bycatch would escape. He favored Option 2e, keeping the 1x2 inch and 2x2 inch mesh, and pointed out a 2x5 inch window would allow legal grouper to escape. He noted some species regarded as trash fish by some, had a market among certain ethnic groups and provided additional income to fishermen, and that tropical fish were rarely found in these localities. The fish trappers had to negotiate with the shrimp fishermen for designated areas to place their traps. Crab traps remained on the same bottom for up to eight months, causing more environmental damage, while fish traps off Collier County were customarily removed every two hours and did minimal damage to seagrass. He felt shrimp boats did considerable harm to seagrass beds, pointing out more bycatch was taken in one shrimp trawl haul than he caught in a 10-day trip with traps.

He recommended for Option 3, that all fish trappers be required to bring their traps in each day and allow the Marine Patrol to inspect them. He felt if permits were issued that allowance should be made for fishermen who had caught under the required amount to qualify due to extenuating circumstances. He felt recreational fishermen contributed to stock loss by inappropriate handling of released fish.

He urged Council to consider changing the grouper size limits to 18 inches explaining if it were increased, the recreational fishermen could catch more, and commercial fishermen could sooner meet their quota. This would benefit fishermen since expenses would accumulate over a shorter period of time and bycatch of undersized fish would also be reduced. He felt hook-and-line and bandit fishing were less efficient than trap fishing and not a reasonable option for fishermen. Changing gear and regulations was expensive, and often prevented targeting other species.

Mr. Harris felt Option 4 should remain status quo, noting Gulf fish trappers operated over various types of bottom, in which coral reefs were not present. He had no preference on Option 5, and favored Option 6c, status quo, 100 traps. Mr. Harris favored the preferred option to the landing requirements which required all reef fish in the fishery be landed with heads and fins intact. He favored having an income requirement under the permit requirements, and suggested it be 75 percent of the earned income.

PUBLIC HEARING ADJOURNED AT 9:45 P.M.

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jak: 11/25/92

DRAFT

MINUTES

GULF OF MEXICO FISHERY MANAGEMENT COUNCIL

REEF FISH PUBLIC HEARING

GALVESTON, TEXAS

OCTOBER 26, 1992

Attendance:

Frank Fisher
Wayne Swingle
Julie Krebs

15 Members of the Public were in attendance

The hearing was called to order by Chairman Frank Fisher at 7:00 p.m., at the Best Western Beach Front Inn in Galveston, Texas. He presented the opening statement which included the seven National Standards. The hearing was held to allow public comment on a proposed amendment to the federal fishing rules for reef fish. Written comments would be accepted until November 9, 1992, and the public were invited to testify before the Council on any of the proposed changes during the November 18th session of the Council to be held in Sarasota, Florida, beginning at 8:30 a.m. The public may again comment directly to the Secretary of Commerce when the proposed regulations are published. This comment period was open for 45 days.

Mr. Swingle presented the details of the proposed changes.

The public was invited to comment:

Richard Delaney, longtime commercial fisherman originally from Pensacola, Florida, moving his operations to Texas, expressed concern that trap fishermen would be forced out of work by the Council. He suggested a moratorium should instead be established on the trap fishermen (Option 5), limiting participation to professional fishermen. He opposed establishment of SMZs, and felt the Council should maintain status quo. He had fished the Alabama SMZ during the 1,000 pound trip limit and had not seen an increase in commercial vessels. As well as many other commercial fishermen, he had been in those areas since 1976 and had constructed hundreds of reefs. He believed that with the new 2,000 pound trip limits, persons where unlikely to fish the Alabama areas. He favored landing of reef fish whole, however, believed that migratory species should be headed at sea. He also spoke in favor of status quo on permits, and commented that there were already too many fishermen. He suggested a hardship exemption should be considered. He opposed an increase in the red snapper minimum size limit.

Jay Porter, Sr., commercial fishermen from Galveston, Texas, opposed an increase in the red snapper size limit. He commented that it was already too high and caused a large number of fish to die from embolism. He felt that the derby fishery, which occurred in 1991, was unfair, considering the backlog for federal permit renewals.

Bob Alfrey, commercial fishermen, from Hitchcock, Texas, opposed the 16-inch size limit. He suggested removal of the size limit for commercial fishermen, allowing landing of all fish, and raising the quota instead. He expressed his belief that the amendment release mortality levels were not correct, that mortality was much higher, and additional studies were needed.

George Caravageli, seafood dealer, operating the Liberty Shrimp Company in Galveston, Texas. He commented that Texas should have been represented more fairly with additional public hearings. He maintained the calamity which occurred in 1991 while permits were under process, was one of the largest problems with the quota being reached so quickly. He contended during quota years, more red snapper were landed than had been recorded by NMFS and the states. He opposed trap fishing off Texas, noting, however,that degradable panels would allow safe fishing. There was no alternative species, targeted off Texas for commercial fishermen, therefore, he urged the Council to open the 1993 season by February.

Frank Marinic, boat owner from Galveston, Texas, felt the trip limit in 1993 should be 5,000 pounds. He expressed concern for the use of explosives in the removal of oil and gas structures, which had killed thousands of reef fish. He questioned why observers from NMFS would not intervene when such deaths occurred. Mr. Swingle explained the observers were part of a study by NMFS on mortality off Texas. He noted that the Director of Minerals Management Services informed the Habitat Committee of studies currently underway to determine better methods of removing the structures, such as a mechanical cutter or cutting torch. The problem with cutting the structure was that a 15 foot clearance underwater had to be maintained, which risked the life of the diver cutting the structure.

John Williams, charter boat operator from Texas City, Texas, expressed his disbelief in the Council data and analysis. He cited as an example that a 15 inch size limit would reach 20 percent SPR in the year 2007, and a 0 inch size limit would also reach a 20 percent SPR in the year 2007. He commented that inconsistent data such as that, caused fishermen to distrust the stock assessment analysis. He requested consideration of different rules for recreational and commercial fishermen, such as different size limits. If actions were necessary to reduce the recreational quota in 1993, he favored (in order) a higher size limit, a closed season, or a reduction of the bag limit. He felt the commercial fishery should maintain a 13 inch size limit because of higher mortality, and noted that a 2,000 pound trip limit would fill the commercial quota rapidly.

Chris Lena, Jr., biologist in Seabrook, Texas, for the Texas Parks and Wildlife Department, collected recreational landings data. He advised that collected data only included legal size fish. Because illegal size fish were required to be returned to the water, they could not be included in the data. He suggested rather than risking the deaths of hundreds of illegal size fish, the fish should be retained and donated to the poor. He recommended a bag limit of the first seven fish caught for recreational fishermen. He contended the release mortality was much higher than 33 percent.

George Caravageli, believed a larger size limit would create a smaller release mortality. He noted that Texas allowed 7 red snapper per day, per person, or 14 on a two-day trip, all of which could be sold. He suggested the 1 to 2 pound sales class could be filled by imports from Mexico, which were currently $1.85 per pound, however, a 16 inch size limit would force the market to replace all of the domestic product with imported product.

Richard Delany, commented that closing of the red snapper season had forced fishermen to target other species such as vermilion or grouper, and in the future the Council should examine the impact on other species.

MEETING ADJOURNED AT 9:10 P.M.

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DRAFT

MINUTES

GULF OF MEXICO FISHERY MANAGEMENT COUNCIL

REEF FISH PUBLIC HEARING

BILOXI, MISSISSIPPI

OCTOBER 28, 1992

Attendance:

Joe Gill
Wayne Swingle
Julie Krebs

31 Members of the Public were in attendance

The hearing was called to order by Chairman Joe Gill at 7:07 p.m., at the Gulf coast Research Laboratory, J. L. Scott Marine Education Center and Aquarium Auditorium in Biloxi, Mississippi. He presented the opening statement which included the seven National Standards. The hearing was held to allow public comment on a proposed amendment to the federal fishing rules for reef fish. Written comments would be accepted until November 9, 1992, and the public were invited to testify before the Council on any of the proposed changes during the November 18th session of the Council to be held in Sarasota, Florida, beginning at 8:30 a.m. The public may again comment directly to the Secretary of Commerce when the proposed regulations are published. This comment period was open for 45 days.

Mr. Swingle presented the details of the proposed changes.

The public was invited to comment:

Jim Twiggs, representing the Charter Boat Captains Association, approved of an increase in red snapper size limits above 13 inches, and reported the association would be conducting a formal poll on the subject. He reported numerous pleasure boats had landed illegal numbers of red snapper, with little enforcement of size or bag limits.

Robert Parker, commercial fisherman for 20 years, informed that at least 300 recreational boats had been landing 7 red snapper per person. He objected to continued access to the fishery for the recreational fishermen, when the commercial fishermen had only fished for 53 days in 1992. He recommended the closure should apply to all fishermen. He also supported closure to all during the spawning season, and the proposed trip limits.

Mark Miller, part-time charterboat fisherman, from Gautier, Louisiana, and a member of Mississippi Gulf Fishing Banks, Inc., supported SMZs and the use of hand-held rod and reel in the two northern zones. He felt the Council should have included the Mississippi fishing banks as SMZs, with a one hook restriction.

He noted that he had written to the Council about single hook limits on reefs in the past. He supported the increase in the red snapper size limit, and added that he uses a 16 inch limit on his charterboat. He had tagged 4,000 red snapper and believed the growth rate was 2 times higher than was indicated in the Amendment. The commercial effort in January, 1992 was so high on a Mississippi reef, he reported the average size had dropped to 14 inches.

Jean Williams, represented Save America's Seafood Industry coalition (SASI), her statement is attached. She expressed concern that scientists who review applications for SMZs may be biased.

Kay Williams, wife of a fourth generation commercial fisherman, from Pascagoula, Mississippi, contended that SMZs were not fair to commercial fishermen. She objected to an increase in the red snapper size limit, because it would only produce more waste. She supported Option 1 for permits, i.e., qualifying for 50 percent earned income in one of three previous calendar years. She felt that commercial fishermen should be allowed to fish throughout the year. She also pointed out that commercial fishermen generated taxes that were important to the economy.

John Lambeth, charterboat operator and sport fisherman, from Biloxi, Mississippi, had fished snapper for 45 years. He supported prohibition of commercial fishing on artificial reefs, and therefore supported establishment of SMZs. He favored the landing of all reef fish with heads and fins intact, and increasing the red snapper size limit to 16 inches. Earned income requirements, he felt, should be necessary for commercial permittees.

Ray Lenaz, recreational fisherman, from Biloxi, Mississippi, and a member of the Mississippi Gulf Coast Conservation Association (GCCA), which did not take a position on fish traps. He felt the current permit rule was best. He supported the SMZs, however felt they should be extended to include Mississippi reefs. He favored the use of hand-held rod and reel only, with a single hook. He supported the landing of reef fish with heads and fins intact, and felt the size limit could be increased to 16 inches immediately, because the commercial fishermen had proven in the past they would have no problem filling their quota.

Tom Becker, charterboat fisherman, from Biloxi, Mississippi, favored enforcement of the extension of a longline limit further offshore. He contended that charterboat operators supported the gulf coast by bringing in millions of tax dollars to Mississippi.

Doug Harrel, expressed concern that hookline people pilfer from the commercial industry.

Pete Umdenstock, charterboat fisherman, from Gulfport, Mississippi, and a member of the Mississippi GCCA, noted the GCCA, which consisted of commercial and recreational fishermen, felt preservation of the resource was a major concern and proposed the measures by the Council would preserve the red snapper fishery. He also stressed his support for the increase of the size limit.

Kenny Bahanovich, a charterboat operator, from Biloxi, Mississippi, reported the United States Coast Guard had not been enforcing the rules, and stated that some fish houses recorded red snapper as grouper.

Paul Berket, suggested longlines should be moved further offshore. He favored implementation of the SMZs.

Jean Williams, felt the commercial industry was not being treated fairly. She reported that restaurants continued to buy red snapper from recreational boats. She suggested a regulation for recreational fishermen prohibiting sales to restaurants and fish houses. She related an incident in which she had reported an illegal sale of red snapper to enforcement officers.

Kenny Bahanovich, opposed limiting persons to 2,000 pound trip limits, because they would then fish the nearest area which happened to be the artificial reefs.

Kay Williams, opposed the 2,000 pound trip limit, because the trip could not be paid for if they had to go further offshore.

Jean Williams, suggested that the fishery was being strongly affected by pollution, and that all fishermen should fight to reduce pollution in the Gulf.

MEETING ADJOURNED AT 8:25 P.M.

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For the record;

I represent the Save America's Seafood Industry Coalition. The membership of S.A.S.I. has a recommendation for Amendment 5, Pertaining to the Special Manag. Area **Tear it up, Throw it out!!!!** Start over with a new realistic proposal. A fair and objective solution for all user groups. This amendment is unconstitutional. S.A.S.I. strongly objects to this amendment for the following reasons. The most blatant being the public taking of Government waters, showing legal bias towards one user group, the historical red snapper fishing fleet. The Federal Management plan, for the federal waters off the coast of Alabama, is a good example of the bias towards the commercial fishing industry. Although the charter boat industry chose to build artificial reefs and wrecks in federal waters, in the same manner that the commercial fishing industries have been doing for years, they now want special privileges in federal waters. The projected proposal restricts gear allowed on a boat, therefore the historical snapper boats will be eliminated and excluded from those areas. To restrict snapper boats in these FMP areas because of their choice of gear is preposterous. The main purpose of amendment 5, as well as the original proposal, seems to have a single ongoing objective, continued harassment to force all commercial fishermen out of business and out of the Gulf of Mexico. Number 7 of number 6 on page 5 of this projected amendment states: "To maximize net economic benefits from the reef fish fishery." In order for National Marine Fisheries/Gulf Coast Council to achieve that projected maximum income they must allow all fishermen including

the commercial red snapper fleets to fish these areas. To maximize net income, the commercial red snapper fleet must be allowed access to the FMP and allowed to use their most effective fishing gear. Amendment 5 is perpetuated toward the continued destruction of the commercial fishing industry therefor this proposal is unconstitutional.

We the members of the Save America's Seafood Industry Coalition demand a new less bias proposal.

Signed this 28th day of October, 1992.

Jean Williams
President
Save America's Seafood Industry Coalition

jak: 12/15/92

DRAFT

MINUTES

GULF OF MEXICO FISHERY MANAGEMENT COUNCIL

REEF FISH PUBLIC HEARING

SUMMERDALE, ALABAMA

OCTOBER 29, 1992

Attendance:

Robert Shipp
Albert King
Vernon Minton
Wayne Swingle
Julie Krebs

25 Members of the Public were in attendance

The hearing was called to order by Chairman Robert Shipp at 7:10 p.m., at the Baldwin County Electric Membership Corporation in Summerdale, Alabama. He presented the opening statement which included the seven National Standards. The hearing was held to allow public comment on a proposed amendment to the federal fishing rules for reef fish. Written comments would be accepted until November 9, 1992, and the public were invited to testify before the Council on any of the proposed changes during the November 18th session of the Council to be held in Sarasota, Florida, beginning at 8:30 a.m. The public may again comment directly to the Secretary of Commerce when the proposed regulations are published. This comment period was open for 45 days.

Mr. Swingle presented the details of the proposed changes.

The public was invited to comment:

Mr. Roland Walker, Sr., charterboat and commercial fisherman from Orange Beach, Alabama, presented a history of the construction of artificial reefs off Alabama beginning in the late 1940s, when there were no artificial reefs and only two small natural reef areas. He pointed out that historically, in the years through the late 1950s, only charter vessels or the state had placed reefs offshore. Currently, there were over 6,000 to 7,000 small reefs, many of which were created and fished by charter vessels. He opposed increasing the red snapper size limit, pointing out 13 inches was perfect for one meal. He suggested that instead, a maximum size limit be set protecting spawners, since the larger fish tended to return to the bottom when released.

Ricky Burns, representing the Orange Beach Fisherman's Association, from Orange Beach, Alabama, suggested that zone C of the SMZs should end at the 50 fathom curve because the charterboat fishermen generally did not fish past that curve. He favored establishment of the three SMZs off Alabama. He supported restricting the use of gear within the SMZs to three hooks with hand-held rod and reel, and the requirement that other prohibited gear aboard a vessel must be stored or not rigged for fishing. He objected

to the current permit requirements, which had been designed so that anyone could obtain a commercial permit. He felt permits should be limited to valid commercial fishermen. He pointed out that 90 percent of the charter boats in the association already utilized a 14 inch size limit, and would continue to remain one inch above the federal regulation.

Gene Myers, of the Orange Beach Marina, from Orange Beach, Alabama, pointed out the importance of charter fishing to the Orange Beach economy. Of 70 charterboats, the majority of the boats fished red snapper, he informed. He felt that red snapper were more valuable economically to Orange Beach as recreational fish rather than as commercial fish. He supported establishing SMZs with gear restrictions. He pointed out that artificial reefs had helped the fishing industry, which made the Alabama area unique in the Gulf and recommended protecting it from overfishing.

Kay Williams, wife of a commercial fisherman, suggested that permit requirements be modified to require 50 percent of total income be from commercial fishing only. She opposed the size limit increase for red snapper, pointing out it would result in more waste from mortality of undersized fish and eliminate the market category for 1 to 2 pound fish. She offered that undersized fish should be landed and donated to the needy. She pointed out that commercially landed fish generated tax revenue from the captain and crew, fish houses, wholesalers, and retailers. She opposed SMZs, which were unfair to commercial fishermen, because they generated more recreational fishermen, impacting the resources. Limitation of gear would place even more hardship on the commercial fishermen. She recommended SMZs only be used for prohibiting fishing to everyone.

Jean Williams, represented Save America's Seafood Industry Coalition (SASI), her statement is attached. She expressed concern that scientists who review applications for SMZs may be biased.

David Walter, reefmaker from Fairhope, Alabama, informed that he had constructed 6,000 to 7,000 individual artificial reefs (frequently 10 reefs on each trip) in the Alabama areas, utilizing a barge. He supported creation of the SMZs to allow control of the harvest in the area.

MEETING ADJOURNED AT 8:13 P.M.

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For the record;

I represent the Save America's Seafood Industry Coalition. The membership of S.A.S.I. has a recommendation for Amendment 5, Pertaining to the Special Manage Area **Tear it up, Throw it out!!!!** Start over with a new realistic proposal. A fair and objective solution for all user groups. This amendment is unconstitutional. S.A.S.I. strongly objects to this amendment for the following reasons. The most blatant being the public taking of Government waters, showing legal bias towards one user group, the historical red snapper fishing fleet. The Federal Management plan, for the federal waters off the coast of Alabama, is a good example of the bias towards the commercial fishing industry. Although the charter boat industry chose to build artificial reefs and wrecks in federal waters, in the same manner that the commercial fishing industries have been doing for years, they now want special privileges in federal waters. The projected proposal restricts gear allowed on a boat, therefore the historical snapper boats will be eliminated and excluded from those areas. To restrict snapper boats in these FMP areas because of their choice of gear is preposterous. The main purpose of amendment 5, as well as the original proposal, seems to have a single ongoing objective, continued harassment to force all commercial fishermen out of business and out of the Gulf of Mexico. Number 7 of number 6 on page 5 of this projected amendment states: "To maximize net economic benefits from the reef fish fishery." In order for National Marine Fisheries/Gulf Coast Council to achieve that projected maximum income they must allow all fishermen including

the commercial red snapper fleets to fish these areas. To maximize net income, the commercial red snapper fleet must be allowed access to the FMP and allowed to use their most effective fishing gear. Amendment 5 is perpetuated toward the continued destruction of the commercial fishing industry therefor this proposal is unconstitutional.

We the members of the Save America's Seafood Industry Coalition demand a new less bias proposal.

Signed this 28th day of October, 1992.

Jean Williams
President
Save America's Seafood Industry Coalition

llm:11/24/92

DRAFT

MINUTES

GULF OF MEXICO FISHERY MANAGEMENT COUNCIL

ONE HUNDRED AND TWENTY-THIRD MEETING

SARASOTA, FLORIDA

NOVEMBER 18-19, 1992

The one hundred and twenty-third meeting of the Gulf of Mexico Fishery Management Council was called to order by Chairman Philip Horn at 8:30 a.m., November 18, 1992. Council members in attendance were:

VOTING MEMBERS

David Anthony	Florida
Jane Black	Louisiana
Julius Collins	Texas
Frank Fisher	Texas
Scott Gordon (designee for Joe Gill)	Mississippi
Philip Horn	Mississippi
James Jenkins	Louisiana
Andrew Kemmerer	NMFS
Albert King	Alabama
Vernon Minton	Alabama
Russell Nelson	Florida
Gilmer Nix	Florida
William Perret	Louisiana
L. Don Perkins	Texas
Ralph Rayburn (designee for Andrew Sansom)	Texas
Robert Shipp	Alabama
Thomas Wallin	Florida

NONVOTING MEMBERS

Conrad Fjetland (designee for James Pulliam)	U. S. Fish and Wildlife Service
Douglas Fruge (designee for James Pulliam)	U. S. Fish and Wildlife Service
Larry Simpson	Gulf States Marine Fisheries Commission
Lt Karl Moore (designee for RADM Card)	U.S. Coast Guard

STAFF

Wayne Swingle	Executive Director
Terrance Leary	Fishery Biologist
Tony Lamberte	Economist
Steven Atran	Population Dynamics Statistician
John Pedrick	NOAA General Counsel
Cathy Readinger	Administrative Officer
Laura Mataluni	Administrative Assistant
Kyla Seals	Secretary

OTHER PARTICIPANTS

William Lindall, National Marine Fisheries Service, St. Petersburg, Florida
Joe Powers, SEFC, Miami, Florida
Chris Koenig, Florida State University, Tallahassee, Florida
Joe Clem, National Marine Fisheries Service, Washington, D.C.
George Brumfield, Moss Point, Mississippi
Bob Zales II, Panama City, Florida
Larry Goins, Summerland Key, Florida
Gene Davis, Bradenton, Florida
David Gryzik, Bradenton, Florida
Robert Robinson, Everglade, Florida
Matthew Brennan, Sarasota, Florida
Charles McCann, Miami Beach, Florida
Wendall Sauls, Panama City, Florida
William Parks, Boynton Beach, Florida
Marty Harris, Naples, Florida
Roger DeBruler, Englewood, Florida
Jean Williams, Pascagoula, Mississippi
Kay Williams, Pascagoula, Mississippi
Richard Nielsen Jr., Dania, Florida
Bill Moore, Big Pine Key, Florida
Linda Johnson, Kenner, Louisiana
Stephen Moore, Davie, Florida
Albert Pflueger, Miami, Florida
Richard Nielsen Sr., Ft. Lauderdale, Florida
Mike Bailey, Gulf Shores, Alabama
Tom Murray, Tampa, Florida
Ed Cummings, Sarasota, Florida
William Dole, Crystal River, Florida
Jerry Sansom, Melbourne, Florida
Robert Spaeth, Madeira Beach, Florida
Richard MacKinnon, Islamorda, Florida
Robert Sierpiejko, Tavernier, Florida
Wilma Anderson, Aransas Pass, Texas
Pete Aparicio, Victoria, Texas
Doug Blevins, Panama City Beach, Florida
Lamar D Ogden,
Robin O'Brien, Tampa, Florida
Christine Parks, Boynton Beach, Florida
Casey Fitzgerald, Florida

Peter Gladding, Key West, Florida
Tom Blythe, Marathon, Florida
Billy Sandefur, Ft. Lauderdale, Florida

o **Adoption of Agenda**

The agenda was adopted with the following modifications: Due to the extensive requests for public testimony, defer Item IV. Proposed Committee Membership, to first item of business on Thursday morning; and the following additions under "Other Business": Memorandum of Understanding for the RecFin(SE), Proposed Council Meeting Locations for 1993.

o **Approval of Minutes**

The minutes of the Gulf Council meeting held in New Orleans, Louisiana, on September 16-17, 1992, were approved with the following corrections: (underlined) page eight, third paragraph, "Mr. Minton felt it may not be difficult to justify an economic crisis in order to protect the proposed special management areas." Page 36, Director's Reports, fourth sentence, "Mr. Rayburn and Dr. Rosen would serve as proxies on the Council to Mr. Andrew Sansom. First page, under NonVoting Members, RADM Loy should be RADM Card.

o **Public Testimony**

Bob Zales II, charterboat fisherman from Panama City, Florida also representing the Destin Charterboat Association, they favor the preferred option: prohibit the use of fish traps. They support the Special Management Zones for Alabama, the two northern tracts A and B, and tract C out to 50 fathoms. They support adoption of Alternative Option 1: Adopt the framework measure in the FMP. For Landing Requirements, they support the Preferred Option: Require that all reef fish species in the fishery be landed with heads and fins intact with the exception that fishermen, both recreational and commercial, use cut bait and some of the bait used is reef fish. They suggest status quo under Permit Requirements, and suggest the current minimum size limit of 13 inches for red snapper be retained. He advised the primary reason for retention of the 13 inch size limit was that over the years in dealing with the management system of different species of fish, the size limit for king mackerel was proposed to be changed repeatedly since it was initiated in the FMP. They have argued to maintain the status quo and believe the reason why king mackerel has returned as prolific was because the size limit had not changed. They believe the current size limit on red snapper was part of the reason why red snapper are currently more abundant in the Gulf. This has been an unusual year in Panama City and Destin and the red snapper are more abundant than previous years. They suggest the size limit remain unchanged but if a larger size limit is implemented, they support the Council's proposal in the Amendment.

Larry Goins, trap fisherman from Key West, stated the Gulf of Mexico trap fishery has always provided a needed supplement to the fishermen's total income especially during the summer months when stone crab and lobster fishing was closed. A closure of the trap fishery would cause severe economic problems and could be the straw that destroys the fishermen's future. He stated there were 87 active trap fishermen in the Gulf of Mexico, 42 use fish traps exclusively, and 45 fishermen use traps part time. Trap fisheries had landings that were 6.8 percent of total reef fish landings in 1991. The trap fishery in the Gulf of Mexico has proven itself to be a viable and sustainable part of the commercial reef fish fishery. Despite extensive research, fish traps have not been documented to have harmful effects claimed by those obsessed with their elimination. Over 1,600 reef fish permits were issued to Florida fishermen in 1992 and only 87 or 4.9 percent of those permit holder use fish traps. It is difficult to understand the fixation by certain individuals with fish traps when they are the smallest component of

the commercial fishery and have the least impact on overall mortality. Regarding size selection for red grouper, a comparison of hook-and-line with fish traps are found to be the same with no hook and damage to mouth or stomach. With the event of jute it provided for the release of fish. He related of the seven fishermen from Key West they all buoy their lines which enables them to tell where they were fishing. He advised other possibilities of habitat destruction were as follows: butterfish trawls, groundfish trawls, fish traps, grappling, anchoring, all commercial boats, recreational boats, longlines, shrimp trawls, crawfish traps, crab fish traps, ocean liner anchorings, headboat anchoring, divers collecting dead bottom, pollution with chemicals, sewage, mosquito spray, and oil, etc. He contended fish trappers were targeted for trying to save their traps with a grapple.
Ms. Black asked what was the incidence of catching American red snapper in the traps. Mr. Goins responded they would not qualify for the red snapper program and probably caught less than two tenths of one percent in the last year. They do not target red snapper and the fish caught seem to be two to three years olds, averaging two to three pounds.

Gene Davis, favored Option One since retention of the 20 to 15 fathom line was essential to his survival as a fishermen. Since the 20 fathom line was imposed, there have been more vessels sinking. The Coast Guard stated there was a law enforcement problem because their vessels were not large enough to go to the areas that trap fishermen must fish. He lost two vessels due to weather conditions. In November 1990 at the Tampa meeting there was a fishermen from Ft. Myers or Pine Island who was told there was no safety concerns as a result of the laws. In November 1991, that fishermen was lost at sea. He maintained the Council was implementing laws to starve the fishermen out for the last four years. He also favored status quo on traps.

David Gryzik, captain longline vessel, stated the AP, SSC, and the SEP have supported the fact that there was no reason for most of the current laws. The red grouper stock assessment indicates it was not overfished and there were indications that the target SPR of 20 percent for the breeding stock has been reached. He reported implementation of the 20-fathom line removed approximately 60 percent of their working bottom. This concentrated all fishermen into a smaller area and stressed the area. He supported moving the line to the 15 fathom boundary since by opening the area just by 5 fathoms that would almost double the amount of bottom available. He also supported status quo on traps.

Robert Robinson, Everglades City, supports status quo on fish traps and suggested moving the stressed area in since the original concept was to separate the sports fishermen and commercial fishermen. He contended there was 60 miles between the Everglades National Park and the Keys and there were not that many sports fishermen in that area.

Ms. Black questioned if he fished areas were angelfish were present. Mr. Robinson responded he has never seen an angelfish in his traps.

Matthew Brennan, longline fisherman, stated there was not a lot of bottom out past the 30 fathom line. With size limits and quotas he believed they should be allowed to fish any area.

Charles McCann, longline fisherman, requested the Council open the longline restricted area to 15 fathoms. He reported when it was legal he fished 80 percent of the time from 15 to 30 fathoms since that was were most of the bottom was. Out past the 30-fathom line the bottom was sand. He offered to have an observer on his vessel to prove that less than 3 percent of his catch was under 5 pounds.

Wendall Sauls, red snapper fisherman from Panama City, Florida, did not support changing the permit income qualifier. He contended the rules were constantly changing without the benefit of seeing if they work. He supports retention of the 13-inch size limit and supports the emergency action and requests it be returned to Dr. Fox without change. He objected to coming to meeting after meeting to discuss the same problems and requested the Council finalize their decisions.

Dr. Kemmerer noted Mr. Sauls supported the proposed emergency rule and questioned if there was any rationale supporting the 5,000 pound threshold rather than 4,000, 6,000 etc. Mr. Sauls responded he harvested 60,000 pounds last year and was barely making a living and contended an individual could not make a living on 5,000 pounds. He contended the part time fishermen should be eliminated and recreational fishermen in both Florida and Texas can sell fish. He stated the number of permitted boats needs to be reduced. Dr. Nelson asked if Mr. Sauls was a directed red snapper fishermen. Mr. Sauls responded until this year he had never fished for anything else. He advised on an average trip of 7,000 to 10,000 pounds of red snapper there might be 200 pounds of other species such as croaker, pogie, grouper. Dr. Nelson asked how many pounds of red snapper he needed to land just to break even. Mr. Sauls responded this year he caught 60,000 pounds and did not make anything on it since the price dropped from $3.00 to $1.50. He was not making enough money to keep his boats operational.

Bill Parks, commercial diver for tropical fish, member of the Florida Keys National Marine Sanctuary Advisory Council, and member of the Florida Marine Life Association, he stated he first voiced his concern on traps in a letter to the Council dated January 1990. He referred to a letter dated November 1, 1992 sent to the Gulf Council which explains their position and justification regarding fish traps. He contended the arguments were based on their knowledge of fish traps as well as the records of the South Atlantic Council and newspaper articles. He noted in response to tropical fish collectors voicing their opinions regarding traps, a number of fish trap fishermen retaliated at these hearings. Its obvious that such attacks are spawned by the desire to get even, shift the burden of responsibility to another fishery, and to try to divert the Council's attention from the issue at hand, i.e., the use of fish traps in the Gulf EEZ. A couple of trappers have even gone so far as to say "they have recently become tropical fish collectors" after which they presented largely inaccurate data and twisted hypotheses. The trappers testimony proves that the act of picking up a net and jumping in the water does not make someone a fish collector and that trappers have no concept of what their activities are doing to the resource. He contended most of the fish trappers and their representatives defending fish trapping in the Gulf are the same people who defended fish trapping in the South Atlantic. At the outset of those hearings the trappers denied ghost traps, the severity of violations, large bycatch, mortality in traps, that explosive decompression was a problem, trapping on the reefs, damaging reefs, damage to other fisheries, and denied that CPUE for traditional food fish was declining. He also contended they avoided saying that they were becoming increasingly dependent on ornamental fish bycatch. Through the course of the hearings in the South Atlantic all of these claims were proven false not only by the evidence presented by the opposition, but by the contradictory testimony of the trappers themselves and supporting seafood dealers. Later in the proceedings when denial no longer worked, the trap industry suggested several solutions involving trap limitations, escape gaps, ect.

Mr. Parks stated the Gulf trappers are denying everything and were faced with video documentation filmed on the south side of Big Pine Key. Their representative, Mr. Moore, in testimony in Key West admitted to it's accuracy and claimed that it does not happen in the Gulf. Mr. Parks pointed out Mr. Moore was the same individual who defended trapping in the South Atlantic. Diver reports confirm that the video accurately depicts what occurs in the Gulf. Concerning ghost traps, there is video and written documentation of their presence in the Gulf EEZ. In addition, a number of trappers stated that none of the opposition dives in the deep waters of the Gulf where they trap and that there were no ornamentals present. He contended there was video documentation gathered in deep water outside of the stressed area already submitted to the Council that documents the presence of angelfish. The trappers also stated they rely upon grouper and snapper and that the stocks were fine. He related he found this interesting considering that a few weeks ago some trappers fishing in the Gulf EEZ became very upset when they learned that there large catches of ornamental species could no longer be landed. They were prohibited by the Florida Marine Life Rule. As a solution to the ornamental problem that does not exist, the trappers have suggested a 2 x 5 inch escape window. He contended this was nothing more than another placebo. They measured a small sampling of angelfish, parrotfish, cowfish,

and other species and found that escape windows greater than 3 x 9 inch were necessary. He contended the effects and results of trapping operations are offshore or under water where there was little enforcement. He finds it contradictory that the 1991 traps only catch report lists only two pounds of angelfish when several trappers have testified that "the most common angelfish we get is the gray angelfish". One adult gray angelfish weighs more than two pounds. There is no question that the two pound figure was grossly inaccurate. Fish loss to mortatlity in traps are not counted at all. He maintained if the trappers were successful in convincing the Council to continue using this gear type, many would continue to optimize their yield with no regard to the short-and longterm impacts. In the case of the tropical fish industry, there was absolutely no question that fish traps are a nonsustainable gear. He noted when the Marine Life Rule was developed, the tropical industry agreed to support upper size limits on angelfish. This measure was implemented to protect the reproductively mature individuals in order to guarantee healthy recruitment of those species. In supporting such limits they voluntarily gave up the most expensive specimens they harvested.

Mr. Perret referred to Mr. Park's comments regarding lack of enforcement. Mr. Parks concurred there was no enforcement at the stressed area depth and distance. Mr. King asked how much area of the Gulf the tropical industry considered to be prime production areas. Mr. Parks responded the prime production area was the Florida Keys and some of the area off of Tampa and Naples. The actual collecting would occur out to 120 feet of water where the angelfish species were the prime target. Mr. King asked how many traps they observed. Mr. Parks responded it varied and depends on where they were diving. Mr. Parks stated they maintain that the continued use of traps and expansion in the Gulf would compromise the recruitment of the blue angelfish in the Keys. Mr. King questioned if they had biological and scientific data to validate their contention. Mr. Parks responded they only have their observations.

Mr. Horn questioned if trappers harvest more angelfish than divers. Mr. Parks responded yes. Dr. Shipp asked how many ornamental collectors were in the Keys. Mr. Parks responded there were more licenses than actual working collectors. The current estimate was approximately 150 collectors which produced several million dollars per year. Ms. Black asked if members of the group he represented used chemicals for collecting purposes. Mr. Parks responded yes. Ms. Black asked how the 10-inch size limit was imposed. Mr. Parks responded they can not be possessed on the boat or possessed on land unless written documentation stating they were from a foreign country. Ms. Black questioned if it was a state regulation. Mr. Parks responded the Florida Marine Life Rule was implemented by the Florida Marine Fisheries Commission. Ms. Black asked if the Florida Marine Fisheries Commission imposes a minimum or maximum size limit on the trap fishery. Mr. Parks responded the trappers were under the same restrictions and were allowed to land up to 20 ornamental fish, can not exceed the angelfish size limits with no more than 5 of the 20 being angelfish, and they must be landed alive. Ms. Black questioned where the information was obtained that trappers were landing extensive quantities of the fish. Mr. Parks responded from the trappers themselves.

Dr. Kemmerer inquired about the disposition of angelfish landed by fish trappers. Mr. Parks responded some fish are targeted for the ethnic markets in Miami and other used as bait.

Marty Harris, fish trapper from Naples, Florida, stated he had a biologist from Mote Marine Laboratory spend 10 days on his boat researching bycatch, bycatch of tropical fish, and mortality of released fish. In the 10 day trip, he pulled 1,740 traps. He caught a total of 73 tropical fish all of which were released alive with the exception of two jackknives that swam for one minute before they went down. He caught 7 parrotfish and 14 angelfish. He stated he caught one tropical for every 23 traps pulled. The area he covered encompassed hundreds of square miles. There were very few tropical fish landed in the Gulf of Mexico and the tropicals landed were usually landed in the Panhandle. One fish house in that area who buys the majority of the grays indicated he probably gets a total of approximately 200 pounds a year. He referred to data for 1989, 1990, and 1991 which indicate the majority of violations were in the

recreational sector and the highest incident of all violations in the commercial sector was 24 for grouper fishermen. He noted recreational fishermen had an average of 250 violations per year.

Mr. Harris referred to Amendment 5 which indicated that fishermen in the Gulf of Mexico lose an average of five percent of traps per year. He explained the reason was that the majority of the fishermen buoy their traps and retrieve them on every trip. A small fraction of fishermen off the Tortugas do not retrieve their traps every trip since they have a minimum of 120 miles to travel carrying the traps. The type of fishing they do in that area was different than the rest of the Gulf of Mexico. Fishermen in the northern Gulf fish smaller traps and were mainly targeting red grouper. He contended there was no coral bottom or reefs where they fish in the Gulf of Mexico. Mr. Harris stated a 2 x 4 inch mesh will allow everything to escape. He noted 18 percent of his catch last year was the snapper that the Council would release with a 2 x 4 inch mesh and he could not give up 18 percent of his income. The bycatch was lane and vermillion snapper and grunts. The size limit was eight inches. He stated his reports from last year indicate that the pounds and numbers of fish caught over 12 inches amounts to one percent of lane snapper and vermillion, they were all 9, 10, and 11 inch fish. Escape panels were cut into the traps to release the fish under eight inches. He noted the fish houses in Collier County up to Ft. Myers rely on the finfish from fish traps. The fish house he uses had 11 longline boats and now has none. When the longlines were moved 120 feet, 50 percent of the boats folded. The fish houses have indicated if they lose all the finfish, they can not survive on five months of stone crabs.

Mr. Harris pointed out they were the only regulated industry which must indicate what day they leave, what day they come in, how many pounds were caught, whole, gutted, etc. Eliminating fish trappers would eliminate good data collectors. He stated there were no more than 2,000 traps at any given time in Gulf waters. He related he caught well over 10,000 pounds but only brought approximately 4,000 pounds to the dock because of size limitations. He also released 1,834 grouper and they all survived. He contended they have a very low mortality rate. The average fishermen had to travel 35 to 70 miles before he puts a piece of gear overboard. He referred to his observation report regarding tropicals which indicates no blue angels, queens, frenches, only gray angels. He stated fishermen who fish 100 percent of the time need 100 tags. Fishermen who are not fishing the 100 traps carry extra tags in the event tags are lost or broken. He related at the same time he was having a survey done a survey was done on a longline and bandit boat. He had 43 species of bycatch caught in the traps and the bandit boat caught 73 species of bycatch and his mortality rate was higher because they were caught by hooks. Mr. Harris stated there was no fishery that trappers could change to.

Ms. Black asked if the fish trap fishery was influenced by the mechanism that the stone crab fishery went through on reduction on the numbers of traps. Mr. Harris responded previously they were able to fish as many traps as they wanted but the majority never fished over 200 traps. They were reduced from 200 down to 100 traps. The fishermen off the Tortugas could really use 200 traps because of the type of fishery they have. Ms. Black questioned if a trap fishermen would be prone to obtain 100 trap tags in the event further reduction programs were instituted. Mr. Harris responded yes. Mr. Rayburn recalled Mr. Harris testified that if traps were forced to move further offshore there would be user conflicts with the longliners. Mr. Harris responded yes. Mr. Rayburn asked if there would be user conflict if the longline line was moved in. Mr. Harris responded no because they would then be sharing the same area with the fishermen they always shared with before longliners were moved out and there was more bottom inshore than offshore.

Roger DeBruler, biologist, stated he would be discussing his observation trip with Marty Harris and the need for more information. In March 1990 he was assigned to the vessel, My Three Ladies, owned and operated by Marty Harris. As an observer for a bycatch and mortality study his job was to record the lengths, the condition, and what happened to all the fish brought onboard. On the trip the weather was not good with high seas, six to eight feet with 30 mile per hour winds. This made fishing and observing

very difficult. The crew was professional and interested in the events onboard including the study. The undersized and bycatch fish was very important to them since these fish would later grow up to be something to harvest at a later date. All the fish were returned to the water within two minutes and the air bladders were expelled. On the trip the catch effort of all the fish per trap was very low, approximately 1.5 fish per trap. During the trip he thought he would see a lot of other fishing boats and actually there were only five other boats observed, two sailing boats, one large shrimp trawler, and two commercial fishing boats anchored up with them at night. He maintained to manage the resource properly it was very important to have most current and geographical data. This means that the Council, politicians, lobbyists, and the Gulf Coast communities need to determine what the priorities were. After reading the proposal and the alternative options, he noticed that most of the citations were reports from geographical locations other than the proposed management area. He implored the Council to judge the facts without bias and on their own merits.

Dr. Kemmerer asked who was the principle investigator on the study. Mr. DeBruler responded the principle investigator was Dr. Jim Bonsack. Mote Marine Laboratory was hired to conduct the three trips on the West Coast. Mr. Collins asked the mortality rate observed from fish traps. Mr. DeBruler responded less than one percent. Dr. Nelson asked how many traps were onboard the vessel when they left port. Mr. DeBruler responded they a problem on the previous trip and had to leave the traps in the water and returned within five days after fixing the boat and lost only one trap so they were fishing with 92 traps. Mr. King asked if he observed any significant difference in the fish other than the five mentioned as decomposed, at the first pulling of the traps which were in the water for five days. Mr. DeBruler responded he did not observe any difference.

Jean Williams, representing the organization of Save America Seafood Coalition in Pascagoula, Mississippi, they have membership in Florida, Louisiana, Texas, Mississippi, and Alabama. She also had letters from consumers in Michigan. She stated the socioeconomic impact on the commercial fishermen is something that is being looked at with blindness. They testified at a public hearing in Kenner and left assuming that the snapper fishermen would get some sort of logical solution. She expressed her dissatisfaction with the Council.

Mr. Simpson noted her organization represents different users. Ms. Williams related the organization represents snapper fishermen, purse seine boats, mullet boats, all entities. They organized to support their husbands who have to stay home and fish and keep the business going.

Kay Williams, representing her husband who is a red snapper fisherman and five other red snapper fishermen, they support the emergency action on the red snapper endorsement. She expressed her dissatisfaction that the emergency action was returned to the Council for further consideration. She stated historical red snapper fishermen could not make a living on 5,000 pounds per year. They request the Council resubmit the original emergency action for the red snapper endorsement. If the Council does not submit the original proposal, she was requesting the Council to extend the fishing season. They support the committee motion allowing both vessel owner and the captain to have permits and endorsements. Her husband has fished on for 35 years on a vessel in which the permit is in the vessel owners name. If he applied for a permit because of his long history in the red snapper fishery, he would have qualified now he does not qualify. They request the Council to clarify loop holes as to qualifications for the red snapper reef permits. There are people on the advisory panel who have reef permits and are not commercial fishermen. They also support status quo on the red snapper maximum size. Dr. Goodyear stated that a fishermen can not fish selectively for size, the benefit of an increased size limit would be offset by increased released mortality. Increasing the size limit would produce more waste and eliminate the largest size of marketable snapper in the one to two pound category primarily sold to restaurants. The stock has increased with the 13-inch size limit and should remain status quo. They contend special management zones are unfair to the commercial fishermen, will create a baited field which would create even more recreational boats. It seems the objective is

to limit the number of boats not increase the number of boats in the Gulf. The historical fishermen have been fishing the area for 30 to 40 years and now because artificial reefs were placed in the area, commercial fishing is now proposed to be banned. They oppose any gear limitations. She related they supported status quo on fish traps.

Richard Nielson Jr., commercial fisherman, stated he called NMFS, St. Petersburg, and received information for the last five years regarding total violations and fish trap violations. There was a total of 594 cases in the Gulf of Mexico, 19 of which were fish trap violations, 8 of the 19 were for nonconforming gear which could have been for escape panels, mesh size, or windows in trap. He believed the Council was mislead that there were all kinds of violations occurring. Two of the cases were for fishing after dark or fishing some one elses gear, eight violations for fishing in the stressed area, and one for vessel or gear identification. This reveals that if there was a serious fish trap problem in the Gulf of Mexico there would be more cases against fish trappers and that enforcement was occurring in the Gulf. The most common violation in the Gulf was size limits. There was 430 size limit violations in the five years and not one size limit violations on a fish trap boat. He related in Florida for the years 1986 through 1990, there were 13 violations for the prohibition of fish traps. From 1986 to 1990 there were 28,632 Marine Resource violations. Mr. Nielson related that Gordon Sharp from the Florida Marine Patrol stated that 95 percent of the fish traps he found fished in illegal waters were constructed illegally. Mr. Nielson expressed his amazement that people would think a fish trap fished illegally would be constructed properly. He contended the 95 percent figure was off the top of Mr. Sharp's head and was only his opinion with no supporting documentation. He found it interesting that the Coast Guard approved the SMZ's off Alabama and yet the Coast Guard could not enforce fish traps offshore. Mr. Nielson related he has attended public hearings where there were four fishermen supporting fish traps and literally 200 to 300 fishermen against fish traps and because of the Magnuson Act the Council could not ban fish traps. At the last series of public hearings in Florida, only five people spoke against fish traps. He related they collected 6,800 signed form letters from consumers in the southeast Florida area in support of fish traps. He contended the public hearings and the form letters do not back up the theory that people were against fish traps.

Mr. Nielson related biologists researched mortality from fish traps and preliminary reports indicate that out of a total of 1,772 released fish, 1,396 - 78.8 percent were classified as swimmers. There were 745 fish captured in 127 fish trap hauls from depths ranging from 20 to 140 feet. They brought them in and put them in a 475 gallon holding tank and 80 percent of the fish survived and were observed to initiate feed activity.

Dr. Kemmerer stated enforcement was a major concern and questioned if there were suggestions for improving enforcement. Mr. Nielson suggested that all fishermen fishing fish traps be permitted and tie retention of the permit to violations. These should be major violations, i.e., not having escape windows in traps, not having the proper panel and things of that nature. Mr. Nielson indicated he was currently not fishing the Gulf and advised that he was the one who use to fish in the South Atlantic, that is currently contemplating moving to the Gulf. Three or four boats have previously moved over from the South Atlantic to the Gulf. Dr. Kemmerer stated there was an increase in permits from 1991 to 1992 from 87 to 96 permits whether due from South Atlantic fishermen moving over or not. Mr. Nielson stated it was a current practice for commercial fishermen to obtain any permit that they qualify for.

Bill Moore, Big Pine Key, Florida, representing the Monroe County Commercial Fishermen Inc., some of the fishermen members use traps during the closed crab and crawfish season during the summer months and fish out of Florida Bay north of Key West and Marathon. Some others fish with traps on a westerly quadrant of the Dry Tortugas. He referred to a trap that he brought which was representative of both areas. The trap was fished several times a day for red grouper in the Florida Bay area or left for three to four days in the deeper waters of the Tortugas. They use two buoys since they fish in strong currents. There was four two inch escape gaps and any larger escape gaps would

take the grunts and yellow tails away. He handed out jute for Council members to observe noting it was used on both the hinge side and the fastener side of the trap. He contended jute does not last as long as the studies claim and they change it after a one week trip. The Monroe County commercial fishermen support alternative Option One - status quo as did the Reef Fish Advisory Panel. He noted Dr. Bonsack's report states that mesh sizes smaller or larger than industry causes the catches to be much less than industry accepted sizes of 1 x 2, 1 1/2 x 1 1/2 hexagonal or chicken wire. They requested the Council consider moving the stress line in closer because the AP, SSC, and stock assessment panels stated that the line brought in closer would not adversely effect the stocks of grouper and that no scientific data existed to justify not allowing this. He stated red grouper were not overfished with a 40 percent SSR and the Council only requires 20 percent. There was no need for a stressed area line. He stated no problems exist with fish traps and it was only an allocation and social problem. Traps were already overregulated particularly since they are the smallest component of the fishery and the Gulf bycatch is small.

Dr. Kemmerer asked if he retrieved his traps daily. Mr. Moore responded when he fishes the Tortugas area he brought his traps in. He explained he fished 100 traps and had a large boat. Ms. Black asked if Mr. Moore was familiar with the proposals regarding mutton snapper in the Riley's Hump area. Mr. Moore responded he testified regarding Riley's Hump in Key West. He contended Riley's Hump was not the only place that mutton snapper aggregate. He stated when he fished that area he fished for grouper, porgies, and hogfish. Their trips lasted 16 days and averaged 1,700 pounds per day.

Linda Johnson, Do You Care Coalition of Commercial Fishermen, Kenner, Louisiana, representing historical dependent commercial fishermen, stated they are running out of money and time and their information is redundant. She related they have tracked five boats from 1989 who are historical dependents on red snapper. In 1991 the five vessels dropped one percent but fished four less months, on the total harvest of the entire Gulf of Mexico. They caught only eight percent of the entire Gulf landings in 53 days in January and February and does not include the emergency action. She related on the 53 days that the season was open the boats did not fish 53 days. Her husband's boat landed 22,660 pounds in 10 days of fishing. She noted 80 to 90 percent of their total gross income came from the harvesting of red snapper until 1992. In 1990 if 5,000 pounds were landed it equated to $15,000 of gross receipts. In 1991 the same fish were only worth $1.85 mean average which produced gross receipts of $9,250. Ms. Johnson maintained the social impact was more to the historical dependent. She could support a 5,000 pound qualifier two of the last three years. She maintained the snapper were in abundance and it was the commercial harvesters which were declining. They oppose any special management zones that would restrict any gear in any area of the Gulf of Mexico.

Ms. Black asked how many dollars were needed in a year to survive. Ms. Johnson responded a true commercial harvester needs $200,000 gross receipts. Ms. Black noted the Council was advised that there was no break in the data to determine those who catch small amounts of red snapper and those who catch greater amounts which leaves a block of fishermen who would probably land a couple of thousand pounds in a year. She questioned if their were any recommendations Ms. Johnson could make to adjust for this. Ms. Johnson responded she could support giving the small qualifiers who land under 2,000 pounds, a 100 pound trip limit and those catching 2,500 to 5,000 pounds, a 400 pound trip limit if there was any way to enforce it. She stated her main concern was for the historical dependents. Ms. Black questioned if Ms. Johnson would object to averaging the amounts to reach the 5,000 pounds if a vessel had 6,000 pounds in one of the three previous years and 4,500 pounds in one of the previous years. Ms. Johnson responded the dollar figure would be too ludicrous to argue over.

Dr. Anthony noted the emergency rule was returned to the Council for reconsideration and one of the points of contention was the 5,000 pound criteria, and questioned why the 5,000 pound figure should be supported. Ms. Johnson responded a fishermen who has not harvested 5,000 pounds was not dependent on red snapper. She noted 5,000 pounds was an arbitrary figure because there was not

a direct slope on Ed Burgess's graph however, the graph did not indicate the harvesters of over 10,000 pounds which was where the break off point is. Mr. Rayburn asked how many vessels were in the Do You Care Coalition. Ms. Johnson responded there were 166 members but some are spouses. There were only 60 vessels. Mr. Rayburn recalled in prior testimony Ms. Johnson indicated that if it takes to long to establish some type of procedure to balance the harvest for a longer period of time, she would prefer to allow the derby fishing begin on January 1. Ms. Johnson responded she really did not want a derby fishery and was not impressed with the poundage on the trip sheets and the price column is what dictates their lives. Mr. Rayburn questioned if was possible to collectively give notice to dealers that fish would be bought only during certain times. Ms. Johnson responded it was illegal to manipulate the market.

Stephen Moore, commercial trap fisherman from Davie, Florida and fishing out of Key West, stated he previously testified in Key West and maintains that the effort to ban fish traps in the Gulf was a social and political issue not a fisheries management issue based on sound science. The biology does not support further restrictions on fish traps and is not an overfishing issue. The gear type accounts for less than seven percent of the total in the snapper-grouper fishery. It was also not a conflict issue since where they fish in the Gulf there are other boats operating and the boats communicate. He contended the GCCA and the FCA and outdoor writers in the press have been misleading the public and they have their own political agenda. The truth was that a good commercial fishermen was a good ecologist and do not want to fish themselves out of a living. Fish traps are one of the most regulated gear types. A legally constructed fish trap will not ghost fish when lost. Current regulations were designed to prevent this occurring. He maintained any traps connected with the stories about ghost fishing were illegal traps. The great majority of commercial fishermen are honest, capable, law abiding citizens who work very hard in a tough and dangerous occupation to support their families and feed the American nonfishing public. He recommends status quo on fish traps.

Albert Pflueger, commercial fisherman and member of Organized Fishermen of Florida, questioned if there was a spawning stock ratio on red grouper. Mr. Horn responded it was approximately 40 percent. Mr. Pflueger questioned if there was a spawning stock ratio on mutton snapper. Mr. Horn responded there presently was not. Mr. Pflueger questioned how a closed season for mutton snapper could be proposed without a spawning stock ratio. He noted the spawning stock ratio in the Atlantic was 30 percent for overfishing and it was 35 percent and it was closed and he questioned the reasoning. He pointed out mutton snapper was the most wide ranged snapper in Florida. He supports status quo on mutton snapper and fish traps.

Richard Nielsen, Sr., previous trap fisherman in the South Atlantic from Ft. Lauderdale, Florida, stated he had a permit for fish traps for the Gulf of Mexico but has not used his tags. He feels his civil rights have been violated with the elimination of trap fishing by the South Atlantic Council. He related he had to sell his home to pay for his vessel. He related they have started litigation against the Secretary of Commerce and a small group of fishermen, associated dealers, and suppliers have invested considerable funds in this pursuit. He referred to the litigation noting the major point was that they were holding Dr. Fox, individually and as the Assistant Administrator responsible for a conspiracy against the fish trap fishermen. Their lawyer advised the federal government moved to dismiss Dr. Fox as to his individual civil rights liability for discriminating against commercial fishermen and they also attempted to keep him from having to produce the document left out of the administrative record. They filed pleading to keep Dr. Fox from being disposed and to keep new documents from being included into the administrative record. Their lawyer stated the federal government lost on all of the motions. Dr. Fox is in the action individually with personal liability and his deposition in Washington was scheduled and the documents he has been ordered to produced can be used to supplement the administrative record. Dr. Fox evoked executive privilege on many of the questions raised. He questioned how the Gulf Council could address another prohibition on fish traps with this litigation pending. He referred to a letter addressed to Dr. Fox requesting information regarding possible

financial assistance from federal agencies for fishermen displaced from traditional fisheries as a result of management plans implemented by NMFS. Dr. Fox responded NMFS has no authority to provide compensation to fishermen for that purpose and know of no plans to provide such authority and were unaware of any federal funds available for retraining such fishermen. Dr. Fox stated they would refer the letter to the Economic Adjustment Division, Economic Development Administration, U.S. Department of Commerce.

Mr. Nielsen stated they participated and encouraged research on fish traps. They had biologists from the Southeast Laboratory as observers on their boats. He stated if the Council prohibits fish traps they would be in violation of National Standard 2 which provides that all conservation and management measures shall be based on the best scientific information available, National Standard 4 provides that conservation and management measures shall not discriminate between residents of different states and provides that if it becomes necessary to allocate or assign fishing privileges among various U.S. fishermen, such allocations must be fair and equitable to all such fishermen, reasonably calculated to promote conservation and carried out in such a manner that no particular individual, corporation, or other entity acquires an excessive share of such privilege. National Standard 5 provides that conservation and management measures shall, where practicable, promote efficiency in the utilization of fishery resources. He supports the Magnuson Act and contends that the South Atlantic Council was dominated by sport fishermen. Mr. Nielsen stated the current regulations of 100 fish trap limit in conjunction with size limits on snapper and grouper has already placed a tremendous burden on the trap fishermen in the Gulf. He recommends status quo on fish traps.

Dr. Kemmerer advised he was not responding to some of Mr. Nielsen comments since litigation was pending.

Mike Bailey, fishing guide and commercial fisherman from Naples, Florida, stated statistics do not support any cause for the meeting. He advised the FCA raised over $45,000 dollars a few nights ago and 90 percent of that sum went to lobbyists and politicians.

Tom Murray, represented the Seafood Consumers and Producers Association of Tampa, Florida, as well as concerned producers of reef fish of Monroe County Commercial Fishermen's Association, and a number of sponsors of seafood consumers and producers who have an active interest in the reef fish fishery of western central Florida. They were concerned having sponsors that produce 80 to 90 percent of all the grouper produced on the west coast of Florida. Their concerns were with the scientific adequacy of the proposals and the fairness of the process. He concluded there was no scientific basis for prohibiting the use of fish traps in the Gulf EEZ. The draft amendment identifies the background problems requiring plan amendment. He noted the draft amendment states "fish traps have always been a controversial issue. Opponents have charged traps are nonselective, frequently cause environmental damage, some fishermen consider traps as unfair competition. Opponents also raise concerns over the enforceability of limitations". Since he became involved in the fish trap issue in the late 1970's there has been a lot of new information generated. The draft amendment has background material principally from the east coast which suggests that the conclusions or problems were not consistent with the bulk of the science. He thought it was ironic that the draft amendment text appears to contradict the problem statement. He noted NMFS internal reviews seem to question the scientific basis for the regulations.

Mr. Murray concluded that wire fish have been a controversy since the late 1970's whether or not it is a problem upon which to build a fishery management plan could be argumentative. The injury and mortality of bycatch of fish traps cited on page nine, "the most recent and complete studies of the subject indicate mortality rates of 2.9 percent according to Sutherland and Harper (1983)". Dr. Bohnsack recently completed a document which suggests that 2.2 percent mortality was associated with wire fish trapping. This might be compared to the estimated hook release mortality of undersized

reef fish used by the SSC of 33 percent. There have been numerous studies of observation over the south Florida trap fishing grounds with little apparent damage associated with the use of traps to coral and live bottom areas. Perhaps of some significance in these areas to habitat destruction is the approximately 180,00 recreational boats that fish from Pinellas to Monroe County. He stated the majority of the Gulf fishery involves insignificant trap losses according to Taylor and McMichael's Report. The principal fishery target was red grouper which was not overfished. The NMFS stock assessment, Goodyear and Schirripa, and the Reef Fish Stock Assessment Panel, October 1991, and the SSC all concluded red grouper was well in excess of the Council's stated goal for spawning potential ratio. The best estimates available depending on the release mortality rate assumed are 30 to 39 percent SPR. This resource is underutilized.

Mr. Murray stated they support Alternative Option 1, Status Quo, to retain current trap rules. Traps are already prohibited in many areas subject to a moratorium on additional permits, and otherwise tightly controlled by design, marking standards, 100 percent logbook requirements, etc. They support inshore movement of the stressed area, stressed area being a fish trap area. They recommend movement of the stressed area line to 5 fathoms and renaming of the line to indicate it was a fish trap line. They also recommend inshore movement of the longline buoy area boundary to 15 fathoms. He stated they were not requesting removal of the longline line although extensive review suggests perhaps there was no scientific basis for its institution. Given the recent stock assessment they contend the Council should consider these improvements in the overall management regime with an eye toward removal of unnecessary, unjustified regulations. More optimal use of the resource through a decrease in minimum size for red grouper and an increase in the quota per the recommendations of the SSC last year. It seems based upon recent information provided by NMFS, that there may be a line of demarkation which needs to be adjusted. The figures suggest the length frequency relationship between the size of the fish caught in inches and the depth of which it is caught. Fish from 0 to 5 fathoms have a mean size of 18 inches, a median of 14 inches and a mode, or the most common number, of 15 inches. Beyond 5 fathoms, the average size was 26 inches, a median of 22 inches, and the most common size of 25 inches. If lines of demarkation are to be set, stressed areas, it should be at the 5-fathom line. He noted most of the fishing activity was inside of 30 feet and 10 percent of the recreational fishing activity in the Gulf of Mexico occurs outside of state waters. Data suggests that the fishing problems are inside problems. They feel that based upon best available information and comments that status quo should be supported for fish traps and their other recommendations for the stressed area and buoy line be accepted.

Ed Cummings, commercial fisherman from Cortez, Florida, requested the longline boundary be moved in. He noted the current boundary at the 29 line required going 100 miles offshore to fish, 28 line was 40 miles offshore, 27 line was 45 miles offshore, etc. They need the inshore bottom and all the boats are concentrated.

William Doles, grouper fisherman from Crystal River, supports continuation of status quo and would like to see the line moved into the 5-fathom line. He supports all the recommendations submitted by Marty Harris. He stated he is one of the largest holders of fish trap licenses and was not notified of the public hearing in Crystal River. The day before the public hearing he was advised of the meeting by a fish house. At the hearing he obtained a copy of the amendment but did not have sufficient time to review the document and comment. He requested that valid permit holders be notified at least 30 days prior to the date of such meetings. Mr. Doles also requested copies of the minutes of such meeting should be made available to all of the attendees.

Jerry Sansom, Executive Director of Organized Fishermen of Florida, stated the fish trap fishery was a relatively insignificant fishery. The gear was one of the most selective gears. He referred to Draft Amendment 5, page 12, and hoped that the Gulf Council does not choose to ban fish traps just because the South Atlantic Council has banned them. He questioned the statement of "wide spread

abuses of the regulations governing the use of fish traps" noted in the Amendment. The fact was there were very few violations of fish trap regulations. He referred to Officer Sharpe's comment regarding 95 percent of fish traps in illegal areas used illegal gear. He stated that the same standards should be applied to fish traps, hook and line, longline, and any other gear with regard to bycatch, release mortality, selectivity, or any other criteria. They support moving in the longline area since it was biologically appropriate. They also support the emergency regulations concerning red snapper.

Ms. Black asked if Organized Fishermen of Florida had a position on special management zones. Mr. Sansom responded they do not believe that special management zones were appropriate means of managing the resource. He did not believe the Coast Guard would be able to enforce special management zones. The federal requirements for artificial reefs require they be nonexclusive. Mr. Wallin questioned OFF's position on landing requirements. Mr. Sansom responded they need to be able to head and core amberjack.

Bob Spaeth, Southern Offshore Fishing Association, Madeira Beach, Florida, stated the stock assessment panel, socioeconomic panel, and the advisory panel have indicated there was no problem or an abundant stock or could not justify the longline boundary. He contended there was no reason for maintaining the longline 20 fathom ban. In 1989 the longline fleet proposed a 15-fathom line to accommodate the unproven fears of people who imagine damage caused by longlines. In 1989 Richard Kitel collected signatures from captains and boats in Florida stating that the conflict of fishermen in the Gulf of Mexico was nonexistent. He demonstrated relative differences of an anchor and a longline and proposed longlines should not be restricted with the rationale that they cause damage otherwise, Florida should enact legislation that only drift fishing was allowed in state waters.

Mr. Spaeth stated all red grouper were born female and they have a tremendous spawning potential ratio. He referred to data collected by a recreational fisherman who caught and returned one red grouper four times which indicates an extremely good survival rate. The habitat for grouper was hard bottom and the fishermen need this bottom to make it a viable commercial fishery. SOFA supports status quo for fish traps. They also do not support special management zones. They request that heads and fins be allowed to be landed intact. They have no problem with the permit requirements and support the Louisiana constituency on red snapper. He presented a package of red groupers which were brought to the SOFA clubhouse by a lady who bought them at a Winn Dixie supermarket. The fish weigh 1.45 pounds and were priced at $2.31. He stated there was a 20-inch size limit and questioned how the American fishermen were to compete when there was no regulations on imports.

Dr. Nelson asked how long a typical longline set was. Mr. Spaeth responded approximately five miles. Ms. Black questioned if some of the angelfish reported could be imported. Mr. Spaeth responded it was a possibility.

Mr. Swingle read letters from Shirley Morgan and from Gloria Pierce of Capri Fisheries from Naples, Florida (attached).

Richard MacKinnon, President Middle Upper Keys Organized Fishermen of Florida, a lobster fisherman and former South Atlantic fish trapper. In his opinion inept, dishonest, and illegal fishery management has removed him from a viable healthy fishery and forced him into the crowded and overcapitalized lobster industry where he was struggling to make a living. He requested the Gulf Council not repeat the management rules enacted in the South Atlantic. The Reef Fish Advisory Panel recommended no change in the existing regulations by a vote of nine to one. The AP noted that most of the information regarding fish traps were germane to the fishery in the South Atlantic and that the trap fishery in the Gulf was different from the Atlantic side. They also noted the trap fishery was a small fishery and

potential harm to the bottom habitat for overfished stocks is not a major concern. Concerns have been raised over fish traps catching juvenile undersized fish. At the September 1992 meeting of the SSC they found "the percentage of undersized fish is the same for all gear types". He noted fish traps were known to primarily catch red grouper. In October 1991, the Stock Assessment Panel stated "red grouper are not overfished". They found the SPR was 30 percent if it was assumed that two thirds of all released fish die. The SPR would become 36 percent if it was assumed that only one third of all released fish die. The Council stated goal was 20 percent. Red grouper were not only underfished, they were an underutilized resource. The Stock Assessment Panel stated that the yield per recruit could be increased by decreasing the minimum size from 20 inches to 16 inches.

He referred to the summary of the October 1992 Law Enforcement Advisory Panel noting they cited problems with trap construction, lack of a degradable panel, traps can not be inspected while in the water, ghost fishing, and a bycatch mortality from decompression. The rules regarding biodegradable panels were not forced on the industry by the Council but were recommended by the fishermen. The current rules were in their own best self interest. He contended traps can be inspected while in the water since they were buoyed. He noted numerous studies have been conducted and no significant ghost fishing problem associated with fish traps was found. All fish caught by all the gear types suffer the same ill effects from being brought to the surface. The wire trap fish have an advantage of not having a sharp hook in their eye, mouth, gill, and they are not poisoned by chemicals. The Law Enforcement Panel recommended the Council wait to see what rules Florida adopts concerning mutton snapper so that compatible regulations can be implemented.

Robert Sierpiejko, trap fisherman out of Key West, Florida who transferred from the Atlantic to the Gulf when the South Atlantic Council closed the fishery. He stated the trap fishery was a viable fishery. He feels he represents consumers since his traps produce an extremely fresh high quality product. He believed the problem was reallocation and maintained certain sport fishing groups want to dominate the fishery. The press was biased against commercial fishermen. He maintained the less expensive species were underutilized.

Mr. Wallin asked if he fished the Tortugas. Mr. Sierpiejko responded yes.

Wilma Anderson, Executive Director Texas Shrimp Association (TSA), Aransas Pass, Texas addressed the Council (statement attached). She stated the TSA would oppose any special management zones off Alabama since this would begin a process that would have no end. Mississippi, Louisiana, and Texas all have tremendous oil and gas platforms. The shrimp industry has been forced out of foreign waters and are concentrated into a small area since they gave up trawlable bottom to the oil and gas companies. They feel special management zones are detrimental and in violation of the Magnuson Act.

Mr. Collins questioned if the TSA would support the concept of using brown shrimp as the dominant species. Ms. Anderson responded brown shrimp was the dominant species and they feel the Council has the option to take the lesser specie of white shrimp which was in the middle.

Pete Aparicio, President of the Texas Shrimp Association, Victoria, Texas, requested his testimony included in the minutes of the September 1992 Council meeting be corrected as follows, page 10, 5th paragraph, (changes underlined): Dr. Kemmerer questioned whether Mr. Aparicio supported a non-revokable permit. Mr. Aparicio responded he did not support a permanent system. He advised it was important for the minutes to reflect the correct testimony as it sets the tone and position of an individual and their associations.

Doug Blevins, Panama City Boatman Association, addressed the Council (statement attached). He expressed his concern regarding statements that the Council will listen to the public's testimony but

that the Council has already made a decision. The public has expended a lot of effort to attend and testify on their behalf and the Council has a responsibility to listen and review all scientific information, public comment, committee and panel reports before any decision was reached.

Lamar Dogden, fish trap fisherman, stated the Council should consider all the public testimony.

Robin O'Brien, delivered Captain Fernand Braun's presentation who was unable to attend. Captain Braun over the past 18 years has been a restaurant and fish house owner, commercial fisherman and was currently a fishing guide. He stated he knew the Keys before the fish trap fishery began and has subsequently witnessed the considerable damage they have created. Most people think the fish trap controversy is a result of a conflict between recreational and commercial fishermen. Actually the conflict is inside the fishing industry. The best proof is that the people fighting fish traps most vigorously are commercial fisherman. They are concerned about their future and with good reason. Anywhere in the world where fish traps were used, fisheries were destroyed. Fish trappers are the kind of people that give a bad name to commercial fishermen. All of the fish traps surveys performed by scientific organizations reveal a high degree of bycatch, as much as 54 percent in a Taylor and McMichael 1983 study. Tropical fish, nonfood fish, undersized juvenile grouper and snapper hawled by fish traps are killed by the millions, victims of explosive decompression. Adding to the bycatch mortality, many traps are lost in great number and become ghost traps. Escape panels tied up with jute will last at least three months before disintegrating and during that time a multitude of fish will perish. However, in many cases escape panels are tied up with illegal, nondegradable material. A conservative assumption of the killing time of these ghost traps can be no less than several years thus causing a phenomenal extermination of reef fish and additional impact on the overstressed Gulf fisheries. During a South Atlantic Council meeting in Key West, in 1990 a Florida Marine Patrol Officer stated that 90 percent of the fish traps inspected were illegal. One of the most common violations was escape panels secured with a stainless clip. Problems involved with wire mesh fish traps are not limited to fish stocks. Wire fish traps are set in trawl lines and retrieved by dragging heavy hooks along the bottom of the oceans, several hours every day for every boat. Trap retrieval methods destroy fish habitat, live bottom, and coral in huge quantities. Trawl lines are hidden from law enforcement agencies making any control totally impossible. All problems encountered with fish traps in the South Atlantic also apply to the Gulf of Mexico since these waters share the same species and same habitat. The only difference he finds between the Gulf and the Atlantic was that the area in the Gulf passed the stressed zone is never patrolled by NMFS or the Marine Patrol because it is to far offshore. In the Gulf, violators would have a free hand to destroy the resources without being disturbed. Last month he pulled two ghost traps from the bottom of the ocean and filmed the process. The film will show many aspects of the deadly efficiency of wire fish traps. The use of wire fish traps degrades both the Gulf fishery and the habitat which the fish depend on. In the best interest of fisheries management, resource and conservation, the Gulf Council should adopt a uniform regulation with the South Atlantic to facilitate enforcement.

Christine Parks, commercial tropical fisherman, referred to letters from Don DeMaria to Bill Parks concerning fish traps in the South Atlantic and the Gulf of Mexico EEZ. She advised Mr. DeMaria has been a member of the Reef Fish Advisory Panel for a number of years. From the October 31, 1992 letter she read the following "reference was made in your fax to several fish trappers that claim that the Gulf was different from the Atlantic. The bottom does tend to be flat like the area outside 100 feet in the Atlantic where the majority of fish trapping was conducted. In other words, the area that was legally opened to fish trapping in the Atlantic was not much different than the Gulf. Also the further north towards Jacksonville and the Carolinas, the more closely the bottom tends to resemble the Gulf. There were plenty of angelfish in the Gulf, mostly blues and grays. The ghost trap that was found on Riley's Hump when he went several years ago with Dr. Bohnsack and Dr. Colin had several large blue angels trapped inside. This is on video and part of the public record. He has dived extensively in the Gulf and South Atlantic. There are large numbers of blue and gray angelfish in the Gulf from the

Tortugas to at least offshore Tallahassee. He has sent video from the deep Gulf wrecks and the Florida Middle Grounds to the Gulf Council. Dr. Koenig should also have video from the Bellows cruise made last year off Tallahassee. This video shows numerous blue angel fish. The video of ghost traps off Big Pine Key should remove all doubts as to the problems associated with lost fish traps. He has found numerous fish traps in the Gulf like those captured on video. Many of the fish traps found were loaded with angelfish, red grouper, and muttons. The same type of traps with the same species of fish in the same condition, doors and escape panels wired and tied shut with bones, dead, dying fish, etc. He called an OFF representative some time ago to tell him what was being found in the lost traps off Big Pine Key. The reply was "what the hell good was a fish that eats the reef anyway". At an OFF meeting in approximately 1983, he remembers Bill Moore saying he pulled up fish traps loaded with juvenile red snapper south of Tortugas. Now he claims the snapper were all yelloweyes and blackfin snapper. Even when studies by Dr. Bohnsack show that not only due fish trappers catch red snapper but that red snapper make up the highest percentage of undersized snapper by species, 92 percent. All this information is contained in the preliminary report on fish trapping by Dr. Bohnsack.

Mr. DeMaria stated if there fails to be a ban in the Gulf he was certain there would be a continued gradual decline in angelfish, grouper, and snapper. Ms. Parks stated grappling hooks with loran were used extensively. The loran makes it practical for trappers to grappel unbuoyed traps. The trap grapnels she has observed consist of about five feet of heavy sea chain and often weigh over 100 pounds. She related Mr. Sharpe, Florida Marine Patrol, stated over 90 percent of fish traps checked in both legal and illegal waters, were in violation of the construction law, most for illegal fasteners. Fishery biologists state that survival of the spawning adults is vital to the sustenance of the ornamental fish stocks and they hold the trap fishery responsible for the current condition. After seeing traps at work, observing catches and listening to conversations of fish trappers, there was no doubt that they were responsible. While they feel that imposing a harvest moratorium upon themselves would do little to aid in stock recovery, they do not think continued harvest of depleted stock would be supportable. Continued and expanding trapping activity in the Gulf threatens the recruitment of the blue and gray angel.

Ms. Black asked when the video was taken off Big Pine Key. Ms. Parks responded she believed it was October 9.

Casey Fitzgerald, Assistant Director of the Florida Conservation Association, represents 9,000 members who have a vested interest in the protection of the fishery and associated resources. Fish trap management is the most critical issue under consideration to their members and is very much a Florida issue. FCA actively participated in the proceedings before the South Atlantic Council that resulted in regulations banning fish traps throughout the region. In addition, their parent organization, The Coastal Conservation Association, has intervened in defense of NMFS regarding the regulations.

FCA fully endorses the Preferred Option: to prohibit the use of fish traps in the EEZ of the Gulf of Mexico. Their position is based primarily on the following: fish traps are not species selective, a trend that should be worked toward, which results in unacceptable levels of bycatch mortality of non-targeted fish; all of the currently used legal mesh sizes trap and kill undersized targeted species; many of the lost or ghost traps will continue to kill indefinitely; the type and nature of fishing with traps makes it virtually impossible to enforce existing regulations or any regulations endorsed by the industry; a prohibition on the use of fish traps would be consistent with Florida and would profoundly improve Florida's ability to enforce the law; traps are operationally wasteful, often resulting in fish dying from embolisms caused by changes in ambient pressure as the trap is lifted, from stress related to attempts to escape from traps, from handling at the surface before release, and from predation prior to the trap being pulled; the use of fish traps causes degradation of benthic communities.

He stated the obvious conclusion of the negative impacts associated with the use of this gear type is that it causes a disproportion share of adverse impacts to the marine fisheries and associated resources. He contended if the Council chooses to let fish traps continue they will expand into the states where fish trapping is not yet an issue.

Peter Gladding, commercial fisherman from Key West, Florida, representing 369 commercial fishermen who have restricted species endorsements on their license. They oppose fish traps. He stated since the South Atlantic ban of fish traps the mutton snapper and grouper were rebounding. He reported in mid-July he was in a fish house and observed an attempted sale of 600 pounds of parrots and angels. He called law enforcement officer to remove the fish from the fish house. At that time if the sale proceeded the parrots and angels would have brought a price of .09 cents more per pound than yellowtail snapper. He supports the proposal for mutton snapper that fishing be ceased during the spawning season. He does not agree with closing Riley's Hump completely. He stated the reporting system was flawed and his hours were recorded inaccurately. At the fish house he uses some of the fish caught by fish traps were not reported accurately and were reported as bottom fish.

Mr. Perret recalled Mr. Gladding indicated some of the trap fishermen were not reporting their catch accurately. Mr. Gladding stated at his fish house one individual reports his fish as handline caught fish and he has in excess of 100 traps. Mr. Perret noted according to the best information, trap fishermen constitute 6.8 percent of the catch and he questioned if this percentage would increase if the reporting was accurate. Mr. Gladding responded the percentage on mutton and grouper in their area was 50 to 70 percent. Mr. Perret questioned the advantage of a commercial fishermen claiming a different gear. Mr. Gladding responded the reporting system was not working. Mr. King asked if all of the 369 fishermen he represents from the Gulf side. Mr. Gladding responded they were from the Atlantic and Gulf and they fish in both areas. Ms. Black asked if Mr. Gladding represented any charterboat fishermen. Mr. Gladding responded no. Mr. Rayburn noted public testimony has indicated there was no user conflict and questioned if Mr. Gladding agreed with that statement. Mr. Gladding responded he believed there was a conflict between user groups.

Tom Blythe, former fish trap fisherman in the South Atlantic, stated he has a Gulf permit and 100 tags but has not fished traps since from Marathon it was 70 miles and with a 30-foot boat it was to far to go. He maintained trap fishermen do not want the escape panels on traps closed up and killing fish. The video depicted panels tied up by renegade divers and they are not professional fish trap fishermen. He pointed out fish traps were only banned in Florida and fishing traps is status quo in North and South Carolina. They were allowed to use seabass traps and traditional gear and can have bycatch. He explained the difference was if they were pulling a seabass trap they could keep snapper and grouper but if the next trap was a traditional fish trap, they had to release the grouper. He questioned the enforceability. He maintained the tropical industry was unregulated and used dangerous chemicals.

Billy Sandefur, commercial fisherman and fish house owner, noted testimony indicates that enforcement was the biggest problem with fish traps, specifically traps were not brought to shore to be checked. To his knowledge the Marine Patrol has never inspected a stone crab, blue crab, crawfish, or fish trap at the fish house that he operates out of. He indicated the Marine Patrol has checked the catch on his boat but has never checked his traps. He contended if the facts were considered, the type of gear should not be an issue since the number one violation was undersized fish. He has been reported as pulling fish traps when he was not. He reported another lobster fishermen was pulling lobster traps and he was reported for pulling fish traps. He supports status quo on fish traps.

Mr. Swingle reported Kenneth Reiter from Rockport, Texas requested his comments be made part of the record since he was unable to attend the meeting. Mr. Swingle noted Mr. Reiter recommended that every permittee be limited to a 1,000 pound trip limit and that the fishery be closed from May 1 until

August 31, the peak of the spawning season. Charles Kolb of Pt. Mansfield, Texas also requested his comments be made part of the record. Mr. Kolb recommended 2,000 pound trip limits for everyone, spawning season closure, consideration of weather conditions rather than calendar dates in setting time periods, maintain limits based on past performance, and eliminate geographical politics from any rules.

o **Reef Fish Management Committee Report**

Emergency Action

Mr. Wallin reported the committee recommended the following changes to the red snapper endorsement qualifications and restrictions to provide a more equitable distribution of endorsements to fishery participants, to eliminate arbitrary break points in qualification and harvest limitations, and to improve enforceability of the emergency rules:

Mr. Wallin moved **on behalf of the committee, that a red snapper endorsement be available to anyone who has possessed a reef fish permit and has landed red snapper in each of the last three years, and that those possessing a red snapper endorsement can possess red snapper in excess of the bag limit only from the 16th to the end of each month in the fishing season.**

Mr. King requested that NMFS's rationale be discussed on the emergency rule and the reason the Council was requested to reconsider the issue. Dr. Kemmerer responded NMFS was concerned that there was no obvious break in the data regarding the 5,000 pound category. He stated NMFS, Washington, requested the Council provide the rationale for the 5,000 pound threshold. Mr. Joe Clem, Plans and Regulations Office, Washington, stated the concern was that the qualification level selected by the Council must fully consider any possible inequities. He noted the Council was requesting the Secretary of Commerce under emergency authority to implement the red snapper endorsement qualification which violated NMFS standing policy not to implement allocation type decisions through emergency action. NMFS has set aside the policy and were prepared to implement the request after further reconsideration by the Council. NMFS requests that the Council add any additional justification for the selection of the qualification level.

Mr. Minton recalled during discussions when the 5,000 pound threshold was arrived at, the primary purpose was an attempt to return to the traditional fishery because of the current number of participants and it was anticipated that this would extend the season. He questioned what effects the pending motion would have on extension of the season. Mr. Atran stated the stock assessment panel projected that without any limitations the season would be 64 days, and if the season only opened for half the month, it would result in 128 days. Mr. Minton questioned if the stock assessment panel considered the population build up noting that originally in Dr. Goodyear's estimate he projected an approximate eight month season which was initially closed after 53 days. Mr. Atran responded Dr. Goodyear indicated that when taking certain provisions into account the estimate derived would indicate the 1992 season would have lasted as long as it did. Mr. Atran stated the increase in the number of fish was taken into account for the 1993 season. Dr. Kemmerer stated the estimate was still very uncertain due to various factors. Mr. Horn noted approximately 40 percent of the fish caught was by nonpermitted fishermen and questioned if the projection considered that factor. Mr. Atran responded no, the projection took into account the expected growth of the fish that were in the population and where the indices were known, and the recruitment of those fish. Dr. Kemmerer stated there was no estimate for catch by nonpermitted vessels, the 40 percent was unaccounted for. Mr. King clarified the 40 percent was the difference between logbooks and landings.

Mr. Minton questioned if the season opened on February 15 for 64 fishing days, would the season close at the end of May. Mr. Atran responded it would be 64 days if the fishermen could fish every

APPENDIX C

Comments Received By Letter
on
EA/RIR/Amendment 5
to
Reef Fish FMP

Sections

1. Public Letters
2. Association Letters
3. Agency Letters

SECTION 1.

Letters Received From
the Public

8 identical letters

RECEIVED
NOV 1 2 1992
GULF FISHERIES COUNCIL

October 11-7, 1992

Gulf of Mexico Fishery Management Council
Lincoln Center, Suite 331
5401 West Kennedy Blvd
Tampa, Fla 33609

Dear Sir:

I am a commercial fisherman in the Gulf of Mexico and presently fish out of Cristal River.

Attached is a letter authored by Marty Harris which I have read and wish to

X Agree with his suggestions.

___ I have the following changes or suggestions of my own:

Sincerely, Carl W. Page Sr

Date 7-11-1992

Witness [illegible]

23 identical letters rec. by Nov 9th

RECEIVED
NOV 0 9 1992
GULF FISHERIES COUNCIL

October 31, 1992

Gulf of Mexico Fishery Management Council
Lincoln Center, Suite 331
5401 West Kennedy Blvd
Tampa, Fla 33609

Dear Sir:

I am a commercial fisherman in the Gulf of Mexico and presently fish out of Crystal River Fl.

Attached is a letter authored by Marty Harris which I have read and wish to

✓ Agree with his suggestions.

___ I have the following changes or suggestions of my own:

Sincerely, John J Allen
John J Allen

Date 10-31-92

Witness_____

October 27, 1992

Re: Draft Amendment 5 to the Reef Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico

Dear

As an opening, I would like to introduce myself as an owner/operator of the commercial vessel My 3 Ladies. I have fished commercially in the Gulf of Mexico for the past 24 years. Presently I fish out of Naples, Florida.

Upon receiving notice of public hearings on this matter I have travelled up and down the state attending these hearings and speaking with people in the fish trap industry and fish houses. I would like to address inadequacies and inaccuracies int his report and proposed rule changes.

Firstly, this proposed amendment is based on data taken from research on coral reefs and rock shelves in the Carribean, Jamaica, the Virgin Islands, Bermuda and the coral reefs in Dade, Broward and Monroe counties in Florida. None of the substantiating data was compiled from studies or research done in the Gulf of Mexico. As far as I can find out, no research has been done for the council on trap fishing in the Gulf of Mexico.

In 1991 the University of Miami was performing a study of trap fishing in the Atlantic and the Gulf of Mexico. The Mote Marine Institute in Sarasota, Florida, was engaged to collect data on the trp fisheries in the Gulf. My vessel was involved in the study of by-catch and mortality. None of this current data on Gulf trapping was used to reference this proposed rule change. The Mote report was presented at the public hearing in Naples, Florida and will be presented as evidence at the hearing November 18, 1992, in Sarasota, Florida.

Below I will address specific parts of the draft Amdnement proposal:

Trap Placement - It suggest that we "prefer to set traps near rocky ledges, reef structures or steep dropoffs". The bottom in the Gulf that we fish has none of these types of bottom. We fish grassy flat, sand shell and mud rock bottom, the same bottom as stone crabbers, lobster trappers and shrimp trawlers fish. We have no areas with coral coverage or coral environments as suggested on page 8.

Trap Losses - The data presented is not factual. We do not have any significant loss to power vessels as we fish an average of 40 to 50 miles offshore. We do not lose any buoys to seagull and turtle bite offs, nor do we lose traps fishing too deep or on sloped shelves. The Gulf bottom we fish is flat, there are no shelves or deep dropoffs. We have no storm surge or coastal wave action as the average depth we begin fishing is 70 feet. "Trap loss was not a problem in Collier County, Florida with an annual loss of only 5%. This was possibly due to the fact that fishermen brought back traps to the dock after each trip". The type fishing we do, traps are pulled every 2 to 4 hours and brought back to the dock at the end of each trip. Trap loss is minimal.

Injury and Mortality - Studies have shown, as this report states, (page 10) that occurence of injury and death were related to length of time the fish were confined with the lowest being in traps constantly tended. The Mote Institute survey with the study of by-catch and mortality done on my vessel reports less than .5% mortality out of over 10,000 lbs of fish caught.

Ghost Trap and Derelict Traps - This is not a problem, as previously addressed, our traps are constantly attended and brought to the dock at the end of each trip. No gear is left out and unattended. Any trap lost, incidentally, by law has biodegradable panels that make the traps unfishable in 5 to 14 days. Small fish, tropicals, snapper, grunts, etc., learn to move in and out of the trap funnel in a few days or less, as stated on page 9. After escape panels are opened by the larger fish, the traps become fish sanctuaries (page 11).

Trap Design - The Gulf Council proposed a change to a 2x4" mesh or a change to a 2x5" escape window.

2x4" mesh will let all the by-catch escape (lane snapper, vermillon, yellowtail, porgies and grunts). It will not keep any fish under 15". Legal size of this by-catch is 8" with an average of 10" to 12". This by-catch accounts for 10-25% of the of the annual income for trap fishermen.

The escape windows we have now, 2x2" release all fish under the size we are allowed by law to catch. This fills the immense wholesale and retail market and, therefore, a major part of many fish markets.

The 2x5" window would allow all snapper of any size to exit and also allow 20" grouper to escape and some larger fish to put their head in the opening, break the weld and render the traps useless in less than one day of fishing. This proposed change in trap design will not allow enough fish to be caught to pay expenses. In a very short phrase, it will close down the domestic fish trapping industry and extremely, adversely affect wholesale fish markets, and in "trickle-down" affect the trucking, retail and restaurant industries.

Alternative Option #4 - Moving the stressed zone out further

offshore to 120' would put trappers fishing the same waters as longliners and bandit fishermen. It will spread the catch so thin that not any of the 3 types of fishermen will survive, and it will impact the species greatly by taking nearly all the large breeding stock.

Alternative Option #6 - Limiting the number of traps to 50 per vessel will not make it possible for a vessel operating solely as a trap fishermen to exist. Smaller vessels and those who trap only part of the year may carry smaller amounts of traps. These "smaller" fishermen may continue to request the legal number of trap tags in order to lessen down-time required for replacement tags.

My suggestions regarding this proposed amendment are as follows:

Alternative #1 - Status Quo, retain current trap rules with the exclusion of magnesium pop-ups.

Alternative #2 - Status Quo. Changes as proposed would render traps ineffective and the domestic trapping industry extinct.

Alternative #3 - Traps should be constantly tended when fishing and traps be buoyed.

Alternative #4 - Leave zones as they are, as explained above, there will be a great stress on the species.

Alternative #5 - Establish a moratorium on permits authorizing fishing traps to 1992 permit holders with that designation as a principal gear.

Alternative #6 - Status Quo. As stated above, sole income trap vessels require 100 trap limit.

Please read and listen to considerations from an industry, not anxious to deplete a resource, as many say, but instead to preserve the resource and a way of life. We who have done this for many years have a lot to offer to research, should we be asked, as far as catch, by-catch, mortality, etc.

A concern of the Council is that trap fishing will now begin in Texas, Louisana, Mississippi and Alabama where it does not currently exist and target the red snapper. This could be alleviated by a change in the rule to disallow new or additional trap fishing in these states by implementing Alternative Option #5, a. This would limit the fishing to the state of Florida as those are the only current permit holders.

It seems there is a negative factor that must be addressed, and which is obviously adversely affecting our legal industry, and that is the small quantity of illegal traps and trappers and the increasingly difficult problem of regulating these illegalities in specific areas of the Gulf.

Suggestions I have to offer to assist in the enforcement of rules

are:

Make fishing inside of stressed area boundary punishable by up to $10,000 fine, revoking all permits, 6 months in prison or confiscation of vessel.

Any traps that have to be left because of severe weather or mechanical malfunction of a vessel will have to be reported to the DNR or Marine Fisheries Services within 24 hours of docking with explanation of why they were left, how many, how long estimated until retrievable and Loran coordinates to be reported.

Make fishing that isn't legal (i.e. mesh, no escape panels or illegal size) first offense up to $1,000 fine and second offense revoke all reef permits.

I respectfully request that you consider current data applicable to the Gulf of Mexico presented by those currently involved in the trapping industry prior to making rule changes deemed necessary by those fishing illegally or in waters other than the Gulf of Mexico.

Respectfully,

Marty Harris
Captain, My 3 Ladies

29 Identical Letters Received

TAB C NO. 9

Oct. 19, 1992
Date

Mr. Gilmer Mix, Chairman
Gulf of Mexico Fishery Management Council
5401 W. Kennedy Blvd. -- Suite 881
Tampa, FL 33609

RECEIVED
OCT 20 1992
GULF FISHERIES COUNCIL

Dear Mr. Mix:

I am gravely concerned over the use of fish traps which damage live hard bottom areas and destroy habitats for all marine life all over the Gulf of Mexico. Fish traps also kill thousands of tropical and non-food fish. To counter this needless destruction and allow the fishery to recover, I support a ban of all fish traps in the Gulf of Mexico as proposed in the Council's Draft Amendment to the Reef Fish Fishery Management Plan.

Current regulations do not protect hard bottom and other marine habitats from the damaging effects of the grappling hooks used to retrieve the unbuoyed traps. Also there are no restrictions protecting the millions of juvenile and tropical fish lost each year in these traps. Due to this bycatch, fish traps are contributing unacceptably to the continuing decline of tropical fish, snapper, and grouper populations.

Juvenile snappers and groupers should be allowed to grow to mature size so they can reproduce. Tropical fish should be allowed to continue attracting diving enthusiasts and playing their vital role as grazers that help keep coral areas free of excess algae. There are other methods of fishing which are more successful and less devastating to the fish and the ecosystem than wasteful fish traps.

The Gulf of Mexico Fisheries Management Council should follow the South Atlantic Fisheries Management Council and ban all fish traps. According to the South Atlantic Fishery Management Council: "by destroying habitat we destroy the productivity of the resource being harvested and we are in essence drawing on the principal, not just taking the interest." I strongly believe this statement is true and that something must be done about fish trap grapple hook damage to Gulf live bottoms.

Thank you for your consideration.

Sincerely,

776 N. Manasota Key
Street Address

Josephine Kixmiller
Signature

Englewood FL. 34223
City / State / Zip

Josephine Kixmiller
Printed Name

P.S. -- Some of the benefits of banning fish traps are listed on the reverse side of this letter.

12 Identical letters received as of November 6

10/26/92
Date

BRIEFING BOOK ADDITION

Mr. Gilmer Mix, Chairman
Gulf of Mexico Fishery Management Council
5401 W. Kennedy Blvd. -- Suite 881
Tampa, FL 33609

RECEIVED
NOV 02 1992
GULF FISHERIES COUNCIL

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Thank you for your consideration.

Sincerely,

4211 3rd Ave N.W.
Street Address

Seattle WA 98107
City / State / Zip

Douglas Fenner
Signature

Douglas Fenner
Printed Name

P.S. -- Some of the benefits of banning fish traps are listed on the reverse side of this letter.

As a marine biologist, I've seen the damage [illegible] fish traps in Jamaica. [illegible] There are very [illegible]

Top 10 Benefits of Banning Fish Traps

1. Hard bottom and marine habitats will be allowed to recover from the damages they have sustained from the grappling hooks.

2. Divers should have more spectacular dives as the beautiful tropical fish repopulate the area.

3. Ghost fishing and cryptic mortality between trap hauls will be eliminated.

4. Fish will no longer suffer and die painful deaths in the wire mesh of the traps.

5. Abundance, species richness, and genetic diversity of fish populations is re-established.

6. Natural fish community equilibrium and age structures are maintained because juveniles will now a chance to mature.

7. Enforcement and compliance in both the Gulf Fishery and the South Atlantic Fishery will be easier.

8. Reefs will not suffocate from overgrowth of algae which is usually kept in check by tropical fish who are often caught in fish traps.

9. Fishermen overall should benefit by the increase in populations because juvenile fish will be allowed to mature and reproduce instead of dying in the fish traps.

10. The future of the marine environment and fish is protected from the devastating effects of this type of fishing.

24 Identical cards received as of November 5

Dear Members of the Council,

I am opposed to the use of Fish Traps inshore of the Twenty Fathom Longline Boundary.

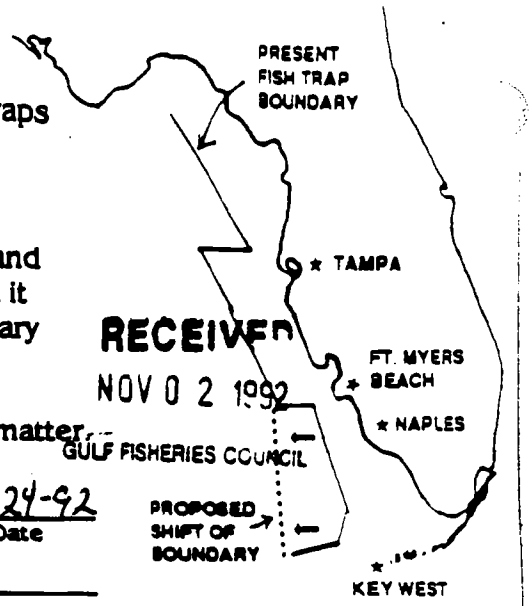
I would support a proposal to expand the stressed area westward so that it coincides with the Longline Boundary offshore of Southwest Florida.

I appreciate your attention to this matter.

Thomas L. Stone — Signature

10-24-92 — Date

mullet Fisherman — Title



RECEIVED
NOV 0 2 1992
GULF FISHERIES COUNCIL

BRIEFING BOOK ADDITION

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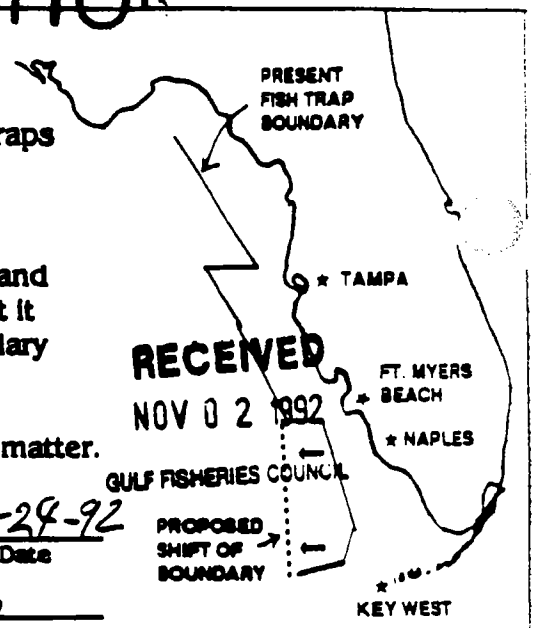
I appreciate your attention to this matter.

Signature

10-24-92 — Date

Grupper fisher man — Title



RECEIVED
NOV 0 2 1992
GULF FISHERIES COUNCIL

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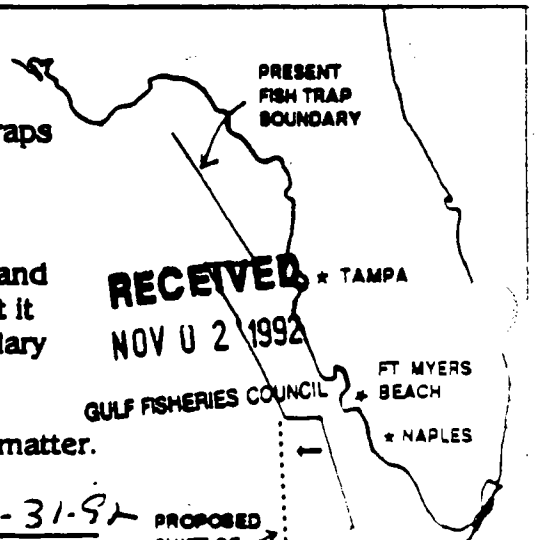
I would support a proposal to expand the stressed area westward so that it coincides with the Longline Boundary offshore of Southwest Florida.

I appreciate your attention to this matter.

Neal White — Signature

10-31-92 — Date



RECEIVED
NOV 0 2 1992
GULF FISHERIES COUNCIL

RECEIVED
NOV 0 4 1992
GULF FISHERIES COUNCIL

October 28, 1992

To the members of the Gulf of Mexico Fishery Management Council:

S#1

I want to speak on the fish trap issue.

My name is Stephen Moore. I'm a fifth generation commercial fisherman and probably the last in my family that will seek a living on the ocean. My father was always proud that I was the one between me and my brothers that chose this way of life. I take a great deal of pride in being a commercial fisherman. It's my heritage, it's our history, and it's our future. We are Florida's oldest industry, and through our efforts we place food on the tables of American families.

But as an American commercial fisherman I have been the victim of a well - directed and relentless effort by the government to put me out of business. What you are dealing with here is not only an industry but a culture.

I've been engaged in the wire fish trap fishery for the past fourteen years. We are probably one of the most regulated fisheries. We are under restrictions regarding trap size, mesh size, door closures, escape panels, number of traps we can fish, and areas we can fish. And we participated in the process and cooperated fully with the council when these management measures were being formulated.

Now you're considering eliminating fish traps from the Gulf.

Why? I mean...what's the problem? Is this an over-fishing issue? No. We're responsible for a whopping 6.8% of the total for

BRIEFING BOOK ADDITION

the snapper grouper fishery. Could it be that the sport lobby wants it all? How could 6.8% of the total make these guys jealous? I suppose they want it all.

Why don't you guys make things easy on yourselves and ban commercial fishing altogether? We can get all our fish from South America. Then maybe one day we'll have to send the Marines into Ecuador to protect our food source. The people being hurt here are not only the commerical fishermen but also the non-fishing public, the American consumer.

Is this a conservation issue? No. We have been the victims of lies and misinformation by the sport lobby and their outdoor writers for so long that the public believes many of their lies to be the truth. I suppose if you tell a lie often enough it becomes the truth. And I would take anything that these so-called conservation associations have to say with a grain of salt, they have their own selfish motives behind what they do.

All the traps in the world couldn't do anywhere near the damage that several million man hours of sport time could.

Maybe it's the word "trap" that throws them. Call them fish "pots" if you like that term better. This gear, contrary to public belief, does not entrap, ensnare, or otherwise kill every fish that swims into it. Many fish swim in and out of traps at will.

As the 1983 fish trap study off of S.E. Florida demonstrated, the survival rate of non-utilized species returned to the water from traps was very high, something on the order of 91%.

What these groups and everyone else should know is that a good commercial fisherman is a good ecologist. We wouldn't want to fish

ourselves out of a living. We are bound by economics. A sport fisherman, on the other hand, is merely a subsidized predator.

Is this a conflict issue? No. A 6.8% share couldn't possibly create that. We can't set on the reef or too close to the walls or on wrecks because of entanglement and retrieval problems. And we stay way outside of the 100' contour. If we're operating near any other boats they always know exactly how our gear is set, and we know how they're fishing. A little communication solves all that.

Do these guys think we have it easy? The gear is efficient, sure, but not as sure-fire as everyone seems to think. There are many times I've been out there pulling blanks and putting in long hours and having my body wracked with pain only to be living the life I love with little or no reward.

So why do these guys hate us? I really can't tell you. Maybe they're trying to make things easy on themselves by blaming all their problems on one small user group. They'll say that the reason fishing isn't what it was like twenty years ago is because of the commercial men. That's just not true.

I believe the main problems we face today are coastal pollution and loss of habitat. You can only go one of two ways - towards development or towards conservation. You can't have both. Every mangrove that is drained off destroys habitat. Every seawall that is built destroys habitat. Freshwater runoff containing pesticides, fertilizers, oil, chemicals and who knows what else enters the ocean creating horrible problems. Then you've got injection wells and outfalls. Plus people are using the ocean as a garbage dump. And we are supposed to take the blame for all that? That's ridiculous.

We were here before the real estate developers.

What you are considering here is not really a fisheries management issue. It is a social issue. It is a political issue.

I urge the council not to involve itself in an effort to eliminate a small group of hard-working fishermen.

I believe that holding to the status quo would be the proper course to take.

We represent a part of Florida's history and her culture. We stand proud of who we are and of the service we perform. We have been faithful stewards of God's bounty and have acted responsibly.

Thank you.

Stephen Moore

Stephen Moore

CAPRI FISHERIES

218 KON TIKI DRIVE
ISLES OF CAPRI
NAPLES, FLORIDA 33940

FISH
Wholesale & Retail

The Stone Crab Pa...
(813) 394-2367

TO WHOM IT MAY CONCERN:

MY NAME IS GLORIA PIERCE. I WORK FOR CAPRI FISHERIES IN NAPLES, FL. MY JOB IS SELLING THE FISH THAT IS CAUGHT BY OUR FISHING BOATS. FROM OCTOBER THRU APRIL, THE MAJORITY OF OUR BOATS STONE CRAB, BUT SEVERAL ARE FULL TIME FISH TRAPPERS. WE HAVE 11 BOATS THAT HOLD TRAP PERMITS AND IF THEY WERE NOT ABLE TO FISH IN THE SUMMER, IT WOULD NOT ONLY BE A TERRIBLE HARDSHIP ON THESE MEN AND THEIR FAMILIES BUT ALSO ON THE FISH HOUSE. STONE CRABBING ALONE CANNOT KEEP A BUSINESS OPEN, SO TO CLOSE FISH TRAPPING IN THE GULF OF MEXICO WOULD EFFECT MORE PEOPLE THAN JUST THE FISHERMEN, MYSELF INCLUDED. "NO FISH - NO JOB!!"

A SUBSTANTIAL AMOUNT OF FISH IS PRODUCED BY THIS FISH HOUSE AND THE ECONOMIC EFFECT IT WOULD HAVE ON US WOULD PROBABLY RESULT IN OUR CLOSING DURING THE SUMMER MONTHS.

I HOPE YOU WILL GIVE CAREFUL CONSIDERATION TO THE CONSEQUENCES THIS DECISION WILL HAVE ON EVERYONE INVOLVED.

THANK YOU,

Gloria A. Pierce

GLORIA A. PIERCE

CAPRI FISHERIES

218 KON TIKI DRIVE
ISLES OF CAPRI
NAPLES, FLORIDA 33940

FISH
Wholesale & Retail

The Stone Crab People
(813) 394-2367

TO WHOM IT MAY CONCERN:

MY NAME IS SHIRLEY MORGAN. I AM SECRETARY/BOOKKEEPER FOR CAPRI FISHERIES IN NAPLES, FL.

WE HAVE NUMEROUS BOATS WHO STONE CRAB DURING THE WINTER AND TRAP FISH DURING THE SUMMER. IT WOULD HAVE A GREAT IMPACT ON THEM IF THEY WERE NOT ABLE TO TRAP FISH. THEY RELY ON THE INCOME FROM "BOTH" SOURCES FOR THEIR SURVIVAL.

THE CLOSING OF TRAP FISHING IN THE GULF OF MEXICO WOULD AFFECT NOT ONLY THE FISHERMEN, BUT ALSO NUMEROUS FISH HOUSES, TRUCKING COMPANIES, MANUFACTURERS, WHOLESALE SUPPLY HOUSES, NOT TO MENTION INDIVIDUALS SUCH AS MYSELF.

PLEASE THINK OF THE OVERALL PICTURE BEFORE MAKING YOUR DECISION.

THANK YOU,

Shirley A. Morgan

SHIRLEY A. MORGAN

Gulf of Mexico Fishery Management Council;

RECEIVED
NOV 0 9 1992
GULF FISHERIES COUNCIL

My name is John Kenny, I've been Commercial Fishing in South Florida for the past 12 years. I do not agree with your Reef Fishing Amendment 5 proposals.

1. A 20" Snapper is not reality. The current 12" Snapper would allow me to keep making a honest, hard working living. According to your chart, the Annual Commercial Mutton Snapper Catch from 1986-1991, shows a very steady catch rate and even going up in 1990-1991. I see no reason for you to change this ruling. There is no overfishing showed and I am still catching my share.

2. I do not agree to prohibit fishtraps in the EEZ. I would like you to retain current rules. All of your research I read is about Trap Fishing in the Caribbean and the Southeast Coast of Florida. The bottom reefs in the Gulf of Mexico EEZ, are nothing like the Caribbean or the Southeast coast of Florida. Please allow your regulations on Traps, that you implemented a few years ago, to remain status quo.

I am one of a few professional Commercial Fisherman left trying to maintain a honest, hard working, American living for my family.

Thankyou for your time.

John Kenny John Kenny
9411 N.W. 5th Street
Pembroke Pines, Florida 33024
305-432-3931

RECEIVED
NOV 0 9 1992
GULF FISHERIES COUNCIL

RECEIVED
NOV 0 9 1992
GULF FISHERIES COUNCIL

GULF OF MEXICO FISHERIES MANAGEMENT COUNCIL
FAX # 813 225 7015

MEMBERS OF THE COUNCIL,

I AM WRITING TO YOU IN SUPPORT OF THE CURRENT REGULATIONS REGARDING FISH TRAPS IN THE GULF. I REALIZE THAT I AM IN THE EXTREME MINORITY HOWEVER THE BEST BIOLOGICAL RESEARCH SUPPORTS NO CHANGE IN THE RULE. RED GROUPER IS THE PRIMARY CATCH IN TRAPS AND IS IN FACT UNDERUTILIZED DUE TO THE CURRENT REGULATIONS. THE MUTTON SNAPPER HAVE A SSR 40%. THE GULF OF MEXICO IS NOT THE SOUTH ATLANTIC AS OPPONENTS TO THE TRAP FISHERY WOULD HAVE YOU BELIEVE. IN THE SOUTH ATLANTIC COUNCIL THE FINAL VOTE WAS 7 TO 6 AGAINST THE TRAPS AFTER INTENSIVE LOBBY AND POLITICAL PRESSURE. TO COPY THE SOUTH ATLANTIC COUNCILS POSITION WILL BE A GRAVE INJUSTICE AS WELL AS A VIOLATION OF THE MAGNUSON ACT. IN 1984 NOAA SAID IN THE FEDERAL REGISTER THAT THE " PROHIBITION OF FISH TRAPS WOULD VIOLATE SEVERAL OF THE NATIONAL STANDARDS OF THE MAGNUSON ACT". IN CLOSING I ASK YOU, WHAT HAS CHANGED IN THE RESEARCH SINCE 1984 THAT WOULD SUPPORT A PROHIBITION NOW ? THE FACT IS THAT THE RESEARCH IS MUCH BETTER THAN IS 84 IN SUPPORT OF THE FISH TRAPS. IF YOU ARE GOING TO MAKE A FAIR DECISION BASED ON BEST AVAILABLE RESEARCH THEN YOUR CHOICE IS CLEAR. CONTINUE THE PRESENT RULE.

S#4

Richard Mac Kinnon
123 Palermo Drive
Islamorada, FLA.
G.M Permit # RN231193

DR. JAMES F. WALTON III
1280 Timberlane Road
Tallahassee, Florida 32312
904-893-2136

Copy C+TS

RECEIVED
SEP 25 1992
GULF FISHERIES COUNCIL

September 21, 1992

Gulf of Mexico Fishery Managment Council
Lincoln Center, Suite 331
5401 W. Kennedy Blvd.
Tampa, FL 33609

Dear Sirs:

I would urgently ask that you ban all use of fish traps in the Gulf of Mexico. Fish traps are indiscriminate killers of sea life. If unattended or lost, they go on killing indiscriminately for years since they do not degrade.

All species of food fish that are caught in the traps can be caught hook and line. Please stop this rape of our marine resources!

Respectfully,

James F. Walton, III, D.D.S.

JFW/ra;

MR. SEAFOOD FISH MARKET

WHOLESALE RETAIL

1553 N.E. SAMPLE ROAD
POMPANO BEACH, FLORIDA 33064
(305) 781-4200
FAX (305) 781-4204

November 9, 1992

TO: Gulf Council

RE: Fish Traps In The Gulf

RECEIVED
NOV 09 1992
GULF FISHERIES COUNCIL

Dear Sir:

In the past my company was involved in a fishing operation with a 45 foot boat (Miss Luisa). We fished the Dry Tortuga area for approximately three years with fish traps. During this time we learned that most fish trappers were consistent fishermen with roots in their native Key West, who provide fish markets like ours with a variety of reef fish such as porgies, grunts, etc. These types of fish are in great demand among the minority groups because they are sold very cheap over the counter and provide a lot of people with a healthy meal.

Our boat never had an accident with fish traps. As the fish were all alive when brought into the boat, all illegal and non-commercial species were thrown back. This method of fishing is proven to be safe for the crew and for the types of fish that were returned to their habitat unharmed. When we changed our style of fishing we recorded two accidents - one to Capt. Bruce McFrland who managed to put a 9/0 hook thru his right hand, and another to first mate Robert Driver who got hooked in his right arm.

Mr. Seafood deals heavily in domestic products which are mostly obtained from fish traps from Stock Island and all various fish houses in the Keys. If this type of fishing were to be closed, my company would face a big loss in trading and have no choice but to lay-off a percentage of the 25 employees involved in our business.

We understand that controls are necessary for the survival of various species, and as in the past, we will cooperate with your office. We hope you will take a few minutes to analyze our needs.

Sincerely,

Mario Esposito

Mario Esposito,

RECEI

OCT 15

GULF FISHERIES

Captain Frank Gumpert
5146 Kristin Court
Naples, Florida 33942

Gulf of Mexico Fishery Management Council
5401 West Kennedy Blvd.
Suite 331
Tampa, Florida 33609

#1

10/13/92

Dear Sir,

I am strongly opposed to fish traps in the Gulf of Mexico. You are undermining the ban traps in the South Atlantic Council's zone because of your actions. Even most of the target species caught in traps are under legal size. I realize this makes little difference to trap fishermen who regularly bring in undersized fish and fillets to local seafood houses with little or no enforcement of the size laws. Fish traps are killers, they kill all types of fish and have been filmed showing the destruction they cause to the fish populations. Fish traps have greatly increased in South West Florida because of the lack of action by your council. Traps have simply moved from the Atlantic to the Gulf because you have failed to ban fish traps causing even more destruction here in the Gulf.

I support the requirement that fish be landed intact. Many commercial fishermen filet undersized fish at sea and fish houses are buying them. There was an arrest of a boat out of Fort Myers Beach in June of this year that had several thousand pounds of filets and was in the process of unloading them at a fish house. An anonymous tip brought in the US Coast Guard and they arrested the commercial fisherman and seized the fish. If fish are not landed whole, it is hard to enforce the size laws. The fish houses will continue to get away with as much as they can generally disregarding the marine resource laws until the there is some law enforcement. As it stands now, fines are small and they are few and far between, just the cost of doing business.

I do not support changing existing federal reef fish permit qualification restrictions. We should not be opening up red snapper to more commercial fishing pressure. If fishermen can find alternative employment then they should not be given commercial permits. This protects the full time fishermen and the dwindling snapper populations. We want to decrease effort remember? To many commercial fishermen shorten the season, drop the price of fish by glutting the market, and create another fishing derby. More importantly, red snapper is in serious depleted condition and suffered in the 92 by heavy commercial effort. Commercial fishermen can land 2,000 pounds of red snapper per trip. Recreational fishermen can land 7 fish per trip per person.

CAPTAIN FRANK GUMPERT JR.
5146 Kristin Court, Naples, FL 33942

RECEIVED
OCT 23 1992
GULF FISHERIES MGT. COUNCIL

Gulf of Mexico Fishery Management Council
5401 West Kennedy Blvd.
Tampa, Florida 33609

10/22/92

#2

Dear Sir,

I attended the public hearing in Naples Florida and I have put my response in writing because Mr. Tom Wallin was not at the meeting. I think Mr. Wayne Swingle did an excellent job explaining our current crisis.

I am strongly opposed to fish traps in the Gulf of Mexico. The public testomy by Mr. Marty Harris confirmed my belief. Mr. Harris has caught 2,200 grouper every 10 days for the last year. Only 440 of those (1 in 5) were legal size. If you multiply that by only 87 boats, you get 6,890,400 grouper hauled up from deep water in traps in one year. You add to that all the non target fish and snapper and you get mass destruction of fish populations in the Gulf. He testified that he has "lost many traps" and that his "trip catches are higher than the data shows". Mr. Rodger DeBrewer a biologist stated that many of the fish were "punctured" before being released".

Commercial fishermen in the Gulf of Mexico think that there is no limit to what they destroy. You have to limit this destruction. Fish traps should be banned which is the correct preferred option. They are banned in State waters, The South Atlantic and should be in the Gulf too.

I support Mutton Snapper option 1, closing mutton snapper to all fishing during peak spawning season. Mr. Billy Sanifer owner of a Ft Lauderdale fish house, testified that the large sows over 2 lbs are difficult to sell. Those fish should be allowed to spawn on Riles Hump the newest hot spot. They need to protected from mass destruction during spawning aggregation.

I support the requirement that fish be landed intact. If fish are not landed whole, it is hard to enforce the size laws. The fish houses will continue to get away with as much as they can, just the cost of doing business.

I do not support relaxing existing federal reef fish permit qualification. We should not be opening up red snapper to more commercial fishing pressure. If fishermen can find alternative employment then they should not be given commercial permits. This protects the dwindling snapper populations. We want to decrease effort remember? To many commercial fishermen shorten the season and drop the price of fish by glutting the market.

Sincerely,

Frank A Gumpert

Captain Frank Gumpert
Billfish Advisory Panel
Gulf of Mexico Fishery Management Council

Fiesta Charters

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BOATS
OUTRAGEOUS
FIESTA
HIDE-A-WAY

CAPT. MIKE McRA[illegible]
(601) 875-9462

To Whom It May Concern:

I would like to express my views and concerns regarding the red snapper industry in the area. Having run a successful charter boat operation for 15 years, I feel I am qualified to comment on this subject.

I feel that commercial fishing for red snapper should be limited to areas 100 ft. or more in depth, reserving the shallower areas for sport fishing.

I am in favor of increased minimum lengths for red snapper rather than a decrease in the number of fish per person allowed.

I also feel there needs to be stricter enforcement of sport fishermen selling fish to local restaurants and others that are not being counted in the commercial quotas.

I appreciate your giving time and consideration to these concerns.

Sincerely,

Capt. Mik[illegible]aney

October 18, 1992

To: Dave Anthony
Gulf of Mexico Fishery Management Council

From: Perry Kirkland
P. O. Box 111
Suwannee FL 32692

Re: Fish Traps

#3

Dear Dave:

This letter is in response to concern for the continuing decline of reef fishes in the Gulf of Mexico.

I'm currently 55 years of age and have spent my entire life on the Levy ane Dixie County coasts. Each year I have seen grouper fishing production decline and snapper fishing become almost extinct within the gulf waters adjacent to our coast lines.

Within the past six to eight years fish traps have become more and more abundant within our waters as the fish population grew smaller and smaller.

I personally have seen several boats working traps, within the immediate areas I fish, who were not properly identified as owning a federal reef permit. Therefore, I have to believe the government has no idea how many traps are out there or how many fish are taken annually by this method. Also, several times I have seen dozens of smaller fish dead and floating on top of the water in areas where trap boats were currently working.

Most of this activity is occurring in 30-80 feet of water adjacent to the Dixie County coastline. Enforcement activities are practically non-existent.

Based upon these and other additional facts I believe the most practical thing to do for fish conservation in the future is to prohibit any and all traps from the entire Gulf of Mexico.

By the way I am a commercial fisherman with all the required licenses and permits trying to make a living from the gulf same as these "trappers," (this includes federal and state trap permits).

Oct. 28, 1992

Capt. Patrick Peterson
275 Seal Ave.
Biloxi, MS 39535
(601) 896-2343
(601) 374-5449

Wayne Swingle,
Executive director,
Gulf of Mexico Fishery Management Council.

Mr. Swingle,

Since the 13-inch minimum size, 7-fish limits on red snapper, I've seen a tremendous increase in the population of fish available to recreational fishermen on the Mississippi Gulf Coast.

I support the Council's plan to raise the minimum legal size of red snapper to 16 inches. The sooner, the better.

I also trust the Council to properly manage red snapper for the maximum benefit of recreational and commercial fishermen.

However, I ask that the Council prohibit commercial fishing on all man-made fish havens off the Mississippi Coast. While this would be a minor sacrifice to commercial fishermen, protecting these fish populations for recreational fishermen would provide a major boost for the Mississippi Coast's economy through the tourism and charter boat industries.

In my opinion, these fish havens were built with tax dollars for recreational fishermen. And from experience, I know that commercial snapper boats can find good catches further offshore, where recreational boats cannot venture easily.

Thank you.

Capt. Patrick Peterson
"Hot Story"
"ConspiraSEA"

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GULF FISHERIES COUNCIL

OCTOBER 21, 1992

GULF OF MEXICO
FISHERY MANAGEMENT COUNSIL
LINCOLN CENTER, SUITE 331
5401 W KENNEDY BLVD.
TAMPA, FL 33609

#4

TO WHOM IT MAY CONCERN,

MY PARENTS TRANS-PLANTED ME FROM NORTHERN MINNESOTA TO KEY BISCAYNE IN 1959. AT MY FIRST SIGHT OF THE TROPICAL OCEAN I KNEW I WOULD SPEND THE REST OF MY LIFE ENJOYING ALL THAT IT HAS TO OFFER.

UNFORTUNATLEY A GREAT DEAL OF THESE AMENITIES IN SOUTH FLORIDA HAVE BEEN REMOVED BY A VERY FEW PEOPLE FOR THE SOLE PURPOSE OF THEIR PERSONAL MONETARY WEALTH. THERE ARE TOO MANY LOBSTER TRAPS IN SOUTH FLORIDA WATERS. I FIND IT HARD TO BELIEVE THAT WEBSTER WOULD DEFINE " MONEY- LOBBING " AS " AN EXTREME MINORITY HAVING THE LEGAL RIGHTS TO THE VAST MAJORITY OF ALL FISH IN SOUTH FLORIDA." THIS BALANCE IS WAY OUT OF PROPORTION.

FISH TRAPS SHOULD ALSO BE REMOVED FROM OUR WATERS. AS A DIVER SINCE 1962 AND A NAUI INSTRUCTOR SINCE 1966, I HAVE SPENT MANY HOURS ON THE OCEAN FLOOR. ON A FEW OCCASSIONS AS RECENT AS 1989, I HAVE COME ACROSS LARGE WIRE FISH TRAPS ON LONG LINES. SOME OF THESE LINES CONTAINED AS MANY AS 15 TO 20 TRAPS. THESE LINES HAD NO FLOATING MARKERS. THE TRAPS CONTAINED NUMEROUS FISH, PARTICULARLY, GROUPER, SNAPPER, HOG FISH, ANGEL FISH AND A FEW OTHERS. THE TRAPS ALSO CONTAINED FISH SKELETONS.

UPON CLOSER OBSERVATION, I NOTICED THAT THE TRAPPED FISH WERE STARVING AND PROBABLY CANNIBALIZING FOR POSSIBLE SURVIVAL. AFTER REALIZING THAT THESE TRAPS WERE LOST OR ABANDONED, I REMOVED THE DOORS FOR OBVIOS REASONS. THE AREAS SURROUNDING THESE TRAPS WERE DEFINITELY VOID OF FISH COMPARED TO OTHER AREAS. MOST OF THE FISH TRAPS WERE IN THE KEY WEST - MARQUESAS WATERS AT THE 60 TO 70 FOOT DEPTH. USE OF FISH TRAPS IS A CRIME. I PERSONALLY WOULD LIKE TO ACCOMPANY ONE LOBBIST TO THE OCEAN FLOOR TO SHOW HIM WHAT HE IS RESPONSIBLE FOR --- AND THEN PUT HIM IN ONE OF THE TRAPS AND LEAVE HIM THERE.

FOR ALL NATURE LOVERS,

Tom Russell

TOM RUSS

Handout

TAB C NO. 9(b)

B. Allen Patrick
Diving Rights Committee Chairman
St. Petersburg Underwater Club
145 Ramon Way NE
St. Petersburg, FL 33704

November 6, 1992

RECEIVED
NOV 0 9 1992
GULF FISHERIES COUNCIL

Mr. H. Gilmer Nix, Chairman
Gulf of Mexico Fishery Management Council
1408 North Westshore Boulevard
Suite 916
Tampa, FL 33607

Dear Mr. Nix,

The July/August issue of the Gulf Fishery News stated that special management zones off Alabama were being considered where spearfishing would be prohibited. Is this part of Reef Fish Amendment 5, which is up for final action in November? What is the conservation purpose behind this proposal?

If Alabama harvest is similar to Florida's, there can be no environmental or conservational justification for such restrictions. Where hook and line fishing is allowed spearfishing should be allowed. Spearfishing represents an insignificant proportion of fish take in Florida. According to National Marine Fisheries Commission data for Florida commercial fish landings:

- Spearfishing accounts for less than three tenths of one percent of the overall fish harvest.
- Baitfish harvest in 1990 from Tampa Bay alone was 18.5 times the total spearfishing harvest in all of Florida! ("Florida Sportsman", Sept. '92, p. 59)
- The great majority of the commercial hogfish harvest is by other than spearfishing, i.e. mostly fish traps.

Spearfishing has insignificant impact on our fishing resource. It does not deserve being singled out for restriction in Alabama or any other area. If spearfishing was highly productive more commercial fish take would be attributed to it.

Yes, we have a fishery resource to revive, protect, and share. Conservation regulation should be based upon objective research, not emotion, selfishness, or mis-information. However, recent news releases, commission meetings, and newspaper articles confirm that attempts are being made to restrict diving and spearfishing rights on the Gulf and Atlantic Coasts.

Setting the Perception Straight

- Recreational bag and size limits apply to both hook and line and spearfishing.
- Spearfishing selects individual fish. With a limited air supply, a diver has little time to waste on undersized fish.
- In contrast to hook and line fishing, spearfishing does not gamble on which size or species of fish is "caught".
- Hook and line fishing's "big one that got away" often does so with hook and line trailing from its mouth.
- Spearfishing leaves no hook and monofillament "Dangerous Litter" behind to entangle sea and land wildlife.
- At the Suncoast Seabird Sanctuary not one bird injury has been attributed to spearfishing; the majority of injuries are attributed to hooks and monofillament fishing line.
- Sport divers often remove and properly dispose of abandoned fishing line and other "Dangerous Litter".

I am not implying that hook and line fishing be outlawed. But its negative aspects should be considered when establishing effective conservation regulations, especially when they discriminate against spearfishing. Allowing hook and line fishing, while excluding spearfishing is unjustifiable, unreasonable, and unfair. If restrictive zones are the answer, make them "no take" zones for all types of fishing. Spearfishing and hook and line interest should join together to effectively return fishing to the abundance it once held.

Where hook and line fishing is allowed.....
spearfishing should be allowed!

Thank you for your consideration.

Sincerely,

B. Allen Patrick

CC: Dr. Russell Nelson, FMFC
Lynn Nettles, Florida Scuba News
GMFMC Members

Copy C+TS

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SEP 1 0 1992
GULF FISHERIES CO

Jerry F. Wells
Rt. 2 Bx 4397
Crawfordville, FL 32327
(904) 926-7275
September 3, 1992

Gulf of Mexico Fisheries
Management Council
Lincoln Center Suite 331
5401 W. Kennedy Boulevard
Tampa, Florida 33609

#2

Dear Sirs:

This letter is to request your assistance and advice regarding both legal and illegal trapping of fin fish in the northern Gulf of Mexico.

As an sport fisherman and diver, I have had the opportunity to examine a sample of traps currently being used in my local area. It is my estimate that less than 2% (two percent) of the traps have the required federal ID tag (I did find one) and none of the traps examined, 0%, include the required biodegradable escape doors.

The current usage of timed disintegrating clips for floats and lines make the presence of the traps difficult to detect unless you happen to be out on the right day, usually Tuesday, Wednesday or Thursday or, you happen to encounter a line of traps while diving. When a trap is discovered, the contents are revealing. No fish is immune, with grouper, rock bass, hog nose snapper, grunts and even dead turtles having been encountered.

Deterioration of fish stocks in this area have been dramatic and coincident with the introduction of commercial trapping about three years ago. I feel a lesson has been learned with the near demise of redfish breeding stocks and the impressive return once commercial harvesting was restricted. Perhaps it is time to consider conservation efforts for other fishes.

I recognize that commercial fishing contributes something to employment and the economy. I hope your council recognizes the contribution to the economy from sport fishing and the potential damage to the economy should stocks be depleted beyond recovery through over-harvesting with these all too efficient methods. Unemployment in both commercial and sport fishing sectors is an ugly and permanent prospect if this is permitted to continue.

Please advise me of the position of your council with respect to commercial (or private) trapping of fish and what steps are necessary to eliminate it or establish meaningful limits (restrictive enough to permit re-establishing stocks).

Sincerely,

Jerry F. Wells

Jerry F. Wells

copy: Sen. Bob Graham

10/28/92

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GULF FISHERIES COUNCIL

Mr Nix:

As an avid scuba diver, I have seen the damage and senseless deaths of creatures trapped by the fish traps.

And when the traps are forgotten or left behind the creatures continue to enter and die.

We are a wasteful country. It's time to amend our ways as a people, despite the individual cries of "foul play."

Change is difficult but can be accomplished a step at a time.

Respectfully,
[illegible]

#3

BRIEFING BOOK ADDITION.

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GULF FISHERIES COUNCIL

To: Gulf Council
From: Larry Goins - Key West

The gulf of Mexico trap fishery has always provided a needed supplement to the fishermen's total income especially during the summer months when stone crab and lobster fishing is closed. A closure of the trap fishery will cause severe economic problems and could be the straw that destroys the fishermen's future. We had as the economy is the fishermen need no help like this.

Trap Facts + Comments

(1) 87 active trap fishermen in entire gulf. only 42 use just fish traps - 45 fishermen use traps part time. S.E. Lab 7-7-92. Trap fishers had landings that were 6.8% of total reef fish landings in 1991

(2) The trap fishery in the gulf of Mexico has proven itself over the past decade to be a viable and sustainable part of the commercial reef fish fishery. Despite extensive research, fish traps have not been documented to have harmful effects claimed by those who are obsessed with their elimination.

(3) Over 1600 reef permits issued to Florida fishermen in 1992, only 87 or 4.9% of those permit holders use fish traps.

(4) It is difficult to understand the fixation by certain people with fish traps, when they are the smallest component of the commercial fishing and have the least impact on overall mortality.

(5) Research in Collier County based on take the traps with you and back the same.
Trap loss 3%-5% annually
Mortality .001% per haul
Traps can be selective
FDNR #39-Nov. 1983

(6) Size selection Red Grouper
A comparison of hook + line with fish traps are found to be the same, with no hooking damage to mouth or stomach. Waters Report S.E Lab

(7) Ghost fishing. With the advent of Jute. I can personally testify that a double granny knot on each corner of the trap door eliminates the possibility of ghost fishing. The submersible. "Reports" de-bunk ghost fishing.

(8) Habitat damage. What are the possibilities in the gulf of Mexico
(a) Butter fish trawls + ground fish trawls
(b) fish traps
(c) grappling
(d) anchoring all commercial boats
(e) anchoring all recreational fishing boats.
(f) Longline
(g) shrimp trawls
(h) crawfish traps
(i) Crab traps
(j) ocean lines anchoring
(k) head boat anchoring
(l) divers collecting live bottom
(m) prop wash all vessels
(n) pollution with chemicals, sewage, mosquito

(o). oil release by commercial vessels.

(p) oil release by outboard motors.

Why make an issue with only fish traps being targeted? Consider one, then do it for all.

(9) All fish traps in gulf of Mexico are fished with buoys.

(10) (a) Red grouper stock not overfished and red grouper comprise about 50% of total trap harvest.

(b) Fish traps and commercial hook-line gear catch the same proportion of small red groupers. Waters S.E. Science Center

(11) Own expression At the present time a moratorium on reef permits is in effect. This in itself will stabalize most fishery pressure. If this ever continues to be a problem or the council a limited entry program could be installed.

(12) Interesting comments by Andrew Kemmerer, just prior to the vote to ban fish traps SAFMC 3-1-91

Just briefly I would still like to comment on some of Mr. Williams' comments. I still really have a difficult time of discounting the best available information we have which shows 9% of the total harvest of snapper/grouper are caught in traps. If you look at the entire South Atlantic we are talking about less than 9%. As such, if we start targeting one piece of gear as being the total problem that we've got in the South Atlantic are wrong and that's what I hear you are doing. What we have got to do is look at all gears, not just one and

to solve the problem. Secondly, the comments on selectivity. I think there have been some measures taken that make these gears selective. The work that the Southeast Fisheries Center has done by one of our leading reef fish experts, Dr. Bohnsack, considers this to be a highly selective piece of gear."

(13) NMFS - Turner - more Amendment 4 South Atlantic - Position Paper excerpts from paper

"Insufficient information is presented to support a finding that the elimination of fish traps is necessary and appropriate for the conservation and management of this fishery. Such prohibition would be inconsistent with National Standard 2 because the best available information does not support a ban as much as it does limited regulation with close monitoring; the proposal is also deemed inconsistent with National Standard 4, which requires that any allocation of fishing privileges (e.g., by gear type) must be fair and equitable. According to the Magnuson Act, an FMP may incorporate coastal state conservation and management measures only if they are consistent with the above three criteria, and they only need to be consistent to the maximum extent practical, not identical with the federally approved coastal zone management plan of a state. Since 1984, use of fish traps in federal waters has been considered to be consistent to the maximum extent practical with Florida's

recent memo, the Assistant Administrator for Fisheries (NMFS) warned that subjugating Federal responsibility to provincial objectives could dilute the efficacy of federal marine resource management programs. He stated that, "We must all be more vigilant in guarding against attempts to interfere with Federal responsibility for managing fisheries and protected resources through the Coastal Zone Management Act;" (memo to Regional and Center Directors, May 20, 1991

(14) As you are aware, at this time, a lawsuit directed at Dr. Fox, NMFS, is under way. It appears the fish trappers are going to get a good hearing from the court. It also appears that it would be prudent for the gulf council to consider not making a decision on fish traps until the case is decided in the Atlantic.

Thank you for reading these comments.

Capt Larry Lains
Capt. Scott Lains
Capt Duke Lains
M.V. "Momma Jo"
M.V. "Crawdaddy"

Rt 2 Box 523-N
Summerland Key, Florida 33042

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
9450 Koger Boulevard
St. Petersburg, FL 33702

1-NO MIZE + GULF

June 18, 1991 F/SER11:WRT

MEMORANDUM FOR: F/SER - Andrew J Kemmerer

THROUGH: F/SER1 - William N. Lindall

FROM: F/SER11 - William R. Turner

SUBJECT: Amendment 4 to the Fishery Management Plan for the Snapper/Grouper Fishery of the South Atlantic--Position Paper

The undersigned have reviewed the subject document and recommend disapproval of certain measures. Council staff was alerted to many deficiencies throughout the document during the course of our advance (informal) review and assistance was provided in revising the draft amendment, but many of the suggestions were ignored. Although some shortcomings can be overlooked because of the condition of the resource and the urgent need for management, we recommend the following measures be disapproved for the reasons given.

Action 20: Greater Amberjack Spawning Closure

The harvest and/or landing of greater amberjack in excess of the bag limit of three in or from the EEZ south of Cape Canaveral, Florida would be prohibited during April.

This measure, disguised as a spawning closure, actually allows the continued harvest of greater amberjack under a generous daily recreational bag limit of three fish.

The discussion or rationale presented in support of this measure is flawed in several respects. First, the measure is labeled as a "spawning closure," but harvest of greater amberjack is still allowed under a recreational bag limit of three fish. This does not provide maximum protection to the spawning aggregation that the measure is designed to protect (National Standard 1). Although the magnitude of recreational harvest of this species is not known, the number of recreational fishermen is substantial and the coastal populous is burgeoning.

Second, greater amberjack spawn over a period of about three months. Selecting April as the peak month for spawning based upon 1989 landings (a single data point) does not seem

See action #28 page 3 4 5 6 7 8

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appropriate. Spawning peaks depend upon a number of condit that may vary from season to season, and do not follow the s pattern every year. To more completely bracket the spawning cycle, we would suggest a closure during the entire three-month period. Third, the protection afforded by this measure may not translate into the 19% reduction in fishing mortality, which is equivalent to the April 1989 estimate of Florida amberjack landings. It is not clear that this landings estimate is for the area of spawning only or for the entire state, including the Gulf of Mexico. Also, since Florida does not prohibit the sale of recreationally caught fish, an unknown portion of this amount must be attributed to fish sold by the recreational sector. (Anglers with a Saltwater Products License, and for certain fishes, a Restricted Species Endorsement, may sell fish caught under bag limits. Most charter boat captains, especially the 100 or so in the Florida Keys, qualify.) Therefore, restricting commercial harvest to bag limits would not necessarily produce a reduction in fishing mortality equivalent to 19%, as stated.

Lastly, the final paragraph of the discussion seems to be grasping for some sort of justification of the measure proposed, but makes little sense.

> "Harvest up to the recreational bag limit is being allowed to promote public understanding of and compliance with the bag limit regulations. Changing the bag limit to zero for one month would have limited biological benefits and crea significant negative public and enforcement costs. Ther equity in leaving the recreational fishery open during th April limited area commercial closure in that the commercial fishery is not limited by a quota while the recreational fishery operates under a 3-fish bag limit."

Changing the bag limit to zero only for one month may produce limited biological benefits, but those benefits certainly would be greater than those resulting from a 3-fish bag limit and, if continued throughout the 3-month spawning season, the measure might even produce significant biological benefits. Likewise, it is not clear why a zero bag limit would cost any more to enforce than would a 3-fish bag limit. Finally, it seems that zero limits would serve to promote public understanding of bag limits as well as 3-fish limits. Total closure may even gain some respect from a fishing public that expects the NMFS and Councils to manage and conserve our fishery resources.

Rejected Option 2, that would have prohibited the harvest and landing of greater amberjack during March, April, and May in the EEZ, would be the preferred option to conserve this resource.

<u>Action 21: Mutton Snapper Spawning Closure</u>

This measure would prohibit the harvest and/or landing of mutton snapper in excess of that allowed within the snapper aggregate bag limit (10) in or from the EEZ during May and June. This measure does not preclude commercial fishing during this time long as the harvest does not exceed the bag limit.

Although somewhat different, the same concerns are present here that applied to the preceding measure. The main differences are that a two-month closure is recommended insofar as May and June have been identified as peak spawning months; however, the extent of the spawning season is not noted. Also, the aggregate snapper bag limit is 10. Even though there is no evidence that mutton snapper is overfished, the proposed measure does not afford adequate protection to prevent overfishing of the resource (National Standard 1). During spawning seasons, fishes are very aggressive; therefore, it is likely that fishermen exploiting a spawning aggregation will fill the entire bag limit with that particular species. Allowing the harvest of as many as 10 mutton snapper per person may not deter commercial ventures on spawning aggregations. Although we agree that spawning closures can be beneficial, this is not a closure. The measure would gain more support if it reduced the harvest of such liberal numbers of mutton snapper during that period. However, a prohibition on all harvest throughout the entire spawning aggregation period would be the most conscionable approach to conserve this resource.

Based upon the preceding, we recommend disapproval of both "spawning closures." The Council should re-examine these measures in the context of providing protection to the resourc by extending the "closure" periods and by reducing the allowab catch levels substantially, preferably to zero. Fishes are highly vulnerable when aggregated for spawning, and should be afforded maximum protection during this period, especially after Council's expressed concern that greater amberjack is already "overfished" and a distinct potential for "overfishing" mutton snapper exists. If these "spawning closures" are approved, for whatever reasons, the Council should, at a minimum, be notified that we expect these measures to be modified as soon as possible to provide greater assurance against overfishing.

Action 28: Regulate Fish Traps

A [illegible] exhaustive account of the fish trap fishery, largely extracted from literature that generally supported the manageability of fish traps, the Council voted to eliminate the use of fish traps from the south Atlantic EEZ except for black sea bass traps north of Cape Canaveral, FL. Much of the discussion used to justify the removal of fish traps is also true of other gear, contradicts the data base, or is based upon speculation or fabrication. The rationale presented in Amendment 4 to support the removal of fish traps may be debunked as

follows. (Incidentally, no rationale is presented to suppor e allowance of black sea bass traps.)

Certain discussion elements that are used to rationalize a ban on fish traps appear to have little or no application to the action being proposed. Statements such as, " Traps are inexpensive, easily constructed, easy to use, fish unattended, catch a wide range of species not caught by other gear, " and etc., are irrelevant to the proposed ban and are not totally accurate. The cost of a trap is dependent upon the material used in its construction; while the mechanics of constructing a trap vary with the configuration and the features required by regulation. At any rate, many of the trap characteristics mentioned have no relation to the proposed action.

Other attributes that are credited to fish traps apply equally well to other gear, commercial and recreational alike. Traps are criticized because they "allow economic exploitation of low density fish stocks, and allow fishing where other methods are uneconomical or have become uneconomical because of overfishing and are able to be fished over a wide range of depth, bottom types, and conditions." Free market forces and desires of sport fishermen to catch their bag limits dictate that harvest methods must be economical -- just like any other business. Thus the same statement regarding harvest of low density fish stocks is equally true of artificial reefs. If fish of certain species were concentrated to the extent that they could be readily exploited by hook-and-line gear, there would be little need to build artificial reefs or fish attracting devices. Just as very few fishes are concentrated enough to support viable commercial enterprises by hook and line, artificial reefs and fish attracting devices are used by many recreational fishermen and recreationally supported fishing enterprises, such as the charter boat and headboat industry, to sustain their operations.

The discussion continues stating that, "traps are bulky," (This has nothing to do with the proposed action, whatsoever.), "result in trap loss and ghost fishing," (If traps weren't fished, none would be lost. At any rate, ghost fishing can be acceptably controlled by degradable panels.), "catch species that were not traditional food fish," certain valued species could be protected by simply prohibiting the harvest and possession of these species, if warranted. Many of the fish taken by traps are alive and in suitable condition to survive when released if retention is prohibited.), "are fished near live bottom causing habitat damage," (Including this as rationale for eliminating the trap fishery points to inconsistencies with previous management actions for snapper grouper species. In January 1989, the use of trawl nets was prohibited in the snapper-grouper fishery between Cape Hatteras, NC, and Cape Canaveral, FL, to prevent damage to live bottom habitat. This would tend to indicate that some live bottom habitat exists north of Cape Canaveral. The reasoning

seems inconsistent because the proposed action prohibits the use of fish traps south of Cape Canaveral while allowing the continued use of black sea bass traps to the north. Perhaps the greatest inconsistency in the campaign to eliminate fish traps the equal number of fish traps compared to the excessive number of crustacean traps used in the same area. The FMP amendment (KIK) estimates the number of fish traps in the south Atlantic EEZ at ca. 6,000; fish traps are prohibited in Florida waters. The obvious question that surfaces is, why aren't measures being taken to ban the more than one million spiny lobster and stone crab traps that are fished in state and federal waters off Florida? Many crustacean traps are weighted with poured concrete in the bottom that would increase the potential for habitat damage. Reviewers must conclude that attention simply has not been focused on crustacean traps because crustaceans are not fished by hook and line.) "result in a bycatch of which a portion dies upon release," (bycatch and release mortality occur in all fisheries. However, survival rate of released fish is probably higher in the trap fishery than in any other because many of the fish are alive and uninjured by hooks when brought to the surface. Survival estimates of released fish range from 53 to 87 percent, much higher than documented for any net or hook-and-line fishery.) "result in gear and user group conflict," (No evidence is presented to support the allegation.) "and existing regulations are extremely difficult or impossible to enforce," (Many regulations are difficult to enforce, but none is impossible. Fish trappers have outlined a feasible management program that was rejected summarily by the Council. Research summarized in the FMP amendment concludes that traps are a manageable gear, but the Council summarily rejected this also. The majority of the Council membership apparently has decided against working within the confines of the data base, but seems determined to eliminate the fish trap fishery.)

After the scattergun approach in the opening paragraph of the discussion that bracketed everything from nuts to bolts, the next three pages of the discussion targeted specific problems tailored to support the elimination of fish traps.

The next paragraph states that the trap issue is critical to Florida, "and in the long term to the entire South Atlantic . . . Florida . . . prohibited the use of fish traps in 1980. There have been many problems since then due to the inconsistency between state and federal regulations. The snapper grouper resource off the Florida Atlantic coast has continued to decline." These obtuse statements fail to make the connection between the condition of the snapper-grouper resource off Florida and fish trap harvest. Perhaps the burgeoning population of recreational fishermen along the south Atlantic coast and especially in Florida has a more direct relationship to the decline of snapper-grouper resources than all of the commercial efforts combined. The inconsistency between state and federal

regulation may make Florida's prohibition on fish traps more difficult to enforce, but snapper-grouper resources occur predominantly in federal waters and are legally managed under federal law. Unquestioned and unconditional extension of Florida regulations into federal waters would amount to reverse supersession unless the removal of traps can be justified under the tenets of the Magnuson Act; such justifications are not apparent in this case.

The next paragraph, which possibly should have been part of the above paragraph, states that, "Available data indicate that approximately 9% of all Florida snapper and grouper are taken by fish traps." (One of the literature citations in the amendment places the estimate as low as 1% from 1972-1988.) However, "the Council concluded that the 9% figure was an underestimate of actual fish trap harvest," based upon reported landings for 1988, which "were significantly underestimated." In the next paragraph, an extrapolation is presented based upon documented catches by 6 fish trappers. The results indicated that catch by traps amounted to 39% of the total 1988 commercial catch. If the 1988 commercial landings were "significantly underestimated," an upward extrapolation of trap landings without adjusting total landings would overestimate the percent contribution by traps. Therefore, the Council's contention that rebuilding snapper-grouper resources will be negatively impacted by fish trap harvest because of these inflated harvest estimates are insupportable. Also, there is no clue as to the composition of the survey sample, i.e., whether the 6 trappers were full-time or part-time fishermen, or both. Such calculations exceed the limitations of the data, and in our opinion, compromise the integrity of the management process.

The Council next concluded that, "traps are non-selective by size and by species (e.g., red grouper recruit to the hook and line fishery at around 19" and to the trap fishery at around 11") . . . The mesh sizes required to correlate with the 20" minimum sizes would be so large as to result in de facto prohibition on use of fish traps." First, no reference is cited for the red grouper example, nor is it reasonable; size at capture may be more related to areas fished than to gear selectivity. Next, why did the Council impose a 12" size limit on red grouper 8 years ago when they are not recruited to the hook-and-line fishery until 19"? Finally, it does not matter because most trapped fish can be released alive. The statement regarding the correlation of trap mesh size with 20" minimum sizes is equally unreasonable. What would serve as the basis for such an action when there are many species in the management unit with no size limits whatsoever, and some with lower size limits? Formulation of a workable mesh size should consider the capture of these fish. Also, previous Council intent in setting mesh sizes was based upon escapement of small juveniles, not the achievement of minimum size. If most fish less than the size limits can be

released alive, then traps probably are inflicting less mortality than any other gear, including hook and line.

Next, the amendment states that, "traps unnecessarily kill an abundance of tropical fish because they harvest angel fish, tangs, parrot fish, etc. . . . Since March 1, 1991 the state of Florida has prohibited the harvest of tropical fish . . . Allowing fish traps in federal waters would make Florida's regulations difficult, if not impossible, to enforce. . . ." The trap industry proposed size and trip limits for these species in their proposal to regulate the trap fishery. The proposal was rejected by the Council. If there is good cause to prohibit the harvest of these species, then simply prohibit their harvest and possession so that they will not be targeted in federal waters.

The next several paragraphs allude to the difficulty of enforcing fish trap measures. Here again, the industry offered means of policing the trap fishery by accommodating observers on their vessels, and at their expense, to ensure compliance with fish trap laws. They also agreed to permanent revocation of permits after two major violations. Admittedly, without such a procedure trap violations would be difficult to enforce; however, many other rules require at-sea surveillance, such as the 50-fathom restriction on bottom longlines.

Another problem alluded to is the effect of the selective removal of herbivores on the health of coral reefs. If this problem can be documented, then the supporting evidence could be used to prohibit the harvest of these species in the trap fishery rather than to eliminate the trap fishery. Most of these species are probably the same ones discussed regarding the unnecessary kill of tropicals, such as angelfish, tangs, parrotfish, etc.

Finally, the discussion concludes with a concern for consistency with Florida's Coastal Zone Program, and the prohibition of fish traps by a number of countries (e.g. Bermuda) (emphasis added). The focus of this discussion indicates a misunderstanding of the authority of the Council and, in turn, the Secretary of Commerce (Secretary) to regulate fisheries under the Magnuson Act and the Coastal Zone Management Act. Three conditions must be satisfied before the Secretary can implement any fishery regulation: (1) the regulation must be necessary and appropriate for the conservation and management of the fishery; (2) it must be of a type contemplated by the Magnuson Act; and (3) it must be consistent with the national standards and other provisions of the Magnuson Act and other applicable law. Insufficient information is presented to support a finding that the elimination of fish traps is necessary and appropriate for the conservation and management of this fishery. Such prohibition would be inconsistent with National Standard 2 because the best available information does not support a ban as much as it does limited regulation with close monitoring; the proposal is also

deemed inconsistent with National Standard 4, which requires that any allocation of fishing privileges (e.g., by gear type) must be fair and equitable. According to the Magnuson Act, an FMP may incorporate coastal state conservation and management measures only if they are consistent with the above three criteria, and they only need to be consistent to the maximum extent practical, not identical with the federally approved coastal zone management plan of a state. Since 1984, use of fish traps in federal waters has been considered to be consistent to the maximum extent practical with Florida's Coastal Zone Management Plan. In a recent memo, the Assistant Administrator for Fisheries (NMFS) warned that subjugating Federal responsibility to provincial objectives could dilute the efficacy of federal marine resource management programs. He stated that, "We must all be more vigilant in guarding against attempts to interfere with Federal responsibility for managing fisheries and protected resources through the Coastal Zone Management Act;" (memo to Regional and Science Directors, May 20, 1991).

Owing to its insular zoogeographic condition, referencing Bermuda's banning of fish traps to support similar action in the EEZ off the southeastern U.S. is inappropriate. It connotes a misunderstanding of the role that the continental shelf and associated nutrient systems play in ecosystems supporting marine life. Waters off small islands, such as Bermuda, are not very productive because of the low nutrient levels and limited shelf area; whereas, waters off the coastal states of the southeastern United States generally are very productive due to nutrients supplied by runoff from large rivers and the presence of an extensive continental shelf. Moreover, these insular examples likely demonstrate failure to adequately manage trap fisheries more than the inherent evil of traps. Major fishing powers, such as Japan, Australia, and New Zealand, have trap fisheries operating in their waters.

Obviously, the Council has strayed far beyond the limits of the existing data base to propose elimination of the fish trap fishery. As conscientious plan reviewers we cannot support the approval of a measure to eliminate fish traps when viable alternatives for managing the gear are available. Accordingly, the undersigned reviewers, recommend that the three measures addressed in this memorandum be disapproved and referred back to Council for consideration of alternative management approaches.

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NOV 0 9 1992
GULF FISHERIES COUNCIL

To the Gulf of Mexico Fishery Management Council.

In responce to Draft Amendment #5 to the reef fishery management plan. the preferred Option: Prohibit the use of fish traps in the EEZ of the Gulf of Mexico. It violates the Magnason Act and its Seven National Standards if they still pritain.

Option #1, Status Quo, retain current trap rules, is my preferred Option and I highly recommend the Council to do just that.

Also recommending that the stress line for fish traps be moved into 5 fathoms line. Scientific research supports this recommendation. Groupers in the area of 20 fathoms to 5 fathoms are the same large size.

Dick Nielsen Sr
5351 SW 35th ST.
Ft. Lauderdale, Fl.
33314

RECEIVED
NOV 9 1992
GULF FISHERIES

#5

To Gulf Council members,

My name is Robert Hickman and I was a fish pot fisherman. I live in North Miami and the ban on fish pots in S.E. Fla. has had a severe economic impact on me. I've heard at meetings on the Gulf Coast fishery that your researches have said that the pot fishery is not in trouble, that the pots should be moved in to 5 fathoms. Doesn't sound like a problem. So why a ban on gear!

The same thing happen on our coast and now it is in a federal court costing the taxpayers hundreds of thousands of dollars.

If the pots were harmful then a ban would be justified but we both know the real reason. POLITICS

Please stop playing the game and do what you were put there to do... base your decisions on the best scientific data available.

I'm AGAINST THE FISH TRAP 13

Laudicina Enterprises, Inc.

6620 S.W. 46th Street
Miami, Florida 33155
(305) 667-8649

TO: GMFMC
FAX: 813-225 7015

P.O. Box 411
Big Pine Key, Florida 33043
(305) 872-~~4434~~ 3649

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NOV 0 9 1992
GULF FISHERIES COUNCIL

MEMBERS OF THE GULF COUNCIL:

MY NAME IS MIKE LAUDICINA, I'VE BEEN A COMMERCIAL FISHERMAN SINCE 1969. I AM ALSO A MEMBER OF YOUR SPINY LOBSTER ADVISORY PANEL AND THE COMMERCIAL FISHING REPRESENTATIVE OF THE FLA. KEYS NATIONAL MARINE SANCTUARY COUNCIL.

REGARDING THE MUTTON SNAPPER SPAWNING SEASON CLOSURE; MUTTONS SPAWN ALL ALONG OUR REEF TRACT AND PROBABLY MANY OTHER REEFS AND OUTCROPPINGS UP IN THE GULF. "RILEY'S HUMP" IS PROBABLY ONE OF THE LARGER AGGREGATIONS IN THE TORTUGAS AREA BUT BY NO MEANS THE ONLY ONE. 2 SPAWNING SEASONS AGO I WORKED AS A COLLECTOR FOR THE UNIVERSITY OF MIAMI'S MARINE LAB TO COLLECT LIVE MUTTONS FOR SPAWNING RESEARCH. ON A TORTUGAS COLLECTING TRIP WE DIDNT BOTHER TO GO TO "RILEY'S HUMP" BECAUSE OF ALL THE COMPETITION THERE. INSTEAD WE WENT TO ANOTHER FAIRLY LARGE AGGREGATION ABOUT 12-15 MILES EAST OF "RILEY'S." WE ALSO COLLECTED FROM SEVERAL OTHER AGGREGATIONS ALONG THE KEYS REEF TRACT UP TO MARYLAND SHOALS. I AGREE THAT SOME PROTECTION NEEDS TO BE GIVEN TO SPAWNING FISH BUT A TOTAL CLOSURE

Laudicina Enterprises, Inc.

2

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(305) 872-[redacted]
3649

is un warrented. I would suggest a partial
losure, for example 2 weeks open and 2 weeks
closed, or a poundage quota. These would insure
hat part of the aggregation could spawn unmolested
and that fishermen who depend on them for
uch needed income during that time of year
ould still catch some without the drastic drop
n dockside value because of a market glut.

Regarding fish traps, I've used fish traps on
nd off throughout my career. I've fished them in
any different area from off the coast of South
rolina, the Caribean Sea and the Gulf of Mexico.
wont go into the pro's and cons here because
ight in your amendment 5 draft you have a
t of good information that points out that
ere is <u>no scientific evidence</u> that points to a total
an on fish traps. The biggest argument it gives
or a ban is on page 12 where it says "Due to
he wide spread abuses of the law, and the
mpossibility of enforcement there may be no
other alternatie to banning fish traps."

3

Laudicina Enterprises, Inc.

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3649

#6

That is not a Logical argument. Because of all the drunk drivers on our Roads abusing the law, shouldn't we Ban Cars? Do we Ban screwdrivers Because a Few Burglers use them? Enforcement of the Law is no excuse to deny the honest majority the use of a Tool Because of a Few abusers. Dishonest People are never affected By a Law or Ban. This is constantly proven with in control Laws that never stop crime.

As far as design and methods of Fishing Traps, my most Productive Traps have Been with "Straight in" Funnels (which I still use) and Pulling my Traps daily and Bringing them home at the end of every 10 day Trip. But now that we have Been Pushed to the deeper and less Productive waters, Traps need to Soak for a Longer Time (3-5 days) to catch the same amount of Fish. This increases the damage to the Fish from the Traps.

Also in the draft it states that the FL. Keys Nat'l Marine Sanctuary is considering a Ban of Fish Traps.

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The SANCTUARY IS SUPPOSEDLY NOT going TO get INTO FISHERY MANAGEMENT, IT WILL Be LEFT TO The FL. MARINE FISH COMMISSION and The COUNCILS. They are TAKING The MOST RESTRICTIVE LAWS and applying Them TO The SANCTUARY SINCE FLORIDA and The SOUTH ATLANTIC COUNCILS Have A BAN IN EFFECT, TRAPS are BANNED IN The SANCTUARY.

The FISH TRAP ISSUE IS really an allocation ISSUE where much MIS-INFORMATION IS PASSED ON as FACT I urge you TO disregard The POLITICS And do what The MAGUNSON ACT directs and THAT IS TO BASE your decisions ON The BEST AVAILABLE SCIENCE.

SINCERELY;

Mike Laudicina

MIKE LAUDICINA

21-9-92

TO Gulf Council

Re: Reef fish Admend 5. #1

This letter is in opposition of Admendment 5. to the Reef Fish plan. As I stated in the public hearing, I have seen no goals in which the council is trying to achieve other than to ban Fish TRAPS.

The grouper is not stressed. If it WAS you would not have increased the quota. Also under consideration is moving the stressed Line shoreward.

YOUR motives ARE Quite Clear, & the facts just do not justify your

I Am Also opposed to the 20" mutton option, + the closed Season.

If + only If more Regulations Are to be put on muttons, an Over size should be an option.

The Smaller Muttons (1.75-4#) Size Are more Valuable per pound than the Large (15+) size

William Randolph

4831 SW 188 AVE
Ft. Laud FL
33332

(1)

Nov 8 1992

RECEIVED
NOV 0 9 1992
GULF FISHERIES COUNCIL

Gulf of Mexico Fishery Management Council
Dear Sirs,

I am writing you concerning the fish trap issue. I have been a commercial fisherman since 1975. I've used fish traps for 10 or 11 years, both in the South Atlantic and the Gulf of Mexico. The two bodies of water are quite different and fishing in them is also quite different. Please don't base your decision on the fish trap issue on what has taken place in the South Atlantic Fishery Council.

The Grouper and Snapper fisheries in the Gulf are healthy. I ask why you would even consider a fish trap ban at all. If there was a problem with the snapper or grouper, then I would agree that we would need to take some kind of conservative measures, but this is not the problem.

The fish trap industry is one of the most regulated industries on the Gulf

today. (1) At the present time we have limited entry into the Gulf Ref. fishery (2) The number of traps is limited to 100. (3) Bio degradable panels are used on the traps, and I add that they work very well using the jute string. the panels stay on the traps approximately 2 weeks & then deteriate. (4) We have to fish them in only Federal Waters.

They say these rules are hard to enforce. I don't believe this. I fished in the Gulf of Mexico this last summer with fish traps and was boarded by the U.S. Coast Guard on three trips. Two of the boardings I had fish traps on board and they was inspected by the US Coast Guard, no violations - no citations were issued. In fact from what I've heard at the fishery meeting, very few citations have been issued against fish traps. If you listen to the fellows on the other side of the fence, they would like you to believe that violations abound in this fishery - that is not true.

Most of the fish traps I know

respect and abide by the law, and will, even if fish traps are made totally illegal. I've been fishing since 1975 without one marine fisheries violation.

I've heard a lot of criticism about the by-catch of fish traps at the G.M.F.C. meetings. A lot of these facts are not facts. In the Gulf of Mexico the by catch is very little compared to fishing on the Atlantic side. Also the deeper the water the less by-catch you have. This summer I fished in the area west of Dry Tortugas approximately 60 nautical miles - Latitude 245000 and Longitude 835200. The depth of water we fished in was from 300' to 475'. We were targeting yellow eye snapper, Blackfin snapper, vermilion snapper and black grouper. We pulled our traps daily and always had good to extremely good catches. One thing I did notice fishing in this area - NO By-Catch - NONE. We did not catch one angel fish or any other ornamental fish in these traps.

To sum this up, I would hope you take a hard look at the fish trap industry. Don't base your opinion on what people are saying that have biased or false opinions of this fishery. This is an industry we need as commercial fishermen to make a living on the water. I appreciate your time.

Capt Rick LaFleur
M/V ANNABEL-C
P.O. Box 2668
Key West, Fla 33045
(305) 296-1891

P.S. Anything in this letter that you would like to document or anything pertaining to the fish trap industry I volunteer my boat free of charge to the Gulf Council.

SECTION 2.

Letters Received From
Associations and Organizations

TAB C NO. 15(c)

Copy C+S

RECEIVED
SEP 18 1992
GULF FISHERIES COUNCIL

September 16, 1992

Mr. H. Gilmer Nix, Chairperson
Gulf of Mexico Fishery Management Council
5401 W. Kennedy Blvd. -- Suite 881
Tampa, FL 33609

re: Mutton Snapper
New Regulations

Dear Mr. Nix:

Project ReefKeeper and its members are alarmed by the dramatic decrease in recreational catches of mutton snapper observed over the last few years in the Gulf of Mexico. We see this decline as an early warning of future overall lower landings and depleted stocks. We are also concerned about fishing during times of peak spawning activity – especially in areas where these fish are known to congregate in spawning aggregations.

Project ReefKeeper is a national non-profit conservation organization exclusively dedicated to the protection of coral reefs and their marine life. In this regard, we have actively worked for years with the Gulf Council on fishery management plans and issues affecting Gulf reef fish and coral resources.

In order to remedy the current situation and prevent the probable depletion of mutton snapper spawning stocks, we formally request that the Gulf of Mexico Fishery Management Council adopt strong measures to protect the known mutton snapper aggregate spawning area of Riley's Hump near the Dry Tortugas by prohibiting all fishing in the Riley's Hump area during the known mutton snapper peak spawning months of May and June.

In addition, we request that the minimum size limit for mutton snapper be increased to 17" to allow these fish the opportunity to achieve sexual maturity and contribute to the replenishment of the stock before they are fished.

Mutton Snapper Stocks
Are Moving Towards Depletion

Council data shows that recreational landings of mutton snapper have decreased dramatically in the Gulf of Mexico since 1981. Over the past ten years, a clear downward trend has been documented, culminating for the 3 most recent years

Project ReefKeeper

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(1989 - 1991) in an *80% decline from 1981-1984 average annual catch levels* (GMFMC, August 1992). It is also clear that this decade-long downward spiral in mutton snapper catch can be expected to continue if the regulatory status quo is maintained.

Although Council data also shows that commercial catches of mutton snapper have remained comparatively stable from 1986 to 1991 (GMFMC, August 1992), the Council still needs to be concerned that this apparent stability in landings may be the deceptive result of increased fishing effort and/or the progressive discovery, targeting and exhaustion of spawning aggregations of this slow-growing fish.

When that possibility is factored in, there is a clear need to take action now before mutton snapper stocks are driven down further.

Present Regulations Are Inadequate

Currently, the only limit to mutton snapper fishing in the Gulf of Mexico is a recreational bag limit of 10 fish per day. There are no existing commercial or overall quotas established nor are there closed seasons. There is no limited entry to this fishery, so only a basic federal permit is needed to fish commercially for mutton snapper. Present regulations do not limit mutton snapper fishing in any way during known spawning times or in known spawning areas.

This has to change. We must safeguard our remaining mutton snapper spawning sites and aggregations before they are lost.

Riley's Hump Needs Protection

Riley's Hump, located some 60 miles west of Key West, is the only known *remaining* area of mutton snapper spawning aggregation in U.S. Gulf waters (GMFMC, August 1992). Other spawning sites, such as the one at Western Dry Rocks immediately south of Key West, were decimated years ago and have never recovered ((GMFMC, July 1992). Riley's Hump will be next if regulations are not created to help remedy the situation.

It would be scientifically unacceptable to shrug off the documented disappearance of other mutton snapper spawning aggregations based on the simplistic assumption that the fish moved to another site. Mutton snapper do not generally migrate or move in that manner (Thomson and Munro, 1983).

Protection of mutton snapper spawning sites is a very important issue if we intend to keep and maintain a Gulf mutton snapper population and fishery. Yet some of the most intensive fishing pressure on reef fish populations occurs over spawning aggregations (Olsen and LaPlace, 1978). Thus, we could eventually lose this fishery altogether if we do not protect the time and areas where mutton snapper choose to spawn.

We request the closing of Riley's Hump to all fishing during May and June to ensure that mutton snapper reproduce in sufficient numbers during their peak spawning season (Closure Option 5, GMFMC August 1992).

Based on red snapper release information, 33% of mutton snapper caught would not survive their release (GMFMC, August 1992). Just as troubling, there is no evidence to show that, once released, *any* of the fish would still be able to spawn. This is why Riley's Hump should be closed to all fishing -- to protect the fish from release mortality and safeguard them from stresses during a peak spawning period.

Closing this area for a short period of time would affect recreational fishermen very little since the best season for recreational mutton snapper fishing *activity* is during the winter (GMFMC, August 1992). Commercial fishermen may lose a little during these months of closure of the area, but they will still be able to fish the rest of the Gulf for mutton snapper or any other reef fish.

By allowing the mutton snapper to reproduce, the closure of Riley's Hump would be an investment in the future of the fishery for all.

Mutton Snapper Minimum
Catch Size Should Be Increased

The present minimum size limit on mutton snapper is 12 inches. However, current studies show that this fish is a slow grower which probably becomes sexually mature at 17 inches -- not 12 inches (Mason and Manooch 1985, Palazon and Gonazalez 1986, Pozo 1979).

It is necessary to increase the minimum size limit to 17 inches to make sure that the fish can reproduce themselves before being caught. This would allow the juvenile 12-inch mutton snapper an extra year to grow and then reproduce.

The fishery would benefit in two ways. The more fish that can reproduce, the more fish there will be to be caught by fishermen. Number of fish caught will increase. *And,* because the fish will be bigger, the yield in pounds will increase even more.

The South Atlantic Fishery Management Council and the Florida Marine Fisheries Commission have both taken prudent preventive action to safeguard the future of the mutton snapper population and fishery. The Gulf Council can do no less.

Project ReefKeeper formally requests the Gulf of Mexico Fishery Management Council to enact Option 5 (Close the region of Riley's Hump to all fishing activity during the months of May and June) and Option 7 (Increase the minimum size limit for mutton snapper from 12 inches to 17 inches total length).

Thank you for your attention and consideration.

Sincerely,

Alexander Stone

ALEXANDER STONE
Director

AS:hm / cc: GMFMC Members
enc: Literature Cited

Literature Cited

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Texas Shrimp Association

P.O. Box 1020 • 126 West Cleveland • Aransas Pass, Texas 78336
Telephone (512) 758-5024 • FAX (512) 758-5853

First in Fisheries

GULF OF MEXICO FISHERY MANAGEMENT COUNCIL
NOVEMBER 18, 1992
HOLIDAY INN, SARASOTA LONGBOAT KEY
SARASOTA, FLORIDA

Public Testimony

ARTIFICIAL REEFS

DESIGNATION OF SPECIAL MANAGEMENT ZONES

Wilma Anderson, Executive Director

Texas Shrimp Association opposes any designation of "Special Management Zones," and the continuing increase in reefs in trawlable bottom until a full comprehensive Gulf Reef Program is established by the Council and the State Agencies

Rationale: The concentration of obstructions, oil and gas platforms in the Gulf of Mexico has diminished trawlable bottom and increased gear loss in the shrimp fishery. Upon the closeout of foreign fishing waters to U. S. vessels and the offshore drilling in the Gulf of Mexico has forced the vessels into concentrated areas for fishing. The objective to continue to topple rigs that originally was intended to be removed and trawlable bottom returned to the fishing industry has now been reversed in theory of artifical reefs in present rig locations, rigs to be moved into inshore areas of prime fishing grounds.

Industry is now in the process of obtaining bycatch data in shrimp trawls. Industry will look to the Council and all agencies, that rigs to reef will present mitigation and credit must be given to industry for loss of fishing grounds by 1994 when the bycatch program terminates.

At the last Council Meeting the Artificial Reef Committee had a briefing from the various states.

> Alabama: Under this program more than 6,000 reefs had been placed offshore by individual fishermen.

Mississippi: No number stated on inshore reefs or offshore reefs, but reefs exist off Mississippi.

Louisiana: Louisiana has 4,000 oil and gas rigs that must be removed by year 2000. State intent is to topple or move most of these rigs for reefs.

Current Reef Fund in Louisiana $ 3.1 million

Texas: Reef program structured like Louisiana, number of present reefs not stated or the number of intent off Texas.

Current Reef Fund in Texas over $ 1 million.

Gulf States Marine Fisheries Commission: Supported special management zones by the Council to regulate gear on reefs.

Amendment 6 to the Shrimp Fishery Management Plan addresses:

Problems in the Fishery

Loss of gear and trawling grounds due to man-made obstructions.

Specific Management Objectives

Minimize adverse effects of obstructions to shrimp trawling.

Apparently the Council does not have correlating objectives in the various fishery management plans.

BETTER FISHING FOR YOU! TAB C NO. 9(a)

florida league of anglers, inc.

November 4, 1992

RECEIVED
NOV 0 5 1992
GULF FISHERIES COUNCIL

Wayne Swingle, Executive Director,
Gulf of Mexico Fishery Management Council
5401 W. Kennedy Blvd., Ste. 331
Tampa, FL 33609

Dear Mr. Swingle,

Ten months after the South Atlantic Fishery Management Council banned wire mesh fish traps in the waters under its jurisdiction, divers are still finding "ghost traps" filled with many species of marine life and piles of skeletons.

It has been well established by federal and state research agencies that wire mesh fish traps harm not only the fishery resource but marine habitat also.

There are other types of commercial gears available for harvesting reef fish that do not have such devastating effects on the resource and the environment.

Florida League of Anglers, therefore, urges not only that wire mesh fish traps be banned in all waters of the Exclusive Economic Zone of the Gulf of Mexico, but that verification be required from each fish trap permittee that all permitted wire mesh fish traps have been removed from the Gulf of Mexico by a specified date.

Sincerely,

Eugene Turner

Eugene Turner
President

ET/ns

BRIEFING BOOK ADDITION

MARINE AQUARIUM SOCIETY
OF THE PALM BEACHES

RECEIVED
OCT 30 1992
GULF FISHERIES

October 27. 1992

Gulf of Mexico Fishery Management Council
Lincoln Center
Suite 331
5401 West Kennedy Boulevard
Tampa, Florida 33609

Gentlemen:

We have viewed Bill Parks' video "FISH TRAPS - EXPLOSIVE DECOMPRESSION" and agree with his stance that fish traps should be prohibited throughout the Gulf of Mexico for the following reasons:

1. Fish unattended in cages (ghost traps)

2. Indiscriminate killing of ornamental marine fish

3. Because the adult species of ornamental fish are being killed, this leaves less breeding stock to perpetuate the species.

Because of these three points described above, the Marine Aquarium Society of the Palm Beaches strongly recommends the outlawing of all fish traps, as documented in the video, in the waters of the Gulf of Mexico.

Sincerely,

David Sinn (jmv)

David Sinn
President, MASPB

DS/jmv

Com C + TS

KSC BARRACUDAS

P.O. Box 21023

Kennedy Space Center, Florida 32815

RECEIVED
OCT 12 1992
GULF FISHERIES C...

October 8, 1992

Wayne Swingle
Executive Director GMFMC
5401 W. Kennedy Blvd, Suite 881
Tampa, Fl 33609

The members of our dive club support Project ReefKeeper in a request to have Fish Traps prohibited in Gulf waters to prevent further distruction to the reefs and non selective killing of sea life and juvenile reef fish communities.

We urge you to continue with public hearings and move forward to establish such Fish Trap bans as will allow the preservation and maintainance of our reef populations.

Sincerely

Grace Hampton

Grace Hampton, Chair
Environmental Committee
KSC Barracuda Dive Club

PANAMA CITY BOATMAN ASSOCIATION

P. O. BOX 9790, PANAMA CITY BEACH, FL 32417
(Dedicated to the Conservation of our renewable Marine Resources)

Gulf of Mexico Fishery Management Council
Sarasota, Florida
November 18, 1992

Mr. Chairman and Members of the Council,

My name is Doug Blevins, President of the Panama City Boatman Association, Panama City, Fl. Our organization consist of recreational fisherman and charter boat Captains and owners. Our comments on Amendment 5 are as follows:

1. Fish Traps.
   We prefer the ALTERNATIVE OPTIONS 1, STATUS QUO-RETAIN CURRENT TRAP RULES.
   Our reasons for this recommendation are:
   A. Traps are already prohibited from use in stressed areas.
   B. A moratorium on additional permits is in effect until 1995.
   C. Assuming, that 87 fishermen have 100 traps each, any change in the existing rules could result in the loss of income for these people. The loss of the traps along would cost each fisherman $5000.00 by your estimates.
   D. The cost of enforcement would be passed on to an industry that can not absorb higher operating fees. Since the total catch from traps represent only one percent of commercial landings we do not feel that the problem at this time is great enought to warrants attention.

2. Special Management Zones.
   We prefer ALTERNATIVE OPTIONS D. STATUS QUO.
   The recommendation for changes is this area are based on the problems that resulted from early closure of the snapper season in 1992. To react to this problem without proper data would be considered CRISIS MANAGEMENT AT ITS WORST. The data referred to is determining if artificial reefs produce fish or attract fish from other areas.

3. Framework measure. We prefer ALTERNATIVE OPTION 2. STATUS QUO.
   The adoptions of this measure would give the Council more power than the laws of the land allow.

4. Landing Requirements. We prefer the ALTERNATIVE OPTION, with the change of wording to read, "excluding oceanic migratory species and amberjack". We have been told that the core length of amberjack is address in other rules.

5. Permit Requirements.
   We prefer ALTERNATIVE OPTIONS 1 with one slight change. The time limit should be changed to four

years instead of three years because of the uncertainty of the 1993 snapper season.

6. Red Snapper Size Limits.
   We prefer STATUS QUO Because the fishery is improving with the current regulations. Increasing the size limits would increase the mortality rate because of additional release requirements. Give the current regulations in effect a chance to work. Our charter industry is still recovering from the massive amount of regulations that were impose upon us in the last few years. The Socioeconomic statement contains the word "anticipated" and "presumably" which we feel represent a crap shoot that says "roll the dice and hope for the best". This doesn't represent a socioeconomic report in our opinion.

Thank you for your time and we hope that you will consi der our opinion in your final decision.

Doug Blevins
President
Panama City Boatman
Association.

Florida Marine Aquarium Society
MUSEUM OF SCIENCE ● 3280 SOUTH MIAMI AVENUE ● MIAMI, FL 33129

11950 North Bay Shore Drive, 1A
North Miami, FL 33181-2931
Tel: (305) 377-5645 (days)
November 5, 1992

Wayne Swingle
Executive Director
GMFMC
5401 West Kennedy Blvd., Suite 881
Tampa, FL 33609

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GULF FISHERIES COUNCIL

Dear Executive Director Swingle:

On behalf of the Florida Marine Aquarium Society, a non-profit affiliate of the Museum of Science and the oldest marine aquarium society in North America, I am writing to express our support for a ban on fish traps in the Gulf of Mexico.

Our Society is concerned for the damage to the physical environment caused by these traps, as we are concerned for the high percentage of marine tropicals caught as an unintended "by-catch". The deployment and collection (with grappling hooks) of fish traps causes severe damage to hard bottom and live bottom areas, as well as associated organisms. The percentage of marine tropicals constituting an unintended by-catch in these traps is cited as up to 49% by the Florida Bureau of Marine Research and the National Marine Fisheries. Project Reefkeeper estimates this percentage at an even higher figure, up to 54%. These traps do not discriminate in what they catch, nor do they rest--they continue to "fish" twenty-four hours of every day.

We consider fish trapping to be a wasteful and detrimental practise to all aspects of our marine resources and we therefore respectfully request that you convey our concern and support for a ban on this practise.

Thank you for your attention.

Sincerely yours,

Beth Hayden

Beth Hayden
Vice-Pres./FMAS

CORAL REEF COALITION

A Coalition to Secure Comprehensive Lasting Preservation of the Biological Diversity and Productivity of Florida's Coral Reef Ecosystem and Wise Use of its Resources

Maureen Eldredge
Washington Coordinator
Center for Marine Conservation
1725 DeSales St., NW
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(202) 429-5609

Debra Harrison
Florida Keys Coordinator
The Wilderness Society
6065 Overseas Highway
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(305) 289-1010

November 13, 1992

Mr. Gilmer Nix, Chairman
Gulf of Mexico Fishery Management Council
5401 W. Kennedy Blvd. -- Suite 881
Tampa, FL 33609

re: Fish TrapProhibition Amendment to the Gulf of Mexico Reef Fish Fishery Management Plan

Dear Mr. Nix:

The undersigned member organizations of the Coral Reef Coalition are gravely concerned over the ongoing mortality of Gulf of Mexico juvenile reef fish, degradation of habitat, and tropical fish bycatch mortality due to the use of wire-mesh fish traps. To eliminate these impacts, we formally request that the Gulf of Mexico Fishery Management Council (GMFMC) adopt an amendment to the Reef Fish Fishery Management Plan establishing a prohibition on fishing with fish traps in the Gulf's Exclusive Economic Zone (EEZ).

The Coral Reef Coalition, consisting of over 100 citizen groups, is dedicated to securing comprehensive and lasting preservation of the biological diversity and productivity of Florida's coral reef ecosystem and wise use of its resources -- including the live bottoms and reef fish populations of the Gulf of Mexico.

The Problem With Fish Traps

It is true that fish traps account for just 6% of reef fish landings in the Gulf of Mexico. But the problem with fish traps is not the legal-size reef food fish that are brought back to the dock.

The problem with fish traps is the impossibility of enforcing current escape gap, mesh size, and even trap number regulations because fish traps are not buoyed, are hidden where compliance can't ever be verified, and never have to be returned to the dock for inspection.

The problem with fish traps is the destruction of live bottom caused by the dragging of grapple hooks to locate and retrieve those hidden, unbuoyed traps.

The problem with fish traps is the mortality of juvenile snappers and groupers caused by the inability of those juvenile fish to escape from traps with 1-inch-by-2-inch mesh.

The problem with fish traps is the wasteful killing of angelfish, butterflyfish, and many other tropicals which can comprise up to 54% of the fish caught in traps.

We are not advocating that anyone be thrown out of the reef fish fishery. We are asking that the GMFMC do away with a type of gear that is indiscriminate in its catches, kills undersize juvenile snappers and groupers, and destroys bottom habitat.

Most fishermen in this fishery already use gear other than fish traps. Fish trappers can also shift to other gear and remain in this fishery -- or shift entirely to another fishery of their choice. By enacting a fish trap ban that becomes effective 18 months after it is approved, fish trappers would be provided enough time through normal trap attrition due to loss and normal wear to recapture their capital instead of reinvesting it in new traps -- and make that shift.

The use of wire-mesh fish traps, as permitted under the Council's 1981 Reef Fish Fishery Management Plan, is incompatible with the maintenance of biological diversity and spawning stock biomass for reef fish communities. Trap retrieval methods also result in the unavoidable and recurring destruction of habitat.

The South Atlantic Fishery Management Council (SAFMC) has recognized that fish traps are detrimental to reef fish and their habitat. It is time for the Gulf Council to follow suit.

Trap Hauling Damages Habitat

Fish traps in the Gulf of Mexico are deployed without trap buoys and are retrieved by dragging large grappling hooks along the sea bottom. Under Amendment 4 to the Snapper-Grouper Fishery Management Plan for the South Atlantic, the SAFMC has concluded that:

> "There is some evidence that fish trapping causes habitat damage where fish traps are set in trawls on live bottom and where grappling hooks are dragged across live bottom to retrieve them. These activities leave an imprint of the trap upon the bottom communities and trenches caused by grappling hooks dragged over the bottom for the purpose of locating and recovering traps." (SAFMC, April 1991)

This habitat damage also applies to the Gulf of Mexico. The extent of the damage is even more disturbing when you consider the annual number of such trap pulls by grappling hooks on Gulf live hardbottoms.

Currently, there are 12,000 permitted fish traps in the Gulf, with individual trap fishermen allowed a maximum of 100 traps each. Trap fishermen give a low estimate of 3,600 traps actually in use in the water, averaging 30 traps per operator.

These traps are pulled up using grappling hooks which are dragged over hard bottom, live bottom and corals to locate and haul the traps. It can logically be assumed that, for convenience, fishermen place their traps in close vicinity to each other.

Taking the trappers' own lower trap use estimates, if each trap fisherman uses 30 traps in a one-square mile area, attaches the traps in groups of five, pulls these traps once a week using grappling hooks and makes just two passes with the hook to locate each unbouyed trap line group, **he tears the bottom of that one square mile area at least 600 times over a one year period.**

If these conservative assumptions are applied to the total number of traps fishing (somewhere between 3,600-12,000), **trap grappling is tearing into Gulf livebottom areas 72,000 to 240,000 times a year**, with many of these incidents actually digging trench paths along the bottom. This has to be causing phenomenal damage to Gulf hard bottom areas.

Habitat damage incurred by grappling hooks can be compared to the use of trawl gear in the South Atlantic. According to the South Atlantic Council, the use of trawl gear in the South Atlantic snapper-grouper fishery resulted in damage to the habitat which the species in the fishery were dependent upon for shelter and food. Under Amendment 1 to its Snapper Grouper Fishery Management Plan (1988), the South Atlantic Council ruled to prohibit the use of trawl gear to harvest fish in the directed snapper-grouper fishery.

These are basically the same assemblage of species and the same type of habitat targeted by fish traps in the Gulf.

The SAFMC trawl prohibition was based on habitat destruction and the desire to prevent overfishing to a particular species. The South Atlantic Council conducted a study showing the effects of a trawl on live bottom (Van Dolah et al., 1987). This study documented habitat damage occurring from the use of trawl gear even in the case of just one pass through an area in a controlled study. The SAFMC arrived at the following conclusion, which may also be applied to habitat damage caused by fish traps:

> "By destroying habitat we destroy the productivity of the resource being harvested and we are in essence drawing on the principal, not just taking the interest..." (SAFMC, 1987)

Fish Traps Are Non-Selective

The species composition of fish trap catches is another factor at the heart of opposition to the continued use of fish traps in the Gulf reef fish fishery. All the fish trap catch surveys performed by scientific organizations reveal a significant degree of fish trap species non-selectivity.

In 1989, the GMFMC's Draft Amendment 1 to the Reef Fish Fishery Management Plan proposed to "extend the prohibition on directed harvest of reef fish with fish traps to the entire EEZ ... because of concern that fish traps result in wastage of reef fish through ghost fishing and cryptic mortality between trap hauls... (and) that fish traps capture nontarget species and juvenile target species." (GMFMC, 1989 -- option 11.2.1)

These concerns were voiced by the Gulf Council in 1989 and since that time nothing has occurred to keep the Council from having the same concerns today.

The South Atlantic Council, in Amendment 4 to its Snapper-Grouper Fishery Management Plan, concluded "that traps are non-selective by size and by species...and the continued use of such highly efficient gear in a stressed fishery is no longer biologically tolerable." The same applies to the Gulf.

Traps unnecessarily kill an abundance of tropical fish, which enter traps routinely.

Fishery biologists from the Florida Bureau of Marine Research systematically surveyed the catches of 1,694 fish trap hauls while under actual operating conditions on-board commercial fishing boats. One-hundred-eleven reef fish species were identified among the trapped fish, even though less than 10 species accounted for 50% of the total catch. Fifty-four percent of the 13,337 fish caught in fish traps were tropicals and other non-food species. (Taylor and McMichael, 1983)

In a parallel study conducted by the National Marine Fisheries Service, comparable results were obtained. In that study, one-hundred-and-four differenct reef fish species were found in the traps. Of the 5984 individual fish trapped, 38% were tropicals and other non-food species. (Sutherland and Harper, 1983)

Overall, these two studies found that 49% of 19,321 trapped fish were non-target tropicals.

Of the tropical fish found in fish traps, 17% were angelfish, 9% were trunkfish, 7% were surgeonfish, and 5% to 6% each were butterfly fish, parrotfish and wrasses. (Taylor and McMichael, 1983)

Fish Traps Remove Juveniles from the Fishery

Research by the URI International Center for Marine Resources Development found that with a maximum diagonal mesh aperture of 5.1 cm (2 inches) -- almost exactly the 5.6 cm (2.2 inches) maximum diagonal aperture of currently permitted fish traps in the Gulf -- the mean weight per trapped fish was just .25 kg (8.8 ounces). (Stevenson and Stuart-Sharkey, 1980)

This research proves that fish traps of the mesh size presently used in federal Gulf waters catch fish averaging less than one pound, with half of all trapped fish

actually being even smaller. And that may seriously impact juvenile fish numbers and prevent the replenishment of reef fish communities, which are sedentary and relatively isolated.

Fish Traps Should Be Prohibited

When the SAFMC prohibited the use of fish traps in the South Atlantic, it recognized that "uniform regulations in both the Gulf of Mexico and Atlantic waters should be established in order to facilitate enforcement and understanding by all concerned." We agree with this assessment.

The use of wire-mesh fish traps degrades both the Gulf reef fish fishery and the habitat which the fish depend on. The Gulf of Mexico Fishery Management Council should follow the lead of the SAFMC and move to prohibit fish traps in Gulf waters. In the best interest of fisheries management and resource conservation, we formally request that the GMFMC amend its Reef Fish Fishery Management Plan to prohibit the use of fish traps throughout the Exclusive Economic Zone.

Thank you for your consideration.

American Oceans — Andy Palmer
235 Pennsylvania, SE Washington D.C. 20003

Big Pine Keys Civic Association — Eugene Shankevinch
PO Box 190 Big Pine Key, Florida 33043

Center for Marine Conservation — Maureen Eldredge
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Environmental Defense Fund — Rod Fujita
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Environmental Solutions International — Lynn Davidson
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Florida Audubon Society — Charles Lee
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Florida Conservation Association — Bonnie Beall
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Florida Keys Audubon Society — Gretta Phillips Ford
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PO Box 6870 Tallahassee, Florida 32314

Friends of the Everglades — Joe Podgor
101 Westward Drive Office Number 2 Miami Springs, Florida 33166

Izaak Walton League, Florida Division — Dr. Carl Keeler
31 Garden Cove Drive Key Largo, Florida 33037

Izaak Walton League, Florida Keys Chapter — Sven Lindskold
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Project ReefKeeper — Alexander Stone
16345 West Dixie Highway Suite 1121 Miami, Florida 33160

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The Nature Conservancy — Don Axelrad
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The Wilderness Society — Debbie Harrison
8065 Overseas Highway Marathon, Florida 33050

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South Atlantic Fishery Management Council. 1988. Pages 10-15 in Amendment Number 1 and Environmental Assessment and Regulatory Impact Review to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region.

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NOV 1 2 1992
GULF FISHERIES COUNCIL

Bill Parks
919 SW Twenty-Seventh Place
Boynton Beach, Florida 33435
Phone: (407)-734-0095
November 11, 1992

Mr. Wayne Swingle
Gulf of Mexico Fishery Management Council
5401 West Kennedy Boulevard, Suite 331
Tampa, Fl. 33609

Dear Mr. Swingle,

The enclosed are comments concerning the fish trap issue with respect to my knowledge of the controversy as well as its relationship to the marine life fishery (tropical fish). I ask that this be entered into the official record and copies be provided to the members of the Gulf Council.

Thank you.

Sincerely,

Bill Parks
Secretary/Treasurer FMLA

November 1, 1992

To: Gulf of Mexico Fishery Management Council

From: Bill Parks

Subject: Fish Trapping in the Gulf of Mexico EEZ

INTRODUCTION

My name is Bill Parks; I'm a commercial diver-fisherman with 17 years of experience who primarily targets tropical fish for the aquarium trade. Additionally, I have fished for grouper, snapper and lobster and did fish trap for a short time. Currently I'm a member of the Florida Keys National Marine Sanctuary Advisory Council. I am writing on my own behalf as well as the Florida Marine Life Association (FMLA) which is a group of commercial collectors and others whose goal it is to see that the stocks that support our fishery are properly managed and not abused.

I first voiced my concern about fish traps to the Gulf Council in a letter dated January 1990.

CHARGES AGAINST FISH COLLECTORS BY TRAPPERS

When, as commercial collectors, we elected to oppose the continued use of this gear type, it was not an easy decision. Commercial fishermen, feeling threatened by the ever increasing demands of the recreational sector, have tended to preach "sticking together no matter what". This sentiment is very strong and we as commercial fishermen knew that breaking this code, if you will, would most likely bring scorn and perhaps even retaliation from the fish trappers. Though this was practically a certainty, we felt that, based upon the intimate knowledge of the affected resources we have gained through formal education, our harvest records and years of field observations, we had no choice but to break with tradition. As the record demonstrates, other commercial fishing interests have done the same.

In response to our testimony, videos assembled in conjunction with other knowledgeable and concerned individuals and our letters, all of which were produced at our own expense, certain trappers have gone on the attack to the point of practically reducing this important issue into a cat fight. This too was not unexpected and I can only conclude that the purpose of such attacks is one, to get revenge, two to shift the burden of responsibility onto another fishery and three, to divert the Council's attention from the issue at hand: the use of wire fish traps in the Gulf EEZ. In the course of recent Gulf Council meetings certain trappers have indicated that they "are now tropical fish collectors" after which they have gone on to

present you with inaccurate and at times, utterly false data from which they develop twisted hypotheses. On top of this I have been misquoted in testimony to this body. As a collector, and one of the primary participants in the development of the Florida Marine Life Rule, I can say with certainty that the testimony of the trappers about the marine life fishery demonstrates two points quite clearly. One, the act of picking up a net and jumping in the water does not make one a fish collector, and two, the participants in the fish trap fishery have no concept of what their activities are doing to the affected resources. I will not speculate as to whether it would make any difference if they did.

Concerning their claims at meetings and in the official record, I request that you question our people on any point, brought up by the trappers or ourselves, regardless of content or detail, that has left you with any doubts or questions about our activities, our effect upon the resource, our motives, or our long term goals. Additionally, all of our records, including the minutes of our meetings, FAXes and such will be made available to you upon request. And finally, at your request, we will be happy to meet with you to discuss any and all aspects of who we are and what we are about. It is absolutely essential that you as Council members understand that our position on fish trapping is not the result of any personal conflicts or blind environmentalism but in fact is in response to an ample weighing of the evidence.

FISH TRAPS

It is at the November 18 meeting of the Gulf Council that you will most likely decide what will be the future of fish traps in the Gulf EEZ. Since this is the end of the review process, I think it is pretty safe to say that most of the claims, counter claims and opposing opinions have been covered so I will try to keep from rehashing them in too much detail. I would however like to examine the claims and counter claims as they have evolved since the early stages of the fish trap controversy back in 1979 when the State of Florida moved toward a fish trap ban. For much of this review I am relying upon statements made in newspaper articles and at agency meetings.

EVOLVING ARGUMENTS PRO AND CON

In the time since 1979 the arguments of those opposed to fish traps have remained more or less constant. Some of the primary complaints have been non-selective harvest, waste through ghost fishing, depletion of local bottom fish stocks, fishery collapse in areas of the Caribbean where fish traps are used, high levels of ornamental fish harvest, numerous incidents of trap law violations, damage to reef and hard bottom habitat and the resulting negative impacts of all of these on numerous competing and/or peripheral fisheries. As time has passed and the effects of fish trapping in and around Florida have become more apparent, these arguments have been enhanced by more detailed analysis, but the basic concerns have remained the same.

DENIAL BY TRAPPERS

The proponents of fish trapping, in essence the trappers and the owners of fish houses who handle the trap harvest, for the most part, have followed one line of defense: Denial. Review of the record also shows quite clearly that even when presented with irrefutable evidence by the opposition, trappers have often cried foul and accused their detractors of doctoring the results. At times this has even resulted in the trappers contradicting their own testimony. Only when there is no way out have the trappers grudgingly admitted that any problems exist at all. Often these concessions are followed by attempts to minimize their significance, saying "it happens over there but it doesn't happen here" or to offer "solutions" that in fact are not solutions but simply window dressing.

At this point I feel that a few examples would be useful.

CARIBBEAN

Early in the controversy it was pointed out that in a number of Caribbean countries, where fish traps are used, bottom fish fisheries have been exhausted.

One of the early responses by trappers and their representatives was, "There never were any fish in those areas".

The fairly recent creation of marine sanctuaries in the Caribbean where trapping is prohibited but hook and line fishing is allowed has shown this to be untrue. The fish are in fact coming back. A good example is the island of Saba in the Netherlands Antilles.

Another response was that, "Unlike Florida these islands have very little continental shelf so the comparison is not valid".

Anyone who has ever fished or dived in places such as the Saba bank, which is rather large, will tell you that the fish populations are depleted there as well. Also, the trapping equipment and boats that depleted those areas were quite limited in comparison to the equipment used here.

REEF DAMAGE

On the issue of damage to reef habitat, the trappers have stated over and over again that, "we do not trap on the reef and so do no damage". The eye witness accounts of numerous divers, both commercial and recreational, from all walks of life, told a different story. Some of these accounts are contained in the official record. Finally, video documentation showed quite clearly both that traps were in fact being fished on the reef causing damage and that grapnel trap recovery operations were

inflicting considerable damage. Faced with this evidence the trappers responded by saying that, "This isn't fair. How come people can anchor their boats on these reefs but what we do is bad." While I do not deny that anchors damage reef, the damage per vessel due to grapnel operations is much worse. The important point is that the trappers denied that they even trapped on reef until the evidence was irrefutable. All of this is in the official record and/or quoted in newspapers articles.

GHOST TRAPS

When the issue of ghost traps and the resulting waste of resource was brought up, the trappers denied that it was significant. They stated that fish swim in and out at will. Further, they stated that biodegradable jute would only last a couple of weeks. Richard Nielson Senior went so far as to say, "Ghost traps are only in the minds of some people". This too did not reflect what was being reported by the diver community, or even by the trappers themselves when sitting around the docks complaining about losing traps. Once again, video data was produced that showed a ghost trap, tied with jute, that lasted the three months that it was monitored. In that time numerous fish were filmed as they degenerated from confinement in the trap, died and decayed. The response of the trappers was that the whole thing had been staged and that it was all a lie. In response to this claim I pose the question, if what was depicted in the video was not true, and not a problem, why would commercial divers spend the time and money, with no financial compensation, to go to such lengths to create a falsehood? What would be the motive? Remember, bottom time and good weather to a commercial diver is precious and cannot be squandered.

SPECIES AND SIZE COMPOSITION AND ESCAPE GAPS

Claims by trappers as to catch species and size composition has been another major point contention. Initially the trappers claimed that they caught very few ornamental species and that almost all non-targeted and undersized fish swam right down. Again, this was not supported by what was known to be happening. In reality, much of the catch was by-catch and many specimens were not "swimming right down". In time, underwater video proved that the ornamental by-catch was substantial and reports by passing anglers of dead undersized fish floating in the vicinity of trap boats were not uncommon. The latter eventually lead to the trappers proposing escape windows "that would allow fish as large as a 14 inch yellowtail to escape". The trappers knew this was more of a placebo than a solution because it would not be sufficient to allow the high profile species, particularly the ornamentals to escape; also, it would be very difficult to enforce. One of the options before you is a proposal by the trappers to include 2" x 5" windows to allow ornamentals to escape. As the trappers know, this too is both a placebo and unenforceable. Recently we measured a small sampling of live angelfish and parrotfish and found these gaps would have to be 9"

high by 3.1" wide. These species are known to get larger and it is obvious that such large escape windows would allow most targeted specimens to escape as well which makes them impractical. The point here once again is that, faced with the evidence, the trappers, or at least some of the trappers, are now admitting to a problem that they had previously denied even though their solution is bogus.

DEPLETION OF STOCKS AND CHANGE OF TARGET

Charges by anglers, commercial hook and line fishermen and divers that trapping operations deplete bottom fish stocks have also repeatedly been denied. Trappers have continuously stated that there are no problems with the grouper snapper supply. A review of the evolution of trapper statements concerning targeted species paints a different picture. Just a few years ago trappers said they were only interested in grouper, snapper and grunts as opposed to ornamental species and other by-catch. More recently they've added parrots and surgeonfish. Fish house representatives who have spoken on behalf of the trappers have stated that the catch of ornamental species is a substantial and important component of their business. In the South Atlantic this clearly contradicted the claims of the trappers as to low ornamental fish harvest. It also showed that their reliance upon traditional trash fish had become greater as the percentage of snapper and grouper diminished. One trapper made a most revealing statement at a meeting in West Palm Beach. He said, "I still get just as many fish as I used to. I may have to go a hundred miles to get them, but I still get them". He was an honest man, even though he missed the point. If one couples this statement with those made by other trappers that "trapping is our salvation now that hook and lining is no longer financially viable", the negative trends that trapping creates in fisheries becomes obvious.

EXPLOSIVE DECOMPRESSION

Finally, there is the issue of explosive decompression which I feel is well covered in the video "Explosive Decompression" that is scheduled to be shown to the council November 18. The video also demonstrates some of the effects of ghost fishing. It happens and it's not a minor problem as the trappers have claimed. As you review the film and watch the effects rapid pressure change particularly on the gray angelfish, consider a statement made by a trapper in a 1979 newspaper article that, "gray angels swim right down". Explosive decompression is a universal problem and honors no oceanographic boundaries.

RELEVANCE OF SOUTH ATLANTIC TO GULF OF MEXICO

As you no doubt realize, most of this information comes from the record of the hearings of the South Atlantic Council and not the Gulf and you may ask, "Why is this relevant here? It is relevant because many of the same trappers who made these

contradictory statements at the South Atlantic hearings are here now making the same statements. Their chief representative Mr. Bill Moore, was also their chief representative on the east coast. After having seen the Explosive Decompression video Mr. Moore said at a recent Gulf Council hearing in Key West, "Please don't compare this to what happens in the Gulf, it's not at all the same." Last year Mr. Moore and his constituents defended trapping in the South Atlantic, something so unacceptable what they now tell you, "Don't worry, it doesn't happen in the Gulf". While defending continued trapping in the South Atlantic they denied ghost traps, denied large by-catch, denied that explosive decompression was a problem, denied trapping on reef, denied damage to reefs, denied they were negatively impacting other fisheries (although they said hook and line was no longer feasible) and denied that their catch per unit effort of grouper and snapper was declining. All of these things have been countered, not only by the opposition, but by their own testimony. No one can deny the pattern that exists here.

RECENT OCCURRENCES IN THE GULF

But let's talk about the Gulf. Since at the recent Key West hearing the trappers denied ornamental by-catch I believe they need to explain why, within the last two to three months a big hullabaloo was raised when trappers in Key West, fishing in the Gulf EEZ, were told that, by the Florida Marine life rule, they were not allowed to land more than twenty ornamentals in aggregate and that they must be landed alive. I think they should explain why, if they don't get ornamentals, some of their number were driving around Key West trying to find buyers for them. Further, perhaps they can explain why one of their number was so irate that he threatened to continue to land ornamentals, law or no law. If they don't get them and don't need them, why are they so insistent that they be able to land them? The trappers stated at the recent Gulf hearing in Key West that "none of the opposition has dived in the deep water of the Gulf where they trap and that there are no angelfish or other ornamentals there." We have video, filmed as deep as 180 feet, outside of the stressed area that documents angelfish.

DOCTORED CATCH STATISTICS

Looking at the recent Gulf catch statistics, I find it interesting that a very small poundage of angelfish was reported while at the same time, in their testimony in Key West, more than one trapper admitted to "catching lots of gray angels". This doesn't add up. Although unconfirmed, there are charges by other fishermen that much of the trap harvest is being reported as hook and line caught. Looking at the lack of validity of the angelfish statistics, it does make me wonder, particularly about the claims of such a low percentage of the overall grouper harvest. As a footnote, please remember that fish that die in traps before retrieval or die in ghost traps are not counted at all.

DENIED TRAP LOSS IN THE GULF

The trappers claim that they have almost no trap loss. If this is true, why do divers find many of them on Riley's Hump? It seems interesting that the only places currently utilized by trappers where no one finds ghost traps is where no one looks. It would be interesting to hear their explanation.

ALLOTMENT FIGHT OR NOT?

There is one other question that has come up in the course of these hearings that I wish to address. It was brought to my attention that some are questioning whether or not the concern of the tropical fish collectors about the ornamental species is one of genuine stock conservation or merely an allotment fight. The question is valid and deserves an answer.

I can assure the Council that our concern is strictly for the continued health of the stocks of these species. Hopefully, my explanation will resolve any doubts you may have.

While we know that trapping pressure is very effective in depleting many ornamental species e.g. parrotfishes, surgeonfishes, cowfishes it is the angels that are of greatest importance to both the aquarium trade and the tourist industry. Contained in the Florida Marine Life rule are several sections dealing specifically with angelfishes. Prescribed in the rule are specific slot sizes and commercial and recreational bag limits. These were developed based upon the best scientific data and anecdotal information at the urging of industry participants because we knew, from many years of combined experience, that proper regulation of this family of fishes should be given top priority. The Florida Marine Fisheries Commission (MFC) agreed, and a joint effort between their fishery management experts and our association resulted in this rule package. For the purpose of the allotment argument, the most important provision contained herein is that specifying upper size limits on angelfish; 10" on Blue, Black, French and Queen; 6" on Rock Beauties. This provision was designed to protect the reproductively mature specimens so as to assure the continued health of the fishery. In essence, we are prohibited from harvesting adult angelfish. At first glance this may not seem to be such a big deal, but in fact it was a decision that came only after much internal debate. You see, queen and French angelfish of lengths 13" and greater were fast becoming an expensive commodity in the aquarium markets of Taiwan and Japan. Collectors were increasingly being asked to provide these fish for which they often were paid 50 dollars and more. The same species at or below 10" were worth about 15 dollars so it is easy to see why more collectors were starting to target these larger fish. Regardless of the quick money available there were a number of us who not only refrained but, with the assistance of the MFC, pushed for the upper size limits. Fortunately, with the assistance of the MFC we put an end to a growing problem before it got out of hand. At the same time, the

problem of large angels being taken by fish traps continued practically uninterrupted. Not only were we finding traps crammed with big angels, alive and dead, but trappers were telling us that they got thousands of pounds of them. In some areas they have told me that they were catching them as deep as 400 feet. Not only was the marine life rule rendered useless, but the trappers were removing stocks too deep for collecting, stocks that had never been exploited. From that time on we have seen some alarming things. As I have stated before to the council, the French angel spawn has all but failed for the last three years and we may be faced with closing all harvest until recruitment increases. This year, in spite of claims by fish trappers Tom Blythe and Dan Harvey to the contrary, the black angel spawn is the poorest we have ever seen. This is the same species that several trappers, in testimony to this council, have admitted they've been catching in quantity. As an aside, Mr. Blythe's claim that he can't sell black angels because they are so common is probably because he is seeing medium sized blacks from last year's spawn. These fish are very dull in color but still not reproductively mature. The fact that they are common indicates that a good percentage of them eluded collectors until they were large enough to be undesirable. In spite of this, the adults are taken by traps in quantity and the spawn did fail this year. Is it the result of a quirk of the currents or the weather? Maybe, but unless the spawn returns to normal next year we may be faced with some tough decisions as we are with the Frenches. The queen angelfish, which has never been as common as the other species, still exhibits normal recruitment. The rock beauty, which is reproductively mature while still small enough to escape from traps, and is heavily collected, continues to show strong recruitment. The most heavily collected angelfish species is the blue angel. Mr. Blythe incorrectly stated that this fish has become rare. This year's spawn in the Keys is one of the largest we've seen. So common is this species right now that the price is very low. All of this can be confirmed through the catch reports held by the State of Florida. The inevitable questions that come to mind are, why is this the most common species, and why has recruitment not declined? We in the tropical fish fishery believe the answer can be found in the Gulf of Mexico. Diver reports indicate that a large standing stock of this species can be found there, including the very deep waters outside the stressed area. It is conceivable that larval fishes from this standing stock, carried by the loop current into the Keys, is the source of replenishment there. From our own diving experiences we know that all of the angelfish species are very long lived fish and very territorial. Too, we know that even in the absence of collecting pressure, there is a high level of attrition among juveniles. All of this lends itself to the success of a well managed marine life fishery as long as the adult specimens are left alone. Fish trapping is spreading north and west in the Gulf and the numbers of traps will continue to increase. We have every reason to believe that this expansion will compromise blue angel recruitment in the Keys. So you see, we don't want to be able to harvest the specimens that are being taken by the traps. We want

them left alone so we will be assured of healthy recruitment thereby guaranteeing a sustainable fishery. Everything we have seen so far with fish traps, as they affect our fishery, goes against everything we know to be sound management.

Currently there is a proposal to study queen angelfish under review by the NMFS Saltonstall - Kennedy Cooperative. It was submitted by Ichthyologist David Snyder of Continental Shelf Associates in Jupiter, Florida in response to a concern I voiced to him, on behalf of our fishery, that more knowledge is needed for the proper management of the angelfish harvest. The need to protect the breeding population is not in question. What we want to know is if altering our current upper size limits could be effective in increasing recruitment, and if so, what those limits should be. We are not looking to defend what we do now; we are trying to find out if we can do it better.

This is not an allotment fight; it is a fight against unsound fishing methods and a commitment to sound fisheries management.

The trappers claim that their efforts do not unduly depress the grouper - snapper supply or the ornamental fish supply. In the areas I have dived I know that they do. Examine the response of the hook and line fishermen, the recreational fishermen and practically every single diver to the introduction of traps. Were it not a real and pressing problem I do not believe that the opposition would be so united. Everything I have learned in my 17 years on the water tells me that allowing the continued use of traps sells out the fishermen, the resource, the goals of fishery management and our fishing future.

Thank you for taking the time to read.

Bill Parks
Secretary/Treasurer FMLA

SECTION 3.

Letters Received From
Public Agencies

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
9450 Koger Boulevard
St. Petersburg, FL 33702

NOV 16 1992

F/SE011:RAS

Mr. Wayne E. Swingle
Executive Director, Gulf of Mexico
Fishery Management Council
5401 West Kennedy Boulevard, Suite 331
Tampa, Florida 33609

Dear Wayne,

This letter contains the NMFS Southeast Regional Office's comments on the public hearing draft for Amendment 5 to the Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico (FMP). Enclosed are separate comments from: (1) the Washington office of Fishery Conservation and Management; (2) the NOAA Ecology and Environmental Conservation Office; (3) the Southeast Fisheries Science Center, and (4) the regional NMFS economist.

The following comments are offered for your consideration.

2. History of Management (pages 1-2)

This section should be expanded to include: (1) the red snapper total allowable catch and rebuilding schedule adjustments (proposed starting in 1993); and (2) other actions previously approved under the FMP's framework procedure.

4. Problems Requiring Plan Amendment (pages 4-5)

The first paragraph of this section should be revised to specifically pinpoint the problems necessitating the proposed actions. For example, the discussion should be expanded to support the proposed ban on fish traps (which was rejected by the Council under Amendment 1). This section mentions: (1) excessive trapping mortality of undersized target species and bycatch species; (2) environmental damage to coral reefs; (3) enforceability; and (4) non-selectivity of the gear. Additional discussion is needed to provide a comprehensive administrative record to clarify that those concerns are unique to the trap fishery and are actually problems requiring plan amendment.

7A. Fish Trap Restrictions

Page 12: Additional information (if available) and discussion should be added to indicate why fish trap regulations are inherently unenforceable. For example, how will prohibition of this gear specifically improve the enforcement of illegal trap use?

Page 14-20: Management Objectives - If the Council ultimately decides to ban fish traps, extensive discussion and rationale for rejecting each of the alternatives must be provided. This is especially true for alternative option 3 which, as presently written, is implied to alleviate the social concerns over the lack of enforceability of current rules.

B. Special Management Zones (SMZ)

Page 20-23: Alabama Management Zones - The information presented is insufficient to determine approvability of these SMZ's. Of critical importance is documentation of the extent of past and present user groups in these areas. Since only hook-and-line gear (and no more than 3 hooks per line) will be allowed, what was or is the extent of any shrimp trawling, or pelagic or bottom longline fishing, or any other kind of fishing that might be prohibited? What specifically is the effect of this gear restriction on local as well as out of state commercial fishermen who use or helped construct the reefs? Also, what is the relationship of these areas to the existing "stressed area" boundary, and how will that be affected? What is the relationship of these areas to the existing longline boundary, and what effect will that have?

The six criteria listed on page 24 are useful for evaluating the proposed SMZ's off Alabama and each should be fully researched, analyzed, and discussed before a decision is reached. For example, compliance with the fairness and equity criteria needs to be evaluated, using additional historical perspective of how and to what extent the area was used and by whom (prior to and during construction of the reefs).

Implications are that the proposed gear restrictions will reduce effort and thus restore the stock. Evidence that this is the case should be presented. For example, the gear restriction does not limit the effort or number of anglers. Delineation and designation of the SMZ favors more inefficient gear but may in fact encourage additional effort and a net increase in harvest, thereby slowing the recovery of red snapper.

If the Council is unable to provide the minimal, necessary additional information described above, then it should strongly consider limiting the actual SMZ area to a much smaller area on an experimental basis. Even if the decision is made to go with a much smaller area as we suggest, the six criteria listed on page 24 must still be critically evaluated before a decision is reached.

C. Landing Requirements (page 25)

The Council prefers the requirement that all reef fish species in the fishery be landed with head and fins intact. However, the

Council's ecological discussion indicates the alternative applying to all fish, other than oceanic migratory species, is more effective. Additional rationale is necessary to justify Council selection of the less effective option.

Sincerely,

Andrew J. Kammerer
Regional Director

Enclosures

cc: (w/enclosures)
F - Fox
F/CM - Schaefer
F/SEC - Brown
GCSE - Pedrick
F/SE03 - Raulerson

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Silver Spring, Maryland 20910

NOV 12 1992

MEMORANDUM FOR: F/SER - Andrew Kemmerer

FROM: for F/CM - Richard H. Schaefer

SUBJECT: Second review of Draft Amendment 5 to the Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico

The subject document has been reviewed by my staff for the second go round. Council arguments in support of the ban on traps remain weak or inconsistent. Several points made during the first review of the draft amendment do not appear to have been addressed in this revision.

For example, a suggestion was made in previous comments regarding the banning of fish traps (Section 4, page 4, problems requiring a plan amendment). Section 4 starts with the statement that the use of traps has always been controversial. The section should begin with the problem statement. What problem would a ban on fish traps address? Also, there should be a presentation of more scientific evidence to support a total ban. In the RIR, under the discussion of the preferred option to prohibit the use of fish traps, the point is made that traps contribute only a little over 1 percent of total reef fish catch in the Gulf and that the benefit of banning of traps is likely to be minimal. This is one example of contradictory statements made between the draft amendment and the RIR that need tighter editing.

The additions to the document regarding artificial reefs on pages 22 and 23 are helpful.

In Section 8, in paragraph a. under fishery resources, page 29, the point is made that the proposed special management zones would reduce mortality of red snapper. Would this be the result of gear regulation? A sentence explaining how the mortality would be reduced would be helpful.

Attached are copies of comments that have been received from Donna Wieting, Office of the Chief Scientist; Paul Hooker, Economist, F/CM2; and the U.S. Coast Guard. Editorial suggestions will be sent by separate memo to Bob Sadler.

Copies of the draft amendment were sent for comments to Jonathan Deason, Director, Office of Environmental Affairs, Department of the Interior. That office has informed me that they may have comments but need more review time. Any additional comments received by my office will be sent to you as soon as they are received.

Attachments

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Silver Spring, Maryland 20910

NOV 12 1992

MEMORANDUM FOR: F/SER21 - Bob Sadler

FROM: F/CM2 - Gerrie Dubit

SUBJECT: Draft Amendment 5 to the Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico - Editorial Comments

The following editorial comments are being submitted as suggestions to improve consistency or provide clarification for the subject draft amendment.

On page 3, 3rd paragraph referring to Figure 1, which depicts average red snapper landings at Gulf ports, line 2, "1958" should read "1960" (Figure 1 on page 35 uses the years 1960 - 1990).

On page 17, "deep-bodied" is used to describe angelfish (line 1). In the 4th paragraph in line 3, "deep profiles" should read "deep body profiles" for consistency.

On page 18, under alternative option 4, paragraph a. discusses Figure 6 and mentions Cape San Blas. It would be helpful if Cape San Blas could be identified in that figure on page 40.

On page 23, the new paragraph under paragraph c. in line 5 "on" should be added after "Based".

On page 26, under D. Permit Requirements, line 3 from the bottom of that paragraph, "tradition commercial fisherman" should read "traditional commercial fishermen".

On page 30, in paragraph b. Fishery, line 3 "effected" should read "affected".

MEMORANDUM

DATE: November 12, 1992

TO: Joe P. Clem, Chief, F/CM8

CC: D. Crestin, M. Miller, G. Dubit

FROM: Paul J. Hooker, Economist, F/CM2

SUBJECT: Comments on RIR and IRFA to Draft Amendment 5 to the Gulf of Mexico Reef Fish FMP

I reviewed the subject documents and they appear to be adequate in terms of the requirements of E.O. 12291 and the RFA. I did not review the documents to assess whether they justified the choices of the preferred alternatives.

On p.13 of the RIR, first paragraph of the IRFA, the reference to "coastal pelagic fishery" should be changed to "reef fish fishery."

The "Summary of Regulatory Impacts" should contain a table listing the issues, alternatives and impacts. Impacts should be quantitative where data exist; the direction indicated where qualitative information is available; or listed as unknown. See Table R3 in the RIR/IRFA to Amendment 6 of the Coastal Migratory Pelagics FMP.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Office of the Chief Scientist
Washington, D.C. 20230

November 3, 1992

MEMORANDUM FOR: Gerrie Dubit
F/Plans and Regulations

FROM: Donna Wieting

SUBJECT: Comments on revised Draft Amendment 5 to the FMP for Reef Fish Resources of the Gulf of Mexico

The Council has done a good job of improving the document. However, I continue to have questions and concerns about some sections. I offer the following general and specific comments on the revised draft. Please call me at (202) 482-5181 if you have any questions.

General Comments

It does not appear that the section on fish traps has changed. It still remains unclear what problem will be addressed by a total ban and if such action is supported by scientific evidence. Please see my memo from September 3 for specific comments on this section.

Specific Comments

Section 4. What is the problem associated with management options under Alabama SMZs? In later discussions the objective of SMZ's is to address red snapper overfishing. This needs to be clearer in 4. The last sentence of page 7 in the RIR clearly identifies the need for the action and may be useful to insert or reference in Section 4.

Section 7.B.1. The discussion on artificial reefs is very good. It clearly describes the environmental analysis process for artificial reef permits. The alternative boundary discussions, associated impacts, and alternative gear restrictions are substantive additions to the section.

Section 7.E. Under red snapper size limits, an additional alternative is warranted. The obvious choice is immediately increasing the size limit. The reasons for considering but not choosing that alternative are discussed briefly in paragraph two and should be expanded.

Section 8

The physical environment section for the amendment and fishery is very good.

Under fishery resources, the first paragraph states that the SMZ proposed rules would reduce mortality of red snapper. Is this discussed in the section on SMZ's? If not, it should be.

The first sentence under b. Fishery is the key to analyzing the impact of the fishery. It implies that the fishery has had a significant impact on the resources. In that case, an SEIS is probably appropriate on the fishery. The rest of the discussion under b. is really about the management measures.

September 3, 1992

MEMORANDUM FOR: Gerrie Dubit
F/Plans and Regulations

FROM: Donna Wieting

SUBJECT: Comments on Draft Amendment 5 to the Fishery Management Plan (FMP) for the Reef Fish Resources of the Gulf of Mexico

I have reviewed the subject document and offer the following brief comments for your consideration. Please call me at 202 377-5181 if you have any questions.

General Comments

In reading this Amendment, it seems the main unanswered question is whether this is an issue of unfair competition or one of fishery conservation. It is generally unclear what resource problem(s) this amendment addresses.

Section 4, Problems Requiring a Plan Amendment: This section should begin with the problem statement. What problem would a ban on fish traps address? What percentage of resources is the trap fishery harvesting? The original EIS argued that fish traps only took 2% of the total catch so there was no need for greater restrictions. Has this percentage changed? If not, how can a fish trap ban make a difference in the resource?

The discussion on page 14, paragraph two, is the basis for the most controversial aspect of this amendment. It is brief and often inconsistent with the general fish trap discussion. It should be expanded to fully support the rationale of the preferred option.

Environmental Consequences: How will the preferred option and other alternatives affect the reef fish resource? How will these actions affect nontarget species and the marine environment?

The Council must take a broader view and analyze the impact of the fishery on the target specie(s) and the marine environment.

Specific Comments

c. Management Options

Why were fish traps banned elsewhere (e.g., Florida waters) and what are the results of those bans. Have the prohibitions been

successful in reducing reef fish catches? or have catches by other user groups just replaced them?

There is very little explanation and no substantive discussion of the stressed area concept. How did this develop? What does it mean?

Page 14 b: If the fishermen will likely switch to other gear such as bandit rigs what will the fish trap ban accomplish?

Environmental Consequences: What problems are associated with Option 3? From the discussion, it seems like the better alternative.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

Southeast Fisheries Science Center
Coastal Resources Division
75 Virginia Beach Drive
Miami, FL 33149

October 26, 1992 F/SEC:NRT:sh

MEMORANDUM FOR: Al Jones

FROM: Nancy Thompson

SUBJECT: Public Hearing Draft of Amendment 5 to the Gulf Reef Fish FMP

Per your request we (myself, Bohnsack, and P. Goodyear) have reviewed the subject. The scientific basis for the subject appears to be based on the best available information with the exception of the identification of a "Special Management Zone", p20-23. In this section (p.22), a figure is referenced (figure 10). This figure depicts the distribution of red snapper in the north eastern Gulf of Mexico. This figure is taken directly from a publication by Minerals Management Service (MMS). In a discussion, I had with Rezneat Darnell, first author of the publication, he indicated that 12 data bases for data collected through 1983 were included to produce the distribution map. Since then, considerable additional trawl data exist which we believe do not agree with the discontinuous distribution depicted on figure 10. I have talked with both MMS and Darnell and I'm to receive a copy of their data for review. As soon as we receive these data, we can comment on the scientific validity of the justification for establishing the special management zone. I apologize for not sending you our comments earlier, however, I was hoping to receive the data by nov.

cc: B. Brown
J. Powers
P. Goodyear

Clem
Dubit

U.S. Department of Transportation
United States Coast Guard

Commandant
U.S. Coast Guard

2100 Second Street S.W.
Washington, DC 20593-0001
Staff Symbol: G-OLE
Phone: (202) 267-1890

NOV 4 1992

16214

Mr. Joe P. Clem
Chief, Plans and Regulations Division
National Marine Fisheries Service
Silver Spring, MD 20910

Dear Mr. Clem:

We have reviewed draft Amendment Five to the Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico as prepared by the Gulf of Mexico Fishery Management Council. The Coast Guard objects to three of the Amendment's provisions. The Coast Guard recommends the following changes be adopted to improve enforceability of the Amendment's provisions and thus increase its likelihood for success:

a. Restricted use of fish traps: The Coast Guard recommends a prohibition on the possession of fish traps within the U.S. Exclusive Economic Zone (EEZ) in the Gulf of Mexico. The draft Amendment prohibition on only the use of fish traps severely limits the enforceability of this provision, as enforcement officers would be required to observe the actual deployment or retrieval of fish traps in order to successfully prosecute a violation (the Coast Guard representative on the Gulf Fishery Management Council reported that the Council's intent was to prohibit possession; perhaps this provision was unintentionally altered when the draft Amendment language was written).

b. Landing of fish with heads and fins intact: The Coast Guard recommends adoption of the draft Amendment's alternative option requiring that all finfish, excluding oceanic migratory species, be landed with heads and fins intact. This change would improve the accurate identification of species by Coast Guard enforcement officers.

c. Minimum size limit for red snapper: The Coast Guard supports increasing the minimum size limit for red snapper, but only after the respective coastal states have adopted this provision within state waters. Adoption of this recommendation would help facilitate complimentary Federal and state enforcement efforts and prevent the creation of a loophole in the enforcement of Federal size limits.

16214

Subj: COMMENTS ON AMENDMENT FIVE TO THE REEF FISH FISHERY MANAGEMENT PLAN

Thank you for the opportunity to comment on this Amendment. If there are questions regarding the Coast Guard response, please contact Commander Vince O'Shea at (202) 267-1785.

Sincerely,

T. L. TERRIBERRY
Captain, U.S. Coast Guard
Chief, Operational Law
Enforcement Division
By direction of the Commandant

Copy: LANTAREA (Aoo)
CCGD8 (ole)

Handout TAB C NO. 9(d)

State of Louisiana

Joe L. Herring
Secretary

Department of Wildlife and Fisheries
Post Office Box 98000
Baton Rouge, LA 70898-9000
(504) 765-2800

Edwin W. Edwards
Governor

November 9, 1992

Mr. Wayne Swingle, Biologist
Gulf of Mexico Fishery Management Council
Lincoln Center, Suite 331
5401 West Kennedy Boulevard
Tampa, Florida 33609

Dear Mr. Swingle:

The Department of Wildlife and Fisheries has reviewed Draft Amendment 5 to the "Reef Fish Fishery Management Plan for the Reef Fish Resources of The Gulf of Mexico" dated September, 1992, and are providing our comments and concerns on proposed management measures. Any references to tables or figures to follow are in reference to Goodyear (1992), "Red Snapper in U.S. waters of the Gulf of Mexico", contribution: MIA 91/92-70.

1) A. Fish Trap Restrictions

The move toward the exclusion of traps seems based on very slight evidence, mainly perceptions. This is a bad precedent. Gear exclusions should only be instituted if the gear has demonstrated deleterious effects greater than those of alternative gears. NMFS has started a video trap study to attempt to quantify reef species. The results of this study should be discussed, and effects of proposed gear modifications tested in this study before implementation of these regulations.

2) B. Special Management Zones

Alabama Special Management Zones - Rather than giving this area a special consideration, the proposal should be tabled until adoption of a framework procedure, and then considered under that procedure. This would assume the equitable treatment of all SMA requests. While such a postponement would certainly delay implementation of the SMA regulations until the next commercial fishing season, we believe that long-term management is best served by consistency of rules. Any perceived detrimental effects from delayed implementation of SMA regulations would not affect the long-term goals of either the Alabama Artificial Reefs Program or the Council Reef Fish Fishery Management Plan.

Framework Procedure for Special Management Zones

We object to the procedure as proposed. 1. The reef fish AP and SSC should be more involved in the recommendations, not just at the request of the Management Committee. 2. Public comment should be requested at an earlier date; there is no specified way to accept public comment before the RD publishes the proposed rule in the Register. 3. Cumulative impacts of such zones are not considered except for environmental impacts. The cumulative impacts on fisheries, especially, may be substantial and very hard to quantify. 4. Insufficient material has been presented to evaluate how such procedures have been used by the South Atlantic Council, and the reaction of the user groups to such regulation.

Such review should be available for comment by the public, AP and SSC before accepting any system. Perhaps some people involved in the South Atlantic program could have some pointers to modify the proposed rules to improve the system. 5. It should be clearly stated that the Regulatory Framework Procedure for SMA's is only applicable to artificial reef sites. Other proposed SMA's should be adopted by the full plan amendment process.

3) E. Red Snapper Minimum Size

There is an obvious difference in the estimates of relative year class strength from Table 11 which are based on the ground fish survey (GFS) and Tables 87 derived from age structured analysis (VPA). It is a matter of contention which results reflect actual measures of recruitment. If the cohort analysis is assumed to be accurate then recruitment has been increasing each year at least as far back as 1984 which is the first year presented in the analysis. If the groundfish survey accurately reflects year class strength then 1990 recruitment was less than half of that observed in 1989. Therefore, the inference that regulations imposed in 1989 have something to do with increased recruitment is simply incomprehensible. In fact, regardless of which method is assumed to provide an accurate measure of year class strength, female spawning biomass from 1984 through 1993 has not changed significantly (see figure attached). One would assume that if spawning potential ratio is the overriding management goal, spawning biomass would play a large role in production of recruits, unless it is assumed that the mere thought of regulations caused increased red snapper recruitment.

The section "Discussion and Impacts" seems to try to justify the benefit of increasing size limits but does little to address the actual direct impacts. The following table reflects the impact on both the fishery and stock resulting from increasing size limits. The results are derived by imposing the proposed size limits on the 1991 cohort while assuming a release mortality of 33%, a 4 million pound TAC given a 51% commercial and 49% recreational allocation and no reduction in bycatch. Fishing mortality rates on the 1991 cohort are assumed to be that found in Table 88 for the year 1991 partitioned into commercial and recreational rates based on their catches for that year. The intent of this exercise is not to provide actual results but to demonstrate the differences in estimated harvest and SPR given various size limits compared to the existing 13 inch minimum. Dr. Goodyear should be able to provide more accurate estimates since he has all of the necessary data at his disposal.

	13 INCH	14 INCH	15 INCH	16 INCH
RECREATIONAL HARVEST (numbers)	474,490	469,643	465,719	432,065
DIFFERENCE	0	-4,847	-8,771	-42,425
% DIFFERENCE	0.00%	-1.02%	-1.85%	-8.94%
COMMERCIAL HARVEST (numbers)	145,489	144,995	144,546	139,617
DIFFERENCE	0	-494	-943	-5,872
% DIFFERENCE	0.00%	-0.34%	-0.65%	-4.04%
TOTAL HARVEST (numbers)	619,979	614,638	610,265	571,682
DIFFERENCE	0	-5,341	-9,714	-48,297
% DIFFERENCE	0.00%	-0.86%	-1.57%	-7.79%
SPR	10.73%	10.74%	10.75%	10.76%
DIFFERENCE	0.00%	0.01%	0.01%	0.02%

Increasing size limits will reduce harvest (numbers) and move the fishery towards maximizing yield per recruit. The statement that a 100% reduction in harvest (numbers) is possible by moving to a 16 inch size limit is simply inaccurate. The realized reduction (numbers) would be approximately 7.8%. The impact on the spawning biomass of increasing size limits is of limited utility. There are very small gains in spawning potential as a result of imposed higher size limits. Therefore, under this scenario yield per recruit will increase and the spawning biomass will realize small gains. The relative ineffectiveness of increasing size limits on SPR is also obvious in the yield and SPR isopleth in Figure 69.

Maximizing yield per recruit is often a preferred management goal for the commercial fishery; however, it may not necessarily be a preferred management goal for the recreational fishery. Optimum yield does not require maximizing yield, but provides the opportunity for social aspects of the fishery to drive management. Given the choice between landing larger numbers of fish or larger but fewer fish the recreational fishery may chose the former. An approach may be to have higher size limits for the commercial fishery to maximize yield in that fishery and have lower size limits for the recreational fishery to maximize the number of fish caught.

The following table demonstrates the estimated harvest in numbers and pounds as a result of the proposed size limits, using the assumptions as stated above with the exception of eliminating bycatch and holding SPR at 30%. The table also considers the impact of a 13 inch size limit on the recreational fishery and a 16 inch size limit on the commercial fishery given no bycatch mortality and a 33% release mortality rate.

	13 INCH	14 INCH	15 INCH	16 INCH	13 & 16
RECREATIONAL HARVEST (numbers)	8,644,600	8,561,681	8,487,620	7,821,830	8,681,916
DIFFERENCE	0	-82,919	-156,980	-822,770	37,316
% DIFFERENCE	0.00%	-0.96%	-1.82%	-9.52%	0.43
RECREATIONAL HARVEST (pounds)	32,114,204	32,187,536	32,210,634	32,186,168	32,250,320
DIFFERENCE	0	73,333	96,431	71,964	136,116
% DIFFERENCE	0.00%	0.23%	0.30%	0.22%	0.42
COMMERCIAL HARVEST (numbers)	3,046,194	3,038,457	3,028,484	2,893,132	2,874,633
DIFFERENCE	0	-6,737	-16,710	-152,062	-170,561
% DIFFERENCE	0.00%	-0.22%	-0.55%	-4.99%	-5.93
COMMERCIAL HARVEST (pounds)	33,428,487	33,498,611	33,519,357	33,498,566	33,565,663
DIFFERENCE	0	70,124	92,870	70,079	139,177
% DIFFERENCE	0.00%	0.21%	0.28%	0.21%	0.42%
COMMERCIAL HARVEST (value)	$72,201,211	$72,352,679	$72,401,812	$72,352,582	$72,501,833
DIFFERENCE	0	$151,468	$200,600	$151,371	$300,622
% DIFFERENCE	0.00%	0.21%	0.28%	0.21%	0.42%

TOTAL HARVEST (numbers)	11,689,794	11,600,138	11,516,104	10,714,962	11,556,549
DIFFERENCE	0	-89,656	-173,690	-974,832	-133,245
% DIFFERENCE	0.00%	-0.77%	-1.49%	-8.34%	1.14%
TOTAL HARVEST (pounds)	65,540,691	65,684,147	65,729,992	65,682,734	65,815,983
DIFFERENCE	0	143,457	189,301	142,043	275,293
% DIFFERENCE	0.00%	0.22%	0.29%	0.22%	0.42%

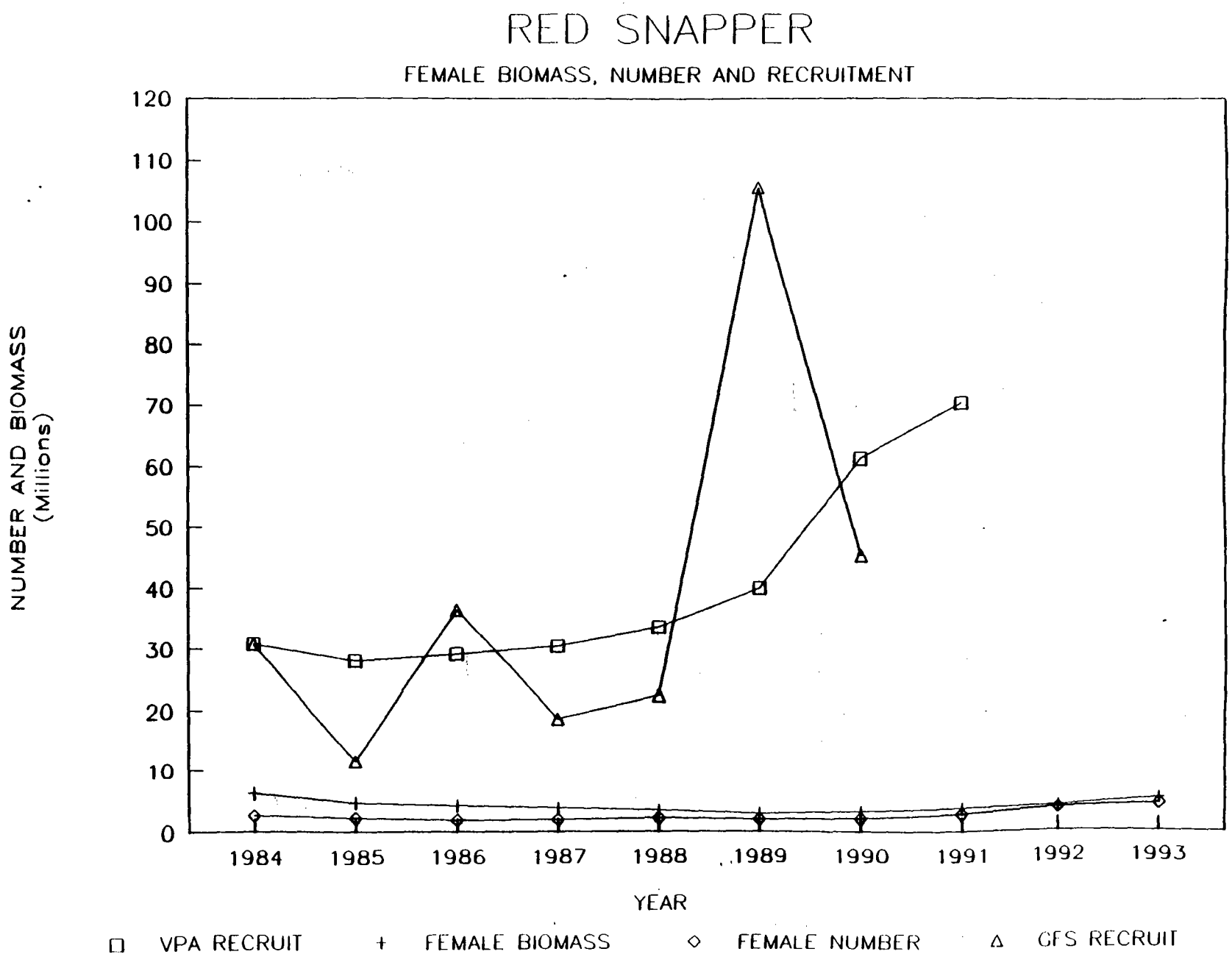
From the table it is obvious that maximum yield per recruit would be achieved with a size limit between 15 and 16 inches total length given the proposed size limits. However, there are potential benefits expected by having different size limits on each sector of the fishery. Based on the table above given a 13 inch size limit on the recreational fishery and a 16 inch size limit commercially the recreational fishery could increase harvest in both number and pounds and the commercial fishery could increase yield and derive an economic benefit. We are not recommending these specific limits be placed on the fishery; however, we do feel a more thorough analysis of the impact of size limits on the red snapper fishery is warranted, prior to increasing size limits.

Sincerely,

Joseph A. Shepard
Program Manager
Marine Fisheries Division

Harry Blanchet
Acting Finfish Program Manager
Marine Fisheries Division

JAS & RHB/lar


RED SNAPPER
FEMALE BIOMASS, NUMBER AND RECRUITMENT
NUMBER AND BIOMASS
(Millions)
120
110
100
90
80
70
60
50
40
30
20
10
0
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
YEAR
VPA RECRUIT
FEMALE BIOMASS
FEMALE NUMBER
GFS RECRUIT

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U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration

Office of General Counsel
Southeast Region
9450 Koger Blvd.
St. Petersburg, FL 33702

December 1, 1992

TO: GMFMC - Wayne Swingle

FM: GCSE - John Pedrick JP

SUBJ: Rationale for an SEIS Covering the Proposed SMZs off Alabama

The NEPA regulations, at 40 C.F.R. 1502.9(c), require an SEIS if there is a substantial change in an action which is relevant to environmental concerns, or if a proposed measure within the action presents significant new circumstances which are relevant to environmental concerns and which bear on the action or its impacts. I believe that the three SMZs proposed off Alabama meet these criteria for production of an SEIS.

The impacts of these SMZs will be similar in scope and effect to those of the stressed area, discussed in the original FEIS accompanying the FMP, and of the longline and buoy gear restrictions created in Amendment 1. They are significant in that there will be tight restriction of the gears that can be used within them. Spearfishing will continue to be allowed, but any other gear with more than three hooks will be prohibited. This bans pelagic longlines from the large area covered by the SMZs, for example.

There was very little discussion before the Council of the extent to which commercial fishing exists in the proposed SMZs, except to say that it is not extensive. There was little discussion of the gears used in the proposed SMZs. There was little discussion of the fish stocks present in these areas. Discussion of the impacts on the gears now in the fishery, as well as the impacts on the fish stocks present in the SMZs, will expand on the administrative record underlying this proposal.

Other factors leading to my conclusion include the fact that these are the first SMZs in the Gulf. They are also much larger than any SMZ approved elsewhere, and extend into much deeper water. The gear restrictions, extent of the SMZs, and their allocative effects also should be discussed in terms of their effect on the human environment.

cc: F/SEO - Andy Kemmerer
Bill Lindall
Bill Turner
Bob Sadler
GCF - Mariam McCall

APPENDIX D

Regulations
of the
Reef Fish FMP

January 6, 1993

NOTE: THE FOLLOWING IS AN UNOFFICIAL COMPILATION OF FEDERAL REGULATIONS PREPARED IN THE SOUTHEAST REGIONAL OFFICE OF THE NATIONAL MARINE FISHERIES SERVICE FOR THE INFORMATION AND CONVENIENCE OF INTERESTED PERSONS. IT DOES NOT INCLUDE CHANGES TO THESE REGULATIONS THAT MAY HAVE OCCURRED AFTER THE DATE INDICATED ABOVE.

DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service (NMFS)
50 CFR Part 641

PART 641--REEF FISH FISHERY OF THE GULF OF MEXICO

Subpart A-General Provisions
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641.2 Definitions.
641.3 Relation to other laws.
641.4 Permits and fees.
641.5 Recordkeeping and reporting.
641.6 Vessel, structure, and gear identification.
641.7 Prohibitions.
641.8 Facilitation of enforcement.
641.9 Penalties.
Subpart B-Management Measures
641.20 Fishing year.
641.21 Harvest limitations.
641.22 Gear restrictions.
641.23 Area limitations.
641.24 Bag and possession limits.
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641.26 Closures.
641.27 Exemptions for the groundfish trawl fishery.
641.28 Adjustment of management measures.
641.29 Specifically authorized activities.
Appendix A-Tables and Figures

Authority: 16 U.S.C. 1801 et seq.

Subpart A-General Provisions

§ 641.1 Purpose and scope.

(a) The purpose of this part is to implement the Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico, prepared by the Gulf of Mexico Fishery Management Council under the Magnuson Act.

(b) This part governs conservation and management of reef fish in the EEZ of the Gulf of Mexico, except that §§ 641.5 and 641.25 also apply to fish from adjoining State waters.

§ 641.2 Definitions.

In addition to the definitions in the Magnuson Act and in § 620.2 of this chapter, the terms used in this part have the following meanings:

Buoy gear means fishing gear consisting of a float and one or more weighted lines suspended therefrom, generally long enough to reach the bottom, on which there is a hook or hooks (usually 6 to 10) at or near the end, which is allowed to drift freely with periodic retrieval to remove catch and rebait hooks.

Charter vessel means a vessel less than 100 gross tons (90.8 metric tons) that meets the requirements of the Coast Guard to carry six or fewer passengers for hire and that carries a passenger for hire at any time during the calendar year. A charter vessel with a permit issued under § 641.4 is considered to be operating as a charter vessel when it carries a passenger who pays a fee or when there are more than three persons aboard, including operator and crew.

Fish trap means any trap and the component parts thereof used for or capable of taking finfish, regardless of the construction material, except those traps historically used in the directed fisheries for crustaceans (blue crab, stone crab, and spiny lobster).

Fork length means the distance from the tip of the snout to the rear center edge of the tail (caudal fin). (See Appendix A, Figure 1.)

Groundfish trawl fishery means fishing by a vessel that uses a bottom trawl, the unsorted catch of which is ground up for animal feed or industrial products.

Headboat means a vessel that holds a valid Certificate of Inspection issued by the Coast Guard to carry passengers for hire. A headboat with a permit issued under § 641.4 is considered to be operating as a headboat when it carries a passenger who pays a fee or when there are more than three persons aboard, including operator and crew.

Powerhead means any device with an explosive charge, usually attached to a speargun, spear, pole, or stick, that fires a projectile upon contact.

Reef fish refers to fish in the following two categories:

(a) Management unit. Species taken in the directed fishery include the following:

Snappers--Lutjanidae Family

Queen snapper, *Etelis oculatus*
Mutton snapper, *Lutjanus analis*
Schoolmaster, *Lutjanus apodus*
Blackfin snapper, *Lutjanus buccanella*
Red snapper, *Lutjanus campechanus*
Cubera snapper, *Lutjanus cyanopterus*
Gray (mangrove) snapper, *Lutjanus griseus*
Dog snapper, *Lutjanus jocu*
Mahogany snapper, *Lutjanus mahogoni*
Lane snapper, *Lutjanus synagris*
Silk snapper, *Lutjanus vivanus*
Yellowtail snapper, *Ocyurus chrysurus*

Wenchman, Pristipomoides aquilonaris
Vermilion snapper, Rhomboplites aurorubens
Groupers--Serranidae Family
Rock hind, Epinephelus adscensionis
Speckled hind, Epinephelus drummondhayi
Yellowedge grouper, Epinephelus flavolimbatus
Red hind, Epinephelus guttatus
Jewfish, Epinephelus itajara
Red grouper, Epinephelus morio
Misty grouper, Epinephelus mystacinus
Warsaw grouper, Epinephelus nigritus
Snowy grouper, Epinephelus niveatus
Nassau grouper, Epinephelus striatus
Black grouper, Mycteroperca bonaci
Yellowmouth grouper, Mycteroperca interstitialis
Gag, Mycteroperca microlepis
Scamp, Mycteroperca phenax
Yellowfin grouper, Mycteroperca venenosa
Sea Basses--Serranidae Family
Bank sea bass, Centropristis ocyurus
Rock sea bass, Centropristis philadelphica
Black sea bass, Centropristis striata
Tilefishes--Malacanthidae Family
Goldface tilefish, Caulolatilus chrysops
Blackline tilefish, Caulolatilus cyanops
Anchor tilefish, Caulolatilus intermedius
Blueline tilefish, Caulolatilus microps
Tilefish, Lopholatilus chamaeleonticeps
Jacks--Carangidae Family
Greater amberjack, Seriola dumerili
Lesser amberjack, Seriola fasciata
Almaco jack, Seriola rivoliana
Banded rudderfish, Seriola zonata
Grunts--Haemulidae Family
White grunt, Haemulon plumieri
Porgies--Sparidae Family
Red porgy, Pagrus pagrus
Triggerfishes--Balistidae Family
Gray triggerfish, Balistes capriscus

(b) Fishery. Species taken incidental to the directed fishery include the following:

Wrasses--Labridae Family
Hogfish, Lachnolaimus maximus
Grunts--Haemulidae Family
Tomtate, Haemulon aurolineatum
Pigfish, Orthopristis chrysoptera
Porgies--Sparidae Family
Grass porgy, Calamus arctifrons
Jolthead porgy, Calamus bajonado
Knobbed porgy, Calamus nodosus
Littlehead porgy, Calamus proridens
Pinfish, Lagodon rhomboides

Sand Perches--Serranidae Family
Dwarf sand perch, Diplectrum bivittatum
Sand perch, Diplectrum formosum
Triggerfishes--Balistidae Family
Queen triggerfish, Balistes vetula

Regional Director means the Regional Director (or a designee), Southeast Region, NMFS, Duval Building, 9450 Koger Boulevard, St. Petersburg, FL 33702; telephone 813-893-3141.

Roller trawl means a trawl net equipped with a series of large solid rollers separated by several smaller spacer rollers on a separate cable or line (sweep) connected to the footrope, which makes it possible to fish the gear over rough bottom, i.e., in areas unsuitable for fishing conventional shrimp trawls. Rigid framed trawls adapted for shrimping over uneven bottom, in wide use along the west coast of Florida, and shrimp trawls with hollow plastic rollers for fishing on soft bottoms, are not considered roller trawls.

Science and Research Director means the Science and Research Director, Southeast Fisheries Center, NMFS, 75 Virginia Beach Drive, Miami, FL 33149, telephone 305-361-5761, or a designee.

Statistical area means one or more of the 21 statistical grids depicted in Appendix A, Figure 2.

Total length means the distance from the tip of the snout to the furthermost tip of the tail (caudal fin) when depressed. (See Appendix A, Figure 1.)

Trip means a fishing trip, regardless of number of days duration, that begins with departure from a dock, berth, beach, seawall, or ramp and that terminates with return to a dock, berth, beach, seawall, or ramp.

§ 641.3 Relation to other laws.

The relation of this part to other laws is set forth in § 620.3 of this chapter.

§ 641.4 Permits and fees.

(a) Applicability.

(1) As a prerequisite to selling reef fish and to be eligible for exemption from the bag limits specified in § 641.24(b), an owner or operator of a vessel that fishes in the EEZ or a person who fishes in the EEZ from a structure must obtain an annual vessel permit.

(2) A qualifying owner or operator of a charter vessel or headboat may obtain a permit. However, a charter vessel or headboat must adhere to the bag limits when operating as a charter vessel or headboat.

(3) For a corporation or partnership to be eligible for a vessel permit, the earned income qualification specified in paragraph (b)(2)(xi) of this section must be met by, and the statement required by that paragraph must be submitted by, an officer or shareholder of the corporation, a general partner of the partnership, or the vessel operator.

(4) An owner or operator of a vessel using a fish trap in the EEZ or a person using a fish trap from a structure in the EEZ

must obtain both a vessel permit and a color code from the Regional Director.

(5) A vessel permit issued upon the qualification of an operator is valid only when that person is the operator of the vessel.

(b) Application for permit.

(1) An application for a vessel permit must be submitted and signed by the owner or operator of the vessel or by a person who fishes from a structure. The application must be submitted to the Regional Director at least 60 days prior to the date on which the applicant desires to have the permit made effective.

(2) Permit applicants must provide the following information (a person fishing from a structure may omit vessel information):

(i) Name, mailing address including zip code, and telephone number of the owner of the vessel;

(ii) Name, mailing address including zip code, and telephone number of the applicant, if other than the owner;

(iii) Social security number and date of birth of the applicant and the owner;

(iv) Name of the vessel;

(v) The vessel's official number;

(vi) Home port or principal port of landing, gross tonnage, radio call sign, and length of the vessel;

(vii) Engine horsepower and year the vessel was built;

(viii) Type of gear to be fished and other fisheries vessel is used for;

(ix) Passenger capacity and U.S. Coast Guard license number(s) of vessel operator(s) if the vessel also operates as a charter vessel or headboat during the year;

(x) Any other information concerning vessel and gear characteristics requested by the Regional Director;

(xi) A sworn statement by the applicant certifying that more than 50 percent of his or her earned income was derived from commercial, charter, or headboat fishing during the calendar year preceding the application, except that, for renewal of permits for 1993 and ensuing years, the earned income requirement may be met in either of the two calendar years preceding the application;

(xii) Proof of certification, as required by paragraph (b)(3) of this section;

(xiii) If fish traps will be used to harvest reef fish,

(A) The number, dimensions, and estimated cubic volume of the fish traps that will be used;

(B) The applicant's desired color code for use in identifying his or her vessel and buoys; and

(C) A statement that the applicant will allow an authorized officer reasonable access to his or her property (vessel, dock, or structure) to examine fish traps for compliance with these regulations; and

(xiv) If fish traps will be used from a fixed structure,

(A) The name and number of the oil or gas structure or the most descriptive identification for other types of structures; and

(B) The location of the structure in latitude and longitude or distance and direction from a fixed point of land.

(3) The Regional Director may require the applicant to provide documentation supporting the sworn statement under paragraph (b)(2)(xii) of this section before a permit is issued or to substantiate why such a permit should not be denied, revoked, or otherwise sanctioned under paragraph (i) of this section.

(c) Change in application information. The owner or operator of a vessel with a permit must notify the Regional Director within 30 days after any change in the application information specified in paragraph (b) of this section. The permit is void if any change in the information is not reported within 30 days.

(d) Fees. A fee is charged for each permit application submitted under paragraph (b) of this section and for each fish trap identification tag required under § 641.6(d). The amount of the fees is calculated, at least annually, in accordance with the procedures of the NOAA Finance Handbook for determining the administrative costs of each special product or service, and may not exceed such costs. Applicable fees are specified with the application form and must be remitted with each application or request for fish trap identification tags.

(e) Issuance.

(1) The Regional Director will issue a permit at any time to an applicant if the application is complete and the applicant meets the earned income requirement specified in paragraph (b)(2)(xi) of this section. An application is complete when all requested forms, information, and documentation have been received and the applicant has submitted all applicable reports specified at § 641.5.

(2) Upon receipt of an incomplete application, the Regional Director will notify the applicant of the deficiency. If the applicant fails to correct the deficiency within 30 days of the date of the Regional Director's letter of notification, the application will be considered abandoned.

(f) Duration. A permit remains valid for the period specified on it unless the vessel is sold or the permit is revoked, suspended, or modified pursuant to subpart D of 15 CFR part 904.

(g) Transfer. Except as provided for under paragraph (1) of this section, a permit issued under this section is not transferable or assignable. A person purchasing a vessel with a permit to fish for reef fish must apply for a permit in accordance with the provisions of paragraph (b) of this section. The application must be accompanied by a copy of an executed (signed) bill of sale.

(h) Display. A permit issued under this section must be carried on board the fishing vessel or fixed structure, and such

vessel or structure must be identified as provided for in § 641.6. The operator of a fishing vessel or person fishing fish traps from a fixed structure must present the permit for inspection upon request of an authorized officer.

(i) Sanctions and denials. A permit issued pursuant to this section may be revoked, suspended, or modified, and a permit application may be denied, in accordance with the procedures governing enforcement-related permit sanctions and denials found at subpart D of 15 CFR part 904.

(j) Alteration. A permit that is altered, erased, or mutilated is invalid.

(k) Replacement. A replacement permit may be issued. An application for a replacement permit will not be considered a new application. A fee, the amount of which is stated with the application form, must accompany each request for a replacement permit.

(l) Moratorium on permits. The provisions of this paragraph (l) are effective through May 7, 1995.

(1) An application for a vessel permit that is postmarked or hand-delivered after May 7, 1992, will not be accepted, except for an application for renewal of an existing vessel permit or as provided in paragraphs (l)(2) and (l)(3) of this section.

(2) An owner of a permitted vessel may transfer the vessel permit to another vessel owned by him or her by returning the existing permit with an application for a vessel permit for the replacement vessel.

(3) A person purchasing a vessel with a permit issued under this section may obtain a permit for that vessel, and renew the permit for that vessel for the first calendar year after the purchase, without meeting the earned income requirement of paragraph (b)(2)(xi) of this section, provided that the seller met the earned income requirement. However, to renew the vessel permit for the second calendar year after the purchase, the new owner must meet that earned income requirement not later than the first calendar year after the purchase takes place.

(4) A permit that is not renewed or is revoked will not be reissued.

[The following paragraphs (m) and (n) are effective December 30, 1992, through March 30, 1993, and may be extended for an additional 90 days.]

(m) Red snapper endorsement.

(1) As a prerequisite for exemption from the trip limit for red snapper specified in § 641.21(d)(1), a vessel for which a reef fish permit has been issued under this section must have a red snapper endorsement on such permit.

(2) A red snapper endorsement is invalid upon sale of the vessel; however, an owner may transfer an endorsement to another vessel owned by him or her in accordance with the permit transfer provisions specified in § 641.4(l)(2).

(n) Condition of a permit. As a condition of a reef fish permit issued under this section, without regard to where red snapper are harvested or possessed, a permitted vessel--

(1) Must abide by the red snapper closure provisions of § 641.30;

(2) May not exceed the appropriate vessel trip limit for red snapper, as specified in § 641.21(d)(1) or (d)(2); and

(3) May not transfer a red snapper at sea, as specified in § 641.21(d)(3).

§ 641.5 Recordkeeping and reporting.

(a) A person specified in paragraphs (b) through (i) of this section must submit the information required by those paragraphs to the Science and Research Director except for data elements reported to a State agency acting as the Science and Research Director's designee. Failure to comply with the reporting requirements of the State of landing is a Federal violation.

(b) Vessels and persons fishing with fish traps. The owner or operator of a vessel or a person on a structure permitted under § 641.4 to fish with a fish trap in the Gulf of Mexico EEZ or who fishes in adjoining State waters must maintain a fishing record on a form available from the Science and Research Director. These forms must be submitted to the Science and Research Director so as to be received not later than 7 days after the end of each fishing trip or, in the case of a person fishing with fish traps from a structure, not later than 7 days after the end of each month. If no fishing occurred during a month, a report so stating must be submitted on one of the forms to be received not later than 7 days after the end of each month. If fishing occurred, the following information must be reported:

(1) Permit number as provided for in § 641.4.

(2) Pounds of catch of reef fish by species for each type of gear used.

(3) Date of trip, depth fished, and fishing location by statistical area.

(4) Number of trap hauls resulting in the catch.

(5) Duration (days and hours) traps were fished before each haul.

(6) Mesh size of traps.

(c) Vessels not fishing with fish traps. The owner or operator of a vessel that is permitted under § 641.4 to fish with gear other than fish traps in the Gulf of Mexico EEZ, or who fishes in adjoining State waters, and who is selected by the Science and Research Director, must maintain a fishing record for each fishing trip on a form available from the Science and Research Director. These forms must be submitted to the Science and Research Director on a monthly basis (or more frequently, if requested by the Science and Research Director) so as to be received not later than the 7th day of the end of the reporting period. If no fishing occurred during a month, a report so stating must be submitted on one of the forms. If fishing occurred, the following information must be reported for each trip:

(1) Name and official number of vessel.

(2) Date(s) of trip and fishing location(s) by statistical area(s).

(3) Pounds of catch of any reef fish by species.

(4) Type and quantity of gear fished.

(5) Duration (days and hours) of vessel fishing effort.

(6) Duration (hours) gear was fished before each haul.

(d) Dealers and processors. Any person who receives reef fish by way of purchase, barter, trade, or sale from a fishing vessel or person that fishes for, or lands said fish from the Gulf of Mexico EEZ or from adjoining State waters, and who is selected to report, must provide the following information to the Science and Research Director at monthly intervals, or more frequently if requested, on forms provided:

(1) Name and address;

(2) Total poundage of each species received during that month, or other requested interval;

(3) Average monthly price paid for each species by market size; and

(4) Proportion of total poundage landed by each gear type.

(e) Recreational fishermen interviews. [Reserved]

(f) Charter vessels. The owner of operator of a charter vessel that fishes for or lands reef fish under the bag limits in the Gulf of Mexico EEZ or in adjoining State waters, and who is selected to report, must maintain a daily fishing record for each trip on forms provided by the Science and Research Director, and must submit the forms to the Science and Research Director weekly within 7 days of the end of each week (Sunday). Information on the forms includes, but is not limited to the following:

(1) Name and official number of vessel.

(2) Operator's Coast Guard license number.

(3) Date and duration of fishing (hours) of each trip.

(4) Number of fishermen on trip.

(5) Fishing location, by statistical area.

(6) Fishing methods and type of gear.

(7) Species targeted.

(8) Number and estimated weight of fish caught by species.

(g) Headboats. The owner or operator of a headboat that fishes for or lands reef fish in the Gulf of Mexico EEZ or in adjoining State waters, and who is selected to report, must maintain a fishing record for each trip, or a portion of such trips as specified by the Science and Research Director, on forms provided by the Science and Research Director and must report the following information at least monthly within 7 days of the end of each month:

(1) Name and official number of vessel.

(2) Date(s) and location of each trip and duration of fishing (hours).

(3) Number of fishermen on each trip.

(4) Number of fish caught and approximate weight by species.

(5) Any other fishery management data requested by the Science and Research Director.

(6) Operator's U.S. Coast Guard license number.

(h) Commercial vessel, charter vessel, and headboat inventory. Any person described under paragraphs (c), (f), and (g) of this section, and who was not selected to report on a monthly or more frequent basis, must provide the following information when interviewed annually by the Science and Research Director:

(1) Name and official number of vessel;

(2) Length and tonnage;

(3) Current home port;

(4) Fishing areas by statistical area;

(5) Ports where fish were landed during the last year;

(6) Type and quantity of gear; and

(7) Number of full- and part-time fishermen or crew members.

(i) Additional data and inspection. Additional data will be collected by authorized statistical reporting agents, as designees of the Science and Research Director, and by authorized officers. An owner or operator of a fishing vessel, a person fishing traps from a structure, and a dealer or processor are required upon request to make reef fish or parts thereof available for inspection by the Science and Research Director or an authorized officer.

§ 641.6 Vessel, structure, and gear identification.

(a) Vessels.

(1) A vessel for which a permit has been issued under § 641.4 must display its official number--

(i) On the port and starboard sides of the deckhouse or hull and on an appropriate weather deck so as to be clearly visible from an enforcement vessel or aircraft;

(ii) In block arabic numerals in contrasting color to the background;

(iii) At least 18 inches in height for fishing vessels over 65 feet in length and at least 10 inches in height for all other vessels; and

(iv) Permanently affixed to or painted on the vessel.

(2) In addition, a vessel for which a permit has been issued under § 641.4 to fish with fish traps must display its color code--

(i) On the port and starboard sides of the deckhouse or hull and on an appropriate weather deck so as to be clearly visible from an enforcement vessel or aircraft;

(ii) In the form of a circle at least 20 inches in diameter; and

(iii) Permanently affixed to or painted on the vessel.

(b) Structures. A person fishing from a structure with a fish trap who has been issued a permit under § 641.4 must display his permit number and color code--

(1) So as to be clearly visible from an enforcement vessel or aircraft;

(2) With the permit number in block arabic numerals in contrasting color to the background;

(3) With the permit number at least 10 inches in height;

(4) With the color code in the form of a circle at least 20 inches in diameter; and

(5) Permanently affixed to or painted on the structure.

(c) Duties of operator or person. The operator of each fishing vessel specified in paragraph (a) or person specified in paragraph (b) of this section must--

(1) Keep the official number or permit number and color code clearly legible and in good repair, and

(2) Ensure that no part of the fishing vessel or structure, its rigging, fishing gear, or any other material aboard obstructs the view of the official number or permit number and color code from any enforcement vessel or aircraft.

(d) Fish traps. A valid identification tag, available from the Regional Director, must be affixed to each fish trap used or possessed in the EEZ. Such tag shows the specific tag number (normally 1 through 100, or less), the permit number, and the month and year through which the permit and tag are valid.

(e) Buoys. Each fish trap, or the ends of a string of fish traps, must be marked by a floating buoy or by a buoy designed to be submerged and automatically released. Each buoy used to mark fish traps must display the designated color code and permit number so as to be easily distinguished, located, and identified.

(f) Presumption of ownership. A fish trap in the EEZ will be presumed to be the property of the most recently documented owner. This presumption will not apply with respect to traps that are lost or sold if the owner reports the loss or sale within 15 days to the Regional Director.

(g) Unmarked traps or buoys. An unmarked fish trap or buoy deployed in the EEZ is illegal and may be disposed of in any appropriate manner by the Secretary (including an authorized officer). If an owner of an unmarked trap or buoy can be ascertained, such owner is subject to appropriate civil penalties.

§ 641.7 Prohibitions.

In addition to the general prohibitions specified in § 620.7 of this chapter, it is unlawful for any person to do any of the following:

(a) Falsify information specified in § 641.4(b)(2) on an application for a vessel permit.

(b) Fail to display a permit, as specified in § 641.4(h).

(c) Falsify or fail to provide information required to be submitted or reported, as required by § 641.5(b) through (h).

(d) Fail to make reef fish or parts thereof available for inspection, as required by § 641.5(i).

(e) Falsify or fail to display and maintain vessel and gear identification, as required by § 641.6.

(f) Possess a reef fish smaller than the minimum size limits, as specified in § 641.21(a).

(g) Possess a reef fish without its head and fins intact, as specified in § 641.21(b).

(h) Fish with poisons or explosives or possess on board a fishing vessel any dynamite or similar explosive substance, as specified in § 641.22(a).

(i) Use or possess in the EEZ a fish trap that does not conform to the requirements for escape windows, degradable openings, and mesh sizes specified in § 641.22(b)(1),(2), and (3).

(j) Use in the EEZ shoreward of the 50-fathom isobath a fish trap that exceeds the maximum allowable size specified in § 641.22(b)(4).

(k) Fish or possess in the EEZ more than 100 fish traps per vessel or structure, as specified in § 641.22(b)(5).

(l) Pull or tend a fish trap, except during the hours specified in § 641.22(b)(6)(i); or tend, open, pull, or otherwise molest or have in possession another person's fish trap, except as specified in § 641.22(b)(6)(ii).

(m) Use a powerhead to take reef fish of the management unit in the stressed area, as specified in § 641.23(a)(1).

(n) Use a fish trap or a roller trawl in the stressed area, as specified in § 641.23(a)(2).

(o) Use a longline or buoy gear to fish for reef fish in the longline and buoy gear restricted area, as specified in § 641.23(b).

(p) Exceed the bag and possession limits, as specified in § 641.24(a) through (d).

(q) Operate a vessel with reef fish aboard that are smaller than the minimum size limits, do not have head and fins intact, or are in excess of the cumulative bag limit, as specified in §§ 641.21(c) and 641.24(e).

(r) Transfer reef fish at sea, as specified in § 641.24(f).

(s) Purchase, barter, trade, or sell a reef fish taken by a vessel that does not have a permit or by a person fishing from a structure who does not have a permit, as specified in § 641.4(a), or taken under the bag limits, as specified in § 641.24(g).

(t) Harvest or possess a jewfish in or from the EEZ.

[The following paragraphs (u), (v), and (w) are effective December 30, 1992, through March 30, 1993, and may be extended for an additional 90 days.]

(u) Exceed the bag and possession limits for red snapper or purchase, barter, trade, or sell red snapper during the closure of the commercial fishery for red snapper, as specified in § 641.30.

(v) Exceed the vessel trip limits for red snapper, as specified in § 641.21(d)(1) and (d)(2).

(w) Transfer a red snapper at sea, as specified in § 641.21(d)(3).

§ 641.8 Facilitation of enforcement.

See § 620.8 of this chapter.

§ 641.9 Penalties.

See § 620.9 of this chapter.

Subpart B-Management Measures

§ 641.20 Fishing year.

The fishing year for reef fish begins on January 1 and ends on December 31.

§ 641.21 Harvest limitations.

(a) Minimum sizes. The following minimum size limits apply for the possession of reef fish in or taken from the EEZ:

(1) Red snapper--13 inches total length.

(2) Gray, mutton, and yellowtail snappers--12 inches total length.

(3) Lane and vermilion snappers--8 inches total length.

(4) Red, Nassau, yellowfin, and black groupers and gag--20 inches total length.

(5) Greater amberjack--28 inches fork length for a fish taken by a person subject to the bag limit specified in § 641.24(b)(4) and 36 inches fork length, for a fish taken by a person not subject to the bag limit.

(6) Black sea bass--8 inches total length.

(b) Head and fins intact. A reef fish subject to a minimum size limit specified in paragraph (a) of this section possessed in the EEZ must have its head and fins intact and such reef fish taken from the EEZ must have its head and fins intact through landing. Such reef fish may be eviscerated but must otherwise be maintained in a whole condition.

(c) Operator responsibility. The operator of a vessel that fishes in the EEZ is responsible for ensuring that reef fish possessed aboard that vessel comply with the minimum sizes specified in paragraph (a) of this section and are maintained with head and fins intact as specified in paragraph (b) of this section.

[The following paragraph (d) is effective December 30, 1992, through March 30, 1993, and may be extended for an additional 90 days.]

(d) Red snapper trip and transfer limitations.

(1) Except as provided in paragraph (d)(2) of this section, a vessel for which a reef fish permit has been issued under § 641.4 may not possess on any trip red snapper in excess of 200 pounds (91 kg), whole or eviscerated.

(2) A vessel for which a red snapper endorsement has been issued under § 641.4(m) may not possess on any trip red snapper in excess of 2,000 pounds (907 kg), whole or eviscerated weight.

(3) A red snapper may not be transferred at sea from one vessel to another.

§ 641.22 Gear restrictions.

(a) Poisons and explosives. Poisons and explosives may not be used to take reef fish in the EEZ; however, powerheads may be used outside the stressed area. A vessel in the reef fish fishery may not possess on board any dynamite or similar explosive substance.

(b) Fish traps. A fish trap used or possessed in the EEZ and a person using a fish trap in the EEZ are subject to the following requirements and limitations:

(1) Escape windows. Each trap must have at least two escape windows on each of two sides, excluding the bottom (a total of four escape windows), that are 2 x 2 inches or larger.

(2) Openings and degradable fasteners.

(i) A degradable panel or access door must be located opposite each side of the trap that has a funnel.

(ii) The opening covered by each degradable panel or access door must be 144 square inches or larger, with one dimension of the area equal to or larger than the largest interior axis of the trap's throat (funnel) with no other dimension less than 6 inches.

(iii) The hinges and fasteners of each degradable panel or access door must be constructed of one of the following materials:

(A) Untreated jute string of 3/16-inch diameter or smaller; or

(B) Magnesium alloy, time float releases (pop-up devices) or similar magnesium alloy fasteners.

(3) Mesh sizes. A fish trap must meet all of the following mesh size requirements (based on centerline measurements between opposite wires or netting strands) (see Appendix A, Figure 3):

(i) A minimum of 2 square inches of opening for each mesh;

(ii) One-inch minimum length for the shortest side;

(iii) Minimum distance of 1 inch between parallel sides of rectangular openings, and 1.5 inches between parallel sides of square openings and of mesh openings with more than four sides; and

(iv) One and nine-tenths (1.9) inches minimum distance for diagonal measures of mesh.

(4) Maximum allowable size. The maximum allowable size for a fish trap fished in the EEZ shoreward of the 50-fathom isobath (300-foot contour) is 33 cubic feet in volume. Fish trap volume is determined by measuring the external dimensions of the trap, and includes both the enclosed holding capacity of the trap and the volume of the funnel(s) within those dimensions. There is no size limitation for fish traps fished seaward of the 50-fathom isobath.

(5) Effort limitation. The maximum number of traps that may be assigned to, possessed, or fished in the EEZ by a vessel or from a structure is 100.

(6) Tending traps.

(i) A reef fish trap may be pulled or tended only during the period from official (civil) sunrise to official (civil) sunset.

(ii) A reef fish trap may be tended only by a person (other than an authorized officer) aboard the vessel permitted to fish such trap, or aboard another vessel if such vessel has on board written consent of the vessel permit holder.

§ 641.23 Area limitations.

(a) Stressed area.

(1) A powerhead may not be used in the stressed area to take reef fish of the management unit. Possession of a powerhead

and a mutilated reef fish of the management unit in the stressed area or after having fished in the stressed area constitutes prima facie evidence that such reef fish was taken with a powerhead in the stressed area.

(2) A fish trap or a roller trawl may not be used in the stressed area. A fish trap used in the stressed area will be considered unclaimed or abandoned property and may be disposed of in any appropriate manner by the Secretary (including an authorized officer). If an owner of such fish trap can be ascertained, such owner is subject to appropriate civil penalties.

(3) The stressed area is that portion of the EEZ in the Gulf of Mexico shoreward of a line connecting the points listed in Appendix A, Table 1. (See also Appendix A, Figure 4.)

(b) Longline and buoy gear restricted area.

(1) Longline and buoy gear may not be used to fish for reef fish in the longline and buoy gear restricted area. For the purposes of this paragraph (b), fishing for reef fish means possessing or landing reef fish--

(i) For which a bag limit is specified in § 641.24(b), in excess of that bag limit; or

(ii) For which no bag limit is specified, in excess of 5 percent by weight of all fish aboard or landed.

(2) A person aboard a vessel that uses on any trip longline or buoy gear in the longline and buoy gear restricted area to fish for species other than reef fish is limited on that trip to the bag limits specified in § 641.24(b) and, for other reef fish, to 5 percent by weight of all fish aboard the vessel or landed.

(3) The longline and buoy gear restricted area is that portion of the EEZ in the Gulf of Mexico shoreward of a line connecting the points listed in Appendix A, Table 2. (See also Appendix A, Figure 5.)

§ 641.24 Bag and possession limits.

(a) Applicability. Bag limits apply to a person who fishes in the EEZ--

(1) From a fixed structure without a permit specified in § 641.4;

(2) From a vessel--

(i) That does not have on board a permit specified in § 641.4,

(ii) With trawl gear or entangling net gear on board,

(iii) With a longline or buoy gear on board when such vessel is fishing or has fished on its present trip in the longline and buoy gear restricted area specified in § 641.23(b), or

(iv) That is operating as a charter vessel or headboat; or

(3) For a species for which the quota specified in § 641.25 has been reached and closure has been effected.

(4) For the purpose of paragraph (a)(2)(ii) of this section, a vessel is considered to have trawl gear on board when trawl doors and a net are on board. Removal from the vessel of all trawl doors or all nets constitutes removal of trawl gear.

(5) For the purpose of paragraph (a)(2)(iii) of this section, a vessel is considered to have a longline on board when a power-operated longline hauler, a cable of diameter and length suitable for use in the longline fishery, and gangions are on board. Removal on any one of these three elements, in its entirety, constitutes removal of a longline.

(b) Bag limits. Daily bag limits are:

(1) Red snapper--7.

(2) Snappers, excluding red, lane, and vermilion snapper--10.

(3) Groupers, excluding jewfish--5.

(4) Greater amberjack--3.

(5) Jewfish--0.

(c) Possession limits. A person subject to a bag limit may not possess in or from the EEZ during a single day, regardless of the number of trips or the duration of a trip, any reef fish in excess of the bag limits specified in paragraph (b) of this section, except that a person who is on a trip that spans more than 24 hours may possess no more than two daily bag limits, provided such trip is aboard a charter vessel or headboat, and,

(1) The vessel has two licensed operators aboard as required by the U.S. Coast Guard for trips of over 12 hours, and

(2) Each passenger is issued and has in possession a receipt issued on behalf of the vessel that verifies the length of the trip.

(d) Combination of bag limits. A person who fishes in the EEZ may not combine a bag limit specified in paragraph (b) of this section with a bag or possession limit applicable to State waters.

(e) Responsibility for bag and possession limits. The operator of a vessel that fishes in the EEZ is responsible for the cumulative bag or possession limit applicable to that vessel, based on the number of persons aboard.

(f) Transfer of reef fish. A person for whom a bag or possession limit specified in paragraph (b) or (c) of this section applies may not transfer at sea a reef fish--

(1) Taken in the EEZ; or

(2) In the EEZ, regardless of where such reef fish was taken.

(g) Sale. A reef fish taken under the bag limits specified in paragraph (b) of this section may not be purchased, bartered, traded, or sold.

§ 641.25 Commercial quotas.

Persons who are fishing under a permit issued pursuant to § 641.4, provided they are not subject to the bag limits specified in § 641.24, are subject to the following quotas each fishing year:

(a) Red snapper--2.04 million pounds.

(b) Deep-water groupers, i.e., yellowedge grouper, misty grouper, warsaw grouper, snowy grouper, speckled hind, and, after the commercial quota for shallow-water grouper is reached, scamp, combined--1.6 million pounds (0.7 million kilograms).

(c) Shallow-water groupers, i.e., all groupers other than deep-water groupers and jewfish, including scamp before the commercial quota for shallow-water groupers is reached, combined--9.8 million pounds (4.4 million kilograms).

(d) Jewfish--0 pounds.

§ 641.26 Closures.

When a commercial quota specified in § 641.25 is reached, or is projected to be reached, the Secretary will publish a notice to that effect in the Federal Register. After the effective date of such notice, for the remainder of the fishing year, the bag limit will apply to all harvest in the EEZ of the indicated species, and the purchase, barter, trade, and sale of the indicated species taken from the EEZ is prohibited. This prohibition does not apply to trade in the indicated species that were harvested, landed, and bartered, traded, or sold prior to the effective date of the notice in the Federal Register and were held in cold storage by a dealer or processor.

§ 641.27 Exemptions for the groundfish trawl fishery.

(a) The requirements of §§ 641.4(a)(1) and 641.24(a)(2)(ii) notwithstanding, the owner or operator of a vessel in the groundfish trawl fishery is exempt from the bag limits for its unsorted catch of reef fish and is not required to obtain a permit in order to sell the vessel's unsorted catch of reef fish or to be exempt from the bag limits for the vessel's unsorted catch of reef fish.

(b) The requirements of § 641.21(a) notwithstanding, the minimum size limits do not apply to the unsorted catch of a vessel in the groundfish trawl fishery.

(c) The requirements of § 641.26 notwithstanding, after a closure, the bag limits and the prohibition on purchase, barter, trade, or sale do not apply to the unsorted catch of reef fish in the groundfish trawl fishery.

(d) The harvest limitations of § 642.21 and the bag and possession limits of § 641.24 apply to any reef fish that may be sorted from the catch of a vessel in the groundfish trawl fishery.

§ 641.28 Adjustment of management measures.

In accordance with the procedures and limitations of the Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico, the Regional Director may establish or modify for species or species groups in the reef fish fishery the following: Target dates for rebuilding overfished species, total allowable catch, bag limits, size limits, vessel trip limits, closed seasons or areas, gear restrictions, and quotas.

§ 641.29 Specifically authorized activities.

The Secretary may authorize, for the acquisition of information and data, activities otherwise prohibited by these regulations.

[The following § 641.30 is effective December 30, 1992, through March 30, 1993, and may be extended for an additional 90 days.]

§ 641.30 Closure of the commercial fishery for red snapper.

(a) Other provisions of this part 641 notwithstanding, the commercial fishery for red snapper is closed from December 30, 1992, through February 15, 1993, except that, with the concurrence of the Gulf of Mexico Fishery Management Council, the Regional Director may revise the ending date of the closure by publication of a notice in the Federal Register.

(b) [Suspended]

(c) During this closure of the commercial fishery, the bag and possession limits, as specified in § 641.24(b)(1) and (c), and the prohibition of purchase, barter, trade, or sale of red snapper taken under the bag limit, as specified in § 641.24(g), apply to red snapper harvested from or possessed in the EEZ and to each vessel for which a currently valid reef fish permit has been issued under § 641.4.

APPENDIX A TO PART 641--TABLES AND FIGURES

Table 1. Seaward Coordinates of the Stressed Area.

Point no.	Reference location[1]	North latitude	West longitude
1	Seaward limit of Florida's waters northeast of Dry Tortugas	24°45.5'	82°41.5'
2	North of Marquesas Keys	24°48.0'	82°06.5'
3	Off Cape Sable	25°15.0'	82°02.0'
4	Off Sanibel Island - Inshore	26°26.0'	82°29.0'
5	Off Sanibel Island - Offshore	26°26.0'	82°59.0'
6	West of Egmont Key	27°30.0'	83°21.5'
7	Off Anclote Keys - Offshore	28°10.0'	83°45.0'
8	Off Anclote Keys - Inshore	28°10.0'	83°14.0'
9	Off Deadman Bay	29°38.0'	84°00.0'
10	Seaward limit of Florida's waters east of Cape St. George	29°35.5'	84°38.6'
Thence westerly along the seaward limit of Florida's waters to			
11	Seaward limit of Florida's waters south of Cape San Blas	29°32.2'	85°27.1'
12	Southwest of Cape San Blas	29°30.5'	85°52.0'
13	Off St. Andrew Bay	29°53.0'	86°10.0'
14	De Soto Canyon	30°06.0'	86°55.0'
15	South of Florida/Alabama border	29°34.5'	87°38.0'
16	Off Mobile Bay	29°41.0'	88°00.0'
17	South of Alabama/Mississippi border	30°01.5'	88°23.7'
18	Horn/Chandeleur Islands	30°01.5'	88°40.5'
19	Chandeleur Islands	29°35.5'	88°37.0'
20	Seaward limit of Louisiana's waters off North Pass of the Mississippi River	29°16.3'	89°00.0'
Thence southerly and westerly along the seaward limit of Louisiana's waters to			
21	Seaward limit of Louisiana's waters off Southwest Pass of the Mississippi River	28°57.3'	89°28.2'
22	Southeast of Grand Isle	29°09.0'	89°47.0'
23	Quick flashing horn buoy south of Isles Dernieres	28°32.5'	90°42.0'
24	Southeast of Calcasieu Pass	29°10.0'	92°37.0'
25	South of Sabine Pass - 10 fathoms	29°09.0'	93°41.0'
26	South of Sabine Pass - 30 fathoms	28°21.5'	93.28.0'
27	East of Aransas Pass	27°49.0'	96°19.5'
28	East of Baffin Bay	27°12.0'	96°51.0'
29	Northeast of Port Mansfield	26°46.5'	96°52.0'
30	Northeast of Port Isabel	26°21.5'	96°35.0'
31	U.S./Mexico EEZ boundary	26°00.5'	96°36.0'
Thence westerly along U.S./Mexico EEZ boundary to the seaward limit of Texas' waters.			

[1] Nearest identifiable landfall, boundary, navigational aid, or submarine area.

Table 2. Seaward Coordinates of the Longline and Buoy Gear Restricted Area.

Point no.	Reference location[1]	North latitude	West longitude
1	Seaward limit of Florida's waters north of Dry Tortugas	24°48.0'	82°48.0'
2	North of Rebecca Shoal	25°07.5'	82°34.0'
3	Off Sanibel Island - Offshore	26°26.0'	82°59.0'
4	West of Egmont Key	27°30.0'	83°21.5'
5	Off Anclote Keys - Offshore	28°10.0'	83°45.0'
6	Southeast corner of Florida Middle Ground	28°11.0'	84°00.0'
7	Southwest corner of Florida Middle Ground	28°11.0'	84°07.0'
8	West corner of Florida Middle Ground	28°26.6'	84°24.8'
9	Northwest corner of Florida Middle Ground	28°42.5'	84°24.8'
10	South of Carrabelle	29°05.0'	84°47.0'
11	South of Cape St. George	29°02.5'	85°09.0'
12	South of Cape San Blas lighted bell buoy - 20 fathoms	29°21.0'	85°30.0'
13	South of Cape San Blas lighted bell buoy - 50 fathoms	28°58.7'	85°30.0'
14	De Soto Canyon	30°06.0'	86°55.0'
15	South of Pensacola	29°46.0'	87°19.0'
16	South of Perdido Bay	29°29.0'	87°27.5'
17	East of North Pass of the Mississippi River	29°14.5'	88°28.0'
18	South of Southwest Pass of the Mississippi River	28°46.5'	89°26.0'
19	Northwest tip of Mississippi Canyon	28°38.5'	90°08.5'
20	West side of Mississippi Canyon	28°34.5'	89°59.5'
21	South of Timbalier Bay	28°22.5'	90°02.5'
22	South of Terrebonne Bay	28°10.5'	90°31.5'
23	South of Freeport	27°58.0'	95°00.0'
24	Off Matagorda Island	27°43.0'	96°02.0'
25	Off Aransas Pass	27°30.0'	96°23.5'
26	Northeast of Port Mansfield	27°00.0'	96°39.0'
27	East of Port Mansfield	26°44.0'	96°37.5'
28	Northeast of Port Isabel	26°22.0'	96°21.0'
29	U.S./Mexico EEZ boundary	26°00.5'	96°24.5'

Thence westerly along U.S./Mexico EEZ boundary to the seaward limit of Texas' waters.

[1] Nearest identifiable landfall, boundary, navigational aid, or submarine area.

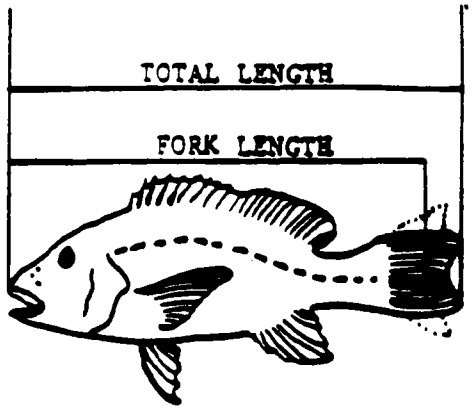

Figure 1. Illustration of fork length and total length measurement

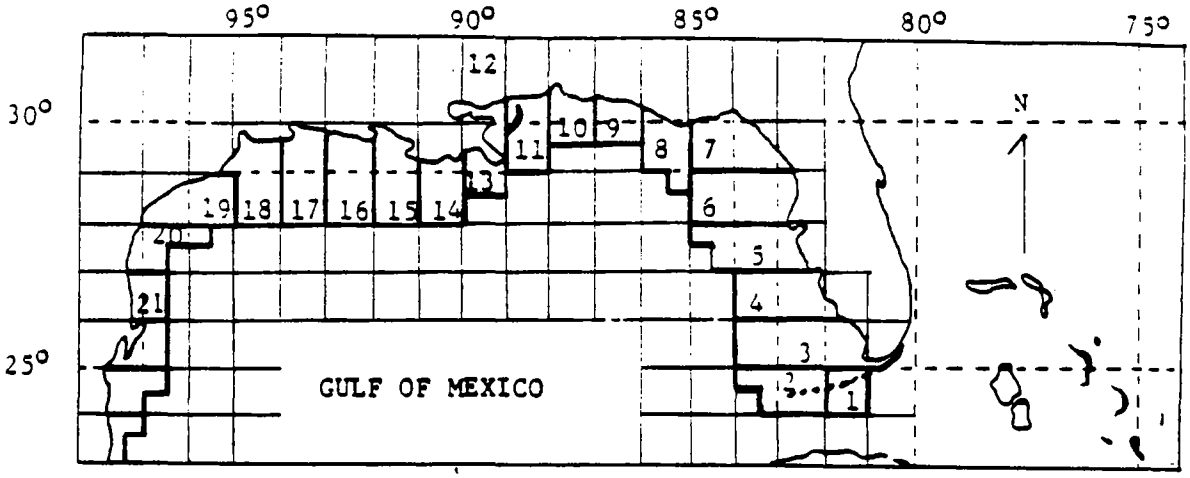

Figure 2. Statistical Grids for Reporting Harvest of Reef Fish.

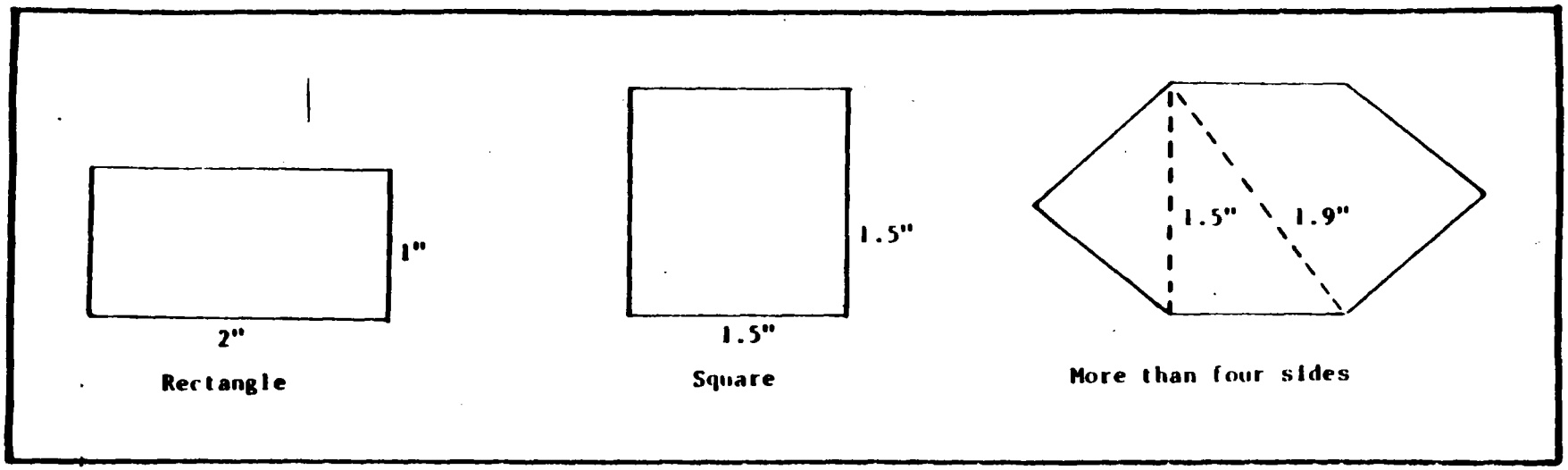

Figure 3. Examples of mesh sizes meeting the measurement criteria

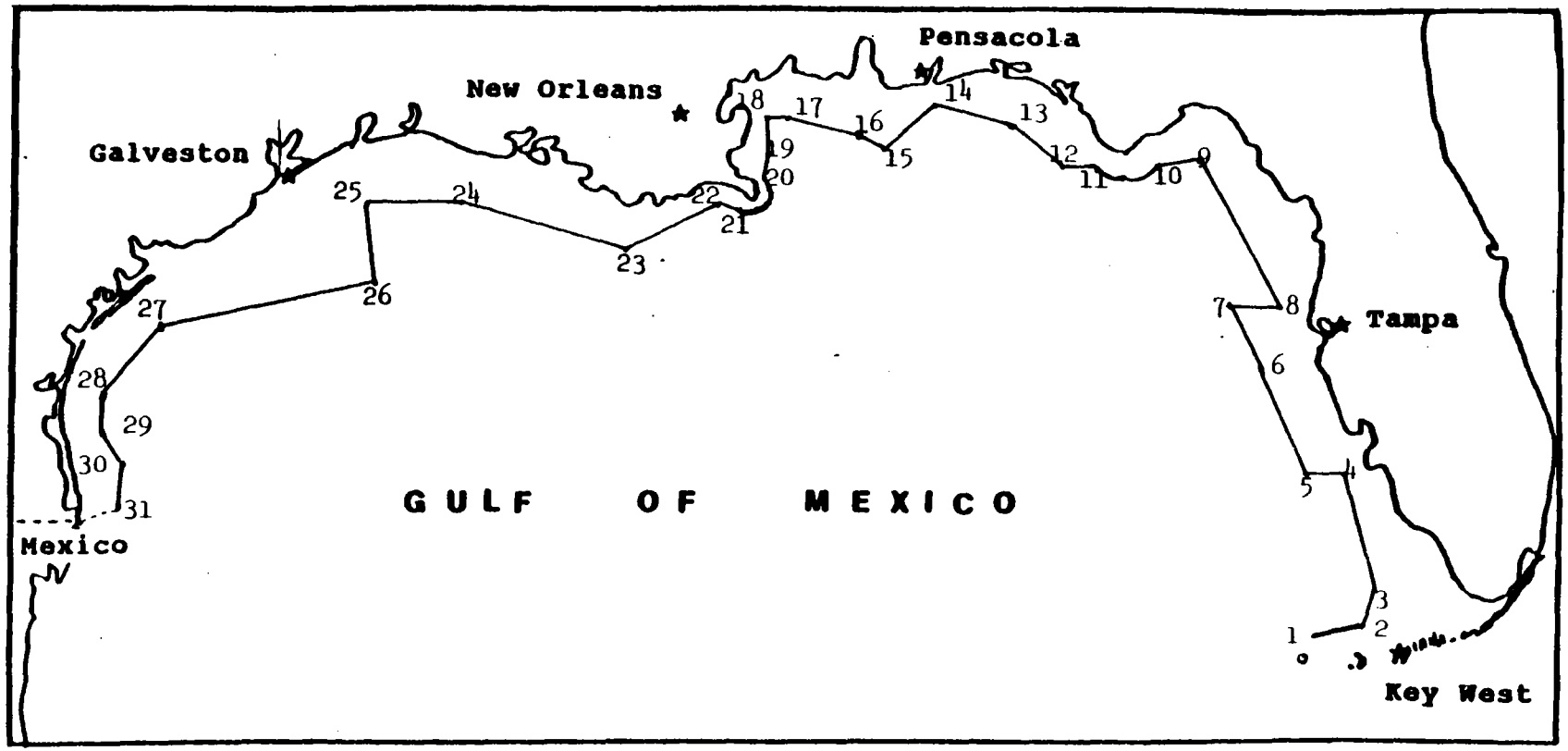

Figure 4. Seaward Limits of the Stressed Area.

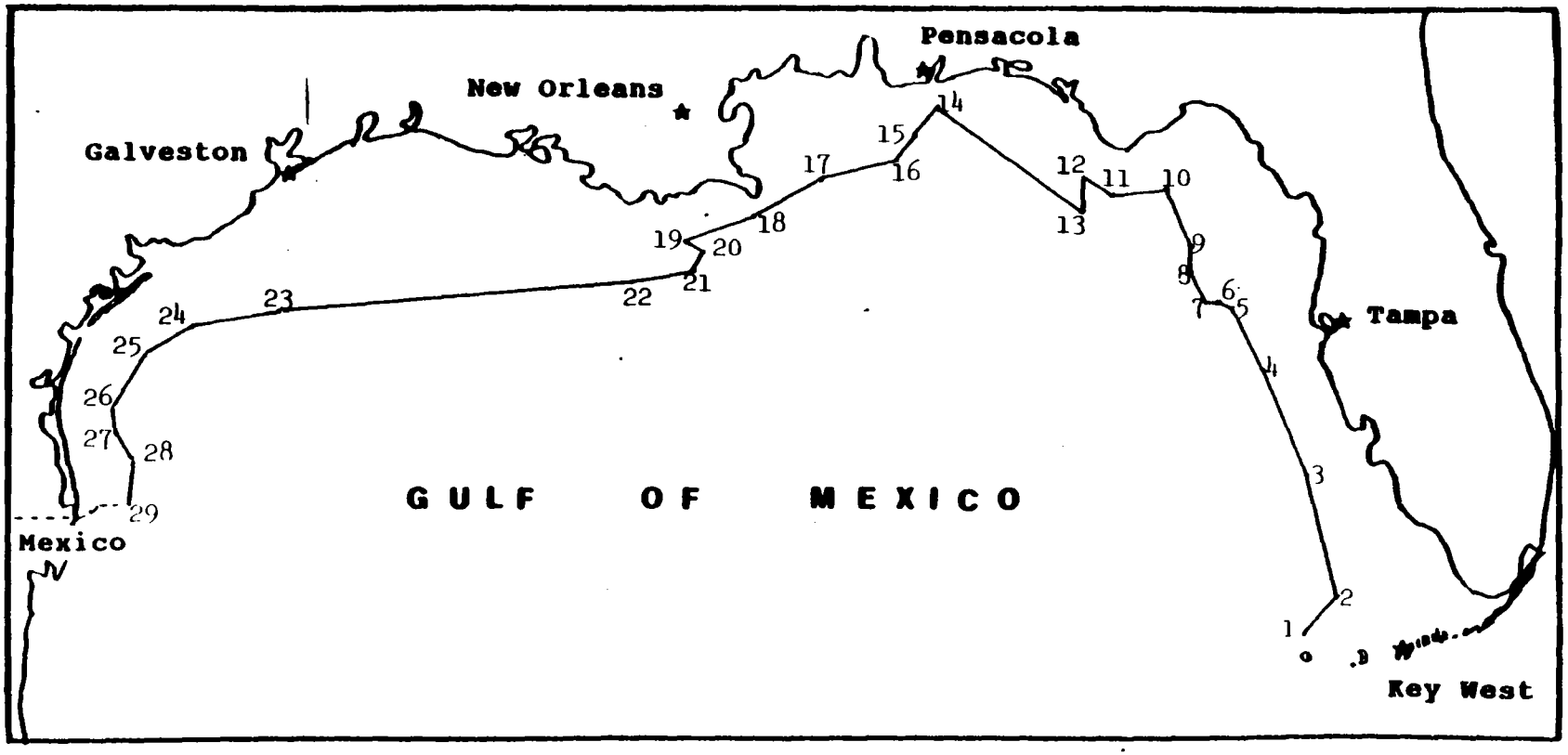

Figure 5. Seaward Limits of the Longline and Buoy Gear Restricted Area.

APPENDIX E

Description[1] of the
Stressed Area from Section 8.0
of the EIS/FMP
for the
Reef Fish Resources
of the
Gulf of Mexico
(GMFMC 1981)

[1]Area was expanded to include Gulf waters of Louisiana and Texas in Amendment 1 using the same rationale.

8.3.1 Domestic Management Measures

Management measures affecting the domestic fishery are as follows:

8.3.1.1 Stressed Area (Area Subject to Special Management)

ESTABLISH A STRESSED AREA IN THOSE WATERS OF THE GULF OF MEXICO SHOREWARD OF THE FOLLOWING DISCONTINUOUS LINE: (1) From the boundary separting the jurisdiction of Gulf and South Atlantic

Councils terminating at 24° 35' and 83° 0.0' northward and eastward around the Dry Tortugas to a point north of Rebecca Shoal at 82° 35' the outer boundary shall be the 100-foot contour;[9] (2) From the point at 82° 35' eastward and northerly to the south end of Sanibel Island (26° 26') the outer boundary shall be the 60-foot contour;[9] (3) From 26° 26' northward to a point off Tarpon Springs (28° 10') the outer boundary shall be the 120-foot contour;[9] (4) From 28° 10' northward and westward to a point off Cape San Blas (85° 52' and 29° 30.5') the outer boundary shall be the 60-foot contour;[9] (5) From 85° 52' and 29° 30.5' westward to a point off Mobile Bay on the 88° longitude line, the outer boundary shall be at the 150-foot contour[9]. The outer boundary shall then be a line from the point on the 88° longitude north westward to the Alabama/Mississippi state line at the 80-foot contour (88° 23.7' and 30° 01.5'); (6) From 88° 23.7' and 30° 01.5' the outer boundary will be a line running directly west along the 30° 01.5' parallel and terminating at the Chandeleur Islands, Louisiana; (7) From the Texas/Louisiana state line to a point on the 95° longitude line, the outer boundary shall be at the 100-foot contour[9] (Figure 11 and Table 12).

Rationale: Analysis in Sections 4.7.1 and 6.3 indicates that total catch and catch per unit effort by recreational fishermen has declined in recent years, suggesting possible overfishing in areas where recreational fishermen participate. The relationship between commercial catch and commercial effort suggests that stocks in the commercial fishery may be underfished. The commercial fishery normally occurs in offshore waters beyond the normal recreational fishing area. The recreational fishermen are generally restricted to inshore waters due to (1) limited capacity of their boats to travel great distances and withstand sea conditions and (2) available time to make individual fishing trips.

These conclusions led to the identification of a stressed area in which specific management measures are deemed necessary. This area is characterized by excessive fishing pressure resulting in reduced catches of certain species, reduced catch per unit effort, and decreased average size of certain species. The stressed area was delineated through a consensus of fishery experts from various states, the Council members, the Advisory Panel, and the public hearing process.

Factors considered in delineating the stressed area included local knowledge of: (1) the fishery and conditions of the stocks in localized geographical areas, (2) the amount of fishing pressure applied to the geographical area, (3) proximity of the offshore geographical areas to cities of high population, (4) coastal access to the reef areas, (5) historical fishing practices occurring in the area, and (6) a need for protection of special habitat.

At one point in Plan development, a single stressed area zone was proposed extending seaward to the 100-foot contour completely around the perimeter of the U.S. Gulf of Mexico. In subsequent dialogue with state officials and scientific personnel, recreational and commercial advisors, scientific committee members and NMFS personnel, it became obvious that the stressed area varied geographically and that in some localities the stocks were not stressed. The Council redefined the stressed area based on a scientific evaluation from these sources.

Portions of the Florida reef tract are encompassed by points 1 through 3 (Table 12, Figure 11). The reef tract supports large assemblages of reef fish. Key West is a major attraction to tourists and support a relatively large fleet of recreation-for-hire vessels which target reef fishes. The Keys also support a relatively large commercial fleet which targets reef fish, at least during some times of the year when other fisheries are closed. The importance of this commercial effort to the local

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[9] The contour lines described shall be generic lines consisting of a series of straight lines closely following the actual contours. Turning points on the series of straight lines will be defined by latitude and longitude as well as by loran C coordinates.

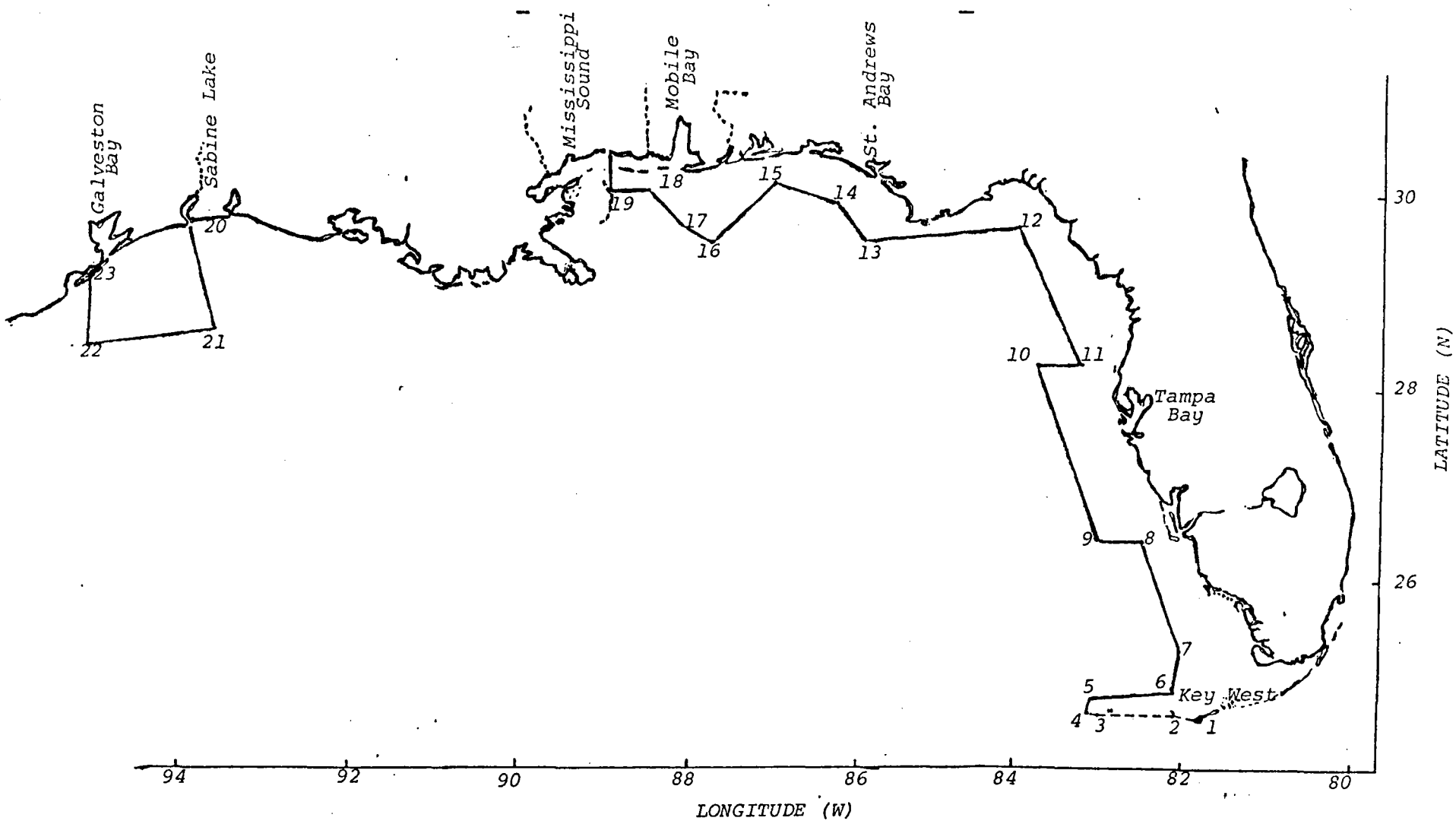

FIGURE 11. MAP OF THE STRESSED AREA.

Table 12. Coordinates of stressed area

Point No.	Reference Location[1]	Latitude (North)	Longitude (West)	Loran C Coordinates[2] W	X	Y	Z
1	Key West	24° 33.0'	81° 48.7'	13927.8	30238.2	43654.2	62655.1
2	Marquesas Key	24° 35.0	82° 06.2'	13894.5	30189.2	43748.8	62726.6
3	Gulf/South Atlantic Boundary	24° 35.0'	83° 00.0'	13768.5	29992.2	44049.2	62941.1
4	Tortugas Bank South	24° 36.0'	83° 06.0'	13753.4		44084.4	62965.5
5	Tortugas Bank North	24° 44.0'	83° 04.0'	13772.3		44087.4	62960.3
6	West of Smith Shoal	24° 48.0'	82° 06.5'	13915.1		43760.2	62727.7
7	Off Cape Sable	25° 15.0	82° 02.0'	13974.7		43759.8	62704.9
8	Off Sanibel Island	26° 26.0'	82° 29.0'	14060.3		43117.4	62824.3
9	Off Sanibel Island	26° 26.0'	82° 59.0'	13990.0		43347.6	62970.7
10	Off Anclote Keys	28° 10.0'	83° 45.0'	14145.8		45328.0	63266.8
11	Off Anclote Keys	28° 10.0'	83° 14.0'	14224.3		45092.0	63086.4
12	Off Deadman Bay	29° 38.0'	84° 00.0'	14412.4		45167.7	63442.2
13	SW of Cape San Blas	29° 30.5'	85° 52.0'	13873.2		46702.0	63976.2
14	Off St. Andrews Bay	29° 53.0'	86° 10.0'	13816.5		46922.3	64050.8
15	Desoto Canyon	30° 06.0'	86° 55.0'	13434.6	30600.6	47045.8	
16	Alabama/Florida line	29° 34.5'	87° 38.0'	12971.5	30023.4	46886.0	
17	Off Mobile Bay	29° 41.0'	88° 00.0'	12766.5	29841.2	46930.9	
18	Mississippi/Alabama line	30° 01.5'	88° 23.7'	12537.6	29697.7	47029.3	
19	Chandeleur Islands	30° 01.5'	88° 51.0'	12262.0	29422.2	47028.6	
20	Sabine Pass	29° 39.0'	93° 49.5'	11027.8	26367.1	46966.6	
21	Texas/Louisiana line, south	28° 38.0'	93° 32.0'	11139.4	26220.7	46815.1	
22	Off Galveston Island	28° 28.0'	95° 00.0'	11086.2	25308.9	46817.0	
23	Off Galveston Island	29° 09.5'	95° 00.0'	11036.9	25551.4	46909.0	

[1] Nearest identifiable landfall, boundary, navigation aid or submarine area.

[2] Loran coordinates are provided to aid the fishermen affected by the measures and are subject to local variations due to atmospheric conditions, therefore, are not used as part of the legal description of the stressed area.

economy is documented in Section 3.5.8 and Table 9. Because of this high fishing effort, this area around the Dry Tortugas was included in the stressed area. The outer boundary of this portion of the stressed area was set at the 100-foot contour upon advice of Florida Department of Natural Resources scientists and fishermen advising the Council. The boundary was set based on the stressed condition of the fishery and fish stocks rather than on the outermost limit of the coral formations.

The area encompassed by points 4 through 8 (Table 12, Figure 11) is characterized by a large relatively shallow expanse of bottom which has scattered low profile reefs and rough bottom supporting reef fish. The shore line is characterized by small fishing ports of low population density such as Everglades City and Naples. The majority of tourists bypass this area and take other routes to south Florida; therefore, the recreation-for-hire fleet is rather limited in size and the total effort applied to the reef fish fishery is reduced. Consequently, the outer boundary of the stressed area was set at the 60-foot contour. It should also be noted that the continental shelf is very broad and gently sloping in this area and the boundary varies from 29 to 56 nautical miles offshore from the fishing ports.

Between points 8 and 11 are the large metropolitan areas of Fort Myers, Sarasota, Bradenton, St. Petersburg, Tampa, Clearwater, and Tarpon Springs with combined populations exceeding two million persons. Because of this large population density and because this area attracts large numbers of tourists, fishing pressure by private and recreation-for-hire vessels is extremely high on the reef fish stocks. The area is also characterized by scattered extensive tracts of low profile reefs and rough bottom extending from shore in a northwesterly direction out more than 100 nautical miles and includes the Florida Middle Grounds reef tract in the outermost extremity. Because of these considerations the outer boundary of the stressed area was set at the 120-foot contour, which is approximately 45 nautical miles off Tampa Bay.

Between points 11 and 13 there are no major cities of consequence with large populations. There are very few lodging accommodations for tourists and virtually no recreation-for-hire vessels. The outer limit or boundary of the stressed area was set at the 60-foot contour for this low population density area.

The area between points 13 and 17 (Table 12, Figure 11) includes the 'Gold Coast' of Florida and the relatively high population centers between Pensacola, Florida and Mobile, Alabama (500,000+). The entire area is characterized by a very large recreation-for-hire fleet catering to tourists. Also the density and frequency of natural reef tracts declines markedly in this area. The fishing pressure is very high considering the amount of reef tracts. The boundary of the stressed area was set at the 150-foot contour and encompasses virtually all the reefs in the offshore areas. Commercial fishing from ports in this area and in Mississippi is a distant water operation.

Between points 17 and 19, there are no natural reefs of consequence and the outer boundary of the stressed area encompasses the artificial reefs placed offshore by the States of Alabama and Mississippi.

The Louisiana coast is distinctly different from the coastal areas of the other Gulf states being characterized by an extensive marsh complex. This results in cities with high populations being much further inland and access to the Gulf waters being much more limited. Tourist accommodations in the coastal areas are severely limited as are the number of recreation-for-hire vessels (about 30). The distance from the major metropolitan area of New Orleans to the major recreational port of Grand Isle is in excess of 90 miles by highway.

The offshore area of Louisiana is also characterized by extensive oil and gas exploration and production. These structures contribute significantly to the available reef fish habitat resulting in increased population size. Because of the limited access, the limited amount of participation in the

fishery, the relatively large amount of habitat (as compared to other central Gulf states), and the scientific evaluation by Louisiana Wildlife and Fisheries Department biologists, the area off Louisiana did not demonstrate the characteristics common to the stressed area and, therefore, was not included in the stressed area.

Between points 20 and 23 the continental shelf again becomes a broad, gradually sloping expanse. The area also contains the large metropolitan complex of Houston-Galveston, Texas with a population exceeding 1.5 million. Fishing effort on the available natural reefs and oil structures is very high. Texas biologists cited the result of a recent tagging study in which 50 percent of the tagged individual red snapper were taken within a short period, indicating extremely heavy fishing pressure. For this area off Texas, the boundary of the stressed area was set at the 100-foot contour.

The reef fish population off the remainder of the Texas Coast was judged to be unstressed primarily because the reefs were at water depths of 40 fathoms or deeper, which is out of the range of most recreational reef fish fishermen.

Once the stressed area was delineated, the Council then proceeded to determine means of reducing fishing pressure on stocks within the stressed area as well as measures to rebuild the stocks. In terms of reducing fishing pressure, the first order was to delineate user groups and to address each user group's activities within the stressed area. This approach was deemed necessary in order to establish management measures that would be equitable to all users and to assure that management measures proposed are in compliance with the seven National Standards. The following user groups were considered in terms of management measures that might be applied to them:

1. Commercial hook and line fishermen

2. Recreational hook and line fishermen

3. Divers

4. Commercial fish trap fishermen

5. Commercial "roller-rig" trawlers

Following is a brief summary of Council conclusions with respect to management measures that might be applied to each user group within the stressed area. A more detailed rationale is provided under specific management measures that were adopted as well as for those rejected.

1. Commercial hook and line fishermen. Virtually all commercial hook and line fishermen fish offshore of the stressed area; therefore, this user group is essentially not involved in contributing to overfishing in the stressed area and is unaffected by the management measures proposed for the stressed area.

2. Recreational hook and line fishermen. This user group is the primary contributor to overfishing in the stressed area; however, it is difficult to develop enforceable management measures that reduce effort by this group. For example, bag limits were considered for the stressed area, but it was determined that this would not be enforceable unless they applied to the entire management area. For this reason, bag and size limits are proposed for all user groups for red snapper throughout the management area.

3. Divers. Again, management measures relating to bag and/or size limits apply to divers. Other management measures include restrictions on power heads.

4. Commercial fish trap fishermen. Management measures that follow prohibit the use of fish traps within the stressed area. These measures will eliminate catch by this user group within the stressed area. Prohibiting fish traps in the stressed area will have a minimal adverse economic impact on fish trap fishermen in that it will involve traveling an extra few miles to allowable fishing grounds.

5. Commercial "roller-rig" trawlers. This potential user group is prohibited from fishing for reef fish within the stressed area in order to preclude future increased effort and catch. Again, the adverse economic impacts are negligible for two reasons: First, currently this type of gear is not used to take reef fish in the stressed area. Second, this type of trawling is permissable outside of the stressed area and, as in the case of fish trappers, only a few extra mile's travel will be required to reach permissable fishing grounds. And, in the case of both trawlers and trappers, the fishing grounds are generally more productive outside of the stressed area. During 1981, fishermen began experimenting with the user of roller trawls for taking reef fish in the offshore waters of the Gulf. Without some restrictions on their use this practice would likely be extended to the stressed area with detrimental effects on the nearshore stocks of fish.

In summation, establishing the stressed area is the principal means by which this plan addresses the problem of overfishing in nearshore waters. The Council evaluated management measures that could be applied to each user group to reduce catch within the stressed area while simultaneously considering the adverse economic impacts resulting from management considerations. In addition, the Council evaluated the enforceability of management measures considered. Those adopted are considered to be enforceable, effective in addressing the basic problem of overfishing, and do not result in a severe adverse economic impact on any user group. The user group that might appear to be impacted the most is commercial fish trappers. However, this is not the case as fish trappers can very easily fish outside of the stressed area because of the short additional "running time" involved. At public hearings, commercial fish trappers supported the proposed management measures as being fair and equitable.

8.3.1.2 Fishing Gear

(1) PROHIBIT THE USE OF POWER HEADS[10] FOR THE TAKING OF REEF FISH WITHIN THE STRESSED AREA.

(2) PROHIBIT THE USE OF ROLLER TRAWLS IN THE STRESSED AREA.

(3) PROHIBIT THE USE OF FISH TRAPS IN THE STRESSED AREA. FURTHER, PROVIDE FOR SEIZURE OF SUCH GEAR ILLEGALLY DEPLOYED IN THE STRESSED AREA.

Rationale: The purpose of including these measures is to help achieve specific management objectives (i), (iii) and (iv) of Section 8.1.2. On establishment of the stressed area or areas subject to special management, it became obvious that measures were needed to reduce fishing pressure within these areas. The Council, during its deliberations, considered measures that would reduce effort by each user group fishing the resource within these areas.

Measures (1), (2) and (3) were proposed by the Council to reduce fishing effort by other users within the stressed area and to reduce conflicts and the potential for conflicts. Measure (1) prohibiting the use of power heads for taking reef fish in the stressed area results in a slight reduction of harvest by fishermen utilizing SCUBA gear within the stressed area.

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[10] Power head means a metal device with an explosive charge and usually a projectile that fires on contact. It is usually attached to a speargun, spear, pole or stick.

Although other restrictions on fishermen using SCUBA gear were discussed, they were never seriously considered since no data supported more severe restrictions. SCUBA fishermen are also subject to the size limit restrictions of 8.3.1.3.

Power heads are prohibited in Florida waters and possibly could be construed as being illegal within the the territorial waters of the other Gulf states (Section 3.3.1). Persons armed with power heads can selectively harvest the largest spawning individuals of many species, whereas through the use of traditional hook and line gear, it is difficult to dislodge these specimens from their refuges in the reef complexes. These large seditary specimens do not constitute a significant portion of the harvest, but because fecundity increases with size the large individuals contribute relatively more to the spawning capacity of the stocks. No prohibition is proposed on the use of power heads as a protection device against sharks and other predators; however, their use in taking reef fish in the stressed area will be prohibited.

Whereas most full-time commercial fishermen fish more distant, offshore waters outside the stressed area, two types of gear would allow them to economically fish the less productive waters of the stressed area. If the use of roller trawls and fish traps become common methods of harvest, they have the potential to adversely affect the more heavily exploited reef fish populations in the stressed area. By restricting the use of this gear for taking reef fish, fishing pressure by this segment of the commercial industry will be reduced in the stressed area.

Roller trawls (which are otter trawls equipped with very large rollers allowing operation over rough bottoms) when used in conjunction with side scanning sonar, have the potential to be highly effective for taking reef fish. Further, this gear is nonselective and its use would inflict additional mortality on species which are currently overfished. Therefore, their use for taking reef fish will be prohibited in the stressed area. This gear also has the potential to damage coral reef habitat. The use of this efficient gear outside the stressed area is not restricted.

Fish traps are discussed in Section 3.2.1.4.1. This gear, if permitted in the stressed area, could seriously reduce the catch per unit effort for persons using the traditional fishing gear and aggravate existing resource competition. Since the Plan indicates that the offshore stocks of reef fish are not stressed, this gear is allowed outside the stressed area with some restrictions.

The prohibition of fish traps and roller trawls for harvesting reef fish in the stressed area would prevent the imposition of a new fishery with more efficient gear on stressed stocks of the nearshore waters. It would also provide for conserving and protecting the reef fish habitats. The measures would help in rebuilding declining stocks only marginally except in some areas such as off south Florida; however, the restrictions would prevent further decline in most of the overfished areas. With the exception of fish traps in south Florida, none of the gear prohibited for taking reef fish in the stressed area is commonly used in the fishery. The Plan does not prohibit the use of this more efficient gear outside of the stressed area.

APPENDIX F

Comments Received
by Letter on the
DSEIS for Amendment 5
to
Reef Fish FMP

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
9450 Koger Boulevard
St. Petersburg, FL 33702

APR 28 1993 F/SEO11:RAS:jbm

Mr. Wayne Swingle, Executive Director
Gulf of Mexico Fishery Management Council
5401 West Kennedy, Suite 331
Tampa, Florida 33609

RECEIVED
APR 30 1993
GULF FISHERIES COUNCIL

Dear Wayne:

This follows up on our April 16, 1993 meeting with you in which we discussed our concerns with Amendment 5 to the Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico (FMP). As discussed, we recommend the following be addressed so that we can declare the Amendment 5 package complete.

- Section 4 of the amendment (problem definition) needs to specifically define the problems to be addressed by the amendment. A suggestion is to rewrite the section and specifically list the problems. For example, the enforceability problem with fish traps and the lack of information on the trap fishery in the Gulf of Mexico should be emphasized. Likewise, the problems that will be solved by the proposed Alabama special management zones (SMZs) need to be clearly identified.

- Requiring surface buoys (i.e., prohibiting "pop-up" devices) is an appropriate means of addressing the problem with identifying the location of fish traps for enforcement purposes. However, the amendment appears to unnecessarily require individual buoys for each trap deployed in a series ("trawls"). The resulting capital outlay would adversely impact fishermen who fish trap "trawls," without providing enforcement benefits beyond that provided by surface buoys at each end of the trawl. Unless compelling evidence can be provided for the need for individual buoys on each trap in a trawl, this measure may not be approved.

- The Council's intent with regard to fish trap tending needs clarification. The term should be specifically defined so that it can be written clearly into the regulations. As the maker of the motion, my intent was that tending simply meant that traps be returned to shore after each fishing trip. Unless the Council disagrees with this intent, we plan to so define it in the regulations.

- The rationale for the Alabama SMZs is weak and appears unapprovable as presently written. Page 20 references

the National Marine Fisheries Service (NMFS) landings data that indicate no large-scale commercial reef fish fishery in the tracts, even in 1992. If this is the case, no substantive problem appears to exist at this time. One possible benefit under that scenario would be to discourage development of a fishery using three or more hooks per line. Consequently, this measure appears to be an allocation issue that requires analysis as a National Standard 4 allocation under 602.14(c) of the guidelines. Per the guidelines, an allocation:

-- must relate to the achievement of optimum yield (OY) or further FMP objectives. Because of the unresolved biological and economic impacts, the effect of the SMZs on achieving OY or furthering FMP objectives is uncertain.

-- may impose a hardship on those who would fish with three or more hooks or who may fish with longlines in the outer part of Tract C, if outweighed by the total benefits to those fishing with three or fewer hooks. As discussed during our meeting, a voluntary survey by the state of Alabama of historical users of the artificial reefs would help quantify the average number of hooks used per line and allow analysis of the hardships and impacts of the restriction. Similarly, the document needs to provide information on whether longline fishermen would suffer any hardship by being denied the deep end of Tract C.

The lack of information in the document prevents economic analysis in the regulatory impact review (RIR) of whether there is a hardship imposed or whether any benefit would accrue to those favored by the allocation. The document provides only a guess that it may keep large vessels out, and does not discuss if fishermen can catch enough fish to make a profit using more lines, by taking longer trips, or by decreasing the soak time for each line.

-- must promote conservation. As stated above, this is unknown. However, the lack of restrictions on the number of lines per boat could negate any conservation benefits.

-- must avoid excessive shares. This appears to present no problem since many commercial and recreational fishermen share the resource.

-- other factors. Economic consequences are unknown. The document should reflect any available data (or lack thereof) on the social consequences of dependence on the fishery by the communities and user groups that established the large majority of the artificial reefs

but may be affected by the proposed gear restrictions.

- To address concerns about market impacts of the proposed increases in the red snapper minimum size limit, NMFS regional economists recently conducted a preliminary survey of the price structure in the commercial fishery. The document should reference that data, along with more definitive information on: (1) the extent of the short term losses in those years when the size limit increases, (2) the increased yield associated with a 16-inch size limit, and (3) the magnitude of the resulting release mortality. Additional assistance from the NMFS regional Economics Division staff and information from the Center can be provided as needed.

- Because of the number of actions contemplated, the overall number of participants affected and the potential overall cumulative impact, the initial regulatory flexibility analyses should conclude that significant economic impacts on a substantial number of small entities would be incurred by Amendment 5 (replacing a statement to the contrary on RIR, page 21.)

- Table R-2 (RIR, page 25) needs revision to more clearly differentiate short-term and long-term effects of each management measure. A suggestion is to use the chart format as in previous amendments.

Because of these deficiencies, we recommend that the Council consider withdrawing the document to make the necessary revisions. To the extent that the specified deficiencies can be corrected, the RIR potentially could be altered to state more definitive conclusions. For example, an estimate is needed of the magnitude and direction of change in net national benefits due to implementation of the proposed actions.

The draft supplemental environmental impact statement (SEIS) also may need modification before filing, to reflect any changes made to the Amendment 5 document. While cross-references can be used to avoid duplication, all documents should track the necessary revisions as outlined during our recent meeting and in this letter. The NMFS operational guidelines specify that a final SEIS be submitted with the final version of the amendment prior to declaring the package complete and initiating Secretarial review. All comments received during the 45-day draft SEIS comment period must be responded to in the final SEIS.

Sincerely,

Andrew J. Kemmerer
Regional Director

One of seven form letters received.

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RECEIVED
JUN 0 1 1993
GULF FISHERIES COUNCIL

May 20, 1993

Mr. Wayne E. Swingle
Lincoln Center, Suite 331
5401 W. Kennedy Blvd.
Tampa, FL 3609-2486

Wayne,

Please submit this to the S.E.I.S., it is my comment on Amendment 5, pertaining to the special management zones.

As a commercial reef fish fisherman, I have been fishing in the proposed special management zones, in the EEZ, off the Alabama coast, designated areas A., B., & C for the past 40 years. Portions of my annual catch are dependent upon those EEZ areas. My historical fishing practices will have to change as I have always fished that area with more than 3 hooks per line, and one of the proposed laws pertaining to the above management zone would limit my fishing to 3 hooks per line. This would change my historical fishing practices.

As stated under section 303 B and C, of the Magnuson act, page 40;

(B) historical fishing practices in, and dependence on, the fishery.

(C) the economics of the fishery.

Historical fishing practices must be considered before passing such laws.

NAME: Roger Wilbourn
Roger C. Wilbourn
ADDRESS: 2837 Cocoa Ave.
Panama City, FL 32405

APPENDIX G

Council Response
to Comments on
DSEIS for Amendment 5
to
Reef Fish FMP

Sections

1. Response to Agency comments
2. Response to Public Comments

SECTION 1. Responses to Agency Comments

1. Comment: Section 4 of the amendment (problem definition) needs to specifically define the problems to be addressed by the amendment. The problems that will be solved by the proposed management measures need to be clearly identified.
Response: This section has been completely revised to specifically identify the problems addressed by the proposed management measures.

2. Comment: Requiring surface buoys (i.e., prohibiting "pop-up" devices) is an appropriate means of addressing the problem with identifying the location of fish traps for enforcement purposes. However, the amendment appears to unnecessarily require individual buoys for each trap deployed in a series ("trawls"). The resulting capital outlay would adversely impact fishermen who fish trap "trawls," without providing enforcement benefits beyond that provided by surface buoys at each end of the trawl. Unless compelling evidence can be provided for the need for individual buoys on each trap in a trawl, this measure may not be approved.
Response: The Council has revised the proposed measure to allow buoying of each end of a "trawl" of traps, rather than requiring each trap be individually buoyed.

3. Comment: The Council's intent with regard to fish trap tending needs clarification. The term should be specifically defined so that it can be written clearly into the regulations. The intent was that tending simply meant that traps be returned to shore after each fishing trip.
Response: The Council concurred and has revised the language of the proposed management measure to require traps be returned to shore after each fishing trip.

4. Comment: National Marine Fisheries Service (NMFS) landings data indicate no large-scale commercial reef fish fishery in the proposed Alabama SMZ tracts, even in 1992. If this is the case, no substantive problem appears to exist at this time.
Response: The Council disagrees and feels there is a problem that it has created through imposition of commercial red snapper quotas and trip limits which resulted in pulse fishing situations in 1992- 1993, and it proposes a similar situation for 1994. The area is attractive under such situations because of the relatively higher CPUE and proximity to shore, which allows multiple trips to be made daily, before the quota is reached. The Council has publicized the location and relatively higher production of these artificial reef tracts through Amendment 5. As pointed out in the discussion of impacts on the fishery resources under 3.2.2.2.1, such fishing is inconsistent with the conservative use of the fishery resources practiced by persons constructing and utilizing the reefs, such conservative fishing practices benefit restoration of the red snapper stock, and contribute to achieving OY.

5. Comment: This SMZ measure appears to be an allocation issue that requires analysis as a National Standard 4 allocation under 602.14(c) of the guidelines. Per the guidelines, an allocation must relate to the achievement of optimum yield (OY) or further FMP objectives. Because of the unresolved biological and economic impacts, the effect of the SMZs on achieving OY or furthering FMP objectives is uncertain.
Response: The section on impacts on the fishery resources under 3.2.2.2.1 has been revised to address the relation of the proposed measure to OY and the FMP objectives. The proposed measure contributes to achieving OY for the fishery and to achieving FMP objectives 1, 2, and 8. There is no intent by the Council that the measure be an allocation, only that all participants utilize conservative fishing practices in the area which are consistent with the historical practices which have resulted in a higher standing stock in the area. A higher standing stock contributes to increased SPR and restoration of the red snapper stock. It also moderates the impact of poor year classes on stock restoration.

6. Comment: The proposed measure for Alabama SMZs may impose a hardship on those who

would fish with three or more hooks or who may fish with longlines in the outer part of Tract C, if outweighed by the total benefits to those fishing with three or fewer hooks. Similarly, the document needs to provide information on whether longline fishermen would suffer any hardship by being denied the deep end of Tract C.
Response: The impacts of the proposed limitation of three-hooks per line and on longline vessels have been revised to be more descriptive. No impact is anticipated on longline vessels as available information indicates such vessels did not fish the area. The three-hook limitation is anticipated to affect about 20 bandit-rigged commercial vessels and, on occasion as many as 30 vessels, resulting in estimated hook reductions of 63 to 70 percent per line. Since fish are not always caught on each hook, the relation of fish caught to hooks used is not known. The reduction of catch efficiency would be less than the reduction of hooks, but is also unknown. The benefits of maintaining conservative fishing practices on these small reefs is anticipated to outweigh the impacts on the affected vessels. The conservation ethic of persons constructing the reefs to voluntarily restrict fishing effort has resulted in maintaining a higher standing stock, which benefits not only a large number of persons fishing the reefs, but also the fishery resources, especially red snapper. There are 72 charterboats that fish the area and an unknown portion of the 16,411 private boats, larger than 16 feet, registered in the two Alabama coastal counties (of which 1,616 are longer than 26 feet).

7. Comment: The lack of information on the utilization patterns of the SMZs prevents adequate economic analysis in the regulatory impact review (RIR) of whether there is a hardship imposed or whether any benefit would accrue to those favored by the allocation. The document does not discuss if fishermen can catch enough fish to make a profit using more lines, by taking longer trips, or by decreasing the soak time for each line.
Response: The proposed measure is not intended as an allocation and does not meet the legal criteria under 50 CFR Part 602.14(c) to be classified as an allocation. It is a gear restriction applied equally to all user groups and is similar to many other gear restrictions in other FMPs that serve a conservation purpose (e.g., those applying to Coral HAPCs, size limits, reef fish longline prohibited areas, etc.). Under any such measure certain segments of the user groups may be subject to greater impacts than others. This would apparently be the case for the 20 or so bandit-rigged vessels fishing, or occasionally fishing the area, as other fishermen tend to use fewer hooks (see discussion in (6) above and under Human Environment of 3.2.2.2.1). Vessels are unlikely to add additional crew to fish more lines, therefore, the proposed measure should reduce fishing power to those using more than 3 hooks per line. No vessel cost and return information is available to assess the current margin of profit for the vessels. However, it is anticipated that the annual profit of most of the bandit-rigged vessels affected will not be significantly impacted, as they do and can fish other areas also.

8. Comment: Measures allocating a resource must promote conservation. The lack of restrictions on the number of lines per boat could negate any conservation benefits.
Response: As pointed out above in (7) the proposed measure is not an allocation, but like many measures may have an incidental allocative effect [50 CFR 602.14(c)(1)]. The revised section on impacts on fisheries resources under 3.2.2.2.1 cite the effects of the proposed measure in promoting conservation of the resources. As pointed out in (7) above, the proposed reduction in fishing power by the measure is unlikely to be affected by more lines being fished from each vessel, since vessels are unlikely to add additional crew members or anglers for that purpose.

9. Comment: Economic consequences are unknown. The document should reflect any available data (or lack thereof) on the social consequences of dependence on the fishery by the communities and user groups that established the large majority of the artificial reefs but may be affected by the proposed gear restrictions.

Response: These data and analyses have been added to the amendment and RIR (to the extent such data are available).

10. Comment: To address concerns about market impacts of the proposed increases in the red snapper minimum size limit, NMFS regional economists recently conducted a preliminary survey of the price structure in the commercial fishery. The document should reference that data, along with more definitive information on: (1) the extent of the short-term losses in those years when the size limit increases, (2) the increased yield associated with a 16-inch size limit, and (3) the magnitude of the resulting release mortality.
Response: The NMFS economic data have been added in its entirety and analyses included in the RIR and amendment. Analyses by Goodyear (NMFS, memo to Nancy Foster, December 1, 1992) also have been added, which indicate that the restoration period for red snapper would be achieved a year earlier as a result of the size limit increases.

11. Comment: Because of the number of actions contemplated, the overall number of participants affected and the potential overall cumulative impact, the initial regulatory flexibility analyses should conclude that significant economic impacts on a substantial number of small entities would be incurred by Amendment 5 (replacing a statement to the contrary on RIR, page 21).
Response: That has been done in the revised document.

12. Comment: Table R-2 (RIR, page 25) needs revision to more clearly differentiate short-term effects of each management measure. A suggestion is to use the chart format as in previous amendments.
Response: That has been done in the revised document.

SECTION 2. Responses to Public Comments

1. Comment: As a commercial reef fish fisherman, I have been fishing in the proposed special management zones, in the EEZ, off the Alabama coast, designated areas A., B., and C for the past 10 to 40 years. Portions of my annual catch are dependent upon those EEZ areas. My historical fishing practices will have to change as I have always fished that area with more than three hooks per line, and one of the proposed laws pertaining to the above management zone would limit my fishing to 3 hooks per line. This would change my historical fishing practices. (Seven form letters received.)
Response: The impacts of the 3-hook limitation proposed for the Alabama SMZs on historical participation and the economic effects are discussed in Section 3.2.2.2.1 and in the RIR.

REGULATORY IMPACT REVIEW

AND

INITIAL REGULATORY FLEXIBILITY ANALYSIS

FOR

AMENDMENT 5

TO THE

REEF FISH FISHERY MANAGEMENT PLAN

JULY 1993

GULF OF MEXICO FISHERY MANAGEMENT COUNCIL
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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 major under the criteria provided in Executive Order 12291 and whether the proposed regulations will have a significant economic impact on a substantial number of small entities in compliance with the Regulatory Flexibility Act of 1980 (RFA). The primary purpose of the RFA is to relieve small businesses, small organizations, and small governmental jurisdictions (collectively: "small entities") of burdensome regulatory and recordkeeping requirements. The RFA requires that if regulatory and recordkeeping requirements are not burdensome, then the head of a Federal agency must certify that the requirement, if promulgated, will not have a significant effect on a substantial number of small entities.

This RIR analyzes the probable impacts that the proposed alternatives for Amendment 5 to the Reef Fish FMP would have on the reef fish industry. The term "industry" is taken here to refer to both the commercial and recreational sectors of the fishery.

PROBLEMS AND ISSUES IN THE FISHERY

The general problems in the reef fish fishery are enumerated in the section Problems in the Fishery of the Reef Fish Fishery Management Plan, as amended. The specific problems addressed by the proposed plan amendment are enumerated in Section 2.2, and the proposed actions are summarized in Sections 1.2 and 1.3 and detailed in Section 3.2.2, of the SEIS/amendment document. There are six issues identified for plan amendment: 1) restrictions on use of fish traps; 2) establishment of special management zones; 3) landing requirement for all finfish; 4) permit requirement; 5) minimum size limit for red snapper; and, 6) closure of a spawning aggregation site for mutton snapper.

OBJECTIVES

The general management objectives are enumerated in Section 3.3.1 of the SEIS/amendment document. This amendment is intended to address the major

problems and issues identified for the reef fish fishery.

MANAGEMENT MEASURES

The full discussions of the proposed management alternatives are set down in Section 3.2 of the SEIS/amendment document. There are six sets of management actions considered corresponding to the six problems identified. These are re-stated or described in the following section where their potential impacts are analyzed. A summary of all management measures is presented in Table R-1.

ANALYSIS OF IMPACTS OF ALL MEASURES

A. FISH TRAP RESTRICTIONS

Preferred Option 1: Require that traps be carried to sea by the vessel and returned to shore at the end of each fishing trip. Each trap must be individually buoyed, or if fished in a "trawl" (several traps connected by submerged line) a floating buoy is required at each end of the trawl. Possession of magnesium pop-up devices is prohibited.

Preferred Option 2: Place a three-year moratorium on vessels that can fish traps by establishing a fish trap endorsement to the vessel permit and limiting such endorsement to permittees who turned in logbooks indicating landings from fish traps in 1991 and/or 1992 through November 19, 1992. These permits with endorsements would be nontransferable for the duration of the moratorium.

Rejected Option 1: Status Quo - Retain current trap rules.

Rejected Option 2: Require larger mesh in traps utilizing one or more of the following:

- **a. Require two sides of trap to be of 2 x 4 inch mesh;**
- **b. Require entire trap to be of 2 x 4 inch mesh;**
- **c. Require bottom to be of 2 x 4 inch or larger mesh;**
- **d. Require four or more vertical escape windows to be either 2 x 5 inches or 1½ x 5 inches;**

Rejected Option 3: Move the stressed area boundary further offshore to coincide with the boundary of the prohibited area for longlines and buoy gear:

- **a. off Florida**
- **b. for entire Gulf**

Rejected Option 4: Limit the number of vessels that can fish traps by:

a. **establishing a moratorium on permits authorizing fishing with traps to 1992 permit holders with that designation as their principal gear, or;**
c. **Establishing a limited entry ITQ system for trap fishermen.**

Rejected Option 5: Limit the number of traps per vessel to:
a. **50**
b. **number of trap tags requested in 1992**

Rejected Option 6: Prohibit the use of fish traps in the EEZ of the Gulf of Mexico.

The fish trap fishery in general and in the Gulf of Mexico in particular is described in the SEIS/amendment document. Certain features will be reiterated here in the process of determining the benefits and costs of various alternatives to regulate fish traps in the Gulf EEZ.

The major issues surrounding the use of fish traps in the Gulf EEZ are: 1) overfishing of certain reef fish species, 2) incidental harvest of ornamental fish, 3) ghost fishing of lost traps, 4) degradation of corals and live bottom habitat, and 5) complication in the enforcement of fish trap rules.

Fish traps have been generally regarded as highly efficient relative to other gear types. Technically traps are efficient, or have higher marginal product, in the sense that they are relatively easy to use; require little skill to fish; capture a wide range of species that are not caught by other gear types; can be fished over a wide range of depths, bottom types, and conditions; and require less labor time to fish. In part, however, the vaunted efficiency of fish traps is attributable to the skill of fishermen and the areas fished by traps. Thus, such technical efficiency may hold only in certain fishing areas and when a fisherman has acquired the necessary skills to effectively use the subject fishing gear. This and the fact that fish traps are relatively more strictly regulated probably partly explain why traps are not used extensively in the Gulf. At any rate, this technical efficiency of traps can pose as a factor leading to localized overfishing of certain reef fishes in areas where traps are deployed. The extent of overall overfishing, however, depends largely on the importance of the amount of fish caught in traps relative to the those caught by other gear types in the same or different areas. Such is the case partly because overfishing in general is defined relative to the entire species, say, in the Gulf and not relative to that species population in certain areas in the Gulf.

Fish traps are also regarded as non-selective although it is thought that with proper design they can be more selective than other gear types such as bottom longlines, hook and lines, and trawls. They catch fish that have relatively high value as food fish such as groupers and snappers and fish that have high value as ornamental fish such as angelfish and parrotfish. This non-selectivity of fish traps has prompted fishermen collecting ornamental fish for aquarium to raise the issue of unfair or wasteful competition

from fish trap fishermen.

There have been concerns raised about traps relative to ghost fishing and adverse impacts on corals and live bottom habitat. Lost traps have been found to continue fishing from few days to several years depending on whether or not degradable fasteners are used. This has been perceived as problematic especially that many traps are lost each year, although it has been indicated by some fishermen in public hearings that except in the Dry Tortugas areas losses of fish traps in the Gulf of Mexico are relatively lower than what have been found in the South Atlantic (i.e., on the order of 5 percent annually). There has been some evidence presented on the nature of the damage caused by traps, but the extent of such damage has not been fully evaluated.

Enforcement of fish trap regulations has also been considered difficult for a number of reasons. For one, federal rules in the Gulf EEZ allowing traps to be fished (subject to certain conditions) are incompatible with the ban on fish traps in Florida state waters and in the South Atlantic EEZ. There is also the practice in some fishing areas, specifically the Dry Tortugas areas, of fishing traps unattended or not bringing them after each trip while constantly deployed at sea -- a situation that virtually requires a costly enforcement at sea. In addition, there are reported abuses by dishonest trap fishermen fishing in closed areas and/or with illegally constructed traps.

Preferred Option 1. The twofold provisions of "tending" and buoying traps (with prohibition on magnesium pop up devices) directly address the enforcement and ghost fishing issues, but leaves out other issues mentioned above. The enforcement feature, however, of this measure would not alleviate the problem posed by incompatible federal and state (Florida) rules on fish traps. Based on information from public hearings, there are two general types of fishing practices using traps with each type prevalent in certain fishing areas. In areas from around Naples through Apalachicola, Florida, fishermen tend traps and bring them ashore after each trip, and they also generally buoy each trap. Although "tending" has many connotations, the term as used in the amendment means returning all traps to shore at the end of each fishing trip, and thus would practically be similar to current fishing practice in these areas. Since in these areas traps are already individually buoyed, the only change that the proposed measure would bring about is the use of surface buoys instead of submerged buoys with pop-up devices. From public testimonies, pop-up devices do not appear to be widespread in use. Noting this fishing practice, Preferred Option 1 may be expected to result in minimal direct impacts in terms of both enforcement benefits and costs to fishermen in these areas. One, however, should recognize the potential indirect effects of this option which would be to prevent deviation from the usual fishing practice in these areas. Such deviation may later be turn out to be more profitable for fishermen but could be problematic from enforcement standpoint.

A different practice for fishing traps occurs in the Keys, particularly in the Dry Tortugas. In these areas traps are fished in deeper waters and in trawls of 8 to 10 traps. Each

trawl end is buoyed, and traps are generally left for longer soak times and are not returned after each fishing trip. The fish trap fishery in this area is composed of about 7 individuals who may be reasonably expected to fish the maximum of 100 fish traps allowed per permittee. With the current practice in these areas of using trawls and buoying them at both ends, the only change that the proposed measure would effect regarding buoys is the requirement to use surface buoys instead of submerged ones with pop-up devices. Surface buoys can help in alleviating the problem of lost traps. Less lost traps will be beneficial to both fishermen and fish resource. With less lost traps fishermen would not be forgoing revenues from catches and would not unnecessarily incur replacement costs. Ghost fishing would also be mitigated under the condition of less lost traps, and in a way could lessen the clamor from other sectors of imposing more trap regulations. In addition, surface buoys allow relative ease in identifying locations of traps for enforcement purposes, although it was mentioned by a Coast Guard representative during the May 1993 Council meeting that Coast Guard vessels are not equipped to haul back a trawl for inspection. Buoying a trap requires about 840 feet of line, and with 10 traps to a trawl, fishing for 100 traps necessitates the use of about 16,800 feet of line. Currently lines used to buoy traps roughly cost about $35 per 1,200 feet. Thus, each trap fisherman would have to put up an additional cost of about $490 for fishing 100 traps. With about 7 fishermen directly affected by the measure, total cost would be about $3,430. If the provision were instead to buoy traps individually, the cost to each fisherman would about $2,450 for a total of $17,150 for all 7 fishermen. Relative to a small fishing operation the latter cost figures could be substantial, and thus would pose as a constraint on fishermen when attempting to deviate from the current practice of fishing traps in trawls; that is for example, to fish individual traps instead of in trawls.

The "tending" requirement will have more than minimal impacts on trap fishing in the Keys. Tending traps and bringing them to port at the end of each fishing trip have been cited in public hearings as one major reason for lower trap losses in the Gulf of Mexico (outside of the Tortugas area) trap fishery. The practice in the Keys is to leave traps underwater when vessels return to port. Cost is the major factor in this case since vessels have to travel longer distances to set traps relative to those fishing in the upper Gulf. Ships pass in areas in the Dry Tortugas where traps are fished, and buoys could be cut off by passing ships, making traps difficult to locate. In addition, the Dry Tortugas area is subject to strong currents which may move individually buoyed traps to deeper waters. Thus the probability of lost traps and eventually ghost fishing appears to be high if traps were individually buoyed in these areas. Tending traps in the sense here understood as bringing traps back to port after each fishing trip can mitigate trap losses in these areas. In addition, this requirement can enhance the enforceability of fish trap regulations in a number of ways. For one traps when brought ashore can be inspected for compliance with construction features as in the case with vessels in the upper Gulf. Secondly, there is less likelihood that the number of traps used for fishing does not exceed the maximum allowed. Without the tending requirement, it is possible to fish more than 100 traps at a time since vessels can simply keep on setting more traps at sea by making several trips. Although it is still possible that vessels may bring to port

about 50 traps, leave the rest at sea, and come back the next fishing trip with 100 traps, however, each trap must be identified with a NMFS annual trap tag. Dockside inspection may be checked with visual inspection at sea of the possible remaining traps being left for fishing, given the provision that traps be buoyed. Additionally under the requirement to bring traps to port after each fishing trip, the incidence of lost traps may also be roughly estimated if vessels bring back less than what they brought to sea. This, of course, presupposes that enforcement agents know the number of traps on board vessels when they leave port. Undoubtedly, tending imposes certain additional costs to fishermen. It would disrupt the practice of some fishermen who fish for stone crabs while leaving fish traps unattended for longer period of time. If fishermen use fish traps and also fish for stone crabs, they would be faced with storage problems, especially in the Keys where storage space is limited. This could result in reduction of catches from traps and harvest of stone crabs. In this way, inefficiency would be introduced into each fishing operation by preventing the realization of the most profitable product mix. Moreover, tending would severely constrain the flexibility of trap fishermen to do some other tasks, particularly on land, while traps are left at sea unattended for several days. Under the tending provision, more days spent on land either for repair vessels or equipment or for other income generating activities would mean forgoing earnings from the initial haul from traps left fishing.

Preferred Option 2 does not directly address any of the issues mentioned above, but does prevent them from intensifying. The proposed moratorium would last for three years from its implementation, and the endorsement may be transferred only with the concomitant transfer of the vessel or from one vessel to another of the same permit holder. Although the moratorium starts at the implementation of this amendment, it is not expected to induce an increase in the number of vessels fishing for fish traps because of the relatively restrictive condition for receiving fish trap endorsement on reef fish permits. Recipients of the endorsement are limited to those permittees that turned in logbooks indicating landings from fish traps in 1991 and/or 1992 through November 19, 1992. Such condition, while restrictive enough to prevent a surge in vessels fishing for fish traps, is liberal enough to include current active participants in the fish trap fishery. Due to the inclusion of practically all current fish trap fishermen, this measure, by itself, is not expected to adversely affect the efficiency of the fish trap fishery. On the contrary, there is afforded to current participants the protection from potential rivals (i.e., other fish trap fishermen) fishing for the same species in the same fishing grounds. In addition, the moratorium provides a relatively stable environment for conducting the proposed research studies regarding the effects of fish traps on fishery resources.

Rejected Option 1, which retains the status quo, does not have economic impacts in the short run by definition. The long-run impacts of this option are relatively unknown, but maintaining the status quo over a longer period could be disadvantageous to commercial trap fishermen when perceptions regarding the negative effects of fish traps on the fishery resources heighten and are not given empirical resolution through research studies .

Any of the sub-options of ***Rejected Option 2*** would address mainly the non-selectivity nature of fish traps by allowing smaller fish to escape. Concerns about potential overfishing of certain reef fish species and incidental catch of smaller sized ornamental fish would be alleviated. Ghost fishing, enforcement problem, and possible coral and bottom habitat damage would still remain valid concerns. Cost-wise, any of the sub-options would entail lesser cost than a total ban on traps (i.e., Rejected Option 6). The catch efficiency of traps, however, would be reduced, resulting in less catch and revenues to trap fishermen. With the mentioned potential for an increase in cost, less revenues translates to lower profits to trap fishermen.

The additional cost of sub-option (a) over the current provision is expected to be minimal, although in the case of traps made of hexagonal mesh size two sides may have to be entirely replaced. It has been estimated that there is some difference in value per haul between a 2 by 4 inch mesh size and hexagonal mesh size traps, although no statistical test for such difference has been performed. While there may be no significant decrease in revenue to fish trappers related to reef fish under this sub-option, a possibility exists for loss of revenue for other unregulated, undersize fish that escape traps. The possibility of releasing small fish is especially important for lost traps.

Under sub-option (b), the cost of redesigning traps may be more than minor for those traps with hexagonal mesh. Fishermen may even have to buy or build entirely new traps to replace illegal ones, thus prematurely replacing traps. In this sense the value of traps lost to fishermen may approximate the amount lost under the trap ban option (discussed below). In addition, it has been found out that mean weights of fish caught in a 2 by 4 inch mesh significantly differ from those caught in any of the currently allowed mesh size, and a 2 by 4 inch mesh trap generates about $4.75 per haul versus $5.50 per haul for the more efficient 1.5 inch hexagonal mesh trap (Bohnsack et al., 1988). Thus, this measure can be expected to reduce the catch and revenue per haul of fish traps. This reduction is especially significant for reef fish without size limits and other commercial fish species caught. Thus, while this measure would enhance the benefits from size limits of regulated reef fish and at the same time would allow escapement of ornamental fish, fish trappers would be compelled to forego revenues from commercial catch of other species.

The cost of redesigning traps under sub-option (c) may be expected to be minimal. Under this measure, the possibility of escapement due to larger mesh size occurs mainly during the hauling of traps when fish are forced against the bottom of the trap. To the extent that undersize fish are allowed to escape, some future benefits at the expense of current foregone catch may be gained from this measure. However, the extent of such escapement appears to be limited.

The cost of redesigning traps under sub-option (d) may also be expected to be minimal. This measure would allow escapement of smaller fish or certain types of fish. Again as with the other sub-options, revenues of fish trappers are bound to decline and would be

particularly severe with respect to unregulated food fish.

Rejected Option 3 directly addresses the enforcement issue, but leaves out other issues discussed mentioned above. The cost side of this option is significantly less than banning fish traps (discussed below). Operational cost would tend to escalate under this option since fishermen would be compelled to travel long distances to fish, approximately 60 miles further per trip. This sub-option could also result in reduction in catch and revenue of fishermen. While potential conflict with many fishermen harvesting ornamental fish, this option could pose some type of conflicts with longline fishermen, since they would be potentially fishing in the same areas where traps would be deployed.

Rejected Option 4 would result in reduction in the number of traps deployed, it can directly address the issues raised regarding the use of traps though at a lesser degree than the option to ban traps. The only exception would be enforcement which would still be a problematic issue under this option. Both benefits and costs under this option would be significantly less than those of the option to ban fish traps (discussed below). Sub-option (a) would be almost similar to the status quo, since the same number of persons would be allowed to deploy the same number of traps. This sub-option would prevent an increase in the number of fishermen using traps, and the increase in the number of traps actually fished in 1993 and thereafter would be constrained to those traps not actually fished by eligible persons in the 1992 season. As per 1992 permit records, 166 indicated fish traps as a principal gear out of the 284 who indicated their vessel would use traps. The 1992 season is still under way and the number of traps actually fished for the season is not known. It may also be noted that current logbook data are inadequate to determine the total number of traps actually fished in any one year. Sub-option (b) has an unknown impact on the number of traps that would be fished. ITQ shares may require less traps for some fishermen but more for others. The net effect in terms of traps to be deployed may be an increase, no change, or decrease in total number of traps. An ITQ system basically requires establishing a quota for all species, individually or collectively, caught in fish traps for division into ITQs. Some of the species currently caught in fish traps are not subject to quotas. For species with a quota, like groupers, an ITQ system would require allocating part of the overall quota to fish traps. Establishing an overall quota for fish traps may be feasible but very difficult to do. A complicating factor is introduced by the possibility of establishing ITQs for incidental catch of ornamental fish.

Rejected Option 5 would result in reduction in the number of traps deployed, it can directly address the issues raised regarding the use of traps though at a lesser degree than the option to ban traps. Again the only exception is enforcement which would still be a problematic issue under this option. Both benefits and costs under this option would be significantly less than those of the option to ban fish traps (discussed below). Sub-option (a) means a 50 percent reduction in the current level of allowed fish traps per vessel. However, this does not directly translate in a 50 percent less effects than the

ban on traps or the status quo, except with respect to the loss of value of fish traps. Fish traps may still be fished twice as often or as long resulting in about similar effects as the status quo in terms of impacts on fish stock, ghost fishing, incidental catch of ornamental fish, and possible habitat damage. Possibly revenues especially those of full-time fish trappers would decline; most likely fishing costs would increase. Sub-option (b) would limit a potential increase in fish traps. In 1992 there were 12,064 trap tags issued while 284 persons indicated their vessels would be fishing traps or a potential 28,400 traps in the fishery or more realistically 16,600 potential traps in the fishery corresponding to 166 persons indicating that traps were their principal gear. Using the 1992 number of persons who indicated the use of fish traps, the potential number of traps under sub-option (a) would range from about 8,300 to 14,200 while under sub-option (b) fish traps would be limited to 12,064. The crucial point, however, in all these is whether sub-option (a) or (b) would result in reduction in the number of fish traps actually used. From this standpoint, the effects of these sub-options are unknown.

Rejected Option 6 addresses all of the issues mentioned above in varying degrees. The technical efficiency of traps poses as a factor that may lead to localized overfishing of certain reef fishes. This was an argument forwarded in the South Atlantic Council's decision to ban fish traps in its area of jurisdiction (see SAFMC, 1991). In the Gulf, fish traps catch a motley of species, with snapper (other than red) and grouper being the predominant species. Red grouper is by far the single most important species caught in fish traps. This species, however, has been formally determined not to be overfished. There are no detailed information on the status of the rest of the grouper or snapper stocks relative to overfishing. In addition, traps contribute only a little over 6 percent of total reef fish catch in the Gulf of Mexico. Fish traps catch few red snapper (about 1 percent of 1991 total trap catch of snapper) which is one reef fish species presently considered severely overfished. It appears then that from this standpoint the potential benefit of banning fish traps is likely to be minimal, although such ban would eliminate the possibility of traps being deployed in the western Gulf where red snapper are relatively more abundant or would preclude fish traps from continuing to fish reef fish species that later might be determined to have been overfished.

Fish traps, being non-selective, catch fish that have relatively high value as food fish such as groupers and snappers and fish that have high value as ornamental fish such as angelfish and parrotfish. When all these catches are sold as food fish, ornamental fish generally command a much lower price than when sold live as ornamental fish. In addition, ornamental fish that are discarded when not sold as food fish would lose their entire market value. In both ways, incidental catches of ornamental fish lead to a reduction in economic value of the fish. It may also be noted that there are non-consumptive values of ornamental fish when left unharvested for divers to see. However, reduction of non-consumptive value may not be totally attributable to fish traps since tropical fish collectors using other gear types also harvest these fish. The benefit from banning traps in the particular case of eliminating incidental take of ornamental fish cannot be quantified.

Banning fish traps can significantly reduce ghost fishing, but the extent of economic benefit from such a ban depends on the extent of the number of traps lost. From current information, lost traps are a small occurrence in areas in the Gulf outside of the Dry Tortugas areas. In these latter areas, there are reported to be few fishermen fishing and noting that each fisherman is limited to 100 traps it appears that the economic problem of arising from ghost fishing is relatively small. On this account, the ban on traps may be expected to have minimal effects with respect to the economic problem associated with ghost fishing.

The current evidence on the nature of the damage caused by traps suggests that fish traps do not account for a major damage of bottom habitat in the Gulf. Relative to habitat damage inflected by stone crab pots and spiny lobster traps, the damage done by fish traps is relatively small primarily because of the small number of fish traps relative to these other traps/pots. Banning fish traps is then bound to achieve very little benefits in terms of mitigating damage to bottom habitat and consequently on the biological and economic productivity of such bottom areas.

Banning fish traps would render compatible the federal rules in the Gulf EEZ with those of the state waters of Florida and South Atlantic EEZ. Enforcement will thus be highly simplified. The size of benefits from a fish trap ban is directly proportional to the extent of problems associated with enforcing fish trap rules applicable to these three areas. As earlier mentioned, the number of recorded fish trap violations is relatively small compared to other marine associated violations. If the probability of detecting violations is proportional to the number of violations, such recorded fish trap violations suggest that the benefits from a ban on traps relative to enforcement of fishing rules is relatively small, especially as most fishermen likely comply with existing regulations.

There are several cost items accompanying the ban on fish traps in the entire Gulf EEZ. Major costs include loss of value of traps, loss of income to trap makers, loss of income to vessel owners, operators and crews, loss of efficiency in the reef fish harvest sector, loss in profitability to fish dealers, and loss in consumer surplus.

In the southeastern U.S. fish traps are banned in state waters of Florida and in the EEZ under the management jurisdiction of the South Atlantic Council. Moreover, fish traps are banned in the Gulf EEZ in designated stressed areas (see Appendix E), and NOAA is about to ban fish traps in the Florida Keys National Marine Sanctuary. If the ban on traps is extended to the entire Gulf EEZ, economic values associated solely with fish trap operations will be foregone in full since practically there will no alternative uses for traps. There are certain economic values discussed below that are lost due to the ban on traps but can be recouped in other fishing or non-fishing activities. The regulatory impacts associated with these latter values would be appropriately regarded as more distributional in nature.

Technically, the value of a trap is determined by demand and supply of traps in the

market. In the absence of demand and supply information, valuing of traps for the purpose of estimating the cost of a trap ban is done by using a similar technique used by the South Atlantic Fishery Management Council (SAFMC) when it was considering the ban on traps in its area of jurisdiction. This technique involves using the acquisition cost of traps adjusted for depreciation. The salvage value of traps is considered very minimal and is thus considered zero for estimation purposes. It was estimated by SAFMC staff that the acquisition cost of a trap is $85 and the average value when adjusted for depreciation is $48.50. The number of traps in the possession of fishermen using traps is not precisely known. In 1992, a total of 96 fishermen reported landings using traps. Assuming that each of the 96 fishermen own 100 traps (the legal maximum to be used by each at any time), the total value of traps lost due to the ban would amount to $465,600 over the lifespan of traps. To this amount should be added the value of traps now in the possession of trap makers or other sellers of traps. The ban on traps would also mean a loss of market to trap makers and sellers of traps or trap materials. The extent of such loss cannot be determined.

In 1991, about $1.45 million pounds of fish caught in traps were landed. The ex-vessel value of such landing was about $2.5 million. This amount shared by vessel owners, operators, and crews would be foregone if traps are banned in the Gulf. At a 10 percent interest, the total amount of foregone earnings from traps would amount to about $25 million. Not all of this amount would actually count towards the loss in earnings by the mentioned group of people from a fish trap ban. In the case of vessel owners who are not operators, the vessel can be used for other purposes such as fishing using other gear types, non-fishing trips, or vessels may be sold. In the case of operators and crews, they can shift to other economic activities in the fishing on non-fishing industries. For these individuals, the appropriate loss in earnings that should be considered directly attributable to the ban on traps are their earnings from using traps minus their earnings from shifting to other economic activities and any re-training or job search costs incurred.

To a certain degree fish traps, in addition to being technically efficient, are also economically efficient, i.e. have higher marginal value product, in the sense that for a given harvest of fish they generally are less costly to employ (due to technical efficiency and relatively low construction cost per trap) and that trap caught fish are contended to command a price premium in the fresh fish market. The ban on traps would mean a loss of efficiency in the harvest segment of the reef fish industry.

Certain fish dealers would suffer a loss in profitability due a fish trap ban. The extent of such loss is dependent on their fish trap related business that would be offset by harvesters using other gear types and on the degree that their lost business would be taken up by other dealers. There is no information to estimate the potential loss to dealers arising from a ban on traps.

To the extent that as contended by some people fish traps bring in higher quality fish,

consumers would forego some benefits from a fish trap ban.

B. SPECIAL MANAGEMENT ZONES

B.1. Alabama Management Zone

Preferred Option 1: Require persons fishing all three tracts (A, B, and C) for reef fish be limited to gear with no more than 3 hooks per line.

Rejected Option 1: Require that persons fishing for reef fish be limited to use of certain gear that utilize no more than three hooks per line for the following reef tracts:

a. The two northern tracts (A and B); or
b. One or more of the tracts; or
d. Status quo - none of the tracts.

Rejected Option 2 for Allowable Gear: Gear allowed by persons fishing the reef tracts selected above will be hand-held rod and reel only, and

a. Other prohibited gear aboard a vessel must be stored or not rigged for fishing, or
b. Vessels with other prohibited gear must transit the reef tract without stopping to fish.

The proposed SMZ off Alabama covers approximately 820 square miles with depths varying from 12 to 400 fathoms. About 5,000 to 7,000 artificial reefs have been "constructed" in the area through the years. Most of the artificial reefs have been constructed by the recreational sector, particularly charter vessels. Others have been constructed by commercial fishermen. Red snapper is said to be the prime target species in the area. Although the precise location of all artificial reefs is not widely known, it is estimated that they cover less than 0.1 percent of the total area proposed as SMZ.

There are at least two objectives of an SMZ: 1) to provide protection or enhance the fishery resource in the area, and 2) to limit the exploitation of such resources which may favor a select group of people, particularly those who build artificial reefs. The first of these is highly relevant because of the overfished status of red snapper that inhabit in the proposed SMZ. The second assumes importance because even though the current proposal does not explicitly exclude anybody from fishing in the proposed SMZ, it does restrict the efficiency of certain fishing operations in the area. Considering that red snapper is the main species targeted in the proposed SMZ and the species is currently managed with an overall TAC, there arises an important issue of whether the proposed

SMZ contributes to the achievement of the Council's long-term goal of rebuilding the red snapper stock. Given all these, the proposed SMZ raises two economic issues: 1) whether it enhances economic value from fishing for red snapper in general, and 2) whether it enhances economic value from the fishing activity in the area. The first issue deals with the contribution of the proposed SMZ to the long-term expansion of the production frontier for red snapper, while the second deals with the consequences of allocating fishing activities in the area to various user groups.

Recreational anglers, in private or charter boats, and small commercial fishermen have been fishing for years in reef tracts in the proposed SMZ, with red snapper being the prime target species. The action of the Council to re-open the red snapper fishery in 1992 under a 1,000 pound trip limit per vessel reportedly prompted many medium to large vessels to fish in these areas. It was pointed out in the SEIS/amendment text that during the regular and extended season for red snapper, fishing activity in the reef tracts was about 60 percent private, 30 percent charter, and 10 percent commercial, including boats coming from outside Alabama. The biological impact of this recent event on the overall red snapper stock is not precisely known, but it has been contended that if this occurrence continues red snapper stock for the small individual reefs in these areas would easily be fished out. There is good reason to believe that preventing localized overfishing of red snapper in certain areas in the Gulf, for example establishing an SMZ as in the present case, would promote the achievement of the target recovery of the stock. However, such conservation measure needs to be considered within the context of an overall red snapper TAC that has been fully taken at least in the last two years. If intensified fishing in the proposed SMZ becomes the major source of TAC overages or adversely changes the size composition of fish or reduces the incentive to construct new reefs to replace those deteriorating or to add to those existing, such type of fishing would impede the achievement of the Council's target recovery for red snapper, and the economic outcome of such fishing practice would be to curtail the expansion of the red snapper production frontier or to prevent such frontier from expanding. Otherwise, the major issue would turn to the allocative consequences of restricting fishing in the proposed SMZ.

Although there still exists the general issue of whether artificial reefs enhance production or simply congregate fish, there appears to be some evidence, as discussed in the SEIS/amendment document, that the Alabama artificial reefs have contributed to the abundance of red snapper. Therefore maintenance of these reefs to remain productive, for example, by replacing those that deteriorated and promoting any conservation practice associated with these reefs, can contribute to the recovery of the red snapper stock. Moreover, given the fact that less than 0.1 percent of the proposed SMZ area has artificial reefs, additional reefs may be expected to further enhance the abundance of red snapper more than to attract fish away from existing reefs. In this regard, maintaining the incentive to build reefs in the proposed SMZ, say through regulatory measures, would have an overall positive impact on the red snapper stock and in particular on reef builders. In order, however, for the positive impacts to be realized,

certain conditions have to be satisfied. The short-run the condition is that individual reefs are not overfished while the long-run condition is that the increase in fishing rate in those reefs should not exceed the rate of increase in red snapper abundance from reef construction. An examination of the current fishing practice in the proposed SMZ and potential fishing effort that may be employed therein may shed some light on the possibility of meeting the stated conditions for red snapper stock enhancement.

In order to develop some background information regarding the users of fishery resources in the proposed SMZ, the Alabama Department of Conservation and Natural Resources (ADCNR) conducted a survey in June 1993. Of the 58 charter boat captains provided with questionnaires, 14 turned in their responses. Recreational anglers were surveyed on availability basis, and responses were elicited from 10 individuals. Commercial boat captains refused to provide any information because they felt it would hurt them in the future (Lazauski, 1993). A summary of the survey's results is presented in the SEIS/amendment document. It may be noted that such survey did not adhere to strict statistical and survey procedures since it was designed mainly to generate general indications of the fishing activities in the proposed SMZ within a short period. In view of this, survey results may only be interpreted with great caution. The survey shows that charter vessels fishing the proposed SMZ limited hooks to no more than 2 and recreational fishermen to 2 to 4 hooks. In addition, charter boat captains indicated they take a few fish from a given reef and move on to another reefs. Recreational anglers, on the other hand, indicated they stay on the same reef until the bag limit is reached or fishing slows down. In the absence of information regarding commercial fishermen, one can only make general statements regarding their fishing practice. If current profitability were their overriding objective, commercial fishermen would attempt to minimize cost per trip in view of the fact that they are subject to trip limits. Under this condition, they may be expected to behave in much the same way as recreational anglers, i.e., staying in the same reef as much as possible until their trip limits are reached or fishing slows down. If future profitability were also included in their fishing decision, they would be expected to behave like charter boat captains, i.e., fishing in many reefs per trip, in order to leave some fish in a reef area for future harvest. The only other information on commercial fishing in the mentioned areas is that mentioned in the SEIS/amendment document that there is very little longline fishing activities in said areas, and the little fishing that exists is limited to tract C of the proposed SMZ. To some extent then, those harvesting in the proposed SMZ may be promoting conservation measures that can help in restoring the depressed red snapper stock. This is, of course, more true with charter vessels which generally fish with few hooks on the line and move from reefs to reefs. This could also be true with recreational anglers who also fish with few hooks on the line but only so long as their number does not substantially increase. This could be true for commercial fishermen but only with respect to those fishing on smaller boats which may be expected to deploy fewer hooks per line than large vessels and again only if their number does not substantially increase. The Preferred Option which limits the number of hooks to three per line can help ensure that current conservation measures promoted in the proposed SMZ would be maintained. In this way, this option may be considered to

result in economic benefits at least in the short run by preventing a possible reduction in the production frontier.

The long-run situation hinges crucially on the increase of fishing effort in the proposed SMZ vis-a-vis the increase in stock abundance from existing or additional reefs and the extent to which the SMZ becomes a significant factor in TAC overages. One may note that the Preferred Option would not curtail the fishing effort of both the recreational sector and commercial vessels so long as they employ the permitted gear type. Regardless of any group's conservation practice related to fishing in reefs located in the proposed SMZ, it is very unlikely that all individual decisions coincide. One group of fishermen may decide to leave out certain reefs that have been nearly fished out, but their decision would not affect the decision of others to fish in those reefs, and under such condition, there exists the possibility of eventually fishing out certain reefs. This non-exclusivity of fishing around individual reefs becomes a particularly problematic factor in the long run when productive reef locations become known to many fishermen. Since there are no direct effort limiting measures on the recreational sector, the long-term increase in recreational fishermen could mean an increase in fishing effort in the SMZ. This is particularly important since the recreational sector which currently comprises about 90 percent of those fishing in the proposed SMZ is mainly managed via a bag limit and its "quota" is only implicit in the sense that the recreational fishery is not closed once its allocation is filled. However, if the recreational sector exceed its allocation, the FMP provides that the bag limit will be reduced in subsequent years, or an increase in size limit can be used for the same effect. We may add, nonetheless, that such bag or size limit changes would be applicable to all recreational fishing in the Gulf and not necessarily only to fishing in the proposed SMZ. While larger commercial vessels may be forced out of the proposed SMZ, smaller ones could still continue to profitably fish in these areas. It is unlikely that these smaller vessel would increase crew size just to be able to fish more lines, but if no effort limitation measure on the commercial sector is adopted, fishing effort by these smaller vessels in the SMZ could eventually increase. The current low trip limits of 200 pounds for some of these vessels would compel them to fish in more abundant, nearshore areas in the SMZ. Again as with the recreational sector, the FMP provides that if the commercial sector exceeds its quota for one year, a part of the excess catch may be deducted from future quotas, and such would apply to all commercial fishing in the Gulf and not necessarily only to fishing in the proposed SMZ. Given the long-term prospects of an increase in fishing effort in the SMZ from the recreational sector and possibly from smaller commercial vessels, the short-run effects of the SMZ (and corresponding gear restriction) in preventing a contraction of the production frontier would be carried over a longer period only if construction of additional reefs led to an increase in abundance that more than compensated for the increase in fishing effort. Currently there is not enough information to conclude one way or another, but it appears that eliminating a relatively small component of effort in the proposed SMZ, i.e. fishing effort from larger vessels or longliners, may not be sufficient to restrain the increase in total fishing effort in the proposed SMZ relative to the increase in abundance. In this sense, the contribution of

the proposed SMZ and gear restrictions thereat to long-term expansion of the red snapper production frontier may be considered minimal.

The influx of medium to large (vessel-wise) commercial fishermen fishing in the mentioned areas in 1992 altered the distribution of red snapper harvest in these areas. The adoption of species endorsement with 2,000/200 pound trip limit for the 1993 fishing season (and later if not otherwise changed) is likely to result in more commercial fishermen fishing for red snapper in these areas. It may be noted that only 131 vessels have been approved to receive the endorsement out of a potential 819 that landed red snapper in 1992 and most of the 819 vessels are base in other areas and would not be expected to fish in the mentioned areas. The 1993 red snapper season which opened on February 16 lasted for 94 days and closed on May 21. Although those that received the endorsement would still have the incentive to fish in nearshore areas at least at the start of the season in order to make more trips, such incentive has more validity with those subject to the 200 pound limit. At any rate, such a situation resulted in altering again the distribution of red snapper harvest in the mentioned areas. The preferred and rejected options (except status quo) for the Alabama management zones are designed to restrict gear used by various user groups targeting red snapper in the designated areas and not to prohibit any user groups from fishing in these areas. Such restriction is bound to alter again the distribution of the red snapper catch in these areas but not necessarily to the pre-1992 situation. In addition, larger vessels and in particular longline vessels would be excluded from fishing in the area unless they conform to the permitted gear.

Economic efficiency dictates that an allocation method should maximize net economic benefit from the use of the resource in these areas. Unfortunately, we do not have sufficient economic information to quantify the impacts of altered catch distribution in the designated areas for special management, particularly those of the resulting distribution upon adoption of the Preferred Option. At best only a qualitative discussion of the economic impacts of the Preferred Option can be made.

When the regular commercial fishing season ended on February 22, 1992, the mentioned areas were continued to be fished by recreational fishermen through private or charter boats. Upon re-opening of the commercial fishing season on April 3, 1992 until its closure on May 14, 1992, the red snapper resource in the mentioned areas were shared by both recreational and commercial fishermen. The adverse impact on the recreational sector fishing in the mentioned areas due to the re-opening of the season is equivalent to the loss in consumer surplus due to reduced catch in number or poundage, more fishing hours spent, or less enjoyable fishing trips because of congestion. If such reduction in consumer surplus also resulted in less angler trips in charter boats, this latter group would also have incurred reductions in profits. Industries associated with the recreational sector would also have registered profit reduction. If Alabama catches are taken as some rough indication of the loss to the charter boat industry, one can see a relatively substantial loss. In 1991, the April and May

charterboat catches amounted to 9,126 fish while for the same months in 1992, catches were only 3,530, or a reduction of about 5,596 fish (Tables 67 and 68, Goodyear, 1992). However, one should recognize the multitude of problems associated with concluding the reduction as attributable to commercial fishing in the designated areas during the April and May extended commercial season. Undoubtedly, the extended season was highly beneficial to the commercial harvest sector. Additional harvests were associated with ex-vessel prices that were relatively more favorable than those of the regular season. Furthermore, some fishermen might have trimmed down their costs by fishing in the proposed SMZ. The 1993 commercial season opened under higher TAC, but the commercial quota was taken in about the same number of days as the combined regular and extended 1992 season. For both 1992 and 1993 seasons, one can see that the recreational sector including charter boats had more time accessing the red snapper resources in the proposed SMZ. To some extent, this indicates that the reallocation brought about by re-opening the 1992 season and trip limits in the 1993 season has not adversely impacted the recreational sector fishing in the proposed SMZ in some significant measure. On the other hand, the commercial sector might have benefited substantially from such arrangement. Any of the options, except status quo, for the proposed Alabama management zone would be disadvantageous to commercial vessels, particularly large vessels. Both sub-options of **Rejected Option 2** would be particularly restrictive for larger vessels. Catch distribution in these areas would favor the recreational sector and small commercial boats. Fishing costs for larger vessels would be higher as they will be compelled to fish further offshore, since in all likelihood the gear requirement for the management zone would be restrictive enough to make uneconomical for these vessels to fish mainly in these areas. It appears then to reason that the reallocation to be effected by the Preferred Option could result in net economic loss to the entire red snapper fishery, i.e., considering the impacts on both the commercial and recreational sectors including charter boats.

B.2. Framework Procedure for Special Management Zones

Preferred Option: Adopt the framework measure in the FMP. (See Section 1.2 of the main document for description of this procedure).

Rejected Option: Status quo - do not adopt the framework measure.

These options are essentially procedural in nature, and no immediate impacts on fishery participants may be expected from either options. Once SMZs are proposed under either options, their socioeconomic impacts will be accordingly analyzed. While a framework procedure simplifies the Council process of considering special management zones, it does not simplify decision making. Basic information for any management zones would still have to be generated, and the Council would still have to devote enough time to consider any proposals and their potential impacts on the resource and the resource users. Under the framework procedure, there is the possibility that the

public may not be given as much access to management decision as they do under a plan amendment. On the other hand, a framework procedure appears to be less costly so long as adoption of the framework procedure is not interpreted as a signal to the public that the Council is favorable to the idea of fishery management by SMZs. The evaluation criteria and procedure outlined for a framework procedure approach to SMZs may also be used under the plan amendment approach, and most likely these will be used for subsequent requests or considerations for SMZs if the framework procedure is not adopted.

C. LANDING REQUIREMENTS

Preferred Option: Require all finfish taken or landed from the EEZ, excluding oceanic migratory species, be landed with heads and fins intact. (Possession of fish in other forms for bait on a vessel is allowed).

Rejected Option 1: Require that all reef fish species in the fishery be landed with heads and fins intact (i.e., whole but eviscerated).

Rejected Option 2: Status quo - requirement applies only to reef fish with minimum size limits.

Either the Preferred Option or Rejected Option 1 could strengthen the enforcement of many regulations currently in place, particularly for reef fish. Enforcement of the size limits is particularly made relatively less problematic. In addition, harvesting of species for which the fishing season is closed can be further prevented as the practice of filleting at sea would be minimized. Moreover, quota monitoring is enhanced under these two options with a more accurate estimation of harvests. Although more likely to occur in the recreational sector than in the commercial sector, the extent of filleting fish at sea is not known, and thus it is not possible to assess the full impact of the proposed landing requirement. Additionally, the proposed and alternative options are landing rather than possession rules. Thus, it is still likely that some filleting at sea may occur and only the landing of such filleted fish may be minimized. The landing requirement under these two options would negatively impact those that currently fillet fish that are not regulated mostly to conserve storage space. The major advantage of the Preferred Option over Rejected Option 1 is that it covers a wider range of finfish and thus has a slightly better chance of achieving the benefits mentioned above. The Preferred Option's allowance for possession of fish in "other forms for bait" may partly negate its effectiveness but it does provide some consideration to fishermen unable to use all the bait they carry in one fishing trip.

D. PERMIT REQUIREMENTS

Preferred Option: Status Quo - No change, retain the current requirement for vessel permits that permittee must meet the income requirement based on records from one of the two previous calendar years.

Rejected Option 1: Require that commercial vessel permittees meet the earned income requirement based on records from one of the three previous calendar years.

Rejected Option 2: Allow permittees to disregard income earned in 1992 in meeting the current requirement for renewal of a permit.

Since May 1992 a moratorium for issuance of new permits has been in place and will terminate no later than May 1994. Under this moratorium, only vessels issued permits in 1992 may be eligible for re-issuance in 1993 and 1994. At present there are 2,214 permits issued, and during the moratorium no more than these permits may be issued. Permit transfer, however, is allowed between vessels of the same permittee or between different persons but only with the concomitant transfer of the permitted vessel. If the new owner of a permitted vessel does not meet the income requirement for permit eligibility, he is granted one year in the fishery to meet the income requirement. For permit re-issuance, the vessel owner or operator has to qualify the requirement of more than 50 percent of earned income from commercial or charter/headboat fishing. The percentage requirement may be based on any one of the preceding two years (Preferred Option). For 1993, earned income for either 1991 or 1992 may be used; for 1994, earned income would be based on income for either 1992 or 1993, and so on. It is worth stressing that the earned income requirement may continue to be imposed after the moratorium whether or not a limited entry in the fishery is established.

The red snapper season for 1992 lasted 53 days in the regular season and 42 days in the extended season, and this abbreviated season compelled fishermen to supplement their income elsewhere. If supplemental income is derived from other commercial fishing or charter/headboat fishing, all three options would have similar results in terms of permit eligibility. If supplemental income comes from non-fishing activities, Rejected Options 2 and 3 would allow more eligible fishermen than the Preferred Option. If a similar abbreviated season occurs in 1993 or in succeeding years, Rejected Option 1 would allow more eligible fishermen than either of the other two options. We may note, however, that the approved emergency action for 1993 specifying trip limits of 2,000 pounds if a vessel qualifies for red snapper species endorsement or 200 pounds if a vessel does not so qualify will lengthen the season. This provision could enable many fishermen to derive the enough income to qualify for reef fish permit.

Relaxation of the eligibility requirement benefits more those that are heavily dependent on red snapper or other fisheries that may experience shortened seasons. The social impacts of this relaxation are definitely positive. The economic impacts in terms of

efficiency are not determinate. If such relaxation allows inefficient fishing operation to continue competing for the scarce red snapper resource, the overall efficiency status of the industry would suffer. To some degree, one may argue that efficient operation is closely associated with strong dependency on the fish stock. In this sense, there is an economic argument for relaxing permit eligibility as in Rejected Options 1 and 2. However, if one grants the contention that those receiving red snapper endorsement are the ones highly dependent on the red snapper resource, then maintaining the status quo could in fact prevent the industry from becoming less efficient while not adversely impacting those who do not receive the endorsement.

E. RED SNAPPER MINIMUM SIZE

Preferred Option: Change the minimum size limit for red snapper as follows:

- **to 14 inches (TL) in 1994, and**
- **to 15 inches (TL) in 1996, and**
- **to 16 inches (TL) in 1998.**

Rejected Option: Status Quo - No change, the size limit remains at 13 inches (TL).

An increase in size limit may be expected to negatively impact the harvest of fish of both commercial and recreational users in the short run. Recreational harvest of red snapper varies in number and weight by fishing mode and state. For 1991, the average weight across all states and fishing modes of recreationally caught red snapper was about 2.07 pounds (Goodyear, 1992). This would approximately correspond to a little over 16 inches in total length. On average then, the impact of an increase in size limit up to 16 inches on the recreational sector would not be very substantial. One may note, of course, that the idea of an average size of fish caught indicates that some fish caught by anglers were smaller than 16 inches and so would have to be discarded when the appropriate size limit takes into effect. Among the states, Texas recreational anglers which caught fish of an average weight of 1.79 pounds in 1991 would be adversely affected by the increase in size limit. Among the fishing modes, the headboat anglers (mainly in Texas) which caught an average weight of 1.93 pounds would be negatively impacted by a size limit of 16 inches. Lower size limits may not have a substantial impact on anglers using this fishing mode. Although in terms of catch, an increase in size limit may not directly translate in catch reduction, recreational anglers may be compelled to increase their fishing cost or experience less valuable fishing trips. In this sense, consumer surplus may decline in the short run. The marketability of fishing trips by charter and head boats may also be adversely impacted in the short run by less valuable fishing trips brought about by a size limit increase.

The commercial sector has caught and sold red snapper in the 1 to 2 pound category. With a gradual increase in size limit to 16 inches, this category will be eventually lost to

imports unless states do not change their size regulations to be compatible with the proposed change in size limits in federal waters. The red snapper pricing system among red snapper dealers in the Gulf is described in the SEIS/amendment document. Such a pricing system is based on information collected from 10 major dealers around the Gulf that supply most of the information for monitoring the red snapper quota (Antozzi, per. com., 1993). According to this survey, dealers historically used from one to four tiers of pricing red snapper based on pound sizes, with one to two tiers being the most common. Whatever the tier system used, the 2-4 pound category generally commanded premium price over smaller or larger sizes. The 1-2 pound category commanded premium price when a two tier system was used, but secondary price with three to four tiers. Given the information that a two-tier system is most common, it is not readily ascertainable whether a 1-2 pound fish commanded higher prices than 2-4 pound fish since both sizes are listed as commanding premium prices. Considering that ex-vessel demand is derived from consumer demand through wholesale demand, wholesale prices (consumer prices are not available) would be highly indicative of red snapper ex-vessel price structure. Information from the Fulton Fish Market shows that at least from 1987 through 1992, wholesale prices for medium size (presumed to be 1-2 pounds) red snapper had been higher than those for smaller sizes (Waters, 1992). This could very likely mean that ex-vessel prices for 2-4 pound sizes had been higher than for those of smaller sizes for the period mentioned. Incidentally, this was the type of information that the Council's Socioeconomic Panel (SEP) had when they discussed the impacts of size limit increase on the most highly priced fish size category (SEP, 1992). On the other hand, information for 1993 appears to indicate that the 1-2 pound fish command higher wholesale prices (Antozzi, 1993). By a similar reasoning as above, this implies higher ex-vessel prices for smaller size than for larger size categories.

Both demand and supply factors have a role on this apparent price reversal. Demand considerations related to the price structure of red snapper are more difficult to pin down. Although an empirically estimated demand function for snappers in the Southeast is available (see Keithly and Prochaska, 1985), it provides only very general quantitative relationships between snapper price, snapper landings, imports, and income. Since such estimation was done for a different purpose it understandably lacks the necessary detail to address such issues as price differentials for various sizes of red snapper. Nonetheless, such estimates show that the demand for snappers is relatively inelastic, indicating that large changes in total quantity of snapper landings are associated with small changes (in opposite direction) in snapper price. In many public hearings held throughout the Gulf, it has been contended that 1-2 pound red snappers command a relatively higher demand especially among restaurants. While such claim is supportive of the premium price smaller snappers commanded in the 1993 open fishing season, it does not appear to support the premium price attached to 2-4 pound sizes in previous years. A change in demand could have possibly occurred in 1993, but there is no information to support this claim.

In view of the foregoing, we turn our attention to supply factors to explain the mentioned

price reversal. Holding demand constant, one possible explanation for the price reversal is that the supply of 1-2 pound fish in 1993 must have been relatively low relative to those of previous years and relative to the 1993 supply of larger fish. Although both imports and domestic landings of red snapper (or close substitutes) affect overall supply, there is not much that can be said about imports due to lack of information. Turning to domestic landings, we recall the discussion in the SEIS/amendment document regarding strong 1989 and 1990 year classes of juvenile red snapper, with the former about twice as abundant as the latter year class. By the beginning of 1993, the 1989 and 1990 year classes averaged about 16.7 and 13.1 inch (TL) size. We may also note that a 1-2 pound fish is smaller than 16 inches (TL) in size. Although it remains to be fully validated by an examination of commercial landings by size categories, there appears some reason to believe that in 1993 there was a relatively higher supply of larger sized fish, and this resulted in lower prices for this size category relative to smaller size fish. By 1994, the 1989 and 1990 year classes will average about 19.8 and 16.7 inches (TL) in length so that larger size fish would then command lower prices than smaller fish if the 1991 year class were not as strong as the 1989 or 1990 year classes. Similar price conditions would exist in later years if subsequent year classes were not also strong. Hence, under the condition that the 1989 and 1990 year classes dominate subsequent year classes, catches of larger fish would be very likely higher and thus would depress prices for these size categories. Hence, an increase in size limit on top of a commercial quota would reduce the short-run revenues of commercial fishermen mainly because revenue losses from reduced sales of smaller snappers would not be outweighed by revenue gains from increased sales of larger snappers. The net effect on profitability, however, also depends of what happens to fishing cost under such condition. In the absence of cost information, we can only focus on general cost changes. If larger size fish becomes more abundant under the scenario depicted above, fishing time could be reduced and thus cost would also be reduced. However, there is also a compensating increase in cost brought about by the added work of discarding undersize fish and by the possibility that fishing vessels may need to travel farther offshore to catch the legal size snappers. It is likely then that a higher size limit would bring about an increase in cost. Hence, the size limit increase may be expected to effect a reduction in short-run profits to the commercial sector due to a reduction in revenue and increase in cost. We hasten to add, however, that such reduction in profit is more likely to be effected more by a reduction in revenue than by an increase in cost.

To complete the picture, the short-run losses described above have to be contrasted with the long-term impacts of a size limit increase. It may be stated at the start that such short-run losses could be maintained over a longer period if a higher size limit plays a minimal role in a long-run increase or in forestalling a reduction in TAC, commercial quota, and recreational bag limit (through regulatory changes).

The long-run impacts of the size limit increase on fishery participants largely depends on the biological outcome of the measure. Increasing the size limit is expected to increase the yield per recruit and eventually the level of harvest of red snapper. First

time spawners are given more protection with an increasing size limit. Indeed an increase in size limit may be expected to increase the release mortality which is currently considered to be 33 percent. As mentioned in the SEIS/amendment document, a more recent analysis of the proposed size limits shows that the target SPR of 20 percent would be achieved sooner, or conversely, a shrimp trawl bycatch reduction of 50 percent could be implemented in 1995. Since, as also mentioned in the SEIS/amendment document, the target bycatch reduction is very unlikely to be achieved in 1994, the proposed size limit increase becomes the major remaining policy variable that management can control to achieve the long-run objective for red snapper management under the current TAC level of 6.0 MP and bycatch reduction in 1995. If the size limit is maintained at current level, the target SPR can only be reached if the TAC is reduced provided the bycatch reduction is implemented in 1995. If both the current size limit and TAC are maintained, then a larger bycatch reduction would be required to achieve the target SPR by 2009. Although the bycatch reduction is the single most important factor in the achievement of the target SPR, research studies along this line are still on-going. At this stage then, we can only assume that the 50 percent (not more) target bycatch reduction can be implemented in 1995. Under this scenario, the choice facing management in order to achieve the target SPR by 2009 is either a reduction in TAC with the same size limit or an increase in size limit with the same TAC. From this standpoint, it can be asserted that an increase in size limit plays an extremely important role in at least maintaining the same TAC over the recovery period.

A lower TAC means a reduction in commercial quota and recreational allocation and bag limit. It is highly probable that the commercial sector would suffer larger profit losses with lower quota and the same size limit than with higher size limit and the same quota. Under a higher size limit, the potential average revenue losses would be on the order of about 10 to 25 cents a pound corresponding to the price differential between small and large snappers. On the other hand, a lower quota with the same size limit would translate to average revenue losses on the order of $1.75 to $3.00 (actually more than these due to inflexibility of demand) a pound corresponding to the price of red snapper prevailing in the market. Although costs also play a role here, it is safe to assert that cost reductions under a lower quota would not be enough to outweigh revenue losses. As argued earlier, an increase in size limit would be accompanied by some cost increase, however profit reduction would be effected more by revenue reduction than by cost increase. Given the foregoing the less costly approach at least over the period of recovery is an increase in size limit than a reduction in commercial quota.

The long-run differential impact of an increase in size limit versus a reduction in bag limit on recreational anglers is not as determinate as that for the commercial sector. The situation is confounded by the lack of demand information for red snapper and the contrasting findings of demand estimates for other recreational fisheries in the Gulf. Green (1989) estimated the recreational demand in the red drum fishery and found statistically significant relationship between trips and catch rate per angler. A similar relationship was found by Milon (1989) for the king mackerel fishery. In contrast, Milon

(1993) found no such relationship existed when he re-estimated king mackerel recreational demand using more recent data. In all three studies, changes in size limits were not examined. Thus while Green and Milon (1989) would lead us to believe that changes in bag limit would affect consumer surplus, Milon (1993) would lead us to conclude that the relationship between changes in bag limit and consumer welfare would be essentially a random event. In reviewing Milon's 1993 study the SEP (1993) noted that although there may be no relationship between trips and catch per angler for those already in the fishery, increased participation in the mackerel fishery appeared to indicate that benefits in terms of an increase in the number of anglers were associated with increased abundance. If the SEP remark is carried over to the red snapper fishery, it could imply that changes in abundance as reflected through changes in bag limits or size limits would affect total benefits in terms of changes in participation in the recreational fishery. The immediate implication of this in relation to the issue at hand is whether changes in size limit affect the perception of potential red snapper anglers more than bag limit changes. In the most recent Council meetings (July 12-15, 1993), a party boat captain testified that given the choice between an increase in size limit and reduction in bag limit, the former is more favorable to the for-hire business. This could be interpreted to mean that the number of angler trips would be affected less by an increase in size limit than by a reduction in bag limits. In the light of Milon's 1993 study and the SEP's remark, such relationship would be more relevant in terms of increased participation than in terms of trips per angler. It can then be concluded that at least over the period of red snapper recovery, a size limit increase would result in greater net consumer welfare than a reduction in bag limit.

Despite the qualitative nature of the foregoing discussion, it appears that short-run losses due to a size limit increase would be outweighed by long-term benefits. It may be noted, however, that long-term economic gains can only be maintained when effort in the fishery is effectively controlled.

F. MUTTON SNAPPER SPAWNING AGGREGATIONS

Alternatives Related to Riley's Hump

Preferred Option : Close the region of Riley's Hump[1] to all fishing activity during the months of May and June.

Rejected Option 1: Do not have a complete closure of Riley's Hump. Fishing for species other than mutton snapper would continue to be allowed during May and June.

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[1] For purposes of this measure, Riley's Hump is defined as the area inside the following coordinates (see Figure 16): Point A (24° 32.2′ N., 83° 8.7′ W.), Point B (24° 32.2′ N., 83° 5.2′ W.), Point C (24° 28.7′ N., 83° 8.7′ W.) and Point D (24° 28.7′ N., 83° 5.2′ W.).

Rejected Option 2: Status quo.

There is a strong biological rationale for closing an area during spawning time, but from the standpoint of determining the economic effects of such a closure, the important biological information needed is the extent to which such closure contribute to the long-term status of the stock. This is the case since the measure currently considered is one of trading short-run losses from preventing the harvest of the mutton snapper resources with long-term gains from future increases in harvests. Presently such needed information does not exist. More importantly, however, is the absence of basic social and economic information about the subject fishery. In the absence of such information, only very general tendencies regarding the potential impacts of the closure may be enunciated.

The commercial mutton snapper fishery is a relatively minor component of the reef fishery in the Gulf of Mexico. Total landings in 1991 amounted to about 340 thousand pounds valued at about $560 thousand. In 1991, mutton snapper comprised as much as 1.6 percent in landings and ex-vessel values of total commercial landings and ex-vessel values of reef fish in the Gulf of Mexico. Additionally there is no observable wide fluctuations in landings since 1970 (Waters, 1992). Monroe County accounts for most of the annual landings of mutton snapper in the Gulf - about 90 percent in May and June and 64 percent in other months. On average, May-June landings account for 39 percent of total commercial landings of mutton snapper in the Gulf for the 1986-1991 period (see Figure 21 and Table 14). Although it is not precisely known how much of total commercial landings of mutton snapper are caught off Riley's Hump, it would appear that this area contributes a substantial amount. Its closure therefore, means a substantial reduction in landings and revenues to the commercial mutton snapper fishery in the closure months. If vessels continue to fish in the closed months but in other areas, their operating costs would tend to rise since they will have to fish more intensively or travel farther or in relatively unfamiliar areas to catch fish. Although there is a possibility of recouping the landings losses after the closure, fishing costs would tend to increase as it will be relatively difficult to catch fish and ex-vessel prices would not be as favorable. A loss in producer surplus is then bound to occur in the commercial fishery at least in the short run. It is not known how many commercial vessels would be affected by such closure. The basic difference in impacts between the Preferred Option and Rejected Option 1 is that in the former losses in producer surplus would include those of other (than mutton) fisheries in the area while in the latter losses are mostly confined to the mutton snapper fishery.

The recreational mutton snapper fishery is a relatively minor component of the recreational fishery in the Gulf. Mutton snapper accounted for less than 1 percent (in number and biomass) of the various species caught by recreational anglers in the U.S. Gulf of Mexico (Goodyear, 1992). A very dramatic drop in recreational catch occurred between 1984 and 1985 when catches fell from about 368 thousand fish to 29 thousand fish. For the period 1987-1991, recreational catch of mutton snapper averaged about

65 thousand fish annually. Catches did not fluctuate sharply during this period (see Table 11). Catches in the Gulf are relatively higher in colder months (November through February). Catches in May and June averaged only about 10 percent of the year's catches of mutton snapper over the 1987-1991 period. If there are catches from Riley's Hump, closure of the area is expected to result in a relatively small adverse impact on the recreational sector in the short run. Such impacts would be in terms of reductions in consumer surplus to the anglers and in profitability to the charter boats. There are about 223 charter boats and 16 party boats in the Keys that would be potentially impacted by the measure (Holland and Milon, 1989). An unknown but very likely a good number of private boats would also be affected by the measure. As in the case with the commercial sector, the Preferred Option would have a bigger impact on the recreational sector than Rejected Option 1.

The long-run impacts on producer and consumer surpluses depend on the effects of the closure on the mutton snapper stock particularly as they relate to future catches. If the closure (Preferred Option and Rejected Option 1) were effective in enhancing the mutton snapper stock or at least preventing its decline, the long-term effects would be positive for both commercial and recreational sectors. These positive effects would be particularly larger with the Preferred Option since (relative to Rejected Option 1) enforcement would be more effective and release mortality from catching mutton snapper during the closure would be minimized. Conversely, in this sense, maintaining the status quo would result in forgoing the benefits afforded by the closure.

Alternatives Related to Seasonal Closures

Preferred Option: Status quo. Do not have a closed season for mutton snapper, and do not change the minimum size limit or set a bag limit for mutton snapper, as an alternative to spawning closures.

Rejected Option 1: Close the mutton snapper fishery to all fishing during the peak spawning season of May and June.

Rejected Option 2: Restrict the commercial sector to the recreational bag limit of mutton snapper during May and June. (This option is identical to the SAFMC regulation).

Rejected Option 3: Implement (Rejected) Option 1 or 2 but with a different season.

The **Preferred Option** does not have any impacts on the resource users in the short run. **Rejected Option 1** would have similar short-run effects as the preferred option with respect to closure of Riley's Hump, except for magnitude which would be less under this rejected option. On average, May and June accounted for as much as 39 percent of total mutton snapper landing, or approximately 123 thousand pounds. At the 1991 ex-

vessel price for mutton snapper, approximately $203 thousand in revenues would be lost to the commercial sector as a result of closing these two months to mutton snapper fishing. It is not known how much of this loss will be recouped when the fishery re-opens in subsequent months. **Rejected Option 2** would adversely affect the commercial sector as catch per vessel would be reduced, although a lesser amount than that from closing the fishery for these two months. The recreational bag limit may be even too low for commercial fishing to break even. This option, on the other hand, would be advantageous to the recreational sector due to reduced commercial catch of mutton snapper during the months of May and June. If recreational effort, which appears to be low in the Gulf during these two months, do not increase substantially, the increase in benefits to the recreational sector may not offset losses to the commercial sector, resulting in a net decrease in overall benefits in the short run. **Rejected Option 3** would have similar effects as Rejected Option 1 or Rejected Option 2, except for the size of effects. Closures (a la Rejected Option 1) in months other than May and June would have relatively less adverse effects on the commercial sector but more on the recreational sector if any months from November through February were chosen. Restricting catches to bag limits (a la Rejected Option 2) would also have less negative impacts on the commercial sector and none on the recreational sector.

The long-run effects of these options depend heavily on the biological outcome of the closure scenarios relative to the overfishing condition for mutton snapper and the presence of other (than Riley's Hump) spawning aggregation sites. Closure under Rejected Option 1 may be beneficial if there are other (than Riley's Hump) spawning aggregation sites. In the absence of such sites the closures in addition to that in Riley's Hump may not afford significant additional protection for mutton snapper. In this sense, additional closures would only stretch out the short-run losses to both commercial and recreational sectors over a longer period. Closure under Rejected Option 3 would bring in more negative effects than Rejected Option 1. The short-run losses to the commercial sector under Rejected Option 2 would also be extended over a longer period especially that fishing outside of Riley's Hump continues during the spawning months. This particular option, however, would be very beneficial to the recreational sector although it is likely that such recreational benefits would not fully compensate for losses in the commercial sector of the fishery.

Alternatives Related to Size and Bag Limits

Preferred Option: Status quo - do not change the minimum size limit or set a species bag limit.

Rejected Option 1: Increase the minimum size limit for mutton snapper from 12 inches to 17 inches total length.

Rejected Option 2: Increase the minimum size limit for mutton snapper from 12 inches to 20 inches total length.

Rejected Option 3: Set a recreational daily bag limit of two (or some other number) mutton snapper.

The Preferred Option is the status quo and so would have no impacts on the resource users in the short run. An increase in size limits (Rejected Options 1 and 2) may be expected to reduce both commercial and recreational catches and corresponding surpluses in the short run. A low bag limit (Rejected Option 3) has the tendency to reduce total recreational consumer surplus, although much of the impact depends on how many mutton snapper are currently being caught by recreational anglers as part of their daily bag limits of ten for all snappers other than red, lane, and vermilion. On the other hand, such bag limit reduction could make more fish available to the commercial sector which could decrease this sector's fishing cost.

The long-run impacts would depend on the kind of additional protection or stock enhancement that a higher size limit or lower bag limit for mutton snapper would effect over that afforded by closure of Riley's Hump. If closure of Riley's Hump is inadequate to protect the mutton snapper resource, a higher size limit may offer additional protection that could allow a sustained harvest of mutton snapper. In this sense, size limit increases would allow more benefits to be gained over the long-run, and if release mortality does not significantly increase Rejected Option 2 would provide more positive effects than Rejected Option 1. On the other hand, if Riley's Hump closure provides adequate protection to the resource, as argued in the SEIS/amendment document, size limit increases would also result in long-run losses to both the commercial and recreational sectors of the fishery. Reduction in recreational bag limit would likely extend the short-run positive effects on the commercial sector and negative effects on the recreational sector over a longer period.

PRIVATE AND PUBLIC COSTS

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 specific action 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	$ 20,000

Public burden associated with permits.....$ None

NMFS costs associated with permits..... $ None

TOTAL..... $ 70,000

The Council and Federal costs of document preparation are based on staff time, travel, printing and any other relevant items where funds were expended directly for this specific action. The cost of law enforcement stems principally from enforcing the special management zones. Some of the costs to enforce the proposed special management zones will be borne by state fishery enforcement agency. To some extent, law enforcement of other fishing rules is enhanced by the ban on traps and landing requirement on all reef fish or finfish. The public burden associated with the permitting requirement is not expected to increase. The NMFS cost of administering the permits may even be reduced, since verification of permit eligibility will be focused on a relatively few permit applicants.

SUMMARY OF REGULATORY IMPACTS

Table R-1 presents a summary description of all management measures considered in this plan amendment, and Table R-2 contains a summary of the impacts of all regulatory measures of this amendment. This summary deals primarily with the impacts of the preferred options in relation to those of the rejected options, particularly the status quo.

Preferred Option 1 for regulating fish traps have been determined to entail direct and indirect costs mainly to those fishing in the Dry Tortugas areas. This option, however, can enhance the enforcement of fish trap rules. Depending on the magnitude of benefits from enforcement, the net effect of this option may range from positive to negative. Preferred Option 2 on fish traps which imposes a fish trap vessel moratorium and gear endorsement would not induce an increase in vessels fishing for traps and would include practically all current active participants in the trap fishery. In this sense, this option may be deemed to result in zero net effect in the short run. Over the long run, the effects of this option hinge primarily on the contribution of the moratorium to the design of post-moratorium management. Among all the options, preferred and rejected, for fish traps, the preferred options appear to be more beneficial, although this conclusion would be limited by the unknown impacts of maintaining the status quo.

The Preferred Option for the proposed SMZ may effect a positive economic impact in the short run in terms of allowing continued fishing in the area by recreational fishermen and small commercial vessels, but its long-term effect appears to be minimal. The SMZ designation would alter the distribution of fishing benefits in the area in favor of the recreational sector and small commercial boats, but not to the extent of achieving an allocation prevailing before the re-opening of the 1992 commercial fishing season.

Although techniques exist to determine the resulting benefit from the proposed re-allocation, information is scant to measure such effect. However, mainly due to the possibility of profit losses to commercial vessels and the fact that generally the recreational season is longer, there is the potential for the net effect of this option to be negative in the long run. Among the rejected options, status quo appears to be slightly better than the Preferred Option over the long run. With respect to the options of whether or not to adopt a framework procedure to address SMZs, there appears to be no difference between the two options as regards economic impacts on fishery participants.

Regarding landing requirements, both the commercial and recreational sectors would experience an increase in fishing cost under all options, except status quo. It has been determined, nonetheless, that the Preferred Option appears to result in net benefits, although the direction of impacts is mainly determined by the potential benefits from enhancing enforcement of several reef fish rules. Similar net benefits, but less in magnitude, would accrue under Rejected Option 1. Such benefits would be forgone under Rejected Option 2.

The Preferred Option, i.e., status quo, on permit requirement does not have any impacts in the short run. Over the long run, some fishermen may drop from the fishery possibly due to hardship situations, but to the extent that such event leads to a more efficient industry, the Preferred Option may be deemed to generate positive effects. The opposite happens with the various rejected alternatives.

The Preferred Option on size limits which imposes a gradual increase on minimum size limit over some period is bound to negatively impact both the commercial and recreational sectors in the short-run. The commercial sector is likely to experience more reduction in benefits than the recreational sector. The long-run effect of this option hinges crucially on the future status of red snapper particularly in relation to the timing and success of bycatch reduction techniques adopted. Given such scenario, the Preferred Option would create positive effects relative to the possible management options possible under the Rejected Option which is status quo.

The Preferred Option regarding closure of Riley's Hump has negative net effects in the short run, since it would reduce the benefits of both the commercial and recreational sectors. To the extent that this measure provides adequate protection to the mutton snapper stock, the long-term effects of the Preferred Option would be positive. In this respect, this option may be deemed better than the any of the rejected options.

The Preferred Option on seasonal closure of mutton snapper fishery is the status quo, and so does not have short-run impacts on resource users. Its long-run effects depend heavily on the outcome of closing Riley's Hump during spawning aggregation time. If this latter protection is adequate, maintaining the status quo on seasonal closure would have no effects on fishery participants. In this event, all the rejected options would result

in negative net effects.

Maintaining the status quo (Preferred Option) on size and bag limits for mutton snapper has no short-run effects. Its long-run effects are potentially positive if Riley's Hump closure proves to be adequate in protecting the mutton snapper resource. In this sense, Rejected Options 1 and 2 would produce negative net effects. The effect of Rejected Option 3 depends on the magnitude of positive effects on the commercial sector and negative effects on the recreational sector.

DETERMINATION OF A MAJOR RULE

Pursuant to E.O. 12291, a regulation is considered a "major rule" if it is likely to result in: a) an annual effect on the economy of $100 million or more; b) a major increase in costs or prices for consumers, individual industries, federal, state, or local government agencies, or geographic regions; or c) significant adverse effects on competition, employment, investment, productivity, innovation, or on the ability of United States-based enterprises to compete with foreign-based enterprises in domestic or export markets. The proposed measures by themselves whether taken individually or collectively are not expected to have a $100 million effect per year on the economy, considering that the commercial reef fish fishery as a whole had an ex-vessel value of only about $21.1 million in 1991. Although one can factor in the effects on the recreational sector, all the proposed measures would not substantially change the surpluses or expenditures of this sector. None of the measures is expected to cause an increase in the price of red snapper or reef fish to consumers. Cost increases to the red snapper industry as a whole are not expected to be substantial although the special management zones and size limit may increase the operation cost of the commercial red snapper sector. Fish trap fishermen, particularly those fishing in the Dry Tortugas area, would shoulder a relatively small increase in cost (approximately $490 per vessel) due to the required change in the practice of fishing traps but not due to the moratorium on fish trap vessels. The federal government may incur some increase in the cost of enforcement due to the special management zones (about $20,000), although the major part of the total cost of enforcement would be borne by the state of Alabama. On the other hand, some enhancement in the enforcement of fishing rules may be brought about by the proposed fish trap restrictions. Competition and innovation are unlikely to be adversely impacted, except by the measures on special management zones since bigger commercial vessels would be rendered inefficient to fish in the designated areas. The measure that has the potential of affecting the relative competitive status of the commercial red snapper industry is the phased-in increase in size limit. When a 16 inch size limit is effected, the domestic commercial industry would lose lower market size category to foreign competition, but there is no strong reason to conclude that such a loss would be significant in amount.

On balance, the proposed measures are deemed to not constitute a "major rule" under

any of the mentioned criteria.

INITIAL REGULATORY FLEXIBILITY ANALYSIS

Introduction

The purpose of the Regulatory Flexibility Act (RFA) is to relieve small businesses, small organizations, and small governmental entities from burdensome regulations and record keeping requirements. The category of small entities likely to be affected by the proposed plan amendment is that of commercial and for-hire businesses currently engaged in the reef fish fishery. The impacts of the proposed action on these entities have been discussed above. The following discussion of impacts focuses specifically on the consequences of the proposed action on the mentioned business entities. An Initial Regulatory Flexibility Analysis (IRFA) is conducted to primarily determine whether the proposed action would have a "significant economic impact on a substantial number of small entities." In addition to analyses conducted for the Regulatory Impact Review (RIR), the IRFA provides an estimate of the number of small businesses affected, a description of the small businesses affected, and a discussion of the nature and size of the impacts.

Determination of Significant Economic Impact on a Substantial Number of Small Entities

In general, a "substantial number" of small entities is more than 20 percent of those small entities engaged in the fishery (NMFS, 1992). In 1992, a total of 2,214 permits were issued to qualifying individuals and attached to vessels, and are deemed to comprise the reef fish fishery in the U.S. Gulf of Mexico. The Small Business Administration (SBA) defines a small business in the commercial fishing activity as a firm with receipts of up to $2.0 million annually. Practically all current participants of the reef fish fishery readily fall within such definition of small business. Since the proposed action will affect practically all the current participants, the "substantial number" criterion will be met. In particular, the change in landing requirements will affect all commercial and charter vessels. The red snapper size change will affect up to 819 permittees with landings of red snapper, about 840 charter and party boats, and about 44.6 thousand private anglers fishing for red snapper. The fish trap measures will affect at least 87 and potentially 259 permittees if they have constructed traps.

Economic impacts on small business entities are considered to be "significant" if the proposed action would result in any of the following: a) reduction in annual gross revenues by more than 5 percent; b) increase in total costs of production by more than 5 percent as a result of an increase in compliance costs; c) 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; d) capital costs of compliance represent a significant portion of capital available to small entities, considering internal cash flow and external financing capabilities; or e) as a rule of thumb, 2 percent of small business

entities being forced to cease business operations (NMFS, 1992).

All proposed measures, with the exception of landing and permit requirements, have implications on the gross revenues of small entities. The requirement to tend traps in the sense of bringing traps back ashore after each fishing trip would reduce the catch and revenues of about 7 vessels fishing in the Dry Tortugas area. This revenue reduction, however, may be considered small and possibly less than 5 percent of these vessels' gross revenues. Most of what would be lost by subject fishermen are those connected with activities on land which they could be performing if the present practice of leaving traps at sea for some longer period of time were to continue. The trap endorsement and moratorium would not likely effect a reduction in gross revenues since most of those actively engaged in the fish trap fishery would be granted the trap endorsement. Charter and party boats would not be affected by the proposed restrictions on fish traps. The special management zones would force large vessels that would be adversely impacted by the gear restriction in these areas to fish further offshore and thus to incur higher operating costs. Although it is very unlikely that they would suffer significant loss in revenues, the size of the management areas would appear to indicate that in the long-run some unknown but potentially substantial amount of revenues may be forgone by restricting these vessels to fish inefficiently in the SMZ. Charter boats fishing in the designated management zones would continue to generate either the same or higher level of revenues as the one they generated before the fishing problem in the area magnified when the commercial fishing season was re-opened under a 1,000 pound trip limit. The higher revenues could come from increased customer trips as a result of higher fishing success when large commercial fishing vessels are rendered inefficient to fish in the area. The size limit increase would eventually result in a loss to the commercial sector of the 1 to 2 pound market for red snapper and corresponding loss in gross revenues from this size category. When the first of three increases becomes effective in 1994, this market would still be open to fishermen since a 14-inch size would still be in the 1-2 pound category. Revenues lost to these fishermen would likely be minimal at this stage. The direction of change in revenues to commercial red snapper vessels when the 16-inch size limit becomes effective cannot be ascertained. If the size limit increase results in more larger sized fish becoming available, especially those fish in the 2-4 pound category, there is a likely event that revenues to commercial vessels would decrease since smaller size fish would command relatively higher prices. For-hire vessels in Texas would possibly experience some reduction in gross receipts from fishing customers, although it has been argued earlier that the size limit is not as binding a constraint as the bag limit. If losses do occur as a result of higher size limits, it is likely that they would be relatively minimal. Closure of Riley's Hump to all fishing in May and June would reduce the gross revenues of commercial vessels fishing in the area. In the absence of catch information and the number of commercial vessels fishing in this area, it is not possible to determine the relative magnitude of impacts on commercial vessel revenues from closing Riley's Hump in May and June. There are approximately 223 charter boats and 16 party boats that would potentially experience reduced fishing trips and revenues as a result of closing Riley's Hump to all fishing

activity. Again the extent of such reduction is not known. From what can be known, therefore, about the impacts of the proposed measures, it can be concluded that such measures would not reduce the gross revenues to commercial and for-hire vessels by more than 5 percent.

Production costs are bound to increase as a result of the proposed measures, but none of these can be can be quantified. Tending traps port would require additional labor costs or at least increase the opportunity cost of performing other tasks be they in terms of fishing for other species or economic activities on land. The gear restriction in designated management zones would compel larger vessels to fish elsewhere and thus to incur additional costs. The landing requirements, permit requirements, and minimum size limits are not expected to induce additional production costs. Closure of Riley's Hump could force commercial and charter vessels to fish farther offshore or in unfamiliar areas and thus to incur additional costs. Although all these increases in costs cannot be quantified, it is likely that they would not exceed 5 percent.

The proposed measures do not have disproportionate effects on small versus large business entities simply because all entities affected by the regulations are determined to be small. It may only be noted that the fish trap restrictions and gear restriction in designated special management zones would impact more the larger commercial vessels than the smaller ones.

Only the fish trap restrictions are known to entail additional capital costs. Each of the known 7 vessels fishing traps in the Dry Tortugas would have to incur additional costs of approximately $490 in order to place a buoy on each end of a trawl of traps. The additional cost due to replacement of traps that may be lost at sea cannot be quantified. Other measures would not require additional capital costs for compliance purposes.

None of the proposed measures is expected to force any businesses to cease operation. The fish trap restriction, including the moratorium and gear endorsement, would allow practically all active participants in the fish trap fishery. Only those who are contemplating of entering or re-entering the fish trap fishery in the Gulf would be excluded from the fishery. Although the establishment of special management zones would render inefficient larger commercial vessels, these vessels can still continue to operate in other areas or in the designated management zones on a limited basis. The landing requirement, permit requirement, and minimum size limits do not exclude fishermen from the fishery or reduce their operating revenues substantially. The closure of Riley's Hump can result in substantial loss in operating revenues to commercial vessels or charter vessels. However, since the closure lasts only two months, this measure is unlikely to force any commercial or charter operations to cease operation.

The foregoing analysis shows that more than 20 percent of the small businesses associated with the fishery will be affected by the proposed management measures. Although the proposed measures considered individually would not meet the criteria for

effecting a significant economic impact on the identified small business entities, taken collectively they would impose significant economic impacts on such entities. Since the analysis concludes that there is an overall impact on a substantial number of small business entities, an IRFA has been prepared. The following comprise the remaining portions of the IRFA.

Explanation of Why the Action is Being Considered

Refer to the section on Problems and Issues in the RIR and to Section 2 of the SEIS/amendment document.

Objectives and Legal Basis for the Rule

Refer to the section on Objectives in the RIR and to Section 3.2 of the SEIS/amendment document. The Magnuson Fishery Conservation and Management Act of 1976 provides the legal basis for the rule.

Demographic Analysis

Refer to the section on Section 3 of the SEIS/amendment document and to the Fishery Management Plan for the Reef Fish Fishery of the Gulf of Mexico United States Waters, as amended.

Cost Analysis

Refer to the section on Private and Public Costs and Summary of Regulatory Impacts in the RIR.

Competitive Effects Analysis

The industry is composed practically of small businesses. The impacts of the measures considered under this amendment are deemed not to involve disproportional small versus large business effects.

Identification of Overlapping Regulations

The proposed action does not create overlapping regulations with any state regulations or other federal laws.

Conclusion

The foregoing information and pertinent portions of the RIR are deemed to satisfy the analysis required under the RFA.

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Table R-1

Summary Description of All Management Measures

Management Measures	Description
A. Fish Trap Restrictions	
Preferred Option 1	Traps must be tended at sea when vessel is fishing, returned to shore at end of fishing trip; pop-up magnesium devices are prohibited
Preferred Option 2	Moratorium of vessels fishing fish traps; fish trap endorsement
Rejected Option 1	Status quo
Rejected Option 2	Four suboptions requiring larger mesh in traps
Rejected Option 3	Move stressed area further offshore
Rejected Option 4	Limit the number of vessels that can fish traps
Rejected Option 5	Limit the number of traps per vessel
Rejected Option 6	Prohibit the use of traps in the Gulf EEZ
B. Special Management Zones **B.1. Alabama Management Zone**	
Preferred Option	Require the use of gear with no more than 3 hooks when fishing in three tracts designated as SMZ
Rejected Option 1	Three suboptions, including status quo, requiring the use of gear with no more than 3 hooks when fishing in any one or more of the three tracts designated as SMZ
Rejected Option 2	Allow only hand-held rod and reel in SMZ and other prohibited gear aboar a vessel must be stored or not rigged for fishing, or vessels with prohibited gear must transit the area without stopping to fish
B.2. Framework Procedure	
Preferred Option	Adopt framework measure when considering SMZ
Rejected Option	Status quo: consider SMZ under plan amendment
C. Landing Requirements	
Preferred Option	Require all finfish, excluding oceanic migratory pelagic species, be landed with heads and fins intact
Rejected Option 1	Require all reef fish be landed with heads and fins intact
Rejected Option 2	Status quo

D. Permit Requirements	
Preferred Option	Status quo
Rejected Option 1	Income requirement for permit eligibility must be based on records from one of the three previous calendar years
Rejected Option 2	Disregard income earned in 1992 in meeting current requirement for renewal of permit
E. Red Snapper Minimum Size Limit	
Preferred Option	Raise red snapper minimum size limit to 14 inches in 1994, 15 inches in 1996, and 16 inches in 1998
Rejected Option	Status quo
F. Mutton Snapper	
Alternatives Related to Riley's Hump	
Preferred Option	May-June closure of the region of Riley's Hump to all fishing activity
Rejected Option 1	May-June closure of the region of Riley's Hump to mutton snapper fishing only
Rejeced Option 2	Status quo
Alternatives Related to Seasonal Closure	
Preferred Option	Status quo
Rejected Option 1	May-June closure to all mutton snapper fishing
Rejected Option 2	Restrict commercial sector to recreational bag limit for mutton snapper in May and June
Rejected Option 3	Adopt either Rejected Option 1 or 2, but with different period
Alternatives Related to Size and Bag Limits	
Preferred Option	Status quo
Rejected Option 1	Increase minimum size limit for mutton snapper to 17 inches
Rejected Option 2	Increase minimum size limit for to 20 inches
Rejected Option 3	Set a recreational bag limit or 2 (or some other number) mutton snapper

Table R-2

Summary of Impacts of All Management Measures

Management Measures	Regulatory Impacts		
	Commercial	Recreational	Net Effects
A. Fish Trap Restrictions			
Preferred Option 1 *Short-run and Long-run*	Raises cost of fishing by about $490 per vessel with possible revenue loss	None	Negative or positive, depending on magnitude of benefits from enhanced enforcement
Preferred Option 2 *Short-run*	Gives endorsement recipients protection from prospective rivals	None	Zero
Long-run	None directly being a temporary measure; indirect effects depend on post-moratorium management	None	Positive, zero, or negative depending on the effectiveness of designing post-moratorium management
Rejected Option 1 *Short-run*	None	None	Zero
Long-run	Unknown	None	Unknown
Rejected Option 2 *Short-run*	Reduces profit by reducing revenue and raising total cost	None	Potentially negative
Long-run	Same as short-run	None	Potentially negative
Rejected Option 3 *Short-run*	Reduces profit; potential conflict with longliners	None	Negative
Long-run	Same as short-run	None	Negative

Rejected Option 4			
Short-run	May result in more traps being fished	None	Negative
Long-run	Protects permit holders from prospective rivals	None	Potentially negative
Rejected Option 5			
Short-run	Reduces revenue and makes inefficient many vessels fishing 100 traps; loses trap value of about $232,800	None	Negative
Long-run	Same as short-run	None, but may increase the benefits of tropical fish collectors	Negative
Rejected Option 6			
Short-run	Reduces revenue of about $25 million; loses trap value of about $465,600	None	Negative
Long-run	Same as short-run	None, but may increase the benefits of tropical fish collectors	Negative
B. Special Management Zones			
B.1. Alabama Management Zone			
Preferred Option			
Short-run	Renders large vessels inefficient to fish in the SMZ; raises cost of fishing to large vessels	Raises benefits of anglers and profitability of charter vessels fishing in the SMZ	Slightly positive
Long-run	Reduces net profitability of commercial vessels more than gains to recreational sector	Same as short-run	Potentially negative
Rejected Option 1			
Short-run and Long-run	Similar effects as those of the Preferred Option, but less in magnitude; status quo sub-option has no effects	Similar effects as those of the Preferred Option, but less in magnitude; status quo sub-option has no effects	Zero to slightly positive

Rejected Option 2 *Short-run and Long-run*	Similar effects as those of the Preferred Option, but larger cost effects on large vessels	Similar effects as those of the Preferred Option or Rejected Option 1	Slightly negative to zero
B.2. Framework Procedure			
Preferred Option *Short-run and Long-run*	None	None	Zero
Rejected Option *Short-run and Long-run*	None	None	Zero
C. Landing Requirements			
Preferred Option *Short-run and Long-run*	Increases costs particularly in relation to storing unregulated species	Increases fishing cost	Potentially positive depending on the magnitude of benefits from enhancing enforcement
Rejected Option 1 *Short-run and Long-run*	Similar effects as the preferred option, but less in magnitude	Similar effects as the preferred option, but less in magnitude	Potentially positive, but less in magnitude than the Preferred Option
Rejected Option 2 *Short-run and Long-run*	None	None	Potentially negative due to less effective enforcement
D. Permit Requirements			
Preferred Option *Short-run*	None	None	Zero
Long-run	Some fishermen may lose permit on hardship basis but could increase efficiency	None	Potentially positive if those remaining are more efficient operations

Rejected Option 1 *Short-run*	May increase the number of permittees	None	Potentially negative if industry efficiency decreases
Long-run	Allows those on hardship cases to continue to be permitted, but may decrease efficiency	None	Same as short-run effects
Rejected Option 2 *Short-run and Long-run*	Similar effects as those of Rejected Option 1, but the hardship cases relate more to those fishing red snapper	None	Potentially negative if industry efficiency decreases
E. Red Snapper Minimum Size Limit			
Preferred Option *Short-run*	Reduces profit	Minimal reduction in benefits	Negative
Long-run	Less costly than potential quota reduction	Less reduction in benefits when reduction in bag limit is an alternative	Potentially positive
Rejected Option *Short-run*	None	None	Zero
Long-run	More reduction in profits when quota reduction is an alternative	More reduction in benefits when reduction in bag limit is an alternative	Potentially negative
F. Mutton Snapper			
Alternatives Related to Riley's Hump			
Preferred Option *Short-run*	Reduces profits	Reduces revenues of charter vessels; raises their costs when compelled to fish elsewhere	Negative
Long-run	Potential benefits larger than short-run losses	Effects on charter vessels may be the same as those in the short-run; potential benefits to private anglers fishing in other areas	Potentially positive

Rejected Option 1 *Short-run and Long-run*	Similar effects as those of the Preferred Option, but less in magnitude	Similar effects as those of the Preferred Option, but less in magnitude	Similar effects as those of the Preferred Option, but less in magnitude
Rejected Option 2 *Short-run* *Long-run*	None Potential benefit loss if mutton snapper become overfished	None Potential loss in benefits if mutton snapper become overfished	Zero Potentially negative
Alternatives Related to Seasonal Closure			
Preferred Option *Short-run* *Long-run*	None Prevents profit loss if mutton snapper is adequately protected by closure of Riley's Hump	None Prevents profit loss if mutton snapper is adequately protected by closure of Riley's Hump	Zero Potentially negative
Rejected Option 1 *Short-run* *Long-run*	Loses profit from revenue loss of about $203 thousand although some portion may be recovered when the fishery re-opens and from cost increase Likely to be similar to short-run effects	Charter vessels lose profit and anglers would forego consumer surplus Likely to be similar to short-run effects	Negative Potentially negative
Rejected Option 2 *Short-run and Long-run*	Similar effects as those of the Preferred Option, but less in magnitude	Increase in benefits to charter vessels and anglers by providing relatively higher fishing success	Negative

Rejected Option 3 *Short-run and Long-run*	Similar effects as Rejected Option 1 or 2, but less in magnitude	Similar effects as Rejected Option 1, but larger in magnitude if closure occurs in any two months between November and February; similar in effects but lesser in magnitude if this option is designed after Rejected Option 2	Negative
Alternatives Related to Size and Bag Limits			
Preferred Option *Short-run*	None	None	Zero
Long-run	Prevents profit loss if mutton snapper is adequately protected by closure of Riley's Hump	Prevents profit loss to charter boats and benefits to anglers if mutton snapper is adequately protected by closure of Riley's Hump	Potentially positive
Rejected Option 1 *Short-run*	Reduces short-run revenues and raises costs	May reduce benefits	Negative
Long-run	Same as short-run effects	Same as short-run effects	Negative
Rejected Option 2 *Short-run and Long-run*	Similar effects as Rejected Option 1, but could be larger in magnitude	Similar effects as Rejected Option 1, but could be larger in magnitude	Negative
Rejected Option 3 *Short-run and Long-run*	Possibly increase profits with more available fish from restricting further the recreational sector	Reduces total consumer surplus to the entire recreational sector	Positive, zero, or negative depending on magnitude of effects on the commercial and recreational sectors

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SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT

FOR THE REEF FISH FISHERY OF 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 ANALYSIS)

Gulf of Mexico Fishery Management Council
Lincoln Center, Suite 331
5401 West Kennedy Boulevard
Tampa, Florida 33609

August 1993

This is a publication of the Gulf of Mexico Fishery Management Council pursuant to National Oceanic and Atmospheric Administration Award No. NA17FC0041.

COVER SHEET

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PROPOSED ACTION:

Examination of the impacts of the fishery on the environment and of implementation of Amendment 5 to the Reef Fish Fishery Management Plan

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TYPE OF STATEMENT:

( ) DRAFT (X) FINAL

ABSTRACT:

This Supplemental Environmental Impact Statement (SEIS) examines the impact of the fishery on the environment and the impact of the preferred and alternate management options of Amendment 5 to the Reef Fish Fishery Management Plan (Amendment 5). The amendment, in response to problems in the fishery, proposes the following actions:

- Revising current rules regulating the use of fish traps in the fishery by requiring that traps carried to sea be returned to shore after each trip, requiring that each trap or trawl of traps individually buoyed, and establishing a moratorium on issuance of additional fish trap permits;

- Establishing special management zones (SMZs) off Alabama that encompass large areas where more than 5,000 artificial reefs have been constructed and where gear used for fishing for reef fish would be limited to no more than three hooks per line;

- Including in the fishery management plan framework procedure for establishing SMZs in other areas by regulatory amendment, provided such SMZs meet certain ecological, environmental, and socioeconomic criteria;

- Requiring that all finfish, except oceanic migratory species managed by NMFS, be landed with heads and fins intact to facilitate identification and compliance with size limits and quotas;

- Considering changes to vessel permitting requirements;

- Increasing the minimum size limit for red snapper from 13 inches (TL) to 16 inches (TL) over a seven-year period; and

- Prohibiting all fishing in an area off southwest Florida where mutton snapper aggregate to spawn during the peak spawning months of May and June.

The fishery resources and long-term productivity of stocks has been adversely impacted by the open access nature of the fishery and inadequate initial regulation resulting in some stocks being overfished. Remedial actions to address these conditions are described. Proposed actions of Amendment 5 are generally beneficial to the stocks and long-term productivity. The fishery has provided significant benefits in terms of income and employment to participants. However, overcapitalization under open access and overfishing of the red snapper stock has reduced net income per fishermen in the commercial fishery. Overall, the proposed actions of Amendment 5 are anticipated to have little effect on participants. The fishery and proposed actions of Amendment 5 have little to no effect on the physical environment. Artificial reefs constructed from reef fish have altered a small portion of the physical environment and ocean habitats with no apparent detrimental effect, and with an anticipated beneficial effect on the stocks through conservative harvest practices applied to the reefs. Coastal habitats, flood plains and wetlands are not affected. The proposed amendment and the fishery have no anticipated effect on endangered and threatened species or marine mammals.

COMMENTS:

Comments were received on the draft Environmental Assessment (EA) and the draft amendment at eight public hearings, and from the public, associations, and agencies by letter. These comments are included in Appendices B and C. Responses to the comments are included in Appendix A.

NOAA subsequently ruled under NOAA Administrative Order 216-6 (sec. 6.02b.1) that the draft EA finding of no significant impact (FONSI) was inadequate and preparation of a SEIS was required. Written comments on the SEIS were received through June 28, 1993, and are included in Appendix F. Response to these comments are included in Appendix G.

Abbreviations Used in This Document

ABC	Allowable Biological Catch
BRD	Bycatch Reduction Device
COE	Corps of Engineers
Council	Gulf of Mexico Fishery Management Council
CPUE	Catch Per Unit Effort
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ESA	Endangered Species Act
EEZ	Exclusive Economic Zone
FMP	Fishery Management Plan
GMFMC	Gulf of Mexico Fishery Management Council
IRFA	Initial Regulatory Flexibility Analysis
MMS	Materials Management Service
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
OY	Optimum Yield
Plan	Reef Fish FMP for the Gulf of Mexico
RD	Regional Director (NMFS Southeast Region)
RFSAP	Reef Fish Scientific Stock Assessment Panel
RIR	Regulatory Impact Review
SAFMC	South Atlantic Fishery Management Council
SEFC	Southeast Fisheries Center, Miami, Florida (NMFS Southeast Region)
SMZ	Special Management Zone
SEIS	Supplemental Environmental Impact Statement
SPR	Spawning Potential Ratio
TAC	Total Allowable Catch
TED	Turtle Excluder Device
YPR	Yield Per Recruit

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1.0 INTRODUCTION

1.1 Purpose of this Document

NMFS had indicated to the Regional Fishery Management Councils that the EA or SEIS for subsequent amendments to FMPs should evaluate the environmental effects of the fishery, including effects on threatened and endangered species, marine mammals and other fishery resources. This directive is based on an internal NOAA legal opinion. This document evaluates those effects.

NOAA, in reviewing the EA prepared for draft Amendment 5 to the Reef Fish FMP ruled that preparation of a SEIS was required, especially to examine effects of the special management zones (SMZs) proposed off Alabama. This document evaluates the effects of all proposed and alternative actions of Amendment 5.

This document contains both the final Amendment 5/RIR and final SEIS.

1.1.1 Management Background

The following discussion of management actions is provided as background for sections on evaluation of the fishery and the alternatives of Amendment 5.

The Reef Fish Fishery Management Plan was submitted for approval by NMFS in November 1981 and implemented by NMFS in November 1984. The implementing regulation, 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 exception that for-hire boats were exempted until 1987 and each angler could keep five undersize fish; and, (3) data reporting requirements.

The National Marine Fisheries Service (NMFS) has collected annual commercial landings data since the early 1950s, recreational harvest data since 1979, and in 1984 initiated a dockside interview program to collect more detailed data on commercial harvest. Consequently, just recently has quantitative assessment of the population levels of major reef fish species been possible. 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 potential ratio (SPR). The 1988 assessment also identified shrimp trawl bycatch as a significant source of mortality.

The Council, through Amendment 1 to the Reef Fish Fishery Management Plan, implemented in 1990 a 5 fish recreational bag limit and a 11.0 million pound commercial quota for groupers that together were to reduce fishing mortality by about 10 percent and begin rebuilding the population. The commercial quota was subdivided into a 9.2 million pound shallow-water quota and a 1.8 million pound deep-water quota. The commercial quota and recreational bag limit for red snapper was set at 3.1 million pounds and 7 fish, respectively, which represented a 20 percent reduction in the average landings for 1985-1987. The amendment also implemented a framework procedure to specify total allowable catch (TAC) and allow for annual management changes in the reef fish fishery. The amendment defined overfishing as a level of fishing that reduces the spawning potential ratio (SPR) below 20 percent. The framework procedure specified Allowable Biological Catch (ABC) and TAC must be set to achieve a SPR of 20 percent by the year 2000 for an overfished stock.

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

At the direction of the Council, the Reef Fish Scientific Assessment Panel (RFSAP) met in March 1990, and reviewed the 1990 NMFS Red Snapper Stock Assessment. The recommendation of the panel (Muller et al, 1990) at that time was to close the directed fishery because the ABC was being harvested as bycatch of the shrimp trawl fishery. No viable alternatives were identified that would achieve the 20 percent SPR goal by the year 2000 without closure of the directed fishery and a significant reduction in trawl bycatch (i.e., 75 percent). However, no means existed under the provisions of the Shrimp FMP or through available gear technology for reducing trawl bycatch.

NOAA general counsel subsequently ruled that the shrimp fishery trawl bycatch could be regulated through the Reef Fish FMP since red snapper were being impacted. The RFSAP was reconvened in June 1990. They developed six management scenarios combining measures for reduced allocations to the directed fishery (including zero), shrimp fishery closures and trawl bycatch reductions (GMFMC June 1990). None of these alternatives achieved a 20 percent SPR by year 2000. In July 1990, the Council considered these scenarios plus 67 others prepared by staff. The Council selected as its preferred option a 1.0 million pound commercial quota and recreational bag limit of 2 red snapper, with a shrimp fishery closure from May 1 through July 31 and with additional reductions in bycatch beginning in 1993. The Council also instructed staff to begin drafting an amendment to the Shrimp FMP that would generically address trawl bycatch reduction of finfish, with emphasis on certain species. The draft regulatory amendment (GMFMC August 1990) containing the preferred option was presented at 12 public hearings attended by 4,500 persons, primarily shrimp fishermen.

In September 1990, the Council concluded (based on scientific advice) that red snapper could not be restored in less than the biological generation time for the species and directed staff to prepare a plan amendment (3) to extend the target date for stock restoration for various alternative dates not to exceed 1.5 times the generation time (i.e., to year 2011). They also concluded that the proposed shrimp closure (May 1 through July 31) would create serious economic disruption for the shrimp fishery. The Council, therefore, submitted a regulatory amendment to establish a red snapper commercial quota at 2.5 million pounds and a recreational bag limit of 6 fish as TAC for 1991 (GMFMC October 1990). The regulatory amendment also proposed trawl bycatch mortality of red snapper be reduced by 50 percent beginning in 1993. On November 1, 1990, the RD notified the Council that the regulatory amendment was being held in abeyance, partially because the reauthorization of the Magnuson Act prevents the Secretary of Commerce from implementing rules affecting trawl bycatch until 1994.

In November 1990, the Council reconsidered TAC and respecified it by revised regulatory amendment as a commercial quota of 2.0 million pounds and a bag limit of 2 red snapper with proposed reduction in bycatch of 50 percent to begin in 1994 (GMFMC November 1990). The Council also requested that a new target date of the year 2007 be implemented by emergency rule.

In January 1991, the RD requested the Council reconsider the TAC, address new stock information and adjust the recreational/commercial allocation ratio which was not in conformance with Amendment 1. The Council deferred the action until March 1991, to allow the public to review the new information. The fishery opened in January under the existing rule of Amendment 1 for quota (3.1 million pounds) and bag limit (7 fish).

The regulatory changes to set and implement the 1991 TAC under the Amendment 1 framework procedure were proposed in a March 1991, Regulatory Amendment, implemented in July 1991 (GMFMC March 1991). The 1991 Regulatory Amendment set a red snapper TAC of 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 pounds). It also contained a proposal by the Council to effect a 50 percent reduction of red snapper bycatch in 1994 by the offshore EEZ shrimp trawler fleet, to occur though 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 by the year 2007.

Amendment 3, implemented in July 1991, provided additional flexibility in the annual framework procedure by allowing the target date for rebuilding an overfished stock to be changed depending on changes in scientific advice. 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 spawning potential goal established in Amendment 1.

In July 1991, the Council submitted a regulatory amendment to increase the 1991 commercial quota for shallow-water grouper by 700,000 pounds that were not taken under the 1990 quota (fishery was closed prematurely based on projected landings). This rule was implemented in November 1991 (GMFMC July 1991). In September 1991, the Council reviewed the stock assessment for red grouper (Goodyear and Schirripa, 1991), the RFSAP report (Muller et al 1991) and proposed by regulatory amendment an increase in the shallow-water grouper quota of 1.6 million pounds (GMFMC November 1991). This rule was implemented in May 1992.

In 1992, a relatively strong year class (1989) entered the fishery and, combined with an increase in effort, resulted in high catches of red snapper and harvest of the commercial quota (2.04 million pounds) in just 53 days. To relieve the socioeconomic hardships associated with the 1992 derby season (i.e., a ten-month closure), the Council requested an emergency reopening of the commercial red snapper fishery under a 1,000-pound trip limit until May 14, 1992, when it would reconvene and reconsider the situation. The Southeast Fisheries Science Center estimated that up to 1.39 million pounds could be caught under the 1,000-pound trip limit without affecting the rebuilding schedule. The Secretary of Commerce reopened the fishery from April 3, 1992, to May 14, 1992; this resulted in an additional commercial catch of approximately 600,000 pounds of red snapper.

Amendment 4, implemented in May 1992, changed the time of year that TAC is specified, included additional species in the management units, and established a three-year moratorium on the issuance of additional commercial vessel permits.

In August 1992, the Council received an updated red snapper stock assessment from NMFS (Goodyear 1992). At the direction of the Council, the Reef Fish Stock Assessment Panel and the Socioeconomic Panel met in August to review the stock assessment and issue recommendations for a 1993 TAC and measures for implementation. The Standing and Special Reef Fish Scientific and Statistical Committees and the Reef Fish Advisory Panel met in September to review the stock assessment and reports from the two previous panels, and the Council reviewed the reports and recommendations of all of the groups at its meeting in September 1992. The regulatory amendment submitted to NMFS includes the Council's proposed red snapper TAC of 6.0 million pounds for 1993 (GMFMC October 1992).

The Council also requested NMFS implement by emergency rule trip limits for commercial vessels fishing for red snapper to extend the 1993 harvest over a longer period than occurred in 1992. Draft Amendment 6 was prepared to extend that rule beyond the termination date of the emergency rule.

In November 1992, NMFS requested the Council readdress the provisions of its proposed emergency rule by submitting an alternative or additional supporting rationale for the original proposal. The Council complied and resubmitted the request that red snapper commercial vessel trip limits be implemented by emergency rule. The emergency rule was approved late in December, 1992.

1.1.2 Previous Environmental Decision Documents

A draft EIS was prepared as part of the draft FMP prior to public hearings held in 1979. That document was revised for public hearings held in 1980 on a revised draft FMP. A final EIS was included as part of the plan submitted for implementation in 1981. The EIS/FMP described the fishery including user groups, vessels and gear, habitats, economic characteristics, social and community structure, biological characteristics of the stocks, and effects of proposed and alternate management measures.

Subsequent to implementation of the FMP in November, 1984, the Council has prepared the following documents which combined the plan amendment, EA, regulatory impact review (RIR), and initial regulatory flexibility analysis (IRFA) into single integrated documents:

- Amendment 1/EA/RIR/IRFA (August 1989) - evaluated the effects of TACs (including quotas, bag and size limits) set for red snapper, groupers (shallow and deep water groups) and amberjack and of size and bag limits set for other species.

- Amendment 2/EA/RIR/IRFA (February 1990) - described the fishery for jewfish and evaluated the effects of a prohibition on harvest of jewfish.

- Amendment 3/EA/RIR/IRFA (February 1991) - evaluated the effects of changes to the stock restoration schedules and reclassifying a species as deep-water grouper.

- Amendment 4/EA/RIR/IRFA (October 1991) - evaluated the effects of technical changes to TAC framework procedure, reclassifying a species as deep-water grouper, and establishing a three-year moratorium on issuance of reef fish commercial vessel permits.

- Draft Amendment 5/EA/RIR/IRFA (September 1992) - evaluated Amendment 5 effects discussed in this SEIS.

- Amendment 6/EA/RIR/IRFA (January 1993) - evaluated extension of red snapper commercial vessel trip limits during 1993 and 1994, and a proposed closure of the commercial red snapper fishery in June through August or September.

In addition, an EA/RIR/IRFA was prepared for the following regulatory amendments prepared for implementation under the FMP framework procedure for setting TAC:

- Draft Regulatory Amendment (August 1990) - evaluated the effects of seasonal closures of the shrimp fishery and various levels of TAC for red snapper in restoration of the red snapper stock.

- Draft Regulatory Amendment (October 1990) - evaluated the effect of a red snapper TAC with 2.5 million pound commercial quota and bag limit of 6 fish.

- Draft Regulatory Amendment (November 1990) - evaluated the effect of a red snapper TAC with 2.0 million pound commercial quota and bag limit of 2 fish.

- Regulatory Amendment (March 1991) - evaluated the effect of a red snapper TAC of 4.0 million pounds.

- Regulatory Amendment (September 1991) - evaluated the effect of increasing the shallow-water grouper quota by 1.6 million pounds.

- Regulatory Amendment (October 1992) - evaluated the effect of setting a red snapper TAC of 6.0 million pounds.

1.2 Summary of the Proposed Alternatives

1.2.1 Reef Fish Fishery

No specific alternatives proposed for the fishery are examined in this document, other than those in the subsequent section on Amendment 5. This document instead examines the effects of the fishery on the environment under status quo.

1.2.2 Amendment 5

Amendment 5 proposes to change the existing FMP regulations **(see Appendix D** for current rules). The preferred options of Amendment 5 are as follows:

1.2.2.1 Fish Trap Restrictions (see Section 3.2.2.1 status quo option for current trap rules).

Preferred Option 1: Require that traps be carried to sea by the vessel and returned to shore at the end of each fishing trip. Each trap or trawl of traps must be individually buoyed. Possession of magnesium pop-up devices is prohibited.

Preferred Option 2: Place a moratorium on vessels that can fish traps by establishing a fish trap endorsement to the vessel permit and limiting such endorsement to permittees who turned in logbooks indicating landings from fish traps in 1991 and/or 1992 through November 19, 1992.

1.2.2.2 Special Management Zones (SMZs)

Preferred Option 1: Establish special management zones off Alabama in the three tracts (A, B, and C - See Figure 7) for which the state holds Corps of Engineers permits for the construction of artificial reefs and require persons fishing all three tracts for reef fish be limited to gear with no more than 3 hooks per line.

Preferred Option 2: Include the following framework measure allowing establishment of SMZ in the FMP:

Upon request to the Council from the permittee (possessor of a Corps of Engineers permit) for any artificial reef or fish attraction device (or other modification of habitat for the purpose of fishing), the modified area and an appropriate surrounding area may be designated as a Special Management Zone (SMZ), with rules that prohibit or regulate the use of specific types of fishing gear that are not compatible with the most effective use of the area. This may be done by regulatory amendment under the following criteria and procedure:

1. A monitoring team[1] will evaluate the request in the form of a written report considering the following criteria:

   a. Fairness and equity of proposed rules.

   b. Promotes conservation of the resource.

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[1] Monitoring Team - The Team will be comprised of members of Council staff, Fishery Operations Branch (Southeast Region, NMFS) and the NMFS Southeast Fisheries Science Center and other members appointed by the Council.

c. Does not result in excessive shares.

d. Ensures SMZs are consistent with the objectives of the FMP, the Magnuson Act, and other applicable law.

e. Considers the natural bottom in and surrounding potential SMZs and impacts on historical uses.

f. Determine the environment impacts and cumulative impacts on the environment of each SMZ, after consideration of the Environmental Assessment (EA) prepared by the Corps of Engineers in issuing the permit for the reef site.

2. The Advisory Panel (AP) and/or Scientific and Statistical Committee (SSC) will review the report and associated documents and advise the Council. The Council Chairman may schedule meetings of the SSC and AP for this purpose. The Council Chairman will also schedule public hearings in the area affected.

3. The Council, following review of the team's report; supporting data; the SSC, AP, and public comments; and other relevant information, may recommend to the Southeast Regional Director of the National Marine Fisheries Service (RD) that a SMZ with appropriate proposed rules on fishing be approved. Such a recommendation would be accompanied by all relevant background data.

4. The RD will review the Council's recommendation, and if he concurs in the recommendation, will propose regulations in accordance with the recommendations. He may also reject the recommendation, providing written reasons for rejection.

5. If the RD concurs in the Council's recommendations, he shall publish proposed regulations in the Federal Register and shall afford a reasonable period for public comment which is consistent with the urgency of the need to implement the management measure(s).

1.2.2.3 Landing Requirements

Preferred Option: Require all finfish taken or landed from the EEZ, excluding oceanic migratory species managed under NMFS FMPs, be landed with heads and fins intact. (Possession of fish in other forms for bait[2] on a vessel is allowed.)

1.2.2.4 Permit Requirements

Preferred Option: Status quo - no change, retain current requirement for vessel permits that permittee must meet the income requirement based on records from one of the two previous calendar years.

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[2] For purposes of the measure, bait includes: (1) Packaged, headless fish fillets, with skin attached, of species of low exvessel value which are frozen, refrigerated, or salted in brine containers, and (2) Small pieces (2 or 3 inches or smaller) or strips (3 x 9 inches or smaller) cut from fillets with skin attached and packaged in cold storage or held in brine containers. Species normally utilized for reef fish bait include, but are not limited to, ladyfish (skipjack), Atlantic mackerel, blue runner, crevalle and other similar jacks, bonito (little tuny), bluefish, mullet, and other species that normally can be distinguished by their skin from regulated species.

1.2.2.5 Red Snapper Minimum Size

Preferred Option: Change the minimum size limit for red snapper as follows:

- o to 14 inches (TL) in 1994, and
- o to 15 inches (TL) in 1996, and
- o to 16 inches (TL) in 1998.

1.2.2.6 Mutton Snapper Spawning Aggregations

Preferred Option 1: Close the region of Riley's Hump[3] to all fishing activity during the months of May and June.

Preferred Option 2: Status quo - do not have a Gulf-wide closed season for mutton snapper in May and June.

Preferred Option 3: Status quo - do not change the minimum size limit or set a bag limit for mutton snapper, as an alternative to spawning closures.

1.3 Alternatives Considered and Rejected

The Alternatives considered in Amendment 5 which were rejected are as follows:

1.3.1 Fish Trap Restrictions

Rejected Option 1: Status quo - retain current trap rules. **(See this option under 3.2.2.1 for current rules).**

Rejected Option 2: Require larger mesh in traps utilizing one or more of the following:

a. Require two sides of trap to be of 2 x 4 inch mesh,
b. Require entire trap to be of 2 x 4 inch mesh,
c. Require bottom to be of 2 x 4 inch or larger mesh, and/or
d. Require four or more vertical escape windows to be either 2 x 5 inches or 1-1/2 x 5 inches.

Rejected Option 3: Move the stressed area boundary further offshore to coincide with the boundary of the prohibited area for longlines and buoy gear:

a. off Florida
b. for entire Gulf

Rejected Option 4: Limit the number of vessels that can fish traps by:

a. Establishing a moratorium on permits authorizing fishing with traps to 1992 permit holders with that designation as their principal gear or:
b. Establish a limited entry ITQ system for trap fishermen.

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[3] For purposes of this measure, Riley's Hump is defined as the area inside the following coordinates (see Figure 16): Point A (24° 32.2′ N., 83° 8.7′ W.), Point B (24° 32.2′ N., 83° 5.2′ W.), Point C (24° 28.7′ N., 83° 8.7′ W.) and Point D (24° 28.7′ N., 83° 5.2′ W.).

Rejected Option 5: Limit the number of traps per vessel to:

a. 50
b. Number of trap tags requested in 1992

Rejected Option 6: Prohibit the use of fish traps in the EEZ of the Gulf of Mexico.

1.3.2 Special Management Zones

Rejected Option 1: Establish SMZs off Alabama and require that persons fishing for reef fish in the SMZs be limited to use of certain gear that utilize no more than three hooks for the following reef tracts:

a. The two northern tracts (A and B - See Figure 7); or
b. One or more of the tracts; or
c. Status quo - none of the tracts.

Rejected Option 2 for Allowable Gear:

Gear allowed by persons fishing the reef tracts selected as SMZs off Alabama will be hand-held rod and reel only, and:

a. Other prohibited gear aboard a vessel must be stored or not rigged for fishing, or
b. Vessels with other prohibited gear must transit the reef tract without stopping to fish.

Rejected Option 3: Status quo - do not include as part of the FMP the framework procedure for establishing SMZs.

1.3.3 Landing Requirements

Rejected Option 1: Require that all reef fish species in the fishery be landed with heads and fins intact (i.e., whole but eviscerated).

Rejected Option 2: Status quo - requirement applies only to reef fish with minimum size limits.

1.3.4. Permit Requirements

Rejected Option 1: Require that commercial vessel permittees meet the earned income requirement based on records from one of the three previous calendar years.

Rejected Option 2: Allow permittees to disregard income earned in 1992 in meeting the current requirement for renewal of a permit.

1.3.5 Mutton Snapper Spawning Aggregations

Rejected Option 1: Do not have a complete closure of Riley's Hump[4]. Fishing for species other than mutton snapper would continue to be allowed during May and June.

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[4] For purposes of this measure, Riley's Hump is defined as the area inside the following coordinates (see Figure 16): Point A (24° 32.2′ N., 83° 8.7′ W.), Point B (24° 32.2′ N., 83° 5.2′ W.), Point C (24° 28.7′ N., 83° 8.7′ W.) and Point D (24° 28.7′ N., 83° 5.2′ W.).

Rejected Option 2: Status quo.

Rejected Option 3: Close the mutton snapper fishery to all fishing during the peak spawning season of May and June.

Rejected Option 4: Restrict the commercial sector to the recreational bag limit of mutton snapper during May and June. (This option is identical to the SAFMC regulation).

Rejected Option 5: Implement Option 3 or 4 but with a different season.

Rejected Option 6: Increase the minimum size limit for mutton snapper from 12 inches to 17 inches total length.

Rejected Option 7: Increase the minimum size limit for mutton snapper from 12 inches to 20 inches total length.

Rejected Option 8: Set a recreational daily bag limit of two (or some other number) mutton snapper.

2.0 NEED FOR PROPOSED ACTIONS

2.1 Reef Fish Fishery

NMFS has determined, based on NOAA legal opinion, that the EIS for the FMP should be periodically updated with a SEIS that addresses the effect of the fishery on the environment with emphasis on the effect on threatened and endangered species, marine mammals and other fishery resources. This SEIS addresses those effects.

2.2 Amendment 5

Problems occurring in the fishery that are addressed by the preferred options of Amendment 5 include:

1. Current regulations do not require that fish traps be returned to shore after each fishing trip, and allow trap buoys to be submerged and released with time pop-up devices. This causes a problem with locating (and inspecting dockside) fish traps for enforcement purposes.

2. The use of fish traps may be expanding in terms of number of participants and geographical range in the Gulf of Mexico, with little or no data available to assess catch composition, or ecological effects of trap deployment.

3. The Council has received reports of pulse and derby fishing on the red snapper resource concentrated on artificial reefs off Alabama, due to commercial quotas, and trip limits starting in January 1992. This has the potential to disrupt stable red snapper populations of the reefs and speed up harvest of the quota.

4. Current rules have exemptions that allow reef fish without size limits, and most other fish, to be cleaned and deheaded or filleted at sea. This adversely affects enforcement for all species subject to minimum size limits, since processed fish usually cannot be identified by species, or length determined.

5. Numerous fishermen have claimed that the qualifying period (at least one of the previous two years) for demonstrating income from fishing is too restrictive and creates a hardship for maintaining a reef fish vessel permit.

6. The current minimum size for red snapper (13 inches total length) is well below the level that would maximize yield per recruit, thereby reducing potential yield in weight from the resource.

7. Mutton snapper aggregate during the spawning season and are extremely vulnerable to over-exploitation if fishing for the species is allowed on the aggregated schools of spawners (e.g., as was the case for Nassau grouper).

3.0 AFFECTED ENVIRONMENT

3.1 Reef Fish Fishery

This section discusses the environmental effects of the fishery under current rules (status quo) and under current conditions existing in the fishery. A discussion of the habitat and description of the fishery is provided as background and reference section for discussion of the environmental effects.

3.1.1 Affected Habitat

The Gulf of Mexico covers an area of approximately 617 thousand square miles. Its continental shelf ranges in width from about 12 miles off the Mississippi River to nearly 220 miles off west Florida. Geologic formations in the central and western Gulf of Mexico consist mainly of Mesozoic and Cenozoic strata beneath the coastal plain and adjacent continental shelf. Texas and western Louisiana shelves are characterized by massive accumulations of silt, clay, and sand deposits between uplifted domes and have no major regional structures. Eastern Louisiana and Mississippi shelves are transitional in nature and composed of fine grain deposits with occasional surface deposits of sand and shell. Mesozoic and Cenozoic strata of the Florida Platform dominate the eastern Gulf of Mexico. The Florida Platform is fronted by shelf-edge reef complexes of the Cretaceous Era. It is characterized by three regional structures: the Apalachicola Embayment, the Ocala Uplift and the South Florida Basin. Within these structures are better known smaller features such as the Florida Middle Ground, the Tampa Arch, and the Southwest Florida Reef Tract. Corals are most prevalent along southwest Florida while the shelf of upper Florida and Alabama is primarily sand and shell. Within the Gulf of Mexico a minimum of six distinct habitats can be defined as follows:

I. Bottom characteristics between Brownsville and Galveston, Texas are variable, consisting principally of hard sand-silt bottom with little freshwater discharge. Salinities are high throughout the year and temperature shows seasonal variation;

II. Between Galveston and the mouth of the Mississippi River the shelf becomes broader with the bottom changing from hard sand-silt to softer sand-mud to soft mud when approaching the mouth of the river. Considerable freshwater is discharged throughout this area from both the Atchafalaya and the Mississippi Rivers. Salinity and temperature vary seasonally and are somewhat dependent on rates of freshwater discharge. Estuarine areas increase in magnitude.

III. Between the Mississippi River Delta and Mobile Bay, Alabama, the shelf remains fairly broad with the bottom changing from mud to mud-sand and hard sand-shell offshore. Freshwater discharge into this area is somewhat reduced. Salinity is generally higher than west of the Delta;

IV. The area between Mobile Bay and Cape San Blas, Florida, is characterized by a fairly broad shelf outside of 10 fm. There is only a limited amount of estuarine area. A hard sand bottom interspersed with small areas of coral and sponge are found throughout the area.

Salinity is quite high and fairly constant. Temperatures vary seasonally. A sharp faunal break is noted east of Mobile Bay were the fauna becomes more tropical;

V. South of Cape San Blas to Tampa, Florida, bottom characteristics are predominantly sand-coral with sponges and marl outcroppings. Offshore salinities remain high throughout the year, but temperatures vary seasonally. Salinity and temperature are variable in the Apalachee Bay because of the Suwannee River discharge. The water also tends to be somewhat turbid; and

VI. South of Tampa to the Tortugas the bottom is composed of sand and shell inshore and coral-sponge farther offshore. Salinity and temperature are high throughout most of the year and are generally higher than in the area north of Tampa.

Reef fish utilize both pelagic and benthic habitats during their life cycle. A planktonic larval stage lives in the water column and feeds on zooplankton and phytoplankton. Juvenile and adult reef fish are typically demersal and usually associated with bottom topographies on the continental shelf (< 100 m) which have high relief; i.e., coral reefs, artificial reefs, rocky hard-bottom substrates, ledges and caves, sloping soft-bottom areas, and limestone outcroppings. More detail on these habitat types is found in the Fishery Management Plan (FMP) for Corals and Coral Reefs (GMFMC and SAFMC, 1982). However, several species are found over sand and soft-bottom substrates. Juvenile red snapper are common on mud bottoms in the northern Gulf. Some juvenile snapper and grouper such as mutton, gray, dog, lane, and yellowtail snappers and jewfish, red, gag and yellowfin groupers have been documented in inshore seagrass beds, mangrove estuaries, lagoons, and larger bay systems (GMFMC, 1981). Habitat ranges, preferences and ranges of depth zones, notes on distribution and migration, as well as information on temperature and salinity preferences are presented in Section 4.1 Life History Features, of the Reef Fish FMP (GMFMC, 1981).

Man-made artificial reefs also were utilized in the Gulf of Mexico to attract fish and increase fish harvests. An artificial reef system of considerable importance is the large number of petroleum platforms and associated structures (approximately 3500) off the shores of Texas and Louisiana (Driessen, 1985a). Their shape, extensive surface area, high and low areas of relief, and hard substrate are very similar to the best Japanese designs of artificial reefs today. Available reef fishes habitat in the Gulf of Mexico may have increased with the construction and emplacement of artificial reefs and oil and gas energy structures. Oil and gas structures include drilling rigs, production platforms, caissons, capped well heads, etc.

Research on man-made reefs including those composed of cars, tires, pipes, etc., is limited. Tennison (1985) discussed the use of offshore oil platforms to develop artificial reefs and enhance fish assemblages. It has been suggested that such platforms support diverse and abundant fish populations not normally found on open sandy bottoms (Hastings et al., 1976; Gallaway and Lewbel, 1982).

Opinions differ as to whether or not artificial structures actually promote an increase of reef fishes or merely concentrate fishes by attracting them from nearby natural areas. Some evidence indicates that artificial reefs actually increase the standing stock of reef fishes (Stone, 1978; Stone et al., 1979). The following excerpt from Bohnsack and Sutherland (1985) adequately portrays the current state of knowledge on artificial reefs:

> "General agreement exists that artificial reefs are effective fish attractants and an important fishery management tool. Most published papers deal with building artificial reefs or are qualitative descriptive studies detailing successional changes and species observed. Conclusions were often

based on little or no scientific data. Few studies used quantitative experimental methods and many lacked scientifically valid controls.

Drastically different approaches to artificial reefs in terms of purpose, funding, research, materials, and size have been taken by Japan and the United States. Most marine artificial reefs in the United States are large, low budget, and haphazardly constructed from scrap materials, using volunteer labor. These reefs are usually built in deeper offshore waters for use by recreational fishermen with boats. Japan's artificial reefs, however, are designed and constructed by engineers, built of durable, non-waste, prefabricated materials, placed in scientifically selected sites in shallow and deep water, and are primarily used by commercial fishermen.

In this paper, 29 recommendations are made for future studies. Improved professional publication standards and more carefully controlled studies using an experimental approach are suggested. Greater emphasis should be placed on determining optimal design, size, and placement of artificial reefs to maximize production....Also, reefs designed for increasing larval and juvenile recruitment, survival, and growth should be considered. Improved quantitative assessment techniques are needed to describe artificial reefs, reef communities, and to monitor biotic changes. Artificial reef data bases should be maintained so that the effectiveness of various artificial reefs can be more easily assessed. The importance of fish attraction versus fish production and the relationship between standing crop and fish catch have not been adequately addressed. The economics and social impact of artificial reefs also have not been carefully examined, especially the benefits from alternative designs and approaches."

Presently, Florida has at least 300 active permitted artificial reef sites (GMFMC, Artificial Reef Committee Minutes, 1992). Artificial reef programs have been underway in Texas, Louisiana, Mississippi, and Alabama, since the 1970's. Alabama has 820-square miles of ocean bottom permitted for artificial reefs.

Habitat Condition

Offshore areas used by adults appear to be the least affected by nearshore habitat alterations and water quality degradation. Since most of the catch comes from offshore in water deeper than 100 feet, there is an unknown effect of pesticides, herbicides, and other harmful wastes which have been considered as deleterious to many inshore fisheries (Ketchum, 1972; Walsh et al., 1981; Boesch, 1983; Walsh, 1984). Nearshore reefs have been adversely affected to various degrees by man, but overall are in good condition. Some coral reef tracts are protected as marine sanctuaries. These include Dry Tortugas (Ft. Jefferson National Monument) and other parks not located in the Gulf of Mexico.

The estuarine phase of some juvenile reef fishes, if obligatory, may be critical as alterations of the environment coupled with local changes in environmental parameters such as temperature and salinity have occurred to a large extent in estuaries. Natural and man-induced changes have altered freshwater inflow and removed much habitat. Natural wetland losses result from forces such as erosion, sea level rises, subsidence, and accretion. The major man-induced activities that have impacted environmental gradients in the estuarine zone are:

1. construction and maintenance of navigation channels;
2. discharges from wastewater plants and industries;
3. dredge and fill for land use development;
4. agricultural runoff;
5. ditching, draining, or impounding wetlands;
6. oil spills;
7. thermal discharges;
8. mining, particularly for phosphate, and petroleum;

9. entrainment and impingement from electric power plants;
10. dams;
11. marinas;
12. alteration of freshwater inflows to estuaries;
13. saltwater intrusion; and,
14. non-point-source discharges of contaminants.

All of the Gulf's estuaries have been impacted to some degree by one or more of the above activities. The estuaries also have been the most impacted by water quality degradation. Numerous pollution-related reports and publications exist, but there still is no complete list of chemical contaminants, their effects, or concentrations. A comprehensive inventory to assess how seriously the Gulf's estuaries are polluted is also needed. The majority of reef fish spend their entire life cycle offshore where environmental conditions are more stable and man's effect on estuaries is less severe. However, if an obligatory relationship between juvenile reef fish and estuarine habitats is determined, estuaries will have to be managed to the same degree for reef fish as for other estuarine-dependent species such as shrimp and red drum.

Habitats of particular concern (HPC) are those which play an essential role in the life cycle of the species. Specific areas have been identified in the Gulf of Mexico in the Corals and Coral Reefs FMP (GMFMC and SAFMC, 1982). These include the Flower Garden Banks, Dry Tortugas, Florida Middle Ground, and the Gulf of Mexico Topographic Highs. Since these reefs also provide excellent reef fish habitat, they are again identified here as HPCs.

We are unaware of any current habitat condition that affects the ability to harvest and market reef fish resources. The same applies to recreationally caught fish. Stout (1980), however, has found low levels of DDT, PCB, endrin, and dieldrin organochlorines in red and black grouper, gag, and red snapper. If the residue levels of organochlorines or other pesticides ever becomes dangerous to humans, it is likely that the marketability of reef fish could be adversely affected.

Habitat Threats

Currently, the primary threat to offshore habitat comes from oil and gas development and production, offshore dumping, platform removals, and the discharge of contaminants by river systems, such as the Mississippi River, which empty into the Gulf of Mexico. The destruction of suitable reefs (natural and man-made) or other types of hard bottom areas also may prove deleterious to this fishery as most of the current data indicate an affinity for these habitats by reef fish (Starck, 1968; Bright and Pequegnat, 1974; Shinn, 1974; Gallaway et al., 1981; Gallaway and Lewbel, 1982; Huntsman and Waters, 1987). Natural impacts on reef habitat may arise from severe weather conditions such as hurricanes, red tide, and excessive freshwater discharge resulting from heavy rain. Human impacts on reef habitat result from activities such as pollution, dredging and treasure salvage, boat anchor damage, fishing and diving related perturbations, and petroleum hydrocarbons (Jaap, 1984). Ocean dumping and nutrient overenrichment also may cause local problems. An additional problem occurs in the northern Gulf, mainly off Louisiana, where large areas of oxygen depleted waters have been observed (Stuntz et al., 1982; Boesch, 1983; Renaud, 1986). The effect of this "hypoxia" is unknown.

In recent years many of the coral reefs in the Caribbean area have been affected by coral bleaching. This phenomenon is believed to be disease related and has resulted in death of many species of coral over large tracts in the Caribbean. To a more limited extent some of the Florida reef tracts have been affected. The exact cause of the bleaching has not been determined but stress from adverse environmental conditions may have caused the occurrence of the "disease" (Burt Williams, University of Puerto Rico, Personal Communication).

Nearshore reefs, especially off Florida, may be impacted by coastal pollution such as sewage and non-point-source discharges, urban runoff, herbicides, and pesticides (Jaap, 1984). Residues of the organochlorine pesticides DDT, PCB, dieldrin, and endrin have been found in gag, red grouper, black grouper, and red snapper (Stout, 1980). Heavy metal accumulations in sediment and reef biota near population centers have been noted (Manker, 1975). Disposal of wastes has created local problems. Jaap (1984) reports of batteries and refuse disposed of on the reef flat at Carysfort Lighthouse in Florida. Juvenile snapper and grouper temporarily residing in estuaries may be adversely affected by coastal pollutants and alterations. The habitat section for the amended Red Drum FMP (NMFS, 1986) provides details on the value of estuaries and the impacts to them.

Dredging and salvaging near or on reefs is potentially the most damaging physical human activity. Dredge gear impacts reefs by dislodging corals and other organisms and by creating lesions or scars that lead to infection or mortality. Sedimentation from dredging may seriously damage reefs. Dredged sediments may be anaerobic and bind up available oxygen thereby stressing corals and other sessile reef organisms. If the organisms cannot purge the sediments deposited on them, they generally are killed. Silt generated by dredging may remain in the area for long periods and continue to impact reefs when suspended during storms. Reef habitat also may be removed by dredging for borrow materials and disposal on beaches and by dredging and filling associated with navigation channel construction and maintenance.

Anchor damage is a significant threat to reefs, especially those composed of corals. Anchors, ground tackle, lines, and chains can break hard and soft corals, scar reefs, and open lesions which can become infected. Heavy use of reef areas by boaters can compound the problem. Although anchoring by oil and gas lease operators is prohibited on most of the coral reefs in the Gulf of Mexico, anchoring for other purposes is not restricted. Fishing gear such as bottom trawls, bottom longlines, and traps also may damage reefs. Effects would be similar to anchor damage. Hook-and-line fishing and related losses of line, leaders, hooks, and sinkers also may damage corals. Disposal of garbage by boats has been identified as a problem at Pulaski Shoal near Dry Tortugas (Jaap, 1984).

Recreational spearfishing has damaged corals and may become more of a problem in areas of heavy diver concentration. Divers often illegally overturn corals and cause other damage. Specimen collecting also may result in localized reef damage, especially when chemical collecting agents are improperly used. Collecting corals and the use of chemicals are regulated under the Coral FMP (GMFMC and SAFMC, 1982). Although there are some potential positive aspects of existing operational platforms acting as artificial reefs, unfortunately, these positive aspects are severely compromised due to adverse effects on fish and other biota from the discharge of drilling muds, drill cuttings, and minor petroleum pollution due to wash down activities, effluent discharges, and trash disposal. Malins (1982) reviewed laboratory experiments describing the deleterious effects of petroleum fractions on fish. Grizzle (1981) and Pierce et al., (1980) have documented that wild fish have been injured by petroleum pollutants. Grizzle (1983) suggested that larger liver weights in fish collected in the vicinity of production platforms versus control reefs could have been caused by increased toxicant levels near the platforms. He also suspected that severe gill lamella epithelium hyperplasia and edema in red snapper, vermilion snapper, wenchman, sash flounder, and creole fish were caused by toxicants near the platforms. These types of lesions are consistent with toxicosis and their prevalence and severity increased near drilling platforms. The kinds of effects listed above could result from activities at platforms, resulting in petroleum leakage. In addition, the possibility of major spills and/or well blowouts exists.

Extensive environmental impact statements were a prerequisite to the installation of offshore platforms. However, prior to 1986 no formal environmental monitoring of structure removals was required. The U.S. Department of Interior, Minerals Management Service (1987), estimates that there were 3,435 platforms in the federal outer continental shelf as of December, 1986 and predicts between 60 and 120

platforms will be removed annually for the next five years. The National Research Council (1985) estimates approximately 1,700 platforms will be removed between 1984 and 2000. The Council predicts about 100 to 130 removals annually between 1990 and 2000. This projection raises questions about the impacts of the potential loss of valuable habitat to a wide variety of marine life. Serious consideration should be given to research projects centered on assessing the importance of platforms to reef fish productivity.

Besides the loss of potential habitat, the removal of a platform often destroys the associated platform ecosystem where one exists. In addition to killing fish at a platform removal site, platform removal will result in dispersal of survivors. This would adversely affect some of the commercial and recreational fishermen that fish near platforms. For example, approximately 112 commercial snapper/grouper boats from Florida fish the platforms off Mississippi and Louisiana on a regular basis (Dimitroff, 1982). The removal of platforms in the Gulf of Mexico may reduce the catches of reef fish. Accordingly, new methodologies for platform removals aside from the standard use of bulk explosives should be devised.

At the request of the Council NMFS is evaluating the impact of explosive removal of offshore oil and gas structures. This report should be available in 1993. Minerals Management Service (MMS) is examining alternative methods of structure removal, including non-explosive methods and use of explosives with reduced shock waves (J. Rogers Pearcy, MMS, Report to Council Habitat Protection Committee, 1992).

The states of Louisiana and Texas have implemented, through legislation, artificial reef programs designed to retain obsolete oil and gas structures as reefs. Under these programs sites have been designated where these structures can be toppled or moved and placed on the bottoms. Under MMS rules the structures must be removed when production is terminated. Normally this has involved cutting off the structure below the bottom contour and towing to shore for salvage of metals. It is less costly to dispose of the structures at sea, and the cost savings of the oil and gas companies by disposing of the structure in a state designated site, is partially shared with the state for assuming liability and buoying the structures. The funds are deposited to special state trust funds designated for artificial reefs and are used for maintaining lighted buoys on the reefs. Louisiana has $3 million in its trust fund (GMFMC, Artificial Reef Committee Minutes, 1992). Through these programs most obsolete structures will be retained as habitat.

Habitat Information Needs

The following research needs relative to reef fish habitat are provided so that state, federal, and private research efforts can focus on those areas that would allow the Council to develop measures to better manage reef fish and their habitat:

1. Identify optimum reef fish habitat and environmental and habitat conditions that limit reef fish production;

2. Determine the relationship between juvenile reef fish and estuarine habitat;

3. Quantify the relationships between reef fish production and habitat;

4. Identify areas of particular concern for reef fish;

5. Determine methods for restoring reef fish habitat and/or improving existing environmental conditions (platform environments) that adversely affect reef fish production; and

6. Identify mitigative methods for preserving and/or relocating oil platforms for use as artificial reefs.

7. The 29 recommendations in Bohnsack and Sutherland (1985) for future studies should be followed. Especially the issue whether artificial reefs contribute to population productivity or primarily congregate fish.

8. Determine the impacts of butterfish trawling on reef fish habitats.

Habitat Protection Programs

State and federal agencies and laws and policies that affect reef fish habitat are found in Section 3.3 of the Reef Fish EIS and FMP (GMFMC, 1981). Specific involvement by other federal agencies are identified below.

Office of Coastal Zone Management, Marine Sanctuaries Program, NOAA: Specifically, this program manages and funds the marine sanctuaries program. On-site management and enforcement are generally delegated to the states through special agreements. Funding for research and management is arranged through grants.

National Marine Fisheries Service: The enactment of the Magnuson Act provides for exclusive management of fisheries seaward of state jurisdiction. This includes both specific fishery stocks and habitat. The process for developing FMPs is highly complex. It includes plan development by various procedures through fisheries management councils. National Marine Fisheries Service implements approved plans. The Coast Guard, National Marine Fisheries Service, and states enforce fishery management plans. Fishery management plans for billfish, corals and coral reefs, coastal migratory pelagics, red drum, reef fish, shrimp, spiny lobster, stone crab, and swordfish are in force in the Gulf of Mexico.

National Park Service: National parks and monuments are under the jurisdiction of National Park Service. Management, enforcement, and research are accomplished in house.

Minerals Management Service: This agency has jurisdiction over mineral and petroleum resources on the continental shelf. Management has included specific lease regulations and mitigation of exploration and production activities in areas where coral resources are known to exist.

Fish and Wildlife Service: Fish and Wildlife Service assists with environmental impact review, develops biological resource evaluations, and administers the endangered species program with the NMFS. In the Keys area the Fish and Wildlife Service manages several national refuges for wildlife.

Geological Survey: In the coral reef areas, the Geological Survey has conducted considerable reef research and assisted or cooperated with other institutions and agencies to facilitate logistics and support of coral reef research.

Coast Guard: The 1978 Waterways Safety Act charges the Coast Guard with marine environmental protection. The Coast Guard is the general enforcement agency for all marine activity in the federal zone. Among the duties are enforcement of sanctuary and fishery management regulations, managing vessel salvage, and coordinating oil spill cleanup operations at sea.

U.S. Army Corps of Engineers: The Corp contracts and regulates coastal engineering projects, particularly harbor dredging and beach renourishment projects. The Corp also reviews and is the permitting agency for coastal development projects, artificial reefs, and offshore structures.

Environmental Protection Agency: This agency has a general responsibility for controlling air and water pollution. Disposal of hazardous wastes and point-source discharge permitting are Environmental Protection Agency functions. Certain mineral and petroleum exploration and production activities are managed by Environmental Protection Agency. Environmental research germane to waste disposal and pollution also are funded.

Federal environmental agencies such as the National Marine Fisheries Service, Mineral Management Service, Fish and Wildlife Service, and the Environmental Protection Agency also analyze projects proposing inshore and offshore alterations for potential impacts on resources under their purview. This is similar to the function of the Gulf Council's Habitat Committee. Recommendations resulting from these analyses are provided to the permitting agencies (the Corp for physical alterations in inshore waters and territorial sea, the Mineral Management Service for physical alterations in the Outer Continental Shelf or the offshore Exclusive Economic Zone (EEZ) and Environmental Protection Agency for chemical alterations). Even though the Corp of Engineers issues permits for oil and gas structures in the EEZ, they only consider navigation and national defense impacts, thus leaving the rest to the Department of Interior, in a nationwide general permit.

In administering the oil and gas resources on the Outer Continental Shelf, the Department of Interior through the Minerals Management Service does not recognize the authority of the Fish and Wildlife Coordination Act. Instead they contend that the Outer Continental Shelf Lands Act, as amended, supersedes the Fish and Wildlife Coordination Act. They also require that the oil and gas lease permit stipulations be more closely coordinated with other Department of Interior bureaus, e.g., Fish and Wildlife Service, as provided in Departmental Manual 655. Coordination with other federal and state agencies is less frequent. For example, coordination between National Marine Fisheries Service and Minerals Management Service results from NOAA participation in the Outer Continental Shelf Advisory Board's Gulf of Mexico Regional Technical Working Group, which usually convenes three times a year, and from authorities under the Endangered Species Act and National Environmental Policy Act. The latter involves the periodic review of environmental statements for proposed lease sales. While review under the Endangered Species Act generally involves exploration and development plans, it is very difficult for agencies like National Marine Fisheries Service to have Minerals Management Service implement less environmentally damaging procedures in oil and gas operations around reefs, etc., if the Fish and Wildlife Service has not already objected to the procedure during the Department of Interior, DM 655 coordination. However, though not required to do so, the Fish and Wildlife Service frequently informally coordinates their proposed actions under DM 655 with National Marine Fisheries Service. Although the fish and wildlife agencies do not have veto power over Minerals Management Service permitting for oil and gas exploration, development and production on the Outer Continental Shelf, or on essentially the EEZ, they can refer the disagreement to a higher level within the Department of Interior for decision.

Environmental Protection Agency is the permitting agency for chemical discharges into the Gulf of Mexico, under the National Pollution Discharge Elimination System (NPDES) program of the Clean Water Act for chemicals used or produced in the Gulf (i.e., drilling muds, produced water or biocides) and then released, or under the Ocean Dumping Regulations of the Marine Protection, Research and Sanctuaries Act if the chemicals are transported into the Gulf for the purpose of dumping. When discharge or dumping permits are proposed, federal and state fish and wildlife agencies may comment and advise under the Fish and Wildlife Coordination Act and National Environmental Protection Act. The Gulf Council may do likewise under the Magnuson Act and

National Environmental Protection Act. The Gulf Council also protects reef fish habitat under the Corals and Coral Reefs Fishery Management Plan.

Habitat Recommendations

The reef fish fishery contributes to the food supply, economy, health of the nation, and provides recreational and commercial fishing opportunities. The fishery is dependent upon the survival of reef fish resources, which can only be assured by the wise management of all aspects of reef fish habitat. Increased productivity of reef fish stocks may not be possible without habitat maintenance and regulatory restrictions.

Recognizing that all species are dependent on the quantity and quality of their essential habitats, it is the policy of the Council to protect, restore, and improve habitats upon which commercial and recreational marine fisheries depend, to increase their extent and to improve their productive capacity for the benefit of the present and future generations. This policy shall be supported by three objectives which are to:

1. Maintain the current quantity and productive capacity of habitats supporting important commercial and recreational fisheries, including their food base (This objective may be accomplished through the recommendation of no loss and minimization of environmental degradation of existing habitat);

2. Restore and rehabilitate the productive capacity of habitats which have already been degraded; and

3. Create and develop productive habitats where increased fishery productivity will benefit society.

To achieve these goals the Council has formed a Habitat Committee and Advisory Panels for the Gulf states. The purpose of the Committee is to bring to the Council's attention activities that may affect the habitat of the fisheries under their management. The Council, pursuant to the Magnuson Act, will use its authorities to support state and federal environmental agencies in their habitat conservation efforts and will directly engage the regulatory agencies on significant actions that may affect reef fish habitat. The goal is to ensure that reef fish habitat losses are kept to the minimum and that efforts for appropriate mitigation strategies and applicable research are supported.

3.1.2 Description of Fishery

This section is divided into two subsections, one describing the reef fish fishery in general and the other describing the fish trap fishery addressed in Amendment 5.

3.1.2.1 Reef Fish Fishery

Users of the reef fish resources can be divided into broad user groups of commercial and recreational fishermen. Commercial fishermen use longlines, traps, power reels or handlines to harvest reef fish for sale as food. Recreational fishermen include those fishing from privately owned craft ranging from small outboard powered vessels to the more sophisticated charter and head boats, rigged with modern electronic equipment. Recreational fishermen tend to fish in waters less than 200 feet deep, while commercial fishermen generally operate further offshore. Both groups of fishermen operate throughout the year in U.S. Gulf of Mexico waters.

Commercial fishermen operate from ports along the west coast of Florida, Alabama, Mississippi, Louisiana, and Texas. Total commercial landings ranged between 21.9 to 26.2 million pounds per year between 1981 and 1986; more recent data indicates lower harvest levels (see Table 1). Although red snapper was once the principal species for the fishery, landings have recently declined. This decrease has been partially offset by the growth of the grouper fishery, primarily from increased use of bottom longlines.

Approximately 1,200 commercial vessels operate in this fishery, based on the number of permits issued in 1991 adjusted to remove boats (Figure 1).

The number of private recreational vessels targeting reef fish is large, but difficult to quantify precisely. Amendment 1 estimated the "for-hire" recreational fleet at approximately 920 boats. However, more recent surveys indicate a slightly lower number, possibly due to the recreational bag limits applied to the fleet under Amendment 1.

More recent estimates of the size of the reef fish charter boat fishery are available. During 1990, the number of charter vessels greater than 25 feet, and carrying less than 15 passengers, and harvesting reef fish was estimated at 719. Of those, 426 operated from ports in Florida, 72 from ports in Alabama, 50 from ports in Mississippi, 54 from ports in Louisiana, and 117 from ports in Texas. The average length of charter vessels was estimated at 35 feet. (NMFS Charter Boat Survey, Panama City, Florida). The predominate gear used were rod-and-reels, and spear guns.

During 1990, the estimated number of headboats operating entirely in the Gulf of Mexico was 97, with 68 operating from ports in Florida, 2 from ports in Alabama, 0 from ports in Mississippi, 7 from ports in Louisiana, and 20 from ports in Texas. The predominate gear used is rod-and-reel. During 1990, headboats harvested approximately 2.3 million reef fish, with vermilion snapper totaling about 23 percent, white grunt about 23 percent, and red snapper about 9 percent (NMFS Annual Headboat Survey, Beaufort, North Carolina).

Recreational fishermen from the Gulf states consider reef fish to be a primary target. In 1990, recreational fishing effort for all reef fish species numbered 384 thousand trips, excluding recreational effort in Texas.

There is no foreign fishing in U.S. Gulf waters for reef fish.

Fish managed under the FMP include the following species:

Snappers - Lutjanidae Family

Queen snapper	*Etelis oculatus*
Mutton snapper	*Lutjanus analis*
Schoolmaster	*Lutjanus apodus*
Blackfin snapper	*Lutjanus buccanella*
Red snapper	*Lutjanus campechanus*
Cubera snapper	*Lutjanus cyanopterus*
Gray [mangrove] snapper	*Lutjanus griseus*
Dog snapper	*Lutjanus jocu*
Mahogany snapper	*Lutjanus mahogoni*
Lane snapper	*Lutjanus synagris*
Silk snapper	*Lutjanus vivanus*
Yellowtail snapper	*Ocyurus chrysurus*

Wenchman	Pristipomoides aquilonaris
Vermilion snapper	Rhomboplites aurorubens

Groupers - Serranidae Family

Rock hind	Epinephelus adscensionis
Speckled hind	Epinephelus drummondhayi
Yellowedge grouper	Epinephelus flavolimbatus
Red hind	Epinephelus guttatus
Jewfish	Epinephelus itajara
Red grouper	Epinephelus morio
Misty grouper	Epinephelus mystacinus
Warsaw grouper	Epinephelus nigritus
Snowy grouper	Epinephelus niveatus
Nassau grouper	Epinephelus striatus
Black grouper	Mycteroperca bonaci
Yellowmouth grouper	Mycteroperca interstitialis
Gag	Mycteroperca microlepis
Scamp	Mycteroperca phenax
Yellowfin grouper	Mycteroperca venenosa

Sea Basses - Serranidae Family

Black sea bass	Centropristis striata
Bank sea bass	Centropristis ocyurus
Rock sea bass	Centropristis philadelphica

Tilefishes - Malacanthidae (Branchiostegidae) Family

Goldface tilefish	Caulolatilus chrysops
Blackline tilefish	Caulolatilus cyanops
Anchor tilefish	Caulolatilus intermedius
Blueline tilefish	Caulolatilus microps
Tilefish	Lopholatilus chamaeleonticeps

Jacks - Carangidae Family

Greater amberjack	Seriola dumerili
Lesser amberjack	Seriola fasciata
Almaco jack	Seriola rivoliana
Banded rudderfish	Seriola zonata

Grunts - Pomodasyidae Family

White grunt	Haemulon plumieri

Porgies - Sparidae Family

Red porgy	Pagrus pagrus

Triggerfishes - Balistidae Family

Gray triggerfish	Balistes capriscus

Species included in the fishery but not the management unit include:

Tilefishes - Malacanthidae Family

Great northern tilefish	Lopholatilus chamaeleonticeps
Tilefishes	Caulolatilus spp.

Wrasses - Labridae Family

Hogfish	Lachnolaimus maximus

Grunts - Pomadasyidae Family

Tomtate	Haemulon aurolineatum
Pigfish	Orthopristis chrysoptera

Porgies - Sparidae Family

Knobbed porgy	Calamus nodosus
Jolthead porgy	Calamus bajonado
Littlehead porgy	Calamus proridens
Pinfish	Lagodon rhomboides
Grass porgy	Calamus arctifrons

Sand Perches - Serranidae Family

Dwarf sand perch	Diplectrum bivittatum
Sand perch	Diplectrum formosum

Triggerfishes - Balistidae Family

Queen Triggerfish	Balistes vetula

Information on the life history, distribution and fishery for reef fish species in the management unit and fishery was included in the FMP (GMFMC 1981) and was updated in Amendment 1 (GMFMC 1989) and are not repeated in this document. More detailed information on principal reef fish species are in publications listed under Section 9.0, especially the NMFS SEFC reports by various authors. Copies of these reports are available from the Council or NMFS. Information on life history and distribution of endangered or threatened species and marine mammals in the Gulf is available from the Southeast Regional Office of NMFS.

The reef fish fishery is a multi-species fishery in which catches and landings for individual trips consist of several to many species. The fishermen principally target groupers and snappers, and occasionally amberjacks. A large number of species associated with reefs, particularly the tropical species associated with the Florida coral reef complexes are not

managed and generally not targeted but are taken incidentally by some gear and frequently discarded.

Amendment 1 provides a detailed description of the fishery (through 1987). Grouper stocks comprise the largest component of the fishery that are currently landed and are principally harvested from the shelf off west Florida. Red grouper is the predominant species in this complex accounting for 69 percent (by weight) of Gulf-wide commercial landings and 29 percent of recreational landings (GMFMC, 1991). This stock is in excellent condition (Goodyear and Schirripa, 1991). The grouper fishery is currently managed with a limit on the annual harvest level (17.5 million pounds) that maintains spawning potential ratio (SPR) near 40 percent (levels below 20 percent SPR are considered indicative of overfishing) (Muller et al., 1991). Total allowable catch (TAC) has been set at 11.4 million pounds annually for the commercial sector and 6.1 million pounds for the recreational sector. Neither sector harvested their quota in 1991, nor in 1992.

Red snapper makes up another major component of the reef fish fishery. That stock is overfished with an estimated SPR on the order of 1 percent (Goodyear 1992). Annual commercial landings from the U.S. shelf (principally off Louisiana and Texas) have declined from a level of about 7 million pounds from 1964 to the mid-1970s, to a level of 3.2 million pounds for the 1988-1990 period (Figure 1, Table 1). Combined annual landings for commercial and recreational fishermen declined from about 15 million pounds for the 1979-1983 period to about 4.7 million pounds in 1990. This fishery has been subject to a program to restore the stock by year 2007[5] (Amendments 1 and 3). However, achieving that goal is conditional on reducing mortality of juvenile red snapper from shrimp trawls by about 50 percent (Amendment 3). Currently, TAC is set at 6.0 million pounds for the fishery. Limiting harvest to this level will restore the stock by the target date (currently 2009) if the trawl-induced mortality reduction goal is achieved. A major NMFS/industry research program is underway addressing reduction of finfish bycatch by trawls (Hoar, et. al, 1992).

Historically, the reef fish fishery began in 1865 targeting red snapper and developed a national market and demand for the species. This national demand resulted in a relatively higher value for red snapper that has continued over the years although the value of other reef fish (primarily grouper and other snapper) has increased relative to the value of red snapper (Figure 3, Table 3b)

Figure 1 depicts average red snapper landings and total reef fish landings (including red snapper) at Gulf ports for each five-year period from 1960 through 1990. During the early portion of this period, U.S. fishing vessels fished in the waters off Mexico and, to a more limited extent, off Central America. Access to the fishing grounds of Mexico was terminated in 1981 as a result of creation of Mexico's economic zone which in 1975 was extended 200 miles seaward of its shoreline. U.S. vessels were gradually phased out of this fishery by Mexico. In 1965, (Figure 1) red snapper caught from foreign waters accounted for about one-half of the landings at U.S. Gulf ports. U.S. landings of red snapper declined between 1965 and 1980 in direct relation to this declining foreign catch. Total reef fish landings similarly declined from 1965 to 1975, but generally increased after that time as vessels targeted other species (primarily grouper).

The number of vessels in the reef fish fishery declined between 1965 and 1970, but increased significantly between 1970 and 1985 (Figures 1 and 2). The loss of the foreign fishing grounds resulted in transfer of all domestic vessel effort to U.S. waters of the EEZ and red snapper effort primarily to the Louisiana/Texas shelf. This, coupled with the increase in the number of vessels from 1970 through 1985, greatly increased effort in the U.S. Gulf EEZ.

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[5]Changed to 2009 by 1992 regulatory amendment based on more reliable estimate of generation time.

Figure 2 depicts the number of vessels by primary gear type. The number of hand-line (bandit rigs[6], rod and reel, etc.) vessels increased from an average of 346 in 1970 to 648 in 1980 and then declined slightly through 1991 (Table 2). Longline vessels entered the fishery in 1979. The number of longline vessels increased from an average of 122 for 1980 to 286 for 1991 and primarily targeted grouper (Figure 2, Tables 2 and 2a). Vessels utilizing other primary gear (including fish traps) increased dramatically in average numbers from 43 in 1985 to 351 in 1991. Total vessels in the reef fish fishery increased from an average of 868 in 1985 to 1,234 in 1991. However, values for vessels for 1960-1985 represent vessels counted by port agents whereas values for 1991 in Figure 1 and Table 2 (average of 1990-1992) represent vessels (fishing craft greater than 29 feet) holding permits to fish commercially for reef fish and likely includes vessels that do not fish for reef fish and many that fish occasionally or on a part-time basis. The knowledge that the Council was considering a limited access program for the fishery may have resulted in speculative entry with some persons obtaining permits without intending to fish. For example, data on vessel permits for 1991 indicated that only 22 percent of the vessels fished solely for reef fish. Another 58 percent fished for reef fish and other species. The remaining 20 percent did not list the reef fish fishery as one of their four best fisheries (NMFS, 1992). Irrespective of whether the 1991 average is inflated, Figure 1 shows a significant increase in the number of vessels since 1975 while red snapper average landings were declining from 7.7 million pounds in 1975 to 3.3 million pounds in 1990, and total reef fish average landings were increasing only moderately from 18 million pounds in 1975 to 21 million pounds in 1990.

Figure 4 depicts the average total economic ex-vessel value over the 1960-1990 period for total reef fish landings (including red snapper) and Table 3 for red snapper alone. Total average annual ex-vessel value (in dollars of the year of landing) for reef fish (including red snapper) increased from $3.7 million in 1960 to $36.6 million in 1990, but average real value (adjusted for inflation) increased to only $10.9 million by 1990.

3.1.2.2 Gulf of Mexico Trap Fishery

Fish traps have been used in the Gulf of Mexico off Florida since at least the 1950s. Fishermen principally targeted black seabass. Landings peaked at about 300,000 pounds in 1968 when 38 vessels using 800 traps were in the fishery (FMP, Table 3). Landings of black seabass steadily declined reaching 33,000 pounds in 1976, and about 3,000 pounds in 1987 (Amendment 1 Table 8.19). Part-time fishermen (probably stone crab fishermen) began targeting grouper with traps in 1975 with five vessels, landing about 15,000 pounds of grouper. Landings of grouper continued to increase reaching 962 thousand pounds in 1985 when total landings of reef fish from traps were about 1.1 million pounds (Table 4) and declined somewhat for the 1986-1991 period (Table 7).

Table 4 presents the number of vessels and traps and landings from traps of grouper, snapper, and other reef fish for the period 1978-1985. Landings of red snapper rarely occurred during this period. The number of vessels and traps are based on annual canvass interviews by NMFS port agents. These data show an increase in vessels from 32 in 1978, to 60 in 1985, but no comparable increase in traps which were reported to be 1,800 in 1985, i.e., a slight decrease.

The Council required a vessel permit for all vessels fishing traps beginning in early 1985. Unfortunately, the permit was a perennial one rather than an annual permit. By October 24, 1985, 132 vessel permits and 7,432 trap tags had been issued (Joann Turner, NMFS,

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6 Bandit rigs are short, heavy fishing rods mounted on vessel sides with a large diameter (>12 inches) open reel turned by hand or power; because the large diameter and direct drive, retrieval rate of line is relatively fast, i.e., more than 3 feet per turn.

Personal Communication). By June 6, 1989, total vessel permits and trap tags issued had increased to 545 and 39,786, respectively (Joann Turner, NMFS, Personal Communication). That represented the cumulative numbers issued over the five-year period, including replacement tags for those lost. Basically, it made determination of vessels actively fishing impossible. In 1987, NMFS polled the 377 permit holders and, of the 254 respondents, determined that 94 were actively fishing with 89 from Florida. However, there were 135 non-respondents in this survey and no effort was made to statistically sample the non-respondents. Some may not have responded since they would be issued logbooks. NMFS followed this mail survey with a canvass of vessels by port agents who identified 45 active vessels in the fishery in Florida (Table 5).

In 1990, the Council required annual vessel permits for all trap fishermen and for all vessels fishing commercially for reef fish. During that year, 208 permittees indicated that fish traps were included in the gear utilized by the vessel. The application form was revised to require applicants to list gear by their importance to their fishing operation. For 1991, 154 permittees listed fish traps as their principal gear and 194 for 1992. (Perry Allen, NMFS, Personal Communication). Of these permittees, 109 in 1991, and 166 in 1992, indicated their principal fishery was either for stone crab or spiny lobster, or both (Table 6). This suggests that the great majority of trap fishermen permitted are also either stone crab or spiny lobster fishermen (i.e., 70 and 86 percent for 1991 and 1992, respectively) who either fished fish traps during the closed season for crab and lobster or obtained permits that would allow them to do so. The spiny lobster level of fishing effort is so high that normally 90 percent of the annual landings are taken in the first five months. Similarly, stone crab fishermen usually conclude their effective season within four to five months. Both groups of fishermen diversify into other fisheries for the remainder of each year.

Table 7 presents landings data from fish traps for 1986 through 1991. During this period total landings increased reaching about 1.5 million pounds by 1991. During 1991, a total of 87 fishermen reported catches by fish traps and during 1992, 96 persons reported (through November 19). That number may represent the best estimate of fishing vessels in the fishery since permittees are denied renewal of the permit for failure to turn in logbooks to NMFS.

Table 7 lists landings by area of capture (statistical zones) and by species categories. Two recent trends are shown by the data, particularly that for 1991. The trap fishery off Florida has progressively extended northward with 19 percent of landings recorded from statistical zone 7 (Crystal River-Cedar Key, Florida area) by 1991. The other trend is that species other than grouper and snappers have progressively made up a greater percentage of the landings (37 percent by 1991). Dominant species groups in this other category (listed in order by weight) were grunts, porgies, sea bass and triggerfish. Red grouper made up 92 percent of grouper landings in 1991. Dominant snappers in 1991 landings were lane, mutton, vermilion, yellowtail and gray. Red snapper accounted for about 1 percent of 1991 snapper landings.

3.1.3 Environmental Effects of Fishery

3.1.3.1 Fishery Resources

The open-access nature of the reef fish fishery has generally resulted in increasing numbers of fishermen and increased fishing effort on the stocks. The effect of this increased effort has been to overfish some stocks and increase both the harvest level of and need for harvest regulation of other stocks. As indicated in the previous section describing the fishery, the number of commercial vessels has increased significantly since 1975 whereas total landings of reef fish has increased only moderately (see Figure 1). The number of vessels almost doubled between 1975 (481 vessels) and 1985 (868 vessels) and almost tripled by the 1990-1992 period (1,234 vessels) (see Table 2). However, landings for the same period increased from 18.3 million pounds (1975 period) to 21.2 million pounds (1990 period) (Table 1).

Available data do not allow precise estimates of trends in recreational fishing effort directed toward harvest of reef fish. Surveys of recreational fishing before 1979 were conducted at five-year intervals as part of the national census of the U. S. population. Approximately 1,500 households nationally were surveyed and subsequent analyses of these data indicated recall bias likely inflated the estimates (GMFMC/GSMFC, 1984, Section 8.2.2.2). In the NMFS annual surveys (MRFSS), conducted since 1979, the majority of fishermen (usually more than 40 to 50 percent) indicated they were targeting marine fish rather than any specific species. However, in 1990, of those indicating target species approximately 384 thousand fishing trips were directed at reef fish. NMFS (In Press) has indicated that total recreational fishing participation increased through the 1970's and remained essentially stable in terms of fishing trips in the 1980's (also see Table 7.25, GMFMC, 1989). NMFS (In Press) projected recreational fishing in the Southeast to increase by 45 percent between 1985 and 2025.

This increased effort resulted in some stocks being overfished, others being fished at near fully exploited rates and transfer of effort to other stocks previously not targeted. Jewfish were overfished and all harvest was prohibited by Amendment 2 (see Section 1.1.1). Both anecdotal information and scientific information on changes in male/female sex ratios (Koenig, 1992) suggest gag grouper are being overfished. Gag grouper were 6.6 percent of commercial landings of grouper by weight from 1986-1990 (note: before 1986 commercial landings records for grouper were not separated by species). In 1990 gag grouper were 43 percent of recreational landings of grouper (GMFMC November, 1991). The Council has requested SEFC prepare a stock assessment for gag grouper. Nassau grouper, a Pan-Caribbean species, appears to be overfished throughout that range (Sadovy In Press). The SAFMC and State of Florida have prohibited harvest and landings of that species. During 1986-1990 annual Gulf landings, principally in Florida, ranged from zero to 8 thousand pounds.

Red snapper are severely overfished with current estimated SPR at about 1 percent (Goodyear 1992). The overfished condition resulted from increased directed effort targeting the species, limited regulation on harvest (i.e., only a size limit) and incidental bycatch of juveniles by shrimp trawls. Survival of juveniles (ages 0 and 1) from the effects of natural mortality and shrimp trawl induced mortality is estimated at 17 percent for the 1982-1990 period (Goodyear 1992). Mortality of surviving fish in the directed fishery has been reduced from F=0.7 (50 percent) in 1984-1985 to about F=0.4 (33 percent) currently due to conservation actions implemented (see Section 1.1.1). Currently the fishery is under a program implemented in 1990 to restore the stock to a 20 percent SPR level by year 2009 which would allow an annual directed harvest level of 18 million pounds. In order to restore the stock within that time period shrimp trawl mortality (F=1.79) must be reduced by approximately 50 percent (to F=0.8). Under the current TAC of 6.0 million pounds for the directed fishery that level of bycatch reduction must be implemented in 1995 or a 25 percent reduction in both 1994 and 1995 followed by 50 percent reduction thereafter (Goodyear memo to Nancy Thompson, SEFC, December 1, 1992).

The Council instructed staff to prepare an amendment to the Shrimp FMP for implementation in 1994 that would achieve a 50 percent reduction in trawl bycatch. However, due to delays in completing and funding the finfish bycatch research plan mandated by Congress (see Hoar et al., 1992), it appears that insufficient bycatch characterization data and gear technology will be available in 1993 to fully develop the amendment and proposed rules for 1994. Therefore, implementation of the amendment appears more likely for 1995. The consequence of further delay in terms of SPR levels achieved by year 2009 under current allowed harvest levels would be as follows:

Implementation Year	SPR in 2009
1996	18.1 %
1997	15.9 %

Although no delay beyond implementation in 1995 of the reduction of bycatch mortality by 50 percent is anticipated, if it were delayed the Council would be close to achieving its SPR goal. Furthermore, the TAC procedure (Section 3.2.1) requires the target date be met even if reduction of TAC for the directed fishery is required.

To meet the target date for stock restoration, TAC and thus red snapper bag limits and commercial quota may have to be reduced to account for failure to achieve a 50 percent reduction in trawl bycatch-induced mortality on juveniles. If no reduction in trawl bycatch is achieved or such reduction is significantly delayed, complete closure of the red snapper fishery may be required to restore the stock. However, as determined when this was considered in 1990, the economic consequences would be very significant. For a ten-year period of closure the commercial sector would forego $120 million of output and $38 million of income and the recreational sector $952 million and $296 million in output and income, respectfully (GMFMC, 1990). Obviously, alternatives other than complete closure would be beneficial to the U.S. economy and fishermen, even if restoration is delayed.

Another factor in achieving that restoration goal which cannot currently be evaluated, relates to reductions in number of shrimp vessels capable of operating offshore in the Gulf. In public hearings held in August, 1990 (see Section 1.1.1) shrimp vessel builders, brokers and fleet owners indicated a significant reduction had and was occurring in the numbers of this size vessel (about 50 net tons or larger), especially since 1988. This anecdotal information cannot be substantiated from records, since several states have no shrimp vessel license (Florida and Louisiana) and others do not record sizes. The NMFS vessel operations file which contains this information has not been merged with vessel characteristics from U.S. Coast Guard vessel documentation files since 1987 (Ken Harris, NMFS, Personal Communication). Considering the operation cost of this size vessel and current exvessel value trends for shrimp in a market increasing dominated by imports, it is likely the anecdotal estimates of 20 to 30 percent reduction in this size vessel has occurred, even though total vessel numbers (including vessels fishing state territorial waters) has increased. This size vessel would primarily be those fishing offshore (beyond 10 fathoms) and thereby be those primarily taking juvenile red snapper as bycatch. Economic projections in trends in imports (particularly pond-raised shrimp), price and impact on domestic exvessel value (Keithly and Roberts 1991), suggest that economic attrition will continue to reduce the number of shrimp vessels in that highly overcapitalized fishery. Any such reductions will contribute and may have already contributed to reductions in shrimp trawl bycatch of red snapper and may partially account for the higher year class strength that has occurred in the fishery beginning in 1989 (Figure 14).

As discussed in Section 3.1.2.1 the current grouper stock assessment (Goodyear and Schirripa 1991) indicates the red grouper stock is in good condition with the SPR approximately 40 percent. Red grouper accounts for 69 and 29 percent of commercial and recreational landings, respectively. Vermillion snapper, which has been targeted extensively as red snapper declined and during periods when the red snapper fishery has been closed, also appears to be in good condition with SPR at 36 percent (Schirripa 1992). Stock assessments have not been completed in detail for other species most of which are subject to regulation; therefore, an estimate of stock condition in terms of SPR level is not available. The SEFC is preparing stock assessments and management information for red and gag groupers, amberjack, triggerfish, and porgy for 1993.

Actions have been taken to correct the excessive effort and overfished conditions. Amendment 4 placed a three-year moratorium on the issuance of any additional commercial vessel permits in the fishery (Section 1.1.1) while the Council developed limited access systems. Three sets of 10 workshops have been held with the industry to consider limited access systems for red snapper and the Council will develop a plan amendment for a system in 1993. Amendment 5 proposes a moratorium on additional fish trap permits. The Council will consider limited access for other components of the fishery in subsequent years.

Each stock or stock complex of similar species for which stock assessments have been completed is subject to an annual TAC consisting of quotas, trip limits, size limits and other regulation designed to maintain a SPR greater than 20 percent or restore it to 20 percent if overfished. Most other species are subject to size limits, bag limits, gear restrictions, closed areas and period, etc.

The gear used in the fishery consists almost entirely of hook-and-line, with the exception of a limited number of fish traps (Section 3.1.2). Hook-and-line gear is fished from longlines, buoys, bandit rigs or rod and reel. Most of the gear is non-selective, but by being fished on the bottom takes non-target reef fish species as incidental catch or occasionally other species such as sharks all of which can be legally harvested. Mortality of non-target bony fish and sub-legal size target fish does occur through embolism. Mortality rate from this source is largely a function of water depth, species, and speed of retrieval. For example, mortality of rod and reel caught red snapper is approximately 10 and 33 percent from waters of 100 and 150 feet in depth, respectively. Generally fish increase in size as water depth increases so both catches and embolism mortality of sublegal fish which must be discarded also decline as depth increases. Retrieval rate is slowest with longlines as the line is raised from the bottom well ahead of the vessel. Retrieval rate is likely fastest for electric powered bandit rigs or reels. Such mortality is unavoidable and is included as part of fishing mortality in stock assessments. Mortality of sublegal size target species was of little concern before minimum sizes were implemented since the fish could be legally harvested and were counted in landings records. The only constraint on retaining these fish was whether they were of saleable size or of a size desired by recreational fishermen.

The reef fish fishery has little effect on other fisheries from the gear utilized. Species from other fisheries (e.g., coastal migratory pelagics) are occasionally caught and can be legally harvested. The fishery by nature of its overcapitalized condition may result in reef fish fishermen applying additional effort in those fisheries, during times of closures to fishing and especially as a result of limited access which may displace some fishermen from the reef fish fishery.

The reef fish fishery resources are currently adversely affected by the shrimp fishery, as discussed above. The industrial groundfish fishery using fish trawls has a similar effect but of much smaller magnitude (i.e., approximately 15 vessels in fishery). The benthic longline fishery for sharks also may have a minor effect, since some reef fish will be caught and must be discarded under FMP rules (i.e., only a bag limit may be retained).

On April 28, 1989, NMFS conducted a Section 7 Consultation on the effects of all commercial fishing activities in the southeast region. This action was concurrent with the implementation of the Marine Mammal Protection Act, Fishery Exemption Amendment. The Biological Opinion concluded that the reef fish fisheries are not likely to impact endangered and threatened species of sea turtles and marine mammals or their habitat. These documents are incorporated by reference as authorized in 50 CFR Part 402.12 (g).

Section 7 consultations under the ESA concluded that plan, and Amendments 1, 2, 3, and 4 were not likely to jeopardize the continued existence of threatened or endangered sea turtles or marine mammals or result in the destruction or adverse modification of critical habitat for those species. These documents are incorporated by reference.

NMFS has also conducted Section 7 consultations on various minor modifications to the FMP. These consultations resulted in opinions that management actions were not likely to jeopardize the continued existence of any listed species. These documents are incorporated by reference.

NMFS concluded neither the directed fisheries nor the changes proposed in Amendment 5 would jeopardize the recovery of endangered or threatened species, or adversely impact their critical habitat.

Five species of sea turtles regularly spend part of their lives in U.S. coastal waters of the Atlantic Ocean and Gulf of Mexico. These species are Kemp's ridley, Lepidochelys kempii; loggerhead, Caretta caretta; green turtle, Chelonia mydas; hawksbill, Eretmochelys imbricata; and leatherback, Dermochelys coriacea. These sea turtles are either listed as threatened or endangered and are protected under ESA.

Eighteen species of whales occur in the Gulf of Mexico although most are rare (Schmidly and Smith 1981). Of these six are classified as endangered. These include right, blue, sei, humpback, fin and sperm whales of which only the sperm whale, Physeter catodon is commonly found in the Gulf. Eleven species of dolphins are found in the Gulf (Schmidly and Smith 1981). None of these are classified as threatened or endangered. Schmidly and Smith (1981) provide life history and distribution information on these species.

Effects of fish traps on the fishery resources are discussed under 3.2.2.1. Appendix A addresses agency and public comments on the effect of fish traps.

The fishery also affects other bottomfish. The Council in selecting fisheries for management had divided bottomfish into three management units based on similarity of habitats, life history and existing fisheries. The reef fish management unit (3.1.2.1) consisted of species that in their adult stages are typically associated with reefs or irregular bottoms and were fished for primarily by hook-and-line gear. The groundfish management unit consisted of 160 species normally associated with sand or mud bottoms and were normally harvested by trawls. MSY for this Gulfwide management unit was estimated at 1.0 million metric tons, with shrimp vessels taking and discarding 500 thousand metric tons (GMFMC 1980). The tropical reef fish management unit includes many species that are typically associated with coral reefs and are typically Pan-Caribbean in distribution, occurring in the Florida Keys with some species occurring rarely across the Gulf at reefs in deeper waters. A FMP was not implemented for the groundfish or tropical reef fish management units. Florida regulates harvest and landing of tropical reef fish in the absence of a FMP.

Most of the harvest of tropical reef fish is in state waters by the marine life industry that harvests these species for the aquarium trade. Both groundfish and tropical reef fish are occasional bycatch in the reef fish fishery. Tropical reef fish were frequently part of catches by fish traps fished near coral reefs (see 3.2.2.1 and Appendix A). Most groundfish and tropical reef fish were likely discarded by reef fish fishermen because of their low exvessel value and Gulfwide catches are very small in comparison to reef fish catch in the fishery.

3.1.3.2 Human Environment

In terms of income and employment the fishery has significant beneficial effects on the participants annual gross revenues for the commercial reef fish vessels for the 1988-1990 period averaged $36.5 million (Table 3, Figure 3). Value to the economy is not available due to unavailability of suitable supply and demand and multiplier functions but would be two to three times higher (around $90 million).

The overcapitalized state of the commercial fishery presently maximizes employment, but also reduces net income (see following discussion). Annual gross revenues for 920 Gulf charter and head boats (Table 15) were $45.7 million and $9.7 million, respectfully [data from Holland and Milon 1989 and from Ditton et al. 1988 (see GMFMC 1990 a)]. However, these vessels also targeted species other than reef fish. Using data from Table 16 to prorate the revenues based on percentage of time targeting reef fish, gross revenues would be $15.8 million and $6.8 million for charter and head boats, respectively, or $22.6 million (i.e., 29 percent of the

total). Recreational fishermen made about 384 thousand trips for reef fish in 1990 (see Section 3.1.2.1) but information to compute the value to the economy is not available.

The commercial fishermen in the fishery have been affected by open access to the fishery. This has resulted in more vessels than are needed to harvest the available resource (Figure 1 - also see Section 3.1.2). The effect of this has been to reduce the revenue from fishing for each vessel, particularly in terms of real value, adjusted for inflation (Figure 3). This situation is compounded by overfishing and the seasonal closures of the red snapper fishery necessary to restore the stock. In these periods fishermen must target less valuable species making it more difficult to maintain an economically viable operation.

The FMP moratorium on commercial vessel permits, while not alleviating the current economic effect, does prohibit it from becoming worse. The limited access systems being considered will moderate the effect over time as the red snapper stock recovers. However, that recovery period is estimated to require 16 years. Persons excluded from the fishery by implementation of such systems will be more severely affected than under the current system. The emergency red snapper rule for 1993 establishing higher vessel trip limits (i.e., 2,000 pounds) for vessels that can document a historical dependency on red snapper will also have that effect. Persons not qualifying for the higher 1993 trip limit and those displaced by the limited access system implemented in the future must change to other fisheries or their operation will cease to be economically viable. This will place more effort on other stocks.

Charter and head boat operations were impacted by the imposition of bag limits on highly targeted species (e.g., red snapper). Initially the bag limits resulted in loss of customers who previously could take an unlimited number of fish. This was largely a perception on the part of the potential customers as the average fisherman on such vessels rarely exceeded the bag limits implemented (GMFMC 1989). Fishermen gradually adjusted to the bag limits largely eliminating this impact on the vessel-for-hire sector. Ditton et al. (1989) pointed out after analyzing the motives of fishermen for taking charter boat trips, that catching a lot of fish was not a major consideration for most fishermen.

The imposition of bag limits probably resulted in fewer trips by private recreational boats. This is because reef fish are generally found fairly far offshore and the relative cost for harvesting a bag limit (e.g., seven fish per person) versus unlimited harvest likely made many persons direct more of their trips toward harvest of estuarine and nearshore species. The FMP rule that requires demonstration of 50 percent of earned income from commercial fishing to qualify to fish commercially for reef fish likely affected several thousand owners of private recreational boats that previously partially offset the cost of a trip, as well as of the boat, by selling part of their catch.

3.1.3.3 Physical Environment

Most of the gear deployed in the fishery should have little to no impact on the physical environment. Historically, almost all of the catch was taken by hook-and-line type gear (rods and reels, bandit rigs, etc.). This gear had no direct impact on bottom habitats although some vessels (largely head and recreational boats) did anchor when fishing; however, many boats fished by using the engines to keep the vessel over the productive bottom. Trawl and net gear is prohibited in the directed fishery. Fish traps are deployed on the bottom and impacts are discussed below. Longline gear is deployed on the bottom and may entangle with live bottom organisms when being retrieved, breaking off gorgonians and sponges. That gear is prohibited inshore of 20 fathoms from the Dry Tortugas, Florida, to Cape San Blas (off Apalachicola, Florida), and inshore of 50 fathoms from there to the Mexican border. This prohibited area should reduce impacts on live bottoms since reduced sunlight penetration at those depths limits abundance of live bottom organisms.

The Council in reviewing the fish trap fishery concluded that traps have little impact on the physical environment (see Section 3.2.2.1). Obviously, a trap deployed on fragile hard coral, such as elkhorn or staghorn coral is likely to do damage. There is a lot of anecdotal evidence (via testimony) of such damage. There is no scientific data supporting such damage. In fact, Sutherland et al. (1983) using a manned submersible concluded there was little apparent damage to reef habitats, even from abandoned traps sitting on high profile coral reefs. It should be recognized that in 1980 the state of Florida prohibited fish traps in state waters, which encompasses most of the Florida coral reef complex. Observed damage reported by the public likely occurred in the SAFMC jurisdiction since it bordered the reef complex at the 100-foot contour. The Gulf stressed area boundary is well outside coral areas depicted on maps and the bottom off Southwest Florida consists primarily of sand and low relief marl rock with live bottom habitat (i.e., sponges, gorgonians, etc.).

3.1.3.4 Ocean and Coastal Habitats

The fishery has little to no effect on ocean and coastal habitats as principally hook-and-line gear is used. Most reef fish do not inhabit the estuarine waters with the exception of some highly saline systems in Florida and Texas (see discussion under Section 3.1.1). The effects of other human activities on these habitats are discussed in detail in Section 3.1.1.

3.1.3.5 Flood Plains and Wetlands

The fishery has no effect on flood plains or wetlands. Other activities affecting these areas are discussed in Section 3.1.1.

3.1.3.6 Endangered Species and Marine Mammals

The fishery has no effect on endangered or threatened species. Section 7 consultations have been held for the fishery under Amendment 4 with a "no jeopardy" opinions rendered. There is no marine mammal interaction in the fishery, even though longlines are used since they are set on the bottom.

3.2 Amendment 5

This section presents the Council's rationale for selection of preferred options and rejection of other options. It also examines the effects of preferred and rejected options.

3.2.1 Relevant Fishery Management Plan Provisions

As background for discussion of environmental effects, this section presents the management objectives the FMP is intended to accomplish, the statement of OY, definitions of overfishing, and the framework procedure for specifying TAC.

Management Objectives

1. The primary objective and definition of Optimum Yield (OY) for the Reef Fish Fishery Management Plan is any harvest level for each species which maintains, or is expected to maintain, over time a survival rate of biomass into the stock of spawning age to achieve at least a 20 percent spawning potential ratio (SPR) population level, relative to that which would occur with no fishing.

2. To reduce user conflicts and nearshore fishing mortality.

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

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

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

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

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

8. To conserve reef fish habitats and increase reef fish habitats in appropriate areas and provide protection for juveniles while protecting existing and new habitats.

Optimum Yield

The primary objective and definition of Optimum Yield for the Reef Fish Fishery Management Plan is to stabilize long term population levels of all reef fish species by establishing a certain survival rate of biomass into the stock of spawning age to achieve at least 20 percent spawning potential ratio.

Definition of Overfishing

The following is the definition of overfishing contained in the Reef Fish Fishery Management Plan (FMP).

1. A reef fish stock or stock complex is overfished when it is below the level of 20 percent SPR.

2. When a reef fish stock or stock complex is overfished, overfishing is defined as harvesting at a rate that is not consistent with a program that has been established to rebuild the stock or stock complex to the 20 percent SPR level.

3. When a reef fish stock or stock complex is not overfished, overfishing is defined as a harvesting rate that if continued would lead to a state of the stock or stock complex that would not at least allow a harvest of optimum yield on a continuing basis (SPR).

Optimum Yield (OY) can be achieved with annual total allowable catch (TAC) specifications for each species or species group. The Council has established a framework procedure where, on an annual basis, a scientific stock assessment panel will establish an ABC range and the Council will set a TAC and prescribe fishing restrictions to attain the management goal of OY for implementation by the Regional Director (RD) of NMFS prior to the beginning of a fishing year.

Procedure for Specification of TAC:

1. Prior to August 1 each year, or such other time as agreed upon by the Council and RD, the Southeast Fisheries Center of NMFS (SEFC) will: a) update or complete biological and economic assessments and analyses of the present and future condition of the stocks for red snapper and other reef fish stock or stock complex; b) assess to the extent possible the current SPR levels for each stock; c) estimate fishing mortality (F) in relation to F(20 percent SPR); d) estimate annual surplus production F(max) or other population parameters deemed appropriate; e) summarize statistics on the fishery for each stock or stock complex; f) specify the geographical variations in stock abundance, mortality, recruitment, and age of entry into the fishery for each stock or stock complex; and g) analyze social and economic impacts of any specification demanding adjustments of allocations, quotas, or bag limits.

2. The Council will convene a Scientific Stock Assessment Panel, appointed by the Council, that will, as a working group, review the SEFC assessment(s), current harvest statistics, economic, social, and other relevant data. It will prepare a written report to the Council specifying a range of ABC for each stock or stock complex which is in need of catch restrictions for attaining or maintaining OY. The ABCs are catch ranges that will be calculated for those species in the management unit that have been identified by the Council, NMFS, or the working panel as in need of catch restrictions for attaining or maintaining OY. The range of ABCs shall be calculated so as to achieve reef fish population levels at or above the 20 percent SPR goal by January 1, 2000, for all reef fish except red snapper which has a January 2009 target date, or by a time period (target date), or set of time periods (target dates) specified by the stock assessment panel. Any time period specified by the stock assessment panel for consideration by the Council under this framework procedure cannot exceed a period equal to 1.5 times the potential generation time of the stock. Generation times are to be specified by the stock assessment panel based on the biological characteristics of the individual stocks. For stock or stock complexes where data in the SEFC reports are inadequate to compute an ABC based on the spawning stock biomass per recruit model, the above working group will use other available information as a guide in providing their best estimate of an ABC range that should result in at least a 20 percent SPR level. The ABC ranges will be established to prevent an overfished stock from further decline. To the extent possible, a risk analysis should be conducted indicating the probabilities of attaining or exceeding the stock goal of 20 percent SPR, the annual transitional yields (i.e., catch streams) calculated for each level of fishing mortality within the ABC range, and the economic and social impacts associated with those levels. The working group report will include recommendations on bag limits, size limits, specific gear limits, season closures, and other restrictions required to attain management goals, along with the economic and social impacts of such restrictions, and the research and data collection necessary to improve the assessments. The stock assessment panel may also recommend additional species for future analyses.

3. The Council will conduct a public hearing on the stock assessment panel reports at, or prior, to the time it is considered by the Council for action. Other public hearings may be held also. The Council will request review of the reports by its Reef Fish Advisory Panel and Standing Scientific and Statistical Committees and may convene these groups before taking action.

4. The Council in selecting a TAC level and time period (target date), if necessary, for each stock or stock complex for which an ABC range has been identified will, in addition to taking into consideration the recommendations provided for in (1), (2), and (3), utilize the following criteria:

   a. Set TAC within or below the ABC range or set a series of annual TACs to obtain the ABC level within three years or less.

   b. Subdivide the TACs into commercial and recreational allocations which maximize the net benefits of the fishery to the nation. The allocations will be based on historical percentages harvested by each user group during the base period of 1979-1987. However, if the harvest in any year exceeds the TAC due to either the recreational or commercial user group exceeding its allocation, subsequent allocations pertaining to the respective user group will be adjusted to assure meeting the specified target date spawning stock biomass per recruit (SPR) goal.

5. The Council will provide its recommendations to the RD for any specifications in TACs and target dates for each stock or stock complex, quotas, bag limits, trip limits, size limits, closed seasons, and gear restrictions necessary to attain the TAC, along with the reports, a regulatory impact review and environmental assessment of impacts, and the proposed regulations before October 15, or such other time as agreed upon by the Council and RD.

6. Prior to each fishing year, or other such time as agreed upon by the RD and Council, the RD will review the Council's recommendations and supporting information; and, if he concurs that the recommendations are consistent with the objectives of the FMP, the National Standards, and other applicable law, he shall forward for publication notice of proposed TACs and associated harvest restrictions by November 1, or such other time as agreed upon by the Council and RD (providing up to 30 days for additional public comment). The RD will take into consideration all information received and will forward for publication in the Federal Register the notice of final rule by December 1, or such other time as agreed upon by the Council and RD.

7. Appropriate regulatory changes that may be implemented by notice action include:

   a. The TACs for each stock or stock complex that are designed to achieve a specific level of ABC within the first year, or annual levels of TAC designed to achieve the ABC level within three years.

   b. Bag limits, size limits, vessel trip limits, closed seasons or areas, gear restrictions, and quotas designed to achieve the TAC level.

   c. The time period (target date) specified for rebuilding an overfished stock with the restriction that a time period specified under this framework procedure cannot exceed a period equal to 1.5 times the generation time of the stock under consideration.

8. If the NMFS decides not to publish the proposed rule of the recommended management measures, or to otherwise hold the measures in abeyance, then the Regional Director must notify the Council of his intended action within 15 days of receipt of the Council's proposal and the reasons for NMFS concern along with suggested changes to the proposed management measures that would alleviate the concerns. Such notice shall specify: 1) the applicable law with which the amendment is inconsistent, 2) the nature of such inconsistencies, and 3) recommendations concerning the actions that could be taken by the Council to conform the amendment to the requirements of applicable law.

3.2.2 Environment Effects and Discussion

3.2.2.1 Fish Traps

Preferred Option 1: **Require that traps be carried to sea by the vessel and returned to shore at the end of each fishing trip. Each trap must be individually buoyed, or if fished in a "trawl" (several traps connected by submerged line) a floating buoy is required at each end of the trawl. Possession of magnesium pop-up devices is prohibited.**

Discussion and Impacts:

a. Fishery Resources: This system of fishing was utilized by Collier County, Florida, fishermen from Everglades City and Chokoloskee (Taylor and McMichael 1983). Public testimony at hearings indicated that most Gulf trap fishermen, except those fishing from Florida Keys ports, tended[7] their traps and returned them to shore after each trip. The system alleviates many potential ecological problems

[7] Tended as defined in the regulations is requiring fishermen to return all traps to shore at the end of each fishing trip. In text discussions, tended means traps were pulled several times each day.

associated with trap fishing. There are few lost traps to ghost fish, i.e., less than 5 percent annually. The traps are pulled every hour or so during daylight and soaked overnight while the crew is sleeping. This generally should have eliminated mortality associated with long confinement periods (i.e., soak periods of 1 to 20 days for Monroe County) and should result in greater survival rates for released fish harvested in the traps. In the Monroe County, Florida fishery conducted in the Atlantic, when traps were retrieved, four percent of all fish were dead or injured. Fifteen percent of angelfish and butterflyfish were injured. No fish were dead on retrieval of traps, and less than 0.1 percent were injured in the Collier County, Florida fishery (Taylor and McMichael 1983). A scientist from Mote Marine Laboratory (Roger DeBruler, Personal Communication) monitored fish trap catches off Collier and Lee Counties during 1991. In that 10-day trip 92 traps were continuously deployed and retrieved with soak times ranging from 3 to 20 hours. Of the 3,681 finfish caught but not retained for landing (i.e., bycatch and undersized target species), 7 were dead, 1,024 were used as bait, and 2,650 were discarded overboard, usually after puncturing the air bladder. Of the discards, 97 percent swam down and less than 0.1 percent were observed to have been eaten by birds. This contrasts with the 53 percent swim down rate for the Monroe County study in Atlantic waters (Taylor and McMichael 1983) and a 78.5 percent swim down rate for a NMFS study (Harper, et al, In press) that included stations off the Atlantic coast from Miami, Florida south and around the Keys to a station west of the Dry Tortugas, Florida. Butterflyfish and angelfish, fish important to aquarium trade, constituted only 0.6 percent of trap catch in the Mote study off Collier and Lee Counties. All were alive when harvested and swam down, except for one fish eaten by birds (DeBruler, Personal Communication).

The Council has requested that NMFS place a high priority on conducting research on the ecological effects of the trap fishery in the Gulf of Mexico. NMFS has agreed to do so and will include information based on scientific observation aboard trap vessels.

b. Human Environment: This system should help alleviate the problem over the lack of enforceability of current rules allowing traps to be continuously deployed at sea, since traps would be returned to shore after each trip and could be inspected as to the number being fished and compliance with required construction characteristics. During public hearings in areas where fishermen normally tended traps and returned them to shore (i.e., Naples through Apalachicola, Florida) the fishermen indicated their traps were frequently inspected by enforcement agents. This type of fishing does require all traps to be baited and rebaited for every set, so cost for bait would be higher for some fishermen (principally those fishing from Florida Keys ports). The requirement that each "trawl" of traps be individually buoyed will affect principally those fishermen fishing from the Florida Keys. These fishermen currently fish their traps in "trawls" (strings of 8 to 10 traps with lines between them) with buoys attached at each end of the "trawl." They estimate the line required to buoy a trap in 120 feet of water around Dry Tortugas, Florida to be 840 feet (scope of 7 to 1). For 100 traps to be directly buoyed, 84,000 feet of line would be required. Seven fishermen operating out of Key West, Florida are estimated to be fishing trawls of traps (Bill Moore, Reef Fish AP, Personal Communication). These fishermen deploy traps in areas with a lot of ship traffic which has, in the past, severed buoy lines, resulting in significant loss of traps. The use of trawls buoyed at each end should reduce (or eliminate) loss of traps over what would occur if traps were individually buoyed, thereby reducing potential for ghost fishing. Although tending is defined in the proposed regulations (for

enforcement purposes) as returning traps to shore at the end of each trip, obviously such trap trawls would be pulled and rebaited several times on each trip, reducing confinement mortality over that associated with continuous deployment of traps.

c. Physical Environment: Detrimental impacts caused by ghost traps would be minimized.

d. Ocean and Coastal Habitats: This option may have a slight beneficial effect on ocean or coastal habitats, since impacts from ghost traps would be reduced.

e. Flood Plains and Wetlands: This option will have no effect on flood plains or wetlands, since the fishery is oceanic, rather than estuarine.

f. Endangered Species and Marine Mammals: This option is anticipated to have no effect on threatened or endangered species or on marine mammals.

There is no documented (or reported) interaction of marine mammals or endangered and threatened species with fish traps used in the fishery. Turtles have been reported to destroy wooden lobster traps fished in the same area to eat lobsters, which is listed as a prey species for loggerhead turtles (NMFS 1985). This has not been reported for fish traps. There is a potential that these animals could possibly be entangled in buoy lines, although that has never been reported. The preferred option requiring traps to be tended could allow release of these entangled animals in a timely fashion should that occur. Other options in this section (3.2.2.1) are concluded to have no effect on these animals (also see 3.1.3.1).

Preferred Option 2: **Place a three-year moratorium on vessels that can fish traps by establishing a fish trap endorsement to the vessel permit and limiting such endorsement to permittees who turned in logbooks indicating landings from fish traps in 1991 and/or 1992 through November 19, 1992. These permits with endorsements would be nontransferable for the duration of the moratorium.**[8]

Discussion:

In 1990, it became a requirement of the FMP that permittees issued logbooks for reporting fishery statistics for each trip must submit logbook reports during each year or their permit would not be reissued in the following year. The moratorium would limit the fish trap endorsements to the vessel permit to those reporting landings from traps in 1991 (87) and 1992 (96), as reported on fishing vessel logbooks received by SEFC on or before November 19, 1992. The total number of endorsements will likely be slightly in excess of 100 (i.e., some may have fished traps in 1991 and not 1992 or vice versa). The cut off date of November 19, 1992, was selected to prevent a proliferation of persons seeking eligibility by fishing traps after that date when the Council announced the moratorium (before an audience of about 100 persons, most of whom were associated with the trap fishery). The FMP rules require logbook forms to be submitted to NMFS within seven days following a trip.

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[8] Note: The moratorium would be effective for three years on implementation of the final rule. Reef Fish Draft Amendment 7 contains a preferred option that, if implemented, would allow transfer within the immediate family of the permit holder during the moratorium.

The trap vessel moratorium would apply for three years after implementation of the rule unless the time period is modified by subsequent amendment. The fish trap endorsements would be issued for the permitted vessel for which the logbook records indicated landings from traps during either of the two years and not to an operator. The fish trap endorsement to vessel permits would be nontransferable to other persons during the three-year moratorium; however, the owner of the permitted vessel may replace the vessel. These provisions may also be modified by subsequent amendment addressing limited access.

Impacts:

a. Fishery Resources: The moratorium would limit the fishery to current participants, until the Council has better information on the ecological impacts of the trap fishery in the Gulf of Mexico. The Council has requested NMFS place a high priority on collecting observer data and conducting research on the Gulf fishery. There is little information available on the Gulf fishery, except for studies in the area of the Dry Tortugas, which is more ecologically similar to the Atlantic (i.e., subject to Gulf Stream currents and near coral complexes, etc). The one observer data set available to the Council for the Gulf (Roger Debruler, Mote Marine Laboratory, Personal Communication) suggested the ecological impacts on the resources were different from the Florida Keys area, where most research has been conducted.

As indicated in Section 7.A.b. which discusses the Gulf fish trap fishery, the number of participants, gear deployed, and landings have increased over time. Comparison of these data for 1991 to that in the FMP EIS (prepared in 1981) shows the following trends, the number of vessels has increased from 51 to 87, the number of traps from 2,488 to about 8,700, landings from traps has increased from 2 percent of total reef fish landings to 6.8 percent. Other trends cited in that section indicate the fishery has expanded northward off the Florida west coast and that species other than grouper and snapper make up a much larger portion of the landings (with dominant species being grunts, porgies, sea bass and triggerfish). Therefore, the Council felt it advisable to cap the fishery while additional information is gathered and evaluated. The Council, through Amendment 4, stated its intent to consider limited access for the reef fish fishery, and this action is consistent with that stated intent. The Council has been exploring with the industry, over the last year, the feasibility and provisions a limited access system for the red snapper component of the fishery.

The moratorium will have little or no impact on the fishery resources. The fishery primarily targets red grouper which stock is in good condition (SPR = 40 percent). This level of effort will be continued (status quo). The moratorium will prevent new participants and expansion of this segment of the fishery for three years. If the moratorium is not implemented, other participants might enter the fishery. They, however, would be fishermen already in the fishery since there is a moratorium on reef vessel permits, and the net affect on harvest would be essentially the same. As indicated in the above paragraph, vessels in this segment increased from 51 in 1981 to about 87 in 1991 which is not a very significant annual increase (about 7 percent).

b. Human Environment: The Council rejected the tentative preferred option of the draft amendment to prohibit fish traps (see discussion under that rejected option). Instead the Council modified the current rules, including the proposed measure of this preferred option. This option, by including the current participants, is anticipated to have a minimal social and economic impacts on the fishermen.

Persons who did not participate in the fishery during the last two years or who did not comply with the reporting requirements would be excluded from the fishery for the three-year period. Some trap fishermen residing in and prohibited from fishing the SAFMC area who had anticipated fishing the Gulf may fall into this category. The measure is not likely to effect a reduction in gross revenues since most engaged in the fishery would be granted the endorsement (RIR).

c. Physical Environment: From the information on the Gulf fishery available, the Council concluded that trap fishing was having little impact on the physical environment or on the resource. Continuation of the same level of participation would not adversely impact the environment. Deployment of fish traps (about 9,600 in 1992) on the bottoms as compared to spiny lobster traps (about 900,000) and stone crab traps (about 500,000) which are weighted with concrete was concluded to have a minimal impact on the bottom. The same is true of fish traps in comparison to shrimp trawls used on the bottoms in the same general areas of the trap fishery. Similarly mortality of undersized target and bycatch species taken in Gulf traps is minimal in comparison to mortality associated with otter trawls and likely in comparison to other gear used in the reef fish fishery (both in terms of lower gear mortality rates and less gear deployed).

d. Ocean and Coastal Habitats: This option will have no new effect on ocean or coastal habitats in that status quo in terms of participation is maintained.

e. Flood Plains and Wetlands: This option will have no effect on flood plains or wetlands, since the fishery is oceanic rather than estuarine.

f. Endangered Species and Marine Mammals: This option will have no effect on threatened or endangered species or on marine mammals.

Rejected Option 1: Status quo - retain current trap rules.

The current rules are as follows:

- A vessel permit is required and applicant must demonstrate that more than 50 percent of earned income is from commercial or charter fishing;
- A moratorium on issuance of additional permits in the reef fish fishery exists until May 8, 1995;
- Traps cannot be fished in the stressed area (Figure 5);
- Permittee is limited to 100 traps per vessel;
- Traps fished inshore of the 50-fathom contour may not exceed 33 cubic feet in volume;
- 144 square inch opening with a cover hinged or fastened with degradable fasteners (3/16 inch jute string or magnesium) must be on a side opposite each funnel;
- Two sides must have at least two 2 x 2 inch escape windows;
- Minimum mesh sizes are 1 x 2 inch or 1.5 x 1.5 inch or 1.5 inch hexagonal mesh;

- o Each trap must be buoyed or a series of traps fished in a "trawl" must be buoyed at each end; buoys may be submerged when used with "pop-up" magnesium releases;

- o Traps must be pulled or tended only during daylight.

Discussion and Impacts:

The Council rejected retaining just the status quo, and through this amendment, proposes to modify the current rules (status quo) through preferred options (1) and (2) above to address problems stated under Section 2.2. These options propose that traps are to be tended at sea, traps or trawls of traps individually buoyed and returned to shore after each trip. A moratorium is also proposed to limit trapping to current participants while the Council considers limited access for the fishery and while NMFS gathers additional ecological information on the fishery in the Gulf.

a. Fishery Resources: The Council established the stressed area to prohibit fish traps and other efficient gear from competing with fishermen in the nearshore waters, which it felt was stressed (subject to growth overfishing) due to a high recreational fishing effort. It addressed FMP management objective (2) to reduce conflicts and nearshore fishing mortality. The stressed area boundary was set further offshore near areas of high human population density (e.g., off Ft. Myers to the Tarpon Springs, Florida, area). The stressed area and trap rules of this option were selected in the original FMP and Amendment 1 over alternative options to ban the use of traps. The stressed area was set well beyond Florida jurisdiction (nine nautical miles) to facilitate state enforcement of the prohibition on traps. The closest distance to the outer stressed area boundary from the following Florida fishing ports is as follows: Key West (28 nautical miles), Marathon (63 nautical miles), Everglades City (50 nautical miles), Madeira Beach (49 nautical miles), and Crystal River (60 nautical miles). The effectiveness of the stressed area rule and other rules of the FMP related to traps was largely contingent on compliance by the fishermen, since enforcement must be carried out at sea. This is because some fishermen deployed their traps constantly at sea and likely used pop-up buoys. Fishermen from the Everglades City area in Collier County carried their traps to sea, attended them, and returned the traps to shore on each trip (Taylor and McMichael, 1983). The preferred options would require this for the entire fishery.

   The escape window size under current rules retains fish 7 to 8 inches in length or larger, depending on shape. The scientific literature on ingress and egress in Appendix A of Draft Amendment 5 and Section 3.2.1.4.1 of the FMP indicated that some species swim in and out of the funnels, it also indicated some do not. Harper and McClellan (1983) noted that the larger predators, including grouper, generally did not leave via the funnel. When traps are hauled off the bottom most fish become disoriented and do not exit and are hauled to the surface. Fish with deep profiles, such an angelfish, tilefish, spadefish, and butterflyfish were particularly retained by the traps (Taylor and Michael 1983).

b. Human Environment: No new impact would affect fish trap fishermen by retaining the status quo alternative.

c. Physical Environment: Environmental effects would remain unchanged unless the number of traps increased significantly. That is unlikely to occur because of the preferred option for a moratorium.

d. Ocean and Coastal Habitats: This option would have allowed expansion of the fishery and traps to be fished in "trawls" resulting in a very slight increased impact on ocean habitats if grappling hooks were used to retrieve traps.

e. Flood Plains and Wetlands: This option will have no effect on flood plains or wetlands, since the fishery is oceanic rather than estuarine.

f. Endangered Species and Marine Mammals: Retaining the current rules for traps will have no effect on threatened or endangered species or on marine mammals.

Rejected Option 2: Require larger mesh in traps utilizing one or more of the following:

a. Require two sides of trap to be of 2 x 4 inch mesh,

b. Require entire trap to be of 2 x 4 inch mesh,

c. Require bottom to be of 2 x 4 inch or larger mesh,

d. Require four or more vertical escape windows to be either 2 x 5 inches or 1-1/2 x 5 inches,

Discussion and Impacts:

The Council rejected options to alter the mesh sizes primarily because the larger 2 x 4 inch mesh would have allowed escapement of legal size (≥ 8 inches TL) vermilion and lane snappers which have become more important components of Gulf landings from traps. The mesh sizes under suboption (d) would have allowed legal size grouper to escape.

a. Fishery Resources: The Council previously considered suboptions (a), (b), and (c) in Amendment 1. Suboption (d) was suggested by trap fishermen giving testimony at the July 1992 meeting as a method of allowing angelfish and other fish with deep body profiles to escape while the traps were actively fishing. Bohnsack, et al. (1989) noted that present specified minimum mesh sizes (1 x 2 and 1.5 x 1.5 inches) appear to do little to reduce bycatch (i.e., status quo option). The current escape windows (2 x 2 inches) under status quo allow the escapement of fish with fork length of 7 to 8 inches for body shapes similar to grunts and snapper (Harper and McClellan, 1983). Fish of similar sizes with deep profiles, such as angelfish, tilefishes, etc., are retained. Taylor and McMichael (1983) indicated that over 15 percent of angelfishes and butterflyfishes were injured in trap catches examined. However, available information indicates these species, important to marine life fishermen, are not a major component of Gulf trap catches.

A 2 x 4 inch mesh would select for gray snapper and white grunt larger than 15, and 12 inches fork length respectively, and red grouper greater than 14 inches total length (Sutherland et al., 1987). This would allow escapement of gray snapper larger than the minimum size (12 inches TL). The use of larger mesh sizes for escapement appears more important when traps are allowed to be deployed for many days by providing for egress of confined fish. Requiring traps be tended and returned to shore eliminates periods of long deployment and reduces the potential for lost (ghost) traps.

b. Human Environment: Fishermen in previous testimony to the Council have maintained that the smaller mesh sizes yield greater catches due to the shading effect of smaller mesh. Bohnsack et al (1989) examined catch and value by size of mesh and found the 2 x 4 inch mesh was equally productive to .5 x .5 inches and 1 x 2 inch meshes; only the 1.5 inch square and hexagonal meshes produced a more valuable catch. The hexagonal mesh produced about $5.50 per haul, whereas 2 x 4 inch mesh produced $4.75 per haul; no statistical analyses were provided to determine if these differences are statistically supported. However, the study examining economic value of catches by mesh size (Bohnsack, et al 1989) was conducted off southeast Florida and species taken in 2 x 4 inch mesh traps (27 samples) was almost entirely different from those taken in the Gulf fishery off Collier and Lee Counties, Florida (DeBruler, Mote Marine Laboratory, Personal Communication). Species composition (by weight) taken by Bohnsack, et al (1989) were mutton and cubera snapper, 31 percent; orange filefish, 29 percent; blue angelfish, 12 percent; gray angelfish, 6 percent; French and queen angelfish, 3 percent; hogfish, 6 percent; yellow jack, 2 percent, grunts (margate and sailors choice), 2 percent; with littlehead porgy, scorpionfish, parrotfish and stingray making up the remainder. Target species in the Gulf catches by weight (DeBruler, Mote Marine Laboratory, Personal Communication) were red grouper, 78 percent; lane snapper, 14 percent; jolthead porgy and pinfish, 4 percent; vermilion snapper, 2 percent; with gag, gray snapper and triggerfish making up the remainder. Gulf bycatch species differed also with only orange filefish (19 specimens) and French angelfish (14 specimens) being common to both studies.

Costs to the fishermen for the suboptions vary significantly: suboption (b) would essentially have a cost similar to banning fish traps, i.e., almost all traps would have to be replaced; suboption (a) would allow existing traps to be modified by replacing mesh on two of the six sides; and suboption (c) on only one size. The larger escape windows of suboption (d) could be made simply by cutting out some meshes. The options would have reduced revenue to the fishermen and increased total cost of operations (RIR).

c. Physical Environment: Changing the mesh size would have no effect on physical environment.

d. Ocean and Coastal Habitats: This option will have no change in effect on ocean or coastal habitats, since the same number of traps would be fished; only the size of mesh would change.

e. Flood Plains and Wetlands: This option will have no effect on flood plains or wetlands.

f. Endangered Species and Marine Mammals: These mesh size options will have no effect on threatened or endangered species or on marine mammals.

Rejected Option 3: Move the stressed area boundary further offshore to coincide with the boundary of the prohibited area for longlines and buoy gear:

a. off Florida
b. for entire Gulf

Discussion and Impacts:

The Council rejected this option because it would increase the operating cost for fishermen (longer distance to travel), slightly increase vessel safety hazard (because of the longer distance) and because the prohibition on trapping in the stressed area was deemed an adequate areal control on trapping (see stressed area discussion under status quo option).

a. Fishery Resources: This option would have moved the use of fish traps, roller trawls, and power heads offshore to the same waters that reef fish longlines and buoy gear are allowed. The prohibited area for longlines is the 20-fathom contour off Florida to Cape San Blas (point 13 on Figure 6) and the 50-fathom contour from there to the Mexican border. In Southwest Florida and the Florida Big Bend area it would have moved fish trapping much further offshore. However, the option would increase embolism mortality of fish and would result in greater loss of fish unless most of the catch is legal size, target species. Data from Goodyear and Schirripa (1991) suggest most grouper would be of legal size. If suboption (b) were selected, it would move this gear beyond 50 fathoms in the Central and Western Gulf, reducing significantly the likelihood of taking red snapper which are seriously overfished. The option may have resulted in a reduced incidence of harvesting tropical fishes associated with the coral in the Dry Tortugas, Florida area.

b. Human Environment: This option would have increased the operation cost for vessels continuing to fish because of the greater distances in some areas of the Gulf. For example, minimum distance to the longline/buoy prohibited area boundary for some Florida ports are as follows: Key West (61 nautical miles), Marathon (99 nautical miles), Everglades City (50 nautical miles), and Crystal River (87 nautical miles). In the western Gulf, boundaries for fish traps would change from the 10-fathom contour off Louisiana and the 30-fathom contour off Texas to the 50-fathom contour. However, there are very few fish trap permit holders in these states. The greater distance offshore would, to some extent, increase the hazard related to vessel safety. Total revenue of fishermen would be reduced and fishermen would have to compete with longliners (RIR).

   By moving the stressed area boundary to coincide with that for longlines and buoy gear, enforcement cost would have been potentially reduced since aerial and vessel surveillance would be necessary only for one prohibited area rather than two.

c. Physical Environment: These options would have resulted in all traps being deployed further offshore and further from coral reef complexes off southwest Florida.

d. Ocean and Coastal Habitats: (See physical environment above).

e. Flood Plains and Wetlands: This option will have no effect on flood plains or wetlands, since the fishery is oceanic rather than estuarine.

f. Endangered Species and Marine Mammals: This option will have no effect on threatened or endangered species or on marine mammals.

Rejected Option 4: Limit the number of vessels that can fish traps by:

a. **Establishing a moratorium on permits authorizing fishing with traps to 1992 permit holders with that designation as their principal gear or;**

b. **Establishing a limited entry ITQ system for trap fishermen.**

Discussion and Impacts:

The Council rejected these options and selected instead a moratorium with eligibility based on permittees reporting fish trap landings by logbook [see Preferred Option (2)].

a. Fishery Resources: Suboption (a) would allow expansion of the trap fishery over that of the preferred option (2) resulting in greater harvest of fishery resources. This would have an effect only if traps harvested more of the resource than gear currently used by these additional fishermen (i.e., under the FMP permit moratorium the total number of fishermen would not increase). This would be a detrimental effect only if that increased effort was directed at overfished species. Suboption (b) would have the same effect as preferred option (2).

b. Human Environment: Suboption (a) recognizes under the FMP that there is a three-year moratorium on issuance of any more reef fish commercial vessel permits. It would limit the use of traps to those persons who, in 1992, checked the application blank to indicate that they would use traps as their principal gear. In 1992, 166 persons indicated their vessel would use traps, usually along with other gear, however, only 96 of them reported landing from traps. In 1991, 109 persons indicated their vessel would use fish traps, however, only 87 of them reported landings from traps in the logbooks. The option would have capped the number of trap fishermen, limiting participation to those who indicated they would use traps.

   Suboption (b) would establish a limited access system using individual transferable quotas for trap fishermen selected. Landing levels from 1991 and/or 1992 logbooks could be used to subdivide total fish trap landings for those years between eligible participants, and possibly further subdivided by species groups (i.e., groupers, snappers, etc.). However, since the Council will consider a limited access system for the fishery during the current three-year moratorium on vessel permits, it was deemed to be more advisable to consider such limited access for traps through subsequent amendment. Either of the suboptions would allow persons with an economic dependency on traps to continue fishing. This would essentially eliminate the economic losses that would have occurred from the option of banning traps. The number of traps fished would be higher than the preferred option. Administrative costs for the ITQ system would be much higher than the preferred option.

c. Physical Environment: Even though option (a) would allow more fishermen than the preferred option, the environmental impacts from deployment of more traps should have little effect on the physical environment.

d. Ocean and Coastal Habitats: This option will have little effect on ocean or coastal habitats (see physical environment above).

e. Flood Plains and Wetlands: This option will have no effect on flood plains or wetlands, since fishery is oceanic rather than estuarine.

f. Endangered Species and Marine Mammals: This option will have no effect on threatened or endangered species or on marine mammals.

Rejected Option 5: Limit the number of traps per vessel to:

a. 50
b. Number of trap tags requested in 1992

Discussion and Impacts:

The Council rejected these options and concluded that the current rule (status quo) allowing use of 100 traps per vessel was necessary for fishermen to maintain an economically viable operation.

a. Fishery Resources: A reduction in traps would have reduced mortality of bycatch an sublegal size target species. However the Council concluded that in the Gulf fishery for vessel tending traps such mortality was not excessive [see discussion of fishery resource impacts under Preferred Option (1)].

b. Human Environment: Suboption (a) may adversely impact fishermen utilizing and dependent on more than 50 traps. It would reduce revenue and make inefficient vessels using 100 traps. Potentially traps valued at $210 thousand would be lost (RIR). Suboption (b) is essentially the same as status quo.

c. Physical Environment: Trap reductions would reduce impact to habitat. However, these impacts were judged to be minimal [see discussion of physical environment impact under Preferred Option (2)].

d. Ocean and Coastal Habitats: Even though the number of traps would be reduced these options will have little effect on ocean or coastal habitats.

e. Flood Plains and Wetlands: This option will have no effect on flood plains or wetlands, since the fishery is oceanic and not estuarine.

f. Endangered Species and Marine Mammals: This option will have no effect on threatened or endangered species or on marine mammals.

Rejected Option 6: Prohibit the use of fish traps in the EEZ of the Gulf of Mexico.

Discussion and Impacts:

The Council identified this option as its tentative preferred option in the draft amendment. The draft amendment cited as a basis supporting that position both scientific and anecdotal information, that in subsequent consideration was judged to apply to traps fished in close proximity to the coral reef complexes and for traps constantly deployed at sea. The Council has proposed, through this amendment, that traps not be constantly deployed but that they be attended and returned to shore after each trip. Limited scientific information (DeBruler, Mote Marine Laboratory, Personal Communication) and testimony presented at public hearings indicated the Gulf fishery is quite different in terms of bottom habitat affected, bycatch and target species taken, survival of released fish, and method of fishing (i.e., most fishermen already returned traps to shore after each trip). Based on these differences the Council rejected this proposed option.

a. Fishery Resources: This option would have eliminated all ecological impacts associated with the use of traps. However, the Council has concluded that these impacts from the current fishery are minimal (see discussion of impacts under other preferred and rejected options). The Council also proposes through this amendment to prevent expansion of the fishery until the ecological characteristics are better documented.

b. Human Environment: From solely a social standpoint, many organizations and much of public sentiment support banning fish traps. Marine life fishermen, who collect aquarium specimens, have expressed concerns that the trap harvest and discard of bycatch species impact the abundance of stocks they collect. There is also a social perception that traps left continually deployed at sea are illegally fished. NMFS recorded only 40 fish trap violations during 1988-1991, and the Florida Marine Patrol recorded only 13 fish trap violations out of 28,632 marine associated violations during 1986-1990.

Among public allegations were charges that more traps are being fished per vessel than allowed (100), that required construction characteristics are modified at sea, that degradable hinges or fasteners are not used, that traps are being fished illegally in the stressed area or in Florida waters, etc. Enforceability of these areas of public concern are enhanced by Preferred Option (1).

Banning fish traps would have resulted in an annual loss of revenue to trap fishermen of about 1.5 million pounds of landings (1991) valued at about $1.70 per pound (Table 3b), or about $2.5 million. The actual loss of revenue would have been less than this amount since the fishermen would likely switch to other gear such as bandit rigs. Banning traps would have resulted in the loss of the value of the traps, the use of which is prohibited in Florida waters and the South Atlantic EEZ. The value of a new trap is approximately $85.00 and the depreciated average value $48.50 (SAFMC Snapper/Grouper Amendment 4 RIR). The actual number of traps used in the Gulf is unknown. If the 96 fishermen reporting landings in 1992 each had the maximum number of traps, there would be 9,600. If there was one trap for each trap tag issued in 1992, there would be 12,064. It is likely that both of these values exceed the actual number of traps. Assuming that 9,600 represents the actual number of traps, the industry loss at the average depreciated value would be $465,600.

c. Physical Environment: This option would have eliminated environmental damage caused by deployment of fish traps. However, the stressed area already precludes setting of traps on the Florida Keys reef tract (Figure 6-4, Coral FMP) which is inshore of the stressed area boundary. The Coral FMP prohibits setting on the high relief area of the Florida Middle Grounds and on the Flower Garden Bank off Texas. Therefore, the potential for damage by deployment in the Gulf to coral reefs would be much less than in the SAFMC EEZ. Deployments in the Gulf are regarded to have little impact on bottom habitats. This effect would be eliminated.

d. Ocean and Coastal Habitats: The anticipated effect on ocean habitats is described above in section (c). The use of fish traps is prohibited in Florida coastal waters (out to nine nautical miles).

e. Flood Plains and Wetlands: This option will have no effect on flood plains or wetlands, since the fishery is oceanic rather than estuarine.

f. Endangered Species and Marine Mammals: This option is anticipated to have no effect on threatened or endangered species or on marine mammals, since there was no known interaction between fish traps and these animals (see preferred option (1) for discussion).

3.2.2.2 Special Management Zones

Special management zones (SMZ) are established where certain gear is prohibited or certain rules apply. Examples are the Habitat Areas of Particular Concern (HAPC) under the Coral FMP where the use of all gear interfacing with the bottom is prohibited (e.g. trawls, traps, etc.) or spawning aggregation sites where all fishing may be seasonally prohibited. This amendment addresses two actions for management zones, one off Alabama, and a general framework procedure for establishing such zones in the future by regulatory amendment.

1. Alabama Special Management Zones

The Alabama Department of Conservation and Natural Resources (ADCNR) has a general Corps of Engineers permit for three EEZ offshore tracts located generally south and east of the mouth of Mobile Bay (Figures 7 and 8). Under the terms of the permit, individuals may construct low profile, unmarked reefs at any point within the tracts. Inspection of reef material by state personnel for environmental sanitation (no oil, etc.) is required. After placing the reef, the individual is the only person with the LORAN coordinates for the reef. The person must sign a release recognizing that any other person may fish the reef after it is established, should they locate it. Recreational fishermen, charterboat fishermen and some local commercial fishermen have established a total of more than 5,000 individual reefs in the tracts. The charterboat industry has created a large portion of the reefs. The tracts also include reefs established by the state consisting of liberty ships, barges, vessels, bridge rubble, and toppled oil platforms. The three tracts cover approximately 820 square miles. Tract A (100 square miles) ranges in depth from 12 to 16 fathoms and contains rubble from the Dauphin Island bridge (3 miles long) removed after hurricane Frederick. Tract B (360 square miles) ranges in depth from 14 to 32 fathoms and contains five liberty ships. Tract C (360 square miles) ranges in depth from 20 to 400 fathoms and contains sunken oil platforms in the deeper depths.

Charterboat fishermen residing in Baldwin County, Alabama, began construction of artificial reefs in federal waters off that county shortly after World War II, after noticing the effectiveness of coastal shipping sunk by German submarines in attracting reef fish. Many fishermen had scores of unmarked reefs offshore that they fished periodically to satisfy customers when pelagic species were unavailable. At their request the state of Alabama placed 250 automobile bodies offshore in 1953 and added 1,500 bodies in 1957 (Swingle, 1974). Both individual fishermen and the state through its artificial reef program continued to place environmentally safe material offshore under U.S. Army Corps of Engineers (COE) permits. Material used to construct these reefs typically consists of automobile bodies. The life span of this type of material is usually 4 to 7 years. Therefore, new material must be added periodically. The general COE permits for the tracts were obtained from 1986 through 1989 (Figure 8). Obtaining the general permits greatly increased reef construction by fishermen, under supervision by the state. (See Figure 24).

Preferred Option: Require that persons fishing all three tracts (A, B, and C) for reef fish be limited to gear with no more than 3 hooks per line.

Discussion: The intent of the Council was that persons fishing the area recreationally or commercially for reef fish, which has historically been with hook and line (i.e. rod and reel, and more recently, bandit rigs), be limited to three terminal hooks on the line. Spear fishing would continue to be allowed (equivalent to one hook). Longlines used for targeting reef fish are prohibited from fishing inshore of 50 fathoms under the FMP. This rule currently prohibits the use of such longlines on the reef tracts except for the extreme offshore portion of tract C (see Figures 6 and 7 and Table 10, for coordinates). The use of longlines to target reef fish has not been known to occur in that area (Minton, ADCNR, Personal Communication). Data from Goodyear (1992) support that observation as recent catches by longlines since tract C was established by general COE permit in 1989 (Figure 8) averaged 2,250 pounds of red snapper annually (with zero catch for 1992) for all of NMFS statistical area 10. Statistical area 10 is 3,210 square miles (Patella, 1975) extending between 88 degrees and 87 degrees west longitudes, and includes the SMZ reef tracts, as well as hard bottoms offshore and to the east of the SMZ tracts (see Figure 9). The intent of the Council was that reef fish longlines not be used in the SMZ reef tracts. To accomplish this, point 16 of the reef fish longline restricted area (Table 10) will be moved from 29° 29.0′ north and 87° 27.5′ west to the outer limit of tract C at 29° 15.75′ north and 87° 33.0′ west (i.e., 13 nautical miles further offshore) and return to a new point (16a) at 29° 25.0′ north and 87° 44.0′ west (Figure 15).

Under the rules of the FMP, longlines used to target other species (e.g., pelagic longlines used for tuna fishing) may be fished inshore of the boundary of the reef fish longline restricted area, but fishermen utilizing such gear in the area are limited to possession of the bag limits for reef fish, which cannot be sold. This rule would continue to apply to the waters of the reef fish longline restricted area, including the SMZ reef tracts.

Under FMP rules entangling nets and trawls are prohibited for use in a directed fishery for reef fish. Persons on vessels with this gear on board are limited to the possession of bag limits for reef fish, which cannot be sold. This rule would continue to apply to the EEZ, including the SMZ reef tracts. However, it is highly unlikely that shrimp trawls would be utilized in these areas, since it was always a relatively nonproductive shrimping area (Swingle, 1976) and, if used, trawls may become entangled with reef material. Entangling nets are used along the beaches well inshore of the reefs.

During 1992, when the Secretary of Commerce at the Council's request established by emergency rule a commercial 1,000-pound trip limit per vessel for red snapper, numerous vessels with bandit rigs and some with jigging rigs harvested red snapper from these reef tracts, (Minton, ADCNR, Personal Communication). Presumably, these vessels targeted the tracts because of their nearness to shore which allowed them to make more frequent trips during the short period the trip limit was in place. Each small reef supports only a limited snapper population which can be easily fished out. Persons constructing the reefs usually carefully regulate their harvest, fishing each reef at infrequent intervals to conserve the population and to allow fish to grow to larger sizes. The reefs cannot support a major commercial effort, such as occurred in 1992, but do support small localized commercial efforts by local fishermen who constructed some of the reefs. The Council utilized vessel trip limits for 1993 as a method of extending the harvest period under the 1993 commercial quota for red snapper so that prices paid to fishermen remain higher. The Council is proposing a similar set of trip limits for managing the fishery in 1994, and delaying implementation of a limited access system until 1995 to allow additional public input into development of the measures. The state of Alabama, as the permit holder for the reef tracts requested the rule limiting gear for one or all of the tracts to prevent pulse overfishing under trip limits, and as being consistent with their artificial reef program. The conservative harvest of these red snapper populations from the reefs is consistent with the Council's program for rebuilding the stock of red snapper.

Impacts

a. Fishery Resources: The preferred option is anticipated to enhance and promote conservation of fishery resources, thereby contribute to achieving OY and the FMP's management objectives. The principal management objective and OY is to establish a harvest level for each stock which maintains, or is expected to maintain over time, a survival rate of biomass into the stock of spawning age to achieve at least a twenty percent SPR population level, relative to that which would occur with no fishing (Section 3.2.1).

Most (60 to 70 percent) of the artificial reefs in the proposed SMZ tracts have been constructed by persons in the charter/head boat industry. In 1964, ADCNR personnel surveyed by SCUBA reefs constructed by Herbert Lowe, a charterboat operator (W. Swingle, GMFMC, personal communication). Mr. Lowe indicated that he had constructed slightly over one hundred reefs and indicated he fished each one no more frequently than once per year, and usually when he could not catch suitable amounts of coastal pelagics, through trolling, for his clientele. This, voluntarily reduced effort contributed significantly to conservation of the fishery resources, and especially to red snapper, which were a major component of the reef populations. This type of conservation ethic by persons constructing reefs has continued through the years. A 1993 ADCNC survey of 20 percent of the states' 72 charterboat operators indicated the average operator had 438 active artificial reefs they fished (S. Lazauski, ADCNR, personal communication). Of these reefs they had constructed, or had someone construct, an average of 247. A single reef was fished no more frequently than 5.9 times annually. To conservatively manage the fish on the reefs, all operators reported they moved off the reefs after taking a few fish, fished multiple reefs on a trip, and limited the number of hooks per line to no more than two. Of the operators that fished commercially on the reefs, each fished an average of 10.5 days annually over the past five years (only 43 percent of the operators reporting fished commercially). Of the reefs constructed, 14 percent were in tract A, 31 percent in tract B, and 55 percent in tract C (Figure 7). No local commercial fishermen responded to the ADCNR survey and a very few recreational fishermen (N=3). Recreational fishermen reporting had constructed fewer reefs (4), fished each about four times annually, placed them closer inshore (tract B), used more hooks (2 to 4), and typically fished a single reef until bag limit was taken.

The conservative harvest practices applied to the reefs by persons constructing and fishing them, and especially the large number of reefs, has resulted in a large standing stock of reef fish, especially red snapper, in an area where natural reefs are almost absent. The increased abundance of red snapper is demonstrated by benthic trawl surveys by MMS (Figure 10) and as cited by Szedlmayer and Shipp (In Press) (see Figure 24). The gear regulation of the preferred option complements and is consistent with conservative harvest practices, and thereby not only contributes toward achieving OY and the principal management objective, but also toward restoration of the red snapper stock. Szedlmayer and Shipp (In Press) conclude that the factors of faster growth rate, older age, high residency, higher CPUE than other areas, very few natural reefs associated with the area, and the extremely high numbers of artificial reefs, provide a strong case for production rather than attraction (or congregation) for the increased catches of red snapper (i.e., more than one-third of Gulf recreational landings in 1990).

The preferred option also addresses FMP objective 2: "To reduce user conflicts and nearshore fishing mortality." As indicated in the discussion section above, conflict has arisen as a result of the pulse fishing situations created by the Council through commercial quotas and trip limits, because of the proximity to shore allowing more trips to be made. The preferred option also contributes to reduction of nearshore fishing mortality by reducing or stabilizing fishing power for each piece of gear.

The preferred option also addresses FMP objective 8 (3.2.1): "To conserve reef fish habitats and increase habitats in appropriate areas, and provide protection for juveniles while protecting existing and new habitats." Requiring conservative fishing methods (3 hooks per line) similar to those voluntarily utilized by the charterboat industry, may enhance continued increases in habitat construction (see discussion under Human Environment for rejected options that follow). Bohnsack (1989) concluded that artificial reef production should be more important in locations isolated from natural reefs, which is characteristic of the Alabama reef tracts. Since the shrimp industry approved placing of the reefs in the tracts, continued reef construction in these areas is also appropriate because the reefs do not interfere with trawling by the shrimp industry. Since the area is not trawled due to reefs, it affords protection to juvenile red snapper.

In general, as long as conservative harvest practices are applied, the reefs should function similar to the marine sanctuaries advocated by Jim Bohnsack (NMFS). However, rather than being an area where all fishing is prohibited, as advocated by Bohnsack, they would be areas where a higher population density of reef fish exist due to the conservative harvest practices. The increased local abundance, while not as high as for a sanctuary, would have many of the same benefits to the stocks.

b. Discussion of Probable Ecological Effects of Artificial Reefs: The issue of whether construction of artificial reefs contribute to increased production of reef fish or simply congregate them has long existed. If the latter case is true, then such reefs could potentially have a detrimental impact on restoration of an overfished stock by making fish more available for harvest and any benefits gained toward restoration would be dependent on controlling fishing effort on the reefs.

Based on publications presented at the most recent conference on artificial reefs (Seaman and Sprage 1991), this issue still remains largely unresolved. However, Szedlmayer and Shipp (In Press) suggest the large Alabama reef tracts contribute to increased production of red snapper.

Bohnsack (1989) summarized scientific literature on reefs and concluded that artificial reefs may not increase production of recruitment limited populations. Artificial reefs are unlikely to increase biomass for intensively exploited or overfished populations without other management actions limiting harvest. He pointed out that this is especially unlikely if growth of the population is effected during life history stages not dependent on reefs. Red snapper, at least, have many of these characteristics, recruitment of juveniles is depressed by lowered SPR, recruitment of juveniles to the fishery is depressed by trawl bycatch during the life history stage not dependent on reefs. Bohnsack (1989) points out that a fundamental biological law is that most animals populations exist close to the carrying capacity of an environment (which is supported by all aquacultural research where populations and environments are managed). This suggests since red snapper populations are

reduced from lowered recruitment that natural reef habitat should not be a function limiting population abundance, and consequently artificial reefs would contribute little to increased red snapper production. However, this would be actually be dependent on whether ecologically similar reef dependent species expanded in abundance to fill the carrying capacity of the natural reef environments as red snapper declined in abundance, as would be expected to happen in an ecosystem.

Bohnsack (1989) concluded that artificial reef production should be more important for reef dependent species in locations more isolated from natural reefs. This is characteristic of the Alabama reef tracts (see discussion under human environment below) and of many of the offshore oil and gas structures off Louisiana and Texas.

Bohnsack et al. (1991) reported on literature related to the ecology of artificial reefs. Some studies suggested that shelter from predation was likely more important than food in influencing abundance of fishes. Other studies found little difference in food content of fish from artificial reefs, natural reefs or fishing grounds off reefs, suggesting perhaps most of the fish foraged off the reefs. Other studies indicated an increase in abundance of fishes (in numbers and species) with increase in reef units per area. However, these numbers leveled off with higher (more dense) habitat complexity, suggesting the habitat carrying capacity of the area was reached. Some studies cited by Bohnsack et al. (1991) reported higher fish density on artificial reefs than on natural reefs. However, studies in California where standing stocks were much higher on artificial reefs attributed this to the larger bottom area involved. Bohnsack et al. (1991) cited the need for more precisely controlled experiments with better sampling methodology to examine the ecology of reefs.

Polovina (1991) cited examples from studies in Japan and Italy where catches for areas were increased significantly for octopus, mussels and fish where suitable habitats were apparently limited. He concluded that it would require large-scale applications of artificial habitat to detect any impact on stock production and that most studies cited were too small to detect these impacts. He cautioned that easily accessible reefs may just redistribute a stock aggregating it at a density that is sufficient to support a fishery. He also pointed out that if trawling results in high mortality of juveniles that reef placement could be used to reduce that mortality by making the area unsuitable to trawling.

Szedlmayer and Shipp (In Press) studied snappers associated with the Alabama reef tracts. They aged and measured fish for growth determination, tagged fish for determination of movement, conducted trawl surveys, and compared those analyses to previous studies. They concluded, no single factor is evidence for production as the primary mechanism of increased catches off Alabama. However, combined with the factors of faster growth, older age, high residency, greater numbers than anywhere else in the Gulf or Atlantic, very few natural reef habitats, and extremely high numbers of artificial reefs, provide a strong case for increased productions rather than attraction. (See Figures 10 and 24 for benthic surveys of abundance).

The senior author of this SEIS offers the following observations on the issue recognizing that the carrying capacity of each oceanic area in terms of the prey forage base is consistent with the environmental conditions for that area, including available primary nutrients, and the fact this prey forage base cannot be converted

into reef-dependent species if there are no reefs and these fish are either rare or absent from the area.

For both natural and artificial reefs a large portion of the fish biomass is dependent on food by foraging in areas surrounding the reef. Night and day-time observations of a tropical coral reef in the Virgin Islands by glass-bottomed barge indicated that most of the population moved off the reef at night to feed (W. Swingle, Personal Communication). The herbivores and omnivorous moved off to surrounding seagrass flats to feed, followed by many piscivorous species who stationed themselves behind low relief objects near the grass flats. Fish remaining on the reef were primarily those feeding on coral or associated symbiotic algae and some predators such as moray eels. During daylight almost all of the fish returned to the reef.

Since adult reef fish tend to congregate around reefs or other objects with relief above the bottom, the absence of such habitat appears to limit the abundance of many species despite the fact they forage off the reef. Possibly this occurs because the range they forage over is limited by necessity to return to the reef each day. Placing artificial reefs in areas where there is little or no bottom relief appears to create a foraging range previously not utilized by the reef fish. This likely results in a change of the species diversity of such an area to be predominantly reef-associated species. This probably results in part of the forage fish inhabiting the area being converted into reef fish biomass, where previously that did not occur, thus increasing production. This certainly appears to be the case for the Alabama reef tracts (Figure 10). Figure 10 depicts benthic surveys conducted under contract to Minerals Management Service for red snapper and indicates annual abundance levels in the north-eastern Gulf to be several hundred times higher for the area of the Alabama artificial reef tracts than for other areas. Figure 24 (Szedlmayer and Shipp in Press) shows more recent benthic surveys as compared to known number of reefs.

c. Human Environment: The Council selected a preferred option applying the gear restriction to all of the tracts. Recognizing that it will be beneficial in restoring the stocks to limit effort on the reefs, the Council is proposing that no more than 3 hooks per line be utilized. Goodyear (1992) pointed out that under a reduced stock level handline type gear (rods and reels and bandit rigs) can catch a large portion of the smaller local stocks, even to the last remaining fish and, therefore, catch per unit effort may be a poor indicator of stock size. He pointed out that the number caught is related, in part, to how rapidly this gear can be deployed and retrieved. The number of hooks used in each deployment also affects the number caught.

The offshore area in which the Alabama reef tracts have been established contains no known coral reefs. The southern portion of reef tract B contains a small outcropping with a relief of 5 to 10 meters. Associated with this are about 50 areas of outcropping with relief less than 5 meters, some of which are less than 10 feet in length (Laswell et al, 1990) This is what is known locally as the "Trysler Grounds" (Tatum, ADCNR, Personal Communication). The remainder of the bottom is homogenous, featureless, sandy bottom. With the exception of the small rocky reefs constituting the Trysler Grounds there were no natural reefs off Alabama. The artificial reef program carried out over the past 40 years which accelerated with the creation of the general permits has greatly increased the availability of reef fish off Alabama. The large number of individual reefs created in the tracts has converted the fish fauna of the area from predominantly species associated with sand bottoms

to those associated with reefs, including particularly red snapper. Because of the large number of individual active reefs (5,000 to 7,000, i.e., exact number "active" unknown because of short life span of 4 to 7 years for reefs) a large, localized population of red snapper has been established in the area that yields much higher charter vessel CPUE than other Gulf areas (NMFS, Channel 68).

Historically, the only natural reefs in the nearshore waters off Alabama (Trysler Grounds) were commercially fished primarily by charter vessels during their off season (fall/winter months). The commercial reef fish vessels based in the area (i.e., Pensacola, Florida, Alabama, and Mississippi) during the 1970's and 1980's were principally distant water operations fishing off the Texas/Louisiana shelf, Mexico (until 1981) and occasionally central America (Reef Fish FMP, GMFMC, 1981). Those operating from Alabama rarely fished the Trysler Grounds (Tatum, ADCNR, Personal Communication). However, vessels occasionally fished further offshore of northwest Florida and east Alabama in statistical zone 10 (Figure 9) with annual catches of red snapper from the zone during the 1980's and 1990's ranging between about 400 to 100 thousand pounds (Goodyear, 1992 - Tables 18, 19, and 20).

Historically, the artificial reefs were placed off Alabama primarily by the charter vessels and through charter associations. Automobile bodies placed offshore in the 1950's (which have long since deteriorated) by the state of Alabama was at the request of the charter association. They also initiated the Congressional action that resulted in Liberty ships being available to Gulf states for reefs. Under the general Corps of Engineers permits for the Alabama reef tracts most of the reefs were constructed by the charterboat industry, followed by recreational fishermen. Comparison of the 1992 reef fish commercial vessel permits (201) for vessels based in the area (Pensacola, Florida, through Biloxi, Mississippi) with the artificial reef file maintained by the state of Alabama under the general permits for reef construction, indicated only eleven commercial permit holders (all from Alabama) had placed reefs in the tracts (Tatum, ADCNR, Personal Communication). Ten of these were charter vessel operators who held commercial permits. Some additional reefs may have been constructed by commercial vessel operators prior to the general permits (before 1986) or under individual permit from the Corps of Engineers. Most of the effort and expense related to creating reefs, and replacing them as they deteriorate, has been by charter and recreational fishermen. A contractor from Orange Beach, Alabama indicated he had placed about 7,000 automobile bodies offshore since 1986 usually for a fee of $180 per automobile (David Walters, Personal Communication). About 60 to 70 percent were transported each year for charter vessel customers and 30 to 40 percent for recreational customers. Most of the cars were placed in tract C. Total cost over the period was in excess of $1 million.

Interviews with charter vessel operators in the Orange Beach, Alabama area indicated during the period the commercial red snapper fishery was open during 1992 (the first 53 days and from April 3 to May 14 under the 1,000 pound trip limit) that fishing activity in the reef tracts was about 60 percent private, 30 percent charter, and 10 percent commercial, including out of state boats (Tatum, ADCNR, Personal Communication). Some of the Alabama charter vessels fished commercially. During 1992 Alabama commercial landings of red snapper was 62,000 pounds and total catch reported from statistical zone 10 (all offshore waters between 87 degrees and 88 degrees west longitude - Figure 9) was 130,000 pounds (Goodyear, 1992 - Tables 17 and 18).

Most commercial vessels in the Gulf utilize bandit rigs which are more efficient (i.e., faster retrieval rate and usually many more hooks). The preferred option would continue to allow bandit rigs to be fished in the reef tracts but with only three hooks per line. The intent is to continue to allow both commercial and recreational fishing on the tracts, but to regulate gear consistent with the availability of fish. The Council recognized that most bandit rigs cannot be easily disconnected and stowed, especially hydraulic rigs. The preferred option does not eliminate the use of other gear in the reef tract areas to fishermen who have traditionally used the area (see Discussion section above on gear limitations proposed), with the possible exception of longlines utilized for targeting reef fish which would be prohibited in the tracts. The use of this gear is currently prohibited in all the tracts except the outer seaward portion of tract C, i.e., seaward of 50 fathoms (see Figures 6 and 7). The use of such longlines in tract C has never been reported, and likely would have been reported by other fishermen if the gear was utilized (Minton/Tatum, ADCNR, Personal Communication). Most longlines for reef fish are used in the grouper fishery off Florida.

In 1993, ADCNR surveyed 20 percent of the state's 72 charterboat operators (S. Lazauski, personal communication) with the respondents indicating that, for each year over the past five years, they saw an average of 27 commercial vessels equipped with bandit rigs, fishing the proposed SMZ reef tracts. This gives only a very general estimate of commercial bandit vessel participation on the reefs since there is no way to determine the multiple sighting of the same vessel or undetected vessels. If each was a separate sighting, then as many as 374 vessel trips may have occurred annually. Although this is unlikely, it still is indicative of low participation levels on the reef tracts (i.e., 37 trips annually for 10 vessels or 19 trips annually for 20 vessels, etc.). Seven commercial fishermen provided the Council with form letters distributed by Save America's Seafood Industry coalition, indicating they fished the area over periods ranging from 10 to 40 years. Approximately seven other bandit fishermen previously testified to the Council that they fished or previously fished the area. A total of 10 persons in Alabama hold reef fish commercial vessel permits from charterboat industry, and 13 other vessels hold red snapper endorsements. Commercial landings of red snapper in Alabama ports averaged 55 thousand pounds annually for the 1990-1992 period (Goodyear 1992, Table 17). The portion taken from the reef tracts is not known. From the discussion above, it is estimated that up to 20, or occasionally 30 bandit vessels may be affected by the preferred 3-hook option for the proposed SMZs. Council staff asked fishermen (calling the office for copies of draft Amendment 7) that used bandit rigs, how many hooks were typically used. The numbers ranged from 2 to 30, with the average of the low to high range being 8.2 to 10.2 hooks per line. Ron Anderson (Reef Fish AP) pointed out that, although he usually used 10 hooks, under pulse fishing situations he used 15 hooks. That may be typical of most fishermen. Using the averages above, the 3-hook proposal would reduce hooks by 63 to 70 percent. The relationship between number of hooks used and usual catch of fish is unknown, but the reduction in fish is likely to be less than the reduction in hooks. The 1993 ADCNR survey (S. Lazauski, personal communication) indicated charter vessels fishing the proposed SMZs limited hooks to no more than 2, and recreational fishermen to 2 to 4 hooks. These levels are consistent with efforts of persons constructing the reefs to maximize the enjoyment of fishing while conservatively harvesting fish from the reefs.

Although the hook restriction would adversely affect efficiency of bandit boats, they are not excluded from fishing the reefs. The proposed measure would require

more conservative harvest from the reefs. Since, under the current quotas, the commercial sector has been able to harvest the annual red snapper quota in a relatively short period, the 3-hook restriction is unlikely to significantly affect opportunity for bandit vessels to harvest their share and contributes to conservation of the fishery resources.

Longline vessels are not known to have fished the outer area (beyond 50 fathoms) of proposed SMZ tract C. Data on longline vessel annual harvest of red snapper from NMFS Statistical Area 10 (2,250 pounds) suggest they do not fish the area. The retrieval process for bringing longline gear aboard a vessel may discourage its use in the artificial reef areas due to likelihood of hanging on car bodies or other deteriorating material.

Conservative use of the fishery resources on the reefs will primarily benefit the coastal community of Orange Beach, Alabama, the economy of which is significantly dependent upon persons travelling to the area to fish from the 70 charter vessels (Gene Myers public testimony - Appendix B). The value to this local economy of the charter fleet, estimated by the Chamber of Commerce, was in excess of $10 million annually.

The measure limiting gear requires enforcement at sea. However, as there are always numerous vessels fishing the tracts, especially the two nearshore ones, it is anticipated that these fishermen will report any observed violations to enforcement agencies who could intercept the vessels. However, prosecution would require the violation be documented, and if compliance is poor, benefits of the preferred options would be reduced. The Council's Law Enforcement Advisory Panel concluded rules could be enforced for the SMZs. The preferred option will help maintain a higher population density of red snapper which should help in restoring the stock.

d. Physical Environment: Using the outside dimensions of reef material it was estimated that the reefs (excluding those that have likely deteriorated) occupy about 523 thousand cubic meters (Ralph Havard, ADCNR, Personal Communication). Material other than the three sunken oil rigs occupies about 156 thousand cubic meters. Assuming that each of the 5,000 small reefs occupies a 20 x 20 foot space on the bottom (a couple of automobile bodies plus lower profile material), these reefs would occupy 2.0 million square feet of bottom. Assuming all other reef material (three oil rigs, five liberty ships, boats, barges, railway cars, concrete culverts and bridge rubble occupied 1.0 million square feet (a significant overestimate) then less than 0.09 percent of the bottom physical environment has been changed in the three reef tracts (820 square miles). The principal advantages of the large areas are that (1) a larger forage base of prey species is available, (2) the shrimp industry approved the areas for reefs so material would not be placed off Alabama in more productive shrimping areas and (3) it encourages private initiative to construct reefs since those persons may place their reefs anywhere in the tracts with only them (and the state) having LORAN coordinates of the reef and with the hope that no one else will find the reef. The preferred option may enhance the motivation to construct reefs and may result in a greater portion of the physical environment being temporarily altered (until material deteriorates). The construction of reefs is likely to continue without the preferred option, but the motivation to do so may be reduced.

In order for any entity to obtain a permit for construction of artificial reefs they must apply to the Corps of Engineers (COE) and, in some instances, to appropriate state agencies. The permit application for a reef or reef-complex is broadly distributed to all affected federal and state agencies (including EPA which has authority over ocean dumping and water quality) and to the public including fishermen and fishing associations that may be affected. Based on comments received by the COE on the application and/or on analyses by its staff, the COE makes a determination whether the proposed project requires an EIS or EA and declares a FONSI (finding of no significant impact). As part of this process the material for reef construction is examined for potential impact to the environment. Fifteen years ago, material for reefs off Alabama was inspected by agents of EPA, COE, Fish and Wildlife Service and the state fishery resource and pollution control agencies, and usually by all of these agents. More recently these agencies have coordinated such inspections with usually a state or federal agency completing the inspection.

For the Alabama reef tracts the COE prepared cumulative EAs as each tract or portion there of was permitted. The EAs cited no adverse effects on the physical environment, including the water quality or other elements of the environment required to be considered under NEPA. Because these EAs have already considered the projects and cumulative impacts under NEPA this amendment incorporates them by reference. (Copies are available from the Council or COE, Mobile District office.).

e. Ocean and Coastal Habitats: This option is anticipated to enhance the motivation to continue to construct artificial reefs in the reef tracts and for current participants to bear the cost of such construction. If this is the case, ocean habitat for reef fish will be maintained and increased.

f. Flood Plains and Wetlands: This option will have no effect on flood plains or wetlands, since the reef tracts are all in the EEZ.

g. Endangered Species and Marine Mammals: This option will have no effect on threatened or endangered species or on marine mammals. None of the fishing activity on the reefs should affect these animals.

Rejected Option 1: Require that persons fishing be limited to use of certain gear that utilize no more than three hooks per line for the following reef tracts:

a. The two northern tracts (A and B); or
b. One or more of the tracts; or
c. Status quo - none of the tracts.

Rejected Option 2 for Allowable Gear:

Gear allowed by persons fishing the reef tracts selected above will be hand-held rod and reel only, and:

a. Other prohibited gear aboard a vessel must be stored or not rigged for fishing, or
b. Vessels with other prohibited gear must transit the reef tract without stopping to fish.

Discussion and Impacts:

These options were rejected by the Council because they felt it was important to limit the gear utilized in directed fisheries for reef fish by recreational and commercial fishermen to all three tracts and not to restrict commercial fishermen to the use of hand-held rods. **Recognizing that vessels are unlikely to add more crew members to fish more lines, the three-hook per line requirement was judged to be appropriate to limit fishing power (fishing efficiency) by vessels on the small reef fish aggregations of these small artificial reefs (frequently consisting of a single automobile body), that are easily overfished.** Most commercial reef fish vessels are equipped with power assisted bandit rigs which allow a small crew to fish efficiently. The Council's intent was to continue to allow both commercial and recreational fishing in the proposed SMZs, under the three-hook restriction. Rejected Option (2) would have prohibited the commercial fishermen from either using bandit gear or from fishing while that gear was on board.

a. Fishery Resources: Rejected Option (1) (c), the status quo, would have continued to expose the small artificial reefs to higher fishing power, especially under the pulse fishing situations created by the Council by requiring red snapper commercial quotas and vessel trip limits to restore the stock. These situations result in the affected persons trying to catch their share for each trip as rapidly as possible and making as many trips as possible before the quota is taken. The small populations of the individual reefs may be overfished, eliminating or reducing harvest potential of the affected reefs for the remainder of the year. Options (1) (a) and (b) were rejected because the majority of reef placement since 1986 has been in tract C (see Human Environment impact discussion under Preferred Option).

b. Human Environment: Option (2) was rejected because it would have prevented commercial vessels with bandit gear or gear other than hand-held rods from fishing or would have created a significant burden and expense associated with removal and storage of this gear each time a vessel fished the area. Most commercial vessels make trips of many days duration and fish many areas during a trip. Removal and storage of the gear while fishing the SMZ tracts and then rerigging the gear for fishing other areas would be a burdensome problem.

   Option (1), including status quo (no SMZs), was rejected because fishermen constructing the reefs have created a unique, productive fishing area, with high population densities and at considerable cost (see Human Environment impact section of Preferred Option). The fishing practices used by these fishermen promote conservation of fishery resources and benefit restoration of red snapper. The reefs have an effective life span, before deteriorating, of 4 to 7 years and must, therefore, be continuously replaced. A perception of unfair harvesting practices by one user group may result in persons constructing reefs being less willing to bear that cost. Suboptions (a) and (b) under Option (1) were rejected because reefs have been place in all three tracts with emphasis on tract C.

c. Physical Environment: There is no impact on the physical environment from the options. The status quo suboption of Rejected Option (1) would have allowed greater fishing power to be applied to the reefs with greater harvests occurring during periods of pulse fishing for red snapper.

d. Ocean and Coastal Habitats: Suboption (1) (c) may have had the effect that participants bearing the cost of reef construction would reduce that activity resulting in loss of reef fish habitat as existing reefs deteriorated (life span of the

reefs is 4 to 7 years). Other suboptions under (1) would have similar effects as the preferred option. Suboptions under (2) would have no effect on these habitats.

e. Flood Plains and Wetlands: These options will have no effect on flood plains or wetlands, as reef tracts are in the EEZ.

f. Endangered Species and Marine Mammals: These options will have no effect on threatened or endangered species or on marine mammals.

2. Framework Procedure for Special Management Zones

Special management zones (SMZs) established under this proposed framework procedure would likely be related to artificial reefs. As indicated under Section 3.2.2.2.1 artificial reefs have been constructed offshore in the Gulf by governmental and other entities since at least the 1950s.

Recognizing the escalation of such activity Congress in 1984 enacted the National Fishing Enhancement Act (P.L. 98-623, Title III). This act provides for an orderly process for reef construction in federal waters to enhance fishery resources and provide for access and utilization by recreational and commercial fishermen while minimizing conflicts among competing uses of the waters and resources in such waters. Its principal sponsor, Mr. John Breaux, recognized both the potential benefits of such reefs and the potential for obstruction of competing use of the water column and bottoms (e.g., shrimp trawling). The Act provided that the Secretary of Commerce (NOAA) would develop a national plan, in coordination with other governmental entities, that would provide for siting, construction, monitoring and management criteria. The Act also specified conditions under which the Secretary of the Army (COE) would issue permits for reef construction which included wide dissemination of permit applications, full consideration of the views of persons and entities affected by proposed construction, the NOAA national plan criteria, and the standards and criteria of the Act, including assignments of liability for the reef. Civil penalties were provided for violations of the permit conditions. NOAA (1985) prepared the National Artificial Reef Plan which provided guidelines on siting, construction, design, regulatory requirements, management, liability and research needs. The Gulf states, independently and cooperatively through the Gulf State Marine Fisheries Commission, developed artificial reef plans based on the Act and NOAA national plan.

The Rigs for Reefs conferences hosted by the Secretary of Interior resulted in revision of the MMS rules requiring that obsolete oil and gas structures be removed from the waters after production ceases. This allowed the structures to be donated to the states for reefs either erect, in place or disassembled and sunk. The legislatures of Louisiana and Texas established trust funds supporting their reef programs into which the oil and gas industry deposits a portion of cost savings accruing to them by disposing of the obsolete structure at sea rather than on shore. The funds support maintaining buoys and other navigation aides on the reefs and other costs of the programs. These states have designated areas where these structures can be moved and sunk (see Figure 23 for Louisiana planning areas). This consolidation of structures reduces navigation hazards and obstructions to shrimping while retaining this artificial reef material.

Louisiana, Texas, and Alabama have programs where the state is the principal entity constructing reefs and obtaining COE permits for the reefs. In Florida, the municipalities and especially counties are the principal entities obtaining COE permits and constructing reefs. This state provides some funding to these entities for reef construction, principally Wallop/Breaux federal aid (sport fishing restoration funds). In Mississippi, a non-profit

corporation (Mississippi Gulf Fishing Banks, Inc.) established in cooperation with the counties and partially funded by state Wallop/Breaux funds constructs most offshore reefs.

Although the environmental effects for each SMZ established under the framework will be determined and included in the EA or EIS that accompanies the regulatory amendment, a general overview of environmental issues is provided here. The environmental effect and cumulative environmental effect of reef complexes or state programs on the physical environment can be readily determined from permit records of the COE or state records in the case of general permits granted to the state (e.g., Alabama). These records describe the reef material, location, and other characteristics which can be used to indicate the area and volume of the physical environment altered. Under these permits, all material is inspected or otherwise determined (e.g., oil structures) to be environmentally safe to water quality and the ecosystem.

The environment effect and cumulative effect on fishery resources and the human environment can not be as easily determined. Studies of each reef complex site before and for many years after construction would be necessary to assess effects on the fishery resources and their value to persons harvesting from the area. This has not been generally done in the Gulf, although some studies have examined the rate of population increase for invertebrate animals and fish for individual reefs. Data collected on recreational and commercial landings usually does not allow separation of those data into catches from specific artificial reefs or reef complexes; therefore, no complete census of landings is possible. Some studies have examined catches of selected fishermen from reefs (e.g., Stanley and Wilson 1990). Ditton and Graefe (1978), described the socioeconomic profiles of fishermen fishing artificial reefs off Texas, including costs and motivations. Reef fish landings by charter vessels off eastern Alabama could likely be all attributed to the artificial reefs as natural reefs are largely non-existent within the range of a daily trip (see 3.2.2.2.1) but data on their landings prior to construction of the reefs is not available.

The requirements of the National Fishing Enhancement Act and thereby the COE permit process address the effect of user conflict for use of the water bottom and resource through its public comment process and permit conditions. The major user group conflict, especially in the northern and western Gulf, is for use of the bottom for shrimp trawling which would be prevented by construction of the reefs. This issue is addressed in the permit process and through state programs, which generally prohibit construction in prime shrimping areas. The state agencies regularly file objections to such permits by other entities and coordinate with the shrimp industry in locating reef areas in their programs. The Texas and Louisiana programs will consolidate the 3,100 oil and gas structures which are scattered off their coasts into designated areas as they become obsolete, increasing trawlable area. User conflicts for SMZs considered under the framework will be described at that time for each proposed gear restriction.

When artificial reefs are placed offshore in areas remote from natural reefs the fish fauna of the area is altered with reef-associated species replacing principally some of the biomass of groundfish in that area. Some of the groundfish species remain in the proximity of the artificial reef and are likely preyed upon by piscivorous reef fish. If the reef has a high profile it frequently also attracts schooling mid-water herrings and other schooling small prey species and migratory predators such as amberjack, all of which contribute to the productivity of the area. The groundfish displaced are generally not targeted by recreational fishermen offshore or by commercial fishermen, except for the industrial groundfish industry for pet food, due to their low value.

PROPOSED FRAMEWORK MEASURE FOR SPECIAL MANAGEMENT ZONES (SMZ)

The SAFMC Snapper-Grouper FMP includes a framework measure for establishing special management zones by regulatory amendment. This measure, as modified by the Council, is as follows:

Upon request to the Council from the permittee (possessor of a Corps of Engineers permit) for any artificial reef or fish attraction device (or other modification of habitat for the purpose of fishing), the modified area and an appropriate surrounding area may be designated as a Special Management Zone (SMZ), with rules that prohibit or regulate the use of specific types of fishing gear that are not compatible with the most effective use of the area. This may be done by regulatory amendment under the following criteria and procedure:

1. A monitoring team[9] will evaluate the request in the form of a written report considering the following criteria:

   a. Fairness and equity of proposed rules.

   b. Promotes conservation of the resource.

   c. Does not result in excessive shares.

   d. Ensures SMZs are consistent with the objectives of the FMP, the Magnuson Act, and other applicable law.

   e. Considers the natural bottom in and surrounding potential SMZs and impacts on historical uses.

   f. Determine the environment impacts and cumulative impacts on the environment of each SMZ, after consideration of the Environmental Assessment (EA) prepared by the Corps of Engineers in issuing the permit for the reef site.

2. The Advisory Panel (AP) and/or Scientific and Statistical Committee (SSC) will review the report and associated documents and advise the Council. The Council Chairman may schedule meetings of the SSC and AP for this purpose. The Council Chairman will also schedule one or more public hearings in the area affected.

3. The Council, following review of the team's report; supporting data; the SSC, AP, and public comments; and other relevant information, may recommend to the Southeast Regional Director of the National Marine Fisheries Service (RD) that a SMZ with appropriate proposed rules on fishing be approved. Such a recommendation would be accompanied by all relevant background data.

4. The RD will review the Council's recommendation, and if he concurs in the recommendation, will propose regulations in accordance with the recommendations. He may also reject the recommendation, providing written reasons for rejection.

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9 Monitoring Team - The Team will be comprised of members of Council staff, Fishery Operations Branch (Southeast Region, NMFS) and the NMFS Southeast Fisheries Science Center and other members appointed by the Council.

5. If the RD concurs in the Council's recommendations, he shall publish proposed regulations in the Federal Register and shall afford a reasonable period for public comment which is consistent with the urgency of the need to implement the management measure(s).

Preferred Option : Adopt the framework measure in the FMP.

Rejected Option : Status quo - do not adopt the framework measure.

Discussion and Impacts:

a. Fishery Resources: Adoption of the measure would give the Council the option to reject or accept and implement other special management zones by regulatory amendment rather than by amending the FMP. Applying certain gear restrictions may be beneficial to maintaining and restoring stocks or local abundance in certain areas. Each case could be decided based on its own merits and the environmental effects and ecological impacts assessed at that time.

b. Human Environment: Adoption of the measure may result in a proliferation of requests for SMZs, greatly taxing the Council's time and budget. Specific socioeconomic impacts would be determined for each proposed designation of a SMZ. These would be included in the EA (or EIS) submitted with the regulatory amendment.

Concern has been expressed that the framework may result in a great acceleration of artificial reef construction and of restrictions on harvest for existing artificial reefs or artificial reef complexes. The anticipated effects related to this concern would be that more bottom would be occupied by reefs obstructing the use of the bottom by other fishermen (principally vessels using bottom trawls) and reducing harvest efficiency through gear restrictions thereby making commercial reef fish fishing impractical in these areas (some of which may have been fished commercially before reefs were constructed). The preferred option may encourage additional reef construction within an area if the Council through the framework were to designate the area a SMZ. However, it would seem unlikely to result in a general increase in reef construction in anticipation of obtaining a SMZ designation. Increases in artificial reefs will continue to be regulated by state and local government (principally counties) programs that must bear the costs associated with construction and U.S. Coast Guard buoying requirements and which must assume the navigation liability associated with the reefs. These entities along with appropriate federal agencies, fishing associations and the public will continue to address the issue of multiple use of bottoms or waters for a proposed reef site under the COE permitting process [see discussion under 3.2.2.2.1 (d)]. The criteria used by the scientific monitoring team under the framework, reviews by AP and SSC, public hearings, and final testimony before the Council should assure the fairness of any gear restrictions implemented for a SMZ.

c. Physical Environment: No impacts by adoption of measure. Specific impacts would be determined for each proposed designation of a SMZ and included in the EA for the regulatory amendment implementing a SMZ. As indicated in the discussion for Alabama SMZs a EA is usually prepared for each artificial reef project by the COE and would be considered, along with other information, by the monitoring team and Council in assessing environmental impacts.

d. Ocean and Coastal Habitats: Specific effects would be evaluated for each proposed SMZ.

e. Flood Plains and Wetlands: Specific effects would be evaluated for each proposed SMZ.

f. Endangered Species and Marine Mammals: Specific effects would be evaluated for each proposed SMZ.

3.2.2.3 Landing Requirements

Preferred Option: Require all finfish taken or landed from the EEZ, excluding oceanic migratory species, be landed with heads and fins intact. (Possession of fish in other forms for bait[10] on a vessel is allowed.)

Rejected Option 1: Require that all reef fish species in the fishery be landed with heads and fins intact (i.e., whole but eviscerated).

Rejected Option 2: Status quo - requirement applies only to reef fish with minimum size limits.

Discussion and Impacts:

The Council selected as its preferred option the requirement that all finfish, other than oceanic migratory species managed under the authority of NMFS, be landed with heads and fins intact (fish may be eviscerated, gilled and scaled). Oceanic migratory species include sharks, tuna, swordfish, and the billfishes which are subject to other rules under NMFS FMPs. Sharks, tuna, and swordfish must be headed at sea to preserve the quality of the flesh and some species are subject to minimum carcass lengths under these FMPs. The Council is proposing this option because under current rules most fish can be filleted at sea which creates a problem in enforcing size limits and closed seasons that apply to certain species. The Council's preferred option is consistent with landing rules of most Gulf states.

a. Fishery Resources: Currently under the Reef Fish and Mackerel FMPs, all species with minimum size limits must be landed with heads and fins intact (i.e., whole but eviscerated). This is required so that compliance with the minimum size can be monitored. The size limits are very important in increasing yield per recruit for certain stocks and prohibiting landing of sexually immature fish for certain other species. Minimum sizes are not applied to all species since that type of management is not currently required for some stocks. However, by not applying the landing requirement to all finfish, fishermen may legally fillet unregulated species at sea. After a fish has been filleted, it becomes very difficult or impossible to determine which species it is, providing an opportunity to land illegal fish. Therefore, the council's preferred option is to require all fish, except oceanic migratory species, be landed with heads and fins intact to enhance compliance and enforcement of size limits and quota closures.

b. Human Environment: The preferred option is unlikely to cause any adverse economic impact. Almost all commercial landings, with the exception of some

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10 For purposes of the measure, bait includes: (1) Packaged, headless fish fillets, with skin attached, of species of low exvessel value which are frozen, refrigerated, or salted in brine containers, and (2) Small pieces (2 or 3 inches or smaller) or strips (3 x 9 inches or smaller) cut from fillets with skin attached and packaged in cold storage or held in brine containers. Species normally utilized for reef fish bait include, but are not limited to, ladyfish (skipjack), Atlantic mackerel, blue runner, crevalle and other similar jacks, bonito (little tunny), bluefish, mullet, and other species that normally can be distinguished by their skin from regulated species.

oceanic migratory species, consist of whole fish that are landed whole but gutted. Most Gulf states also require all fish (with exceptions for sharks and certain other large fish) to be landed whole but eviscerated. Mississippi requires all saltwater fish be landed with heads and fins intact. Louisiana and Texas apply that requirement to all fish other than very large species. Florida applies the same requirement to most fish, e.g., all reef fish, drums, coastal migratory pelagics, etc. Extending the requirement to fish from the EEZ facilitates state enforcement and closes a loophole in enforcement of federal size limits and quota closures.

c. Physical Environment: No impacts on physical environment.

d. Ocean and Coastal Habitats: This option will have no effect on ocean or coastal habitats.

e. Flood Plains and Wetlands: This option will have no effect on flood plains or wetlands.

f. Endangered Species and Marine Mammals: This option will have no effect on threatened or endangered species or on marine mammals.

3.2.2.4 Permit Requirements

As indicated in the Amendment 5 section on Problems Requiring a Plan Amendment, the FMP currently requires that for a vessel permit to be reissued annually the applicant must be able to demonstrate that more than 50 percent of his/her income was derived from commercial or charter fishing in one of the two previous calendar years. Because of the short duration of the 1992 commercial fishing season for red snapper and the potential that a similar fishing pulse may rapidly harvest the 1993 red snapper commercial quota, some commercial fisherman may lose the right to participate in the fishery by being unable to meet that qualification in 1994. Therefore, the Council considered the following alternatives:

Preferred Option: Status Quo - No change, retain the current requirement.

Rejected Option 1: Require that permittees meet the earned income requirement based on records from one of the three previous calendar years.

Rejected Option 2: Allow permittees to disregard income earned in 1992 in meeting the current requirement for renewal of a permit.

Discussion and Impacts:

The Council selected as its preferred option status quo (no change). This option was selected because the Council is proceeding with development of a limited access system for the red snapper fishery which would have the effect of limiting participation in an already overcapitalized fishery. Therefore, they rejected options that would have altered the current permit criteria, liberalizing participation requirements, and because those requirements may change under the limited access system, as proposed in Draft Amendment 7.

a. Fishery Resources: Rejected Options (1) and (2) would have made the income requirement more liberal possibly resulting in more vessels remaining in the fishery, which is already overcapitalized. This would be unlikely to have a measurable ecological impact on fish stocks regulated by annual quotas, since fishing for those stocks would be terminated on

reaching the quotas. It may have had an impact on other unregulated species through greater fishing pressure, thereby hastening the time when quotas for those stocks are necessary.

b. Human Environment: Rejected Options (1) and (2) were proposed to alleviate potential socioeconomic impacts on fishermen who may be displaced from the fishery in 1994 under the current rule. This would occur if the fishing derby which occurred in 1992 reoccurs in 1993 and if fishermen affected were required to take other employment for a greater part of those years resulting in more than 50 percent of their earned income being from the other employment. This is more likely to occur in the western Gulf where red snapper is the predominant species and the opportunity to target other species is more limited. The Council's proposed red snapper rule for 1993 while attempting to spread out the landings over a greater portion of the year, also proposes to allocate a greater portion of the commercial quota to vessels with historical records of participation in the red snapper fishery. Therefore, many permittees entering the fishery in 1992 may not meet the income requirements for a permit in 1994 based on landings of reef fish. However, many of these permittees are in other fisheries, such as shrimping, and would qualify based on that income.

Rejected Option (1) would allow permittees to qualify for renewal of permits in 1994 based on records for any one of the three calendar years preceding the renewal date (birth date of permittee) for their permit. This option would be consistent with the time period of the commercial vessel permit income requirement for king and Spanish mackerel. It is the more liberal of the options, in that the three-year qualification period would be permanent.

Rejected Option (2) would retain the two-year qualification period, but allow the permit applicant to exclude 1992 in meeting the requirement. The Preferred Option would retain the current requirement, and thereby consideration of income earned in 1992 and 1993 as a basis for renewal of the permit. It may displace some fishermen from the fishery. However, this may (or may not) occur under the limited access system for red snapper being considered by the Council if it is implemented in 1994.

c. Physical Environment: These permitting options would have no effect on the physical environment.

d. Ocean and Coastal Habitats: These permitting options would have no effect on ocean or coastal habitats.

e. Flood Plains and Wetlands: These permitting options would have no effect on ocean or coastal habitats.

f. Endangered Species and Marine Mammals: These permitting options would have no effect on ocean or coastal habitats.

3.2.2.5 Red Snapper Minimum Size

Increasing the minimum size while reducing fishing mortality through the stock restoration program will increase the yield per recruit obtained from the fishery provided the gains are not negated from release mortality of undersized fish. Goodyear (1992) indicated that biomass yield would be maximized by delaying harvest until the fish reach 19 to 21 inches (TL) and reducing instantaneous fishing mortality (F) to about 0.2 (18 percent annual mortality) (Figure 11). During 1992, instantaneous fishing mortality for the directed fishery was estimated to be slightly above F=0.4 (about 34 percent annual mortality) and overall

stock mortality much higher due to shrimp trawl bycatch of juveniles. Obviously attaining the fishing mortality rate that would maximize yield per recruit is a long-term goal under the restoration program.

Immediately increasing the size limit to the level that would maximize yield per recruit, while benefiting the resource, would not be practical since it would adversely impact the directed recreational and commercial fishermen which are harvesting principally smaller fish (see Figures 12 and 13, respectively). However, the year class strengths for 1989 and 1990 were significantly higher than for the previous seven years (Figure 14), with the 1989 year class being about four times higher (Goodyear, 1992). Since these were the first two year classes subject to conservation actions taken through Amendment 1, it is anticipated that future year classes will also be higher than those for 1982 through 1988. Therefore, it is proposed to increase the size limit gradually toward maximizing yield per recruit and thus increasing yield from the biomass.

Preferred Option: Change the minimum size limit for red snapper as follows:

- **to 14 inches (TL) in 1994, and**
- **to 15 inches (TL) in 1996, and**
- **to 16 inches (TL) in 1998.**

Rejected Option: Status quo - no change, the size limit remains at 13 inches (TL).

Discussion and Impacts:

a. Fishery Resources: Increasing the size limit will eventually increase yield per recruit and biomass yield from the stock, thereby benefiting the restoration program. As indicated by Figure 11, a 16 inch size limit would be entering the yield per recruit isopeth that would maximize yield (i.e., see inner concentric area of figure) if release mortality did not exceed 33 percent and F is reduced. During 1992 most of the recreational and commercial harvest was from the 1989 year class, i.e., three year old fish. Those fish averaged about 13 inches (TL) at the beginning of 1992 (Table 9). By the beginning of 1993, the 1989 and 1990 year classes averaged about 16.7 and 13.1 inches (TL), respectively (Table 9). Because of the dominance of the 1989 year class (Figure 14) a large part of the landings will be fish above the current 13 inch (TL) size limit. By 1994 when the 14 inch (TL) size limit is implemented the 1989 and 1990 year classes will average about 19.8 and 16.7 inches (TL), respectively. Currently, release mortality is estimated at 33 percent, but if it were higher (e.g. 50 to 60 percent) some gain in the number of fish not harvested under a 16 inch (TL) minimum size would still be achieved. In as much as restrictive quotas will be required for much (or all) of the restoration period, fishermen should be able to take their quotas without dependence on the size classes below 16 inches (TL). A recent analysis by Goodyear (SEFSC) of the effect of the proposed size limit increases on SPR indicated a 20 percent level of SPR would be achieved sooner, or conversely, a shrimp trawl bycatch reduction of 50 percent could be implemented later than 1994 (Goodyear memo to Thompson, SEFSC, 12/1/92). This is a very important consideration. Specifically, Goodyear's analysis indicated that the effects of increasing the size limit to 16 inches (TL) by 1998 would allow meeting the restoration goal of 20 percent SPR by year 2009, if the reduction of trawl bycatch mortality on juveniles by 50 percent was delayed in implementation until 1995 (see discussion in 3.1.3.1). This becomes especially important since the research program on shrimp trawl bycatch (Hoar, et. al, 1992)

was delayed in implementation by about a year, making it very unlikely that an amendment to the Shrimp FMP addressing bycatch reduction could be implemented in 1994. This analysis also suggests that a further increase in size limit may shorten the period required for restoration of the stock and may become a principal alternative to reduction of TAC for the directed fishery if adequate reduction of trawl bycatch mortality is subsequently delayed.

The yield per recruit (YPR) isopeth (Figure 11) indicates YPR and, thereby, total biomass yield from the stock, would be maximized at minimum sizes above 16 inches (TL), provided release mortality is not greatly in excess of 33 percent and shrimp trawl bycatch is reduced, i.e., F_{max} at 19 inches (TL) = 0.2 [see discussion in Goodyear (1992)]. The release mortality rate of 33 percent is from NMFS studies conducted for red snapper harvested for waters of 150 feet in depth off Texas. If release mortality is much greater than 33 percent, then a size limit smaller than 19 inches (TL) would maximize YPR. The 16-inch minimum does, however, increase both YPR and biomass yield from the stock over the current size at entry into a fishery of 13 inches.

b. Human Environment: Although the Council has the authority to change the size limit by regulatory amendment annually through the FMP procedure for specifying TAC, it chose to implement the change by plan amendment. The Council did this so the public would have the opportunity to comment on the option and be apprised of the changes well in advance of implementation. This knowledge should result in better compliance. It also provides the states with advance notice so that their regulatory agencies can implement compatible rules through their rule-making procedures. That will enhance the enforceability of the size limits.

It is anticipated by the years of the size limit changes that neither the recreational or commercial sectors will be impacted in ability to harvest their quotas due to insufficient numbers of legal size fish being available (see Table 9 for growth rates).

A size limit of 16 inches (TL) would eliminate one of the commercial market categories for red snapper (i.e., the 1 to 2 pound size class). Historically, under the unregulated fishery, ex-vessel prices for the 1 to 2 pound size class were occasionally higher in some landing localities and at some times of the year. This size class would be eliminated by 1998, possibly to some extent affecting ex-vessel value of vessel landings at certain times of the year.

During the 1993 red snapper season, primary wholesale dealers either paid a flat rate for all sizes or used a two-tiered system. The latter was used mostly during the first half of the season and constituted a premium price for small fish in the 1-2 pound category, with the remaining sizes bringing a lower price ($.10-.20 lower). During the second half of the season, one price for all sizes prevailed. (W. Antozzi, NMFS personal communication).

Historically (pre-1990), dealers used a one (flat rate), two, three, or four-tiered system, with the one and two-tiered predominant. The following illustration portrays the pricing systems, with "1" indicating the premium price category.

	1-TIER	2-TIER	3-TIER	4-TIER
1-2#	1	1	2	2
2-4#	1	1	1	1
4-12#	1	1	1	3
>12#	1	2	3	4

Typically, price breaks averaged 10 to 25 cents. It was not uncommon for dealers to switch between systems during the year. Changes were driven by either a change in relative production of fish in certain size categories or change in demand for fish in certain size categories. A few dealers indicate that they have always paid a flat rate only.

New York wholesale prices for fresh Gulf red snapper recorded at the Fulton Fish Market for 1993, consistently show a 10 cent premium for red snapper in the 1-2 pound category. The only exception to this norm was a single report (24-hour period) showing a premium of 10 cents also paid for fish between 8 and 15 pounds. (W. Antozzi, NMFS, personal communication).

As indicated, the 1 to 2 pound category historically commanded a premium price when 1 or 2 price/pound tiers were in effect (the most common scenario) and brought a secondary price when 3 or 4 price/pound tiers were in effect. As the 1 to 2-pound (13 to 16 inches) red snapper category is phased out over the next five years, likely demand and reduced supply will result in a premium price or, more likely, that market category will be supplied by imports. Since the fishery will operate under a quota for about the next 15 years, and the stock abundance should increase annually, it will be easier each year for fishermen to harvest the quota without any dependance on harvest of fish smaller than 16 inches to meet the quota. Whether the loss of the 1 to 2-pound category after 1998 impacts vessel revenue is problematic, and must be contrasted against gains in stock restoration and available biomass from the resource. Red snapper grow from 13 to 16 inches (TL) in seven months (Table 9).

c. Physical Environment: No impact is anticipated on the physical environment. The preferred option should enhance the condition of the stock and thus restoration of the resource.

d. Ocean and Coastal Habitats: This option will have no effect on ocean or coastal habitats.

e. Flood Plains and Wetlands: This option will have no effect on flood plains or wetlands.

f. Endangered Species and Marine Mammals: This option will have no effect on threatened or endangered species or on marine mammals.

3.2.2.6 Mutton Snapper Spawning Aggregation

At public hearings on Amendment 5 the Council presented management options to regulate the recreational and commercial harvest of mutton snapper in the Gulf of Mexico. Specifically, the Council sought public comment on proposals to have a Gulf-wide spawning season closure during May and June, and to prohibit all fishing activity during May and June in the region of Riley's Hump, an area near the Dry Tortugas, Florida, (Figure 16) which is known to have major mutton snapper spawning aggregations. The Council also presented other alternative options for regulation of mutton snapper harvest.

Mutton snapper (Lutjanus analis) are occasionally found from the Gulf of Maine to Brazil, but are most common in the eastern Gulf of Mexico (NOAA 1985). This NOAA atlas depicted the recreational and commercial fishing grounds in the Gulf to be limited to the Florida Keys area (Figure 22). Mutton snapper can reach a maximum size of 34 inches to 40 inches and may live for 15 to 20 years (Mason and Manooch 1985, Palazon and Gonzalez 1986, Pozo 1979). Mutton snapper frequently inhabit open waters; both adults and juveniles may associate with grass beds, but the adults also live on or near patch reefs of coral and rock rubble and sponge patches (Bortone and Williams 1986). Spawning probably occurs during an extended period which may last from May to November (Claro 1983, Mason and Manooch 1985, Palazon and Gonzalez 1986, written and verbal testimony received by the Gulf Council from fishermen). In the Gulf of Mexico, the peak spawning months appear to be May and June.

Snappers generally spawn in groups (Thompson and Munro 1974, Thresher 1984). Fishermen in Gulf waters have observed mutton snapper spawning aggregations during full moon periods around sunset May and June. In U.S. Gulf waters the only known spawning aggregation is in the area of Riley's Hump near the Dry Tortugas. The Gulf Council has received testimony from fishermen that other aggregations have existed in the past, in particular, in the vicinity of Western Dry Rocks, near Key West. However, these particular aggregations were targeted and are no longer found in that area. Testimony by fishermen at public hearings indicated minor aggregations occur along the outer reefs on the Atlantic side of the Florida Keys.

The summary of recreational mutton snapper harvest from 1987 to 1991 is in Tables 11 and 12. This harvest has been almost evenly split between the Gulf of Mexico and the South Atlantic off Florida. From 1979 to 1991, the annual mutton snapper recreational harvest in the Gulf of Mexico ranged from 29 thousand fish to 369 thousand fish, peaking in 1984 (GMFMC 1989). However, since 1984 the recreational harvest of mutton snapper has declined dramatically. From 1981 to 1984 the annual recreational harvest averaged 230 thousand fish. From 1985 to 1988 the average decreased to 64 thousand fish. In 1989-1991 the average annual harvest dropped to 48 thousand fish, a decline of 24 percent from 1985-1988 levels and 80 percent from 1981-1984 harvests. Although spawning aggregations are reported during May and June, the greatest harvests have occurred in the winter months, with November through February accounting for 64 percent of the total mutton snapper Gulf of Mexico harvest (Figure 17).

South Atlantic recreational harvest of mutton snapper off Florida has also seen a decline in recent years, from an average of 87 thousand fish in 1987 through 1988 to an average of 60 thousand fish in 1989-1991, a 31 percent decrease. In contrast to the Gulf of Mexico, South Atlantic recreational harvest displays a bimodal landings distribution, with a primary peak in summer and a second peak in winter (Figure 18). For 1987 through 1991, the months of May-June accounted for 52 percent of the South Atlantic recreational harvest, and another 23 percent was harvested in November-December. Riley's Hump is very close to the GMFMC/SAFMC jurisdictional border (see Figure 16). If fishing trips in the Riley's Hump area were counted as Atlantic trips, then additional harvest during periods of spawning aggregations would not appear in Gulf of Mexico statistics, but would instead appear in South Atlantic statistics.

Commercial landings for mutton snapper were obtained from Florida trip ticket data provided by Florida DNR. Note that all Monroe county landings are considered to be Gulf of Mexico landings. Over 98 percent of the commercial mutton snapper catch is taken from waters adjacent to Florida (GMFMC 1989). Since 1986 landings in Florida have remained fairly stable, ranging from 242 thousand pounds to 362 thousand pounds (in 1987). Unlike the recreational harvest, commercial landings have shown no obvious trend upward or downward (Table 13, Figure 19). The commercial sector has harvested 65 percent of the mutton snapper since 1985 (GMFMC 1989). Figure 20 shows the average monthly mutton snapper landings for 1986-1991. For most of the year, other

than May and June, average monthly landings are fairly stable, ranging from 12 thousand to 22 thousand pounds. However, in May and June, average landings increase to 60 to 62 thousand pounds. For the period 1986-1991, May-June landings accounted for 39 percent of mutton snapper landings. The May-June landings peak is from Monroe County landings. If Monroe County landings are removed from the statistics, the remaining Gulf Coast landings do not show any increased harvest in May-June (Figure 21, Table 14). Monroe County accounts for 64 percent of mutton snapper landings during the non-spawning months, but 90 percent of mutton snapper landings during May and June.

Existing Regulations

In the Gulf of Mexico EEZ, mutton snapper have a 12 inch total length minimum size limit, and must be landed with head and tails attached. Recreational fishermen have an aggregate bag limit of 10 snapper (including mutton) other than red, lane, and vermilion. Charter and headboats may possess two day's bag limit on trips longer than 24 hours. There are no quotas or closed seasons, however, a federal reef fish permit is required to harvest commercial quantities of mutton snapper. Within the "stressed area", the use of fish traps, roller trawls and power heads is prohibited. (Riley's Hump is outside of the stressed area, which extends to the 10 fathom contour in the region near the Dry Tortugas.)

In the South Atlantic EEZ, there is also a 12 inch total length minimum size limit, and mutton snapper must be landed with head and tails attached. Recreational fishermen have an aggregate bag limit of ten of all snappers combined except for vermilion, which has a separate bag limit (a maximum of two of the aggregate can be red snapper). Charter and headboats may possess two day's bag limit on trips longer than 24 hours, or three day's bag limit on trips longer than 48 hours. A federal snapper-grouper permit is required to harvest commercial quantities of mutton snapper. There is a spawning season closure in May and June, during which commercial fishermen are limited to the recreational limit for mutton snapper.

Within Florida state waters, there is also a 12 inch total length minimum size limit, and mutton snapper must be landed with head and tails attached. Recreational fishermen have an aggregate bag limit of ten of all snappers with a bag limit. A saltwater products license with a restricted species endorsement is required to harvest commercial quantities of mutton snapper. The only allowable gears for harvest are hook and line, spear, gig or lance (except powerheads, bangsticks, or explosive devices).

Preferred Option : Close the region of Riley's Hump[11] to all fishing activity during the months of May and June.

Rejected Option 1: Do not have a complete closure of Riley's Hump. Fishing for species other than mutton snapper would continue to be allowed during May and June.

Rejected Option 2: Status quo.

Discussion: The region is just inside the Gulf Council's jurisdictional waters, about five miles from the SAFMC jurisdiction, and less than three miles from the Florida Keys National Marine Sanctuary.

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11 For purposes of this measure, Riley's Hump is defined as the area inside the following coordinates (see Figure 16): Point A (24° 32.2′ N., 83° 8.7′ W.), Point B (24° 32.2′ N., 83° 5.2′ W.), Point C (24° 28.7′ N., 83° 8.7′ W.) and Point D (24° 28.7′ N., 83° 5.2′ W.).

Riley's Hump is the only known remaining area of mutton snapper spawning aggregation in U.S. Gulf of Mexico waters. Spawning aggregations in other areas have been observed (Don DeMaria, Reef Fish Advisory Panel, Personal Communication) off the Turks and Caicos, Bahama Islands in April 1992. However, long-term tagging returns indicate that adult mutton snapper show little movement. The Council proposes a complete prohibition on all fishing on Riley's Hump during the peak of the spawning season which would eliminate release mortality and would increase ease of enforcement. This would provide the greatest possible protection for the mutton snapper spawning aggregation. No information is available on release mortality of mutton snapper. The Council has chosen to use a release mortality of 33 percent for red snapper for purposes of stock assessments. Riley's Hump is a shallow water area or plateau (minimum depth 80-90 feet rising from 200 feet), which could increase the survival of released mutton snapper.

Impacts:

a. Fishery Resources: Protection of fish from exploitation during spawning periods is important only if the fish are more vulnerable to harvest during the spawning period or the spawning act, than at other times of the year. Some of the reef fish form dense aggregations during the spawning act. During periods of these aggregations the fish become more vulnerable to harvest as the aggregations are targeted by fishermen. Nassau grouper, a Pan-Caribbean species, has been significantly reduced in abundance over that area partially as a result of fishing on aggregations (Sadovy, in press). Mutton snapper aggregations in the Florida Keys area have been fished by recreational and commercial fishermen for years, and some aggregations have been substantially reduced (e.g., at Western Dry Rocks).

   An assessment of the mutton snapper stock in the Gulf has not been completed. However, analyses completed for the SAFMC jurisdiction indicated a SPR level between 38 and 51 percent (Huntsman, NMFS, Personal communication to Steven Atran). Huntsman pointed out these levels conflict with perceptions of the fishermen that mutton snapper are declining and suggested samples for these determinations may have been biased through collection of larger specimens.

   Even though the SPR may be relatively high for the Florida Keys population, it is appropriate to protect the spawning aggregation, since the fish are more vulnerable to fishing at that time. The Council's preferred option would do that during the peak spawning months of May and June and not over entire period spawning has been observed to occur (i.e., May through November). Mutton snapper, like many reef fish, are batch spawners, extruding eggs as they ripen over an extended period. However, for many batch spawners egg release is much higher during the spawning peaks, often when environmental conditions first become favorable. May and June appear to be the peak period for the Riley's Hump area.

b. Human Environment: The Council's preferred option would prohibit any fishing on the Riley's Hump area during May and June. This was selected, rather than rejected Option (1), because enforcement is more easily accomplished (i.e., aerial surveillance can be utilized) and, because of the large aggregations, many mutton snapper would be caught incidentally and be subject to release mortality.

   Testimony at hearings indicated many spiny lobster and some stone crab fishermen fished Riley's Hump when their fisheries were closed (April through July) and were dependent on fishing during those months. These fishermen would have to fish other (likely less productive) areas during May and June.

On the average, May-June landings account for 39 percent of Gulf commercial landings of mutton snapper (Figure 21), with 90 percent of the Gulf landings for May-June occurring in Monroe County (i.e., the Florida Keys). It is not known how much of these commercial landings of mutton snapper are caught on Riley's Hump, but it would appear this area contributes a substantial amount. Although the loss of these catches may be recouped in other areas or at other times the operating cost of vessels would be increased. A loss in producer surplus is bound to occur in the commercial fishery at least in the short run. While mutton snapper are a minor component of the Gulf recreational catch (i.e., about 65 thousand fish annually) and only 10 percent are landed in the May-June period, some of the 233 charter and 16 head boats in the Florida Keys could be impacted, as well as an unknown number of private recreational boats (RIR).

c. Physical Environment: No environment effects are anticipated in relation to preferred and rejected options other than the impacts on the human environment described above. The preferred option is anticipated to benefit the resource and fishery, by preventing harvest of aggregated spawners.

d. Ocean and Coastal Habitats: These options will have no effect on ocean or coastal habitats. Fishing would be prohibited on 13 square miles of oceanic habitat for two months.

e. Flood Plains and Wetlands: These options will have no effect on flood plains or wetlands, as the area is oceanic.

f. Endangered Species and Marine Mammals: This option will have no effect on threatened or endangered species or on marine mammals.

Alternatives Related to Seasonal Closures

Preferred Option: Status quo - do not have a closed season for mutton snapper.

Rejected Option 1: Close the mutton snapper fishery to all fishing during the peak spawning season of May and June.

Rejected Option 2: Restrict the commercial sector to the recreational bag limit of mutton snapper during May and June. (This option is identical to the SAFMC regulation.

Rejected Option 3: Implement Option 1 or 2 but with a different season.

Discussion and Impacts:

The Council selected status quo as its preferred option because closure of Riley's Hump, the only identified spawning area in the Gulf, appeared to provide adequate protection of the spawning population. A Gulf-wide closure [rejected Option (1)] would have enhanced enforcement but, was deemed not appropriate because NOAA (1985) identified the directed fishery for mutton snapper to occur only in the Florida Keys area of the Gulf and because there was no stock assessment available on the Gulf resource. Limiting all participants to a bag limit (ten fish) during May and June [Rejected Option (2)] would have allowed persons to continue to fish Riley's Hump during the peak spawning period, partially negating the benefits of the area closure.

a. Fishery Resources: Rejected Options (1) and (2) would have reduced harvest of mutton snapper over the entire Gulf of Mexico during the peak spawning months associated with the

Florida Keys area. However, spawning peaks may occur at other times in other parts of the Gulf due to different environmental conditions [Rejected Option (3)]. That information is not available. The statistical information on landings indicates the directed fisheries in the Gulf for mutton snapper occurs only off South Florida. Therefore, large spawning aggregations are more likely in that area and many are likely protected by the SAFMC rule [Rejected Option (2)].

b. Human Environment: There are no effects related to adoption of status quo. Rejected Option (2) would have restricted fishing by only the commercial sector during peak spawning months.

c. Physical Environment: No change in environmental effects are associated with the status quo (Preferred Option). Rejected Options (1) and (2) may have benefitted the spawning stock if other unknown aggregations in the Gulf are targeted.

d. Ocean and Coastal Habitats: These options will have no effect on ocean or coastal habitats.

e. Flood Plains and Wetlands: These options will have no effect on flood plains or wetlands.

f. Endangered Species and Marine Mammals: These options will have no effect on threatened or endangered species or on marine mammals.

Alternatives Related to Size and Bag Limits

Preferred Option: Status quo - do not change the minimum size limit or set a species bag limit.

Rejected Option 1: Increase the minimum size limit for mutton snapper from 12 inches to 17 inches total length.

Rejected Option 2: Increase the minimum size limit for mutton snapper from 12 inches to 20 inches total length.

Rejected Option 3: Set a recreational daily bag limit of two (or some other number) mutton snapper.

The Council selected status quo as its preferred option after deciding to wait until it had better assessment information on mutton snapper and until the Florida Marine Fisheries Commission had considered rules regulating mutton snapper in Florida waters. Mutton snapper in Cuba are reported to first exhibit indications of sexual maturity at about 17 inches total length (GMFMC 1989). It is therefore likely that 12 inch mutton snapper in the Gulf of Mexico are not yet mature. However, increasing the minimum size limit might eliminate the recreational fishery for mutton snapper in grass flats and near shore areas. When the Council decided to set a 12 inch size limit in Amendment 1, it felt that the combination of size and catch limits together would provide protection against overfishing. Mutton snapper presently have no species bag limit but are included in an aggregate daily bag limit of 10 snappers.

a. Fishery Resources: There was insufficient scientific data to assess the impacts of the rejected options; therefore status quo was adopted as the preferred option.

b. Human Environment: There was insufficient scientific data to assess the impacts of the rejected options; therefore status quo was adopted as the preferred option.

c. Physical Environment: These options would have no effect on the physical environment.

d. Ocean and Coastal Habitats: These options would have no effect on ocean and coastal habitats.

e. Flood Plains and Wetlands: These options would have no effect on flood plains or wetlands.

f. Endangered Species and Marine Mammals: These options would have no effect on endangered species and marine mammals.

4.0 ENVIRONMENTAL CONSEQUENCES OF PROPOSED ACTIONS

This section summarizes the environment effects of the proposed actions of Amendment 5 and of the fishery under current rules and conditions. The effects of alternatives to the proposed action are included in Section 3.0.

4.1 Fishery Resources and Long-Term Productivity of Stocks

Reef Fish Fishery

The open access nature of the fishery coupled with inadequate initial regulation of the fishery and lack of scientific information for each individual stock has resulted in some stocks being overfished. These include jewfish, possibly gag grouper, and especially red snapper. Bycatch of juvenile red snapper in shrimp trawls contributes significantly to this overfished condition for red snapper. The condition of some stocks is not known due to lack of adequate scientific information.

Actions taken, being taken or proposed to be taken should arrest these overfished conditions and assure the long-term productivity of the stocks. Programs have been initiated under the FMP to restore the red snapper stock utilizing reduced recreational and commercial quotas, bag limits, size limits and other regulations on harvest. An amendment to the Shrimp FMP reducing shrimp trawl bycatch of finfish, utilizing bycatch reduction devises (BRDs) or modified TEDs, and possibly seasonal and areal closures, will be implemented in 1994 or by 1995, depending on availability of information and bycatch reduction technology. A moratorium has been placed on issuance of reef fish commercial vessel permits and a limited access system amendment for red snapper will be prepared in 1993. Limited access systems for other components of the fishery will be considered for implementation in subsequent years. Harvest of jewfish has been prohibited for an indefinite period to restore that stock. Stock assessments for gag grouper and other highly targeted species will be available in 1993 and subsequent years as a basis for regulatory action. Research by NMFS has been increased to gather needed scientific information on the stocks for which certain critical stock assessment information is not currently available (e.g., growth rates and age/fecundity relations, etc.).

Amendment 5

Potential impacts of the proposed and alternative (rejected) actions are discussed in the text of Section 3.2 following each action. The proposed actions should have the following environmental effects. The requirement that all fish traps be carried to sea and returned to shore following each trip should reduce confinement-associated mortality and mortality associated with lost or ghost traps. The moratorium on trap permits should stabilize effort in that fishery at current levels and allow a more thorough evaluation of the ecological effects of traps to be conducted by NMFS. These actions should enhance long-term productivity of the stocks.

The establishment of SMZs off Alabama where gear used for harvest of reef fish from artificial reefs is limited to no more than three hooks per line and spear fishing should reduce and stabilize fishing power of vessels fishing the reefs. This effort limitation measure should benefit long-term productivity of the stocks, especially

the red snapper stock. It should also contribute toward increased productivity through continuation of expansion of the construction program for artificial reefs. It may reduce fishing efficiency for some commercial fishermen utilizing the reefs.

The requirements for fish to be landed with heads and fins intact to enhance compliance with size limits should benefit long-term productivity, since size limits generally are used to increase yield per recruit (YPR) from a stock or protect sexually immature fish. Retaining status quo on commercial vessel permit income requirements (see Section 3.2.2.4) is consistent with previous actions to limit effort by permit moratorium and with proposed future action to implement a limited access system. Such effort limitations should benefit stock productivity.

The proposed action to increase the red snapper size limit to 16 inches will increase yield from this stock and it enhances the restoration program for the stock. The effect on the restoration program is to reduce the period required for restoration and allow greater flexibility in the implementation dates of shrimp trawl bycatch reduction measures (see Section 3.2.2.5). This action enhances long-term productivity of that stock.

The proposed action to prohibit all fishing on Riley's Hump to protect a spawning aggregation of mutton snapper during the peak spawning period of May and June will enhance long-term productivity of that stock.

4.2 Human Environment

Reef Fish Fishery

In terms of income and employment for the fishermen and the supporting industries the fishery has a significant beneficial effect. Revenue generated from the commercial industry is around $90 million annually. Gross revenue by Gulf charter and head boats targeting reef fish is about $23 million. Recreational fishing trips are about 18 million annually. All of these activities contribute significantly local and national economies, but data are inadequate to quantify that effect.

The consequence of the open access nature of the fishery has been the significant increase in the number of commercial reef fish vessels which has almost tripled since 1975 (Figure 1) while total value landings in real dollars (adjusted for inflation) only doubled over the same period (Table 3). This economic trend, coupled with reduced quotas placed on red snapper (the most valuable species) to restore the stock, has economically stressed these participants in the fishery making some individual operations not fiscally sound. Recreational fishermen are not similarly affected since discretionary expenditure of income regulates their participation. The charter and head boat industry, while initially economically affected by imposition of bag and size limits for reef fish, appear to have economically adjusted to these restrictions without continued adverse impact. They also have the option to target species other than reef fish. Proposed future actions to reduce effort in the fishery by limited access systems will displace some vessels, the crews of which will have to seek other employment or enter other fisheries. These effects will be described when that action occurs.

Amendment 5

The proposed action that fish traps be buoyed and returned to shore after each trip affects very few Gulf trap fishermen since most fishermen already followed this practice. The proposed moratorium of fish trap permits is anticipated to have no effect, since all current participants are included.

The proposed action limiting gear used in Alabama SMZs to three terminal hooks per line when fishing for reef fish is anticipated to have little adverse effects on most users of these areas. Most recreational and charterboat fishermen, who principally constructed the reefs, use 2 to 4 hooks per line and advocated the three hook limitation. Local commercial reef fish fishermen fishing the area are not anticipated to be significantly affected either, as most are charter boat fishermen. For the 20 to 30 vessels with bandit rigs estimated to fish, or occasionally fish, the area, hooks per line would be reduced by 60 to 70 percent. Fishing for species other than reef fish with other gear is not restricted in these areas. Natural reefs in the area are too few, small and scattered to support a sustained directed fishery. The proposed action is anticipated to relieve perceived social concerns by persons constructing reefs that the reefs will not be

overfished through excessive use of efficient gear, thereby enhancing their willingness to continue to bear the cost of replacing the reef material which deteriorates in 4 to 7 years.

The proposed requirement that fish be landed with heads and fins intact and the permit income requirement (status quo) are anticipated to have no appreciable effect. The proposed action to increase the red snapper minimum size limit to 16 inches by 1998 will eliminate the commercial market category of 1 to 2 pound fish, likely resulting in that category being filled by imports, as it currently is during periods when the commercial red snapper fishery is closed. This may affect commercial exvessel income during certain periods when that category commands a higher price of $0.10 to $0.25 per pound However, since the category will not be eliminated until 1998, and since prices are frequently higher for fish in other market categories (>2 pounds), little adverse effect is anticipated.

The proposed action to prohibit all fishing on Riley's Hump to protect the spawning aggregation of mutton snapper during May and June will adversely affect fishermen who historically fished this area (approximately 13 square miles) during those months (likely targeting the mutton snapper). They will have to fish other areas that may not be as productive, but should benefit in the long-term by the action maintaining this spawning aggregation.

4.3 Physical Environment

Reef Fish Fishery

All terminal gear used in the fishery, with the exception of fish traps, consists of fish hooks and spear guns to a very limited extent. No appreciable adverse effect on the physical environment will occur as a result of the gear used. The Council concluded that fish traps as fished in the Gulf had little to no adverse impact. Anchoring by some vessels to fish may have a limited adverse impact of short duration i.e., vessels do not drop anchors on reef; an anchored vessel requires a scope of 10 feet of anchor rope for each foot of depth. Many vessels (e.g. longline and trap vessels) do not anchor when fishing.

Amendment 5

None of the proposed actions are anticipated to adversely affect the physical environment. The proposed action to establish SMZs off Alabama may result in increase in reef fish environments. (See 3.2.2.2.1).

4.4 Ocean and Coastal Habitats

Reef Fish Fishery

Reef fish generally do not occur in coastal habitats and consequently there is no directed fishery (see Section 3.1.1). The fishery has little impact on the ocean habitats (see Section 4.3).

Amendment 5

See discussion under section 4.3.

4.5 Flood Plains and Wetlands

Reef Fish Fishery

The fishery does not effect flood plains or wetlands.

Amendment 5

None of the proposed actions affect flood plains or wetlands.

4.6 Endangered Species and Marine Mammals

The proposed amendment and fishery will have no effect on endangered or threatened species. Section 7 consultations have been held on this amendment and for the fishery under Amendment 4 with a "no jeopardy" opinions rendered. There is no known marine mammal interaction in the fishery, even though longlines are used since they are set on the bottom.

4.7 Cumulative Adverse Effects and Substantial Impacts on Stocks

Reef Fish Fishery

The cumulative adverse effects of the fishery have been to overfish some stocks and have resulted in overcapitalization of the commercial sector affecting economic viability of some individual vessel operations. Rules currently affecting the fishery through the FMP should improve the condition of stocks.

Amendment 5

No adverse cumulative effects are anticipated from the proposed actions which should enhance long-term productivity of the stocks.

4.8 Economic Effects

Reef Fish Fishery

The economic effects are summarized under Section 4.2 above and discussed in more detail in sections 3.1.2 and 3.1.3.

Amendment 5

The economic effects are summarized in sections 4.2 and discussed in more detail in Section 3.2.2 and the appended RIR/IRFA.

4.9 Federal Agencies that may be Affected

NOAA, NMFS and the U.S. Coast Guard are affected by the fishery and will be affected by proposed actions in Amendment 5. In addition to enforcement of rules resulting from the proposed actions by these agencies, in cooperation with the states, NMFS will be required to issue trap vessel permits and administer that annual permit requirement.

5.0 LIST OF PREPARERS

5.1 List of Agencies and Persons Consulted in Preparation

Gulf of Mexico Fishery Management Council:	Standing and Special Reef Fish Scientific and Statistical Committee Reef Fish Advisory Panel
Coastal Zone Management Programs:	Louisiana Mississippi Alabama Florida
National Marine Fisheries Service:	Southeast Fisheries Science Center Southeast Regional Office
Alabama Department of Conservation and Natural Resources:	Marine Resources Division Messrs. Minton and Tatum

National Oceanic and Atmospheric Administration:	General Counsel (SER) Ecology and Conservation Office
Corps of Engineers (Mobile District):	Operations Branch

5.2 List of Preparers

Gulf of Mexico Fishery Management Council
- Wayne Swingle, Biologist
- Antonio Lamberte, Economist
- Steven Atran, Populations Dynamics Statistician

6.0 PUBLIC REVIEW

6.1 Public Hearings

A total of eight public hearings were held to obtain public comments on Amendment 5/EA with one additional hearing held during the Gulf Council meeting on Wednesday, November 18, 1992, in Sarasota, Florida. The public comment period for this amendment ended on November 9, 1992.

The public hearings, with the exception of the one conducted during the Council meeting, were held at the following dates and places beginning at 7:00 p.m.:

October 19, 1992	American Legion Hall, 5610 College Road, Key West, Florida
October 20, 1992	Naples Depot Cultural Center, 1051 5th Avenue South, Naples, Florida
October 21, 1992	Plantation Inn and Golf Resort, 9301 West Fort Island Trail, Crystal River, Florida
October 22, 1992	Apalachicola Bay Chamber of Commerce, Rainey House, 128 Market Street, Apalachicola, Florida
October 26, 1992	Best Western Beachfront Inn, 5914 Seawall Boulevard, Galveston, Texas
October 27, 1992	Howard Johnson Lodge, 201 North Canal Boulevard, Thibodaux Louisiana (no attendance)
October 28, 1992	Gulf Coast Research Laboratory, J. L. Scott Marine Education Center and Aquarium Auditorium, 115 East Beach Boulevard, Biloxi, Mississippi
October 29, 1992	Baldwin County Electric Membership Corporation, 19600 State Highway 59, Summerdale, Alabama

6.2 Persons, Associations and Agencies from whom Comments were Requested on the EA/Amendment (* designates distribution of SEIS)

Florida
Southeast Fisheries Association*
Organized Fishermen of Florida*
Southern Offshore Fishermen's Association*
Panama City Charter Boat Association*
Destin Charter Boat Association*
Marine Life Association*
Pensacola Charter Boat Association*
Florida League of Anglers*
Florida Conservation Association
- State Office*
- Ft. Myers Chapter
- Hillsborough Chapter
- Pensacola Chapter
- Upper Keys Chapter
- Lower Keys Chapter
- Sarasota Chapter
- Manatee Chapter

- Tallahassee Chapter

Key West Charter Boat Association
Florida Keys Fishing Guides Association

Alabama
Orange Beach Fishermen's Association*
Orange Beach Charter Boat Association*
Saltwater Sportsman Association
Gulf Coast Conservation Association*

Mississippi
Save America's Seafood Industry coalition
Saltwater Fisherman's Coalition
Gulf Coast Conservation Association*
Gulf Fishermen's Association

Louisiana
Organization of Louisiana Fishermen*
Louisiana Coastal Fishermen Association*
Louisiana Shrimp Association
Louisiana Association of Coastal Anglers
Gulf Coast Conservation Association
- State Office*
- Baton Rouge Chapter
- Houma Chapter
- Westbank Chapter
- Northshore Chapter
- Lake Charles Chapter

Texas
Texas Shrimp Association*
Port Aransas Boatmen, Inc.*
Women in Seafood Industry
PISCES
Galveston Charter Association
Coastal Conservation Association*
Gulf Coast Conservation Association
- State Office*
- Galveston Chapter
- Houston Chapter
- Matagorda Chapter
- Golden Triangle Chapter
- Mid-Coast Chapter
- Redfish Bay Chapter
- Trinity Chapter
- Corpus Christi Chapter
- Rio Grande Valley Chapter
Sportsmen's Conservationists of Texas (SCOT)

Agencies
National Marine Fisheries Service
National Oceanic and Atmospheric Administration
United States Coast Guard
Coastal Zone Programs
- Florida
- Alabama
- Mississippi

- Louisiana

6.3 Distribution of SEIS

Agencies
National Marine Fisheries Service
National Oceanic and Atmospheric Administration
Environmental Protection Agency
United States Coast Guard
Department of Interior, Fish and Wildlife Service
Corps of Engineers
Coastal Zone Programs
- Florida
- Alabama
- Mississippi
- Louisiana

Associations [See distribution indicated (by *) under Section 6.2]:

National
Center for Marine Conservation
Coral Reef Coalition

Florida
Talamorada Charterboat Association
Seafood Consumers and Processors Association
Project ReefKeeper, Inc.
Florida Marine Aquarium Society

Texas
Commercial Reef Fishermen of Texas
Seafood Producers and Processors of Upper Texas Coast

7.0 CONSISTENCY WITH APPLICABLE LAW

Vessel Safety Considerations

There are no fishery conditions, management measures, or regulations contained in this amendment that would result in the loss of harvesting opportunity because of crew and vessel safety effects of adverse weather or ocean conditions. The affected persons can fish throughout each year and select fishing periods dependent on weather. Therefore, there are no procedures for making management adjustments in the amendment due to vessel safety problems because no person will be precluded from a fair or equitable harvesting opportunity by the management measures set forth.

No vessel will be forced to participate in the fishery under adverse weather or ocean conditions as a result of the imposition of management regulations set forth in this amendment. Therefore, no management adjustments for fishery access will be provided. There are no procedures proposed to monitor, evaluate, and report on the effects of management measures on vessel or crew safety under adverse weather or ocean conditions.

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.

This amendment is consistent with the Coastal Zone Management programs of the states of Alabama, Florida, Louisiana, and Mississippi to the maximum extent possible; Texas does not have an approved Coastal Zone Management program. This determination has been 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, and Louisiana.

Paperwork Reduction Act

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

The Council proposes, through this amendment, to establish no additional permit requiring data from the public or data collection programs. Therefore, no increased reporting burden on the public or cost to the government will be incurred through this amendment.

Federalism

No federalism issues have been identified relative to the actions proposed in this amendment and associated regulations. The affected states have been closely involved in developing the proposed management measures and the principal state officials responsible for fisheries management in their respective states have not expressed federalism related opposition to adoption of this amendment. Therefore, preparation of a federalism assessment under Executive Order 12612 is not necessary.

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FIGURE 1. LANDINGS OF RED SNAPPER AND REEF FISH & NUMBER OF VESSELS

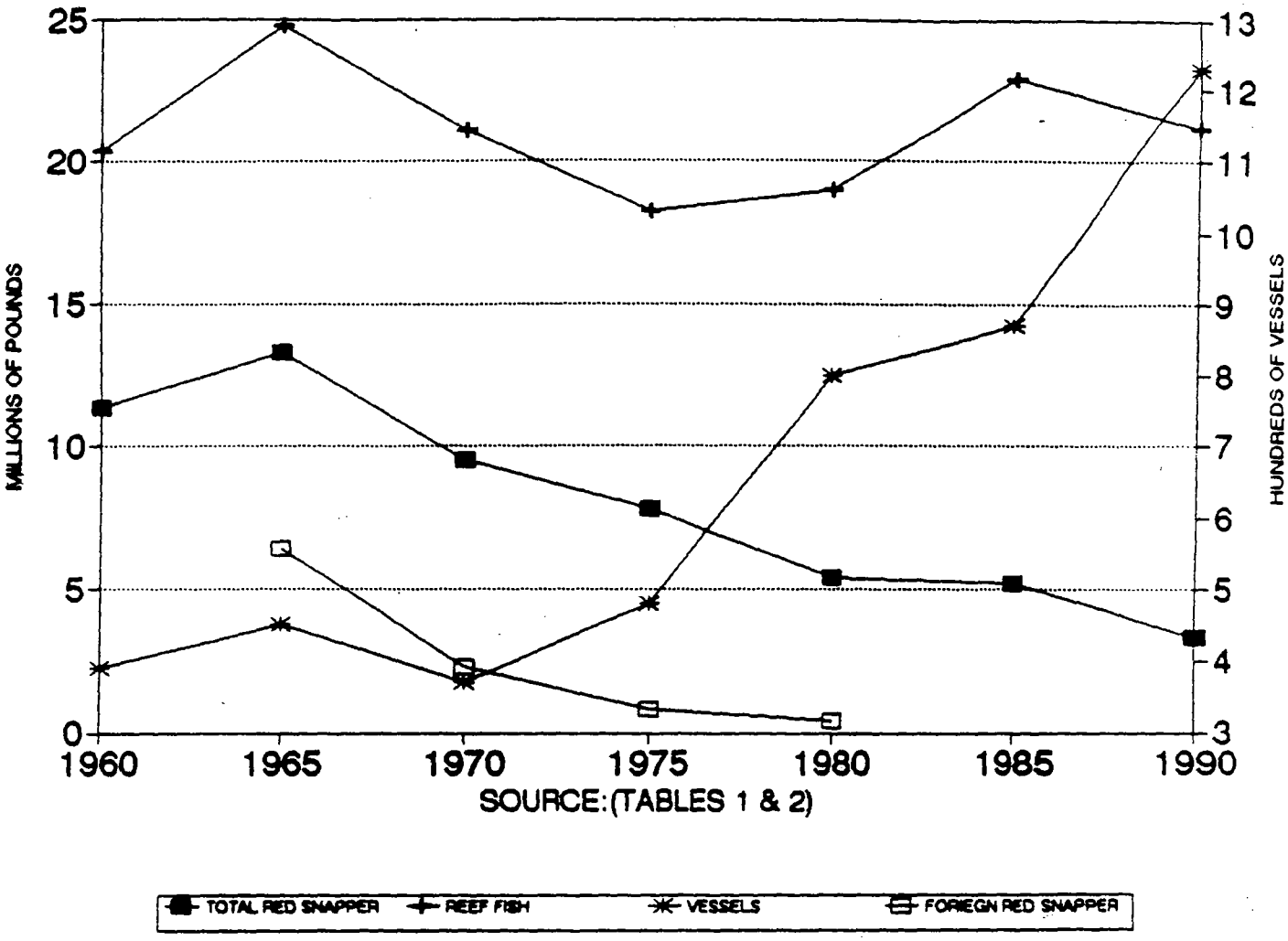


FIGURE 2. AVERAGE NUMBER OF VESSELS
IN THE REEF FISH FISHERY

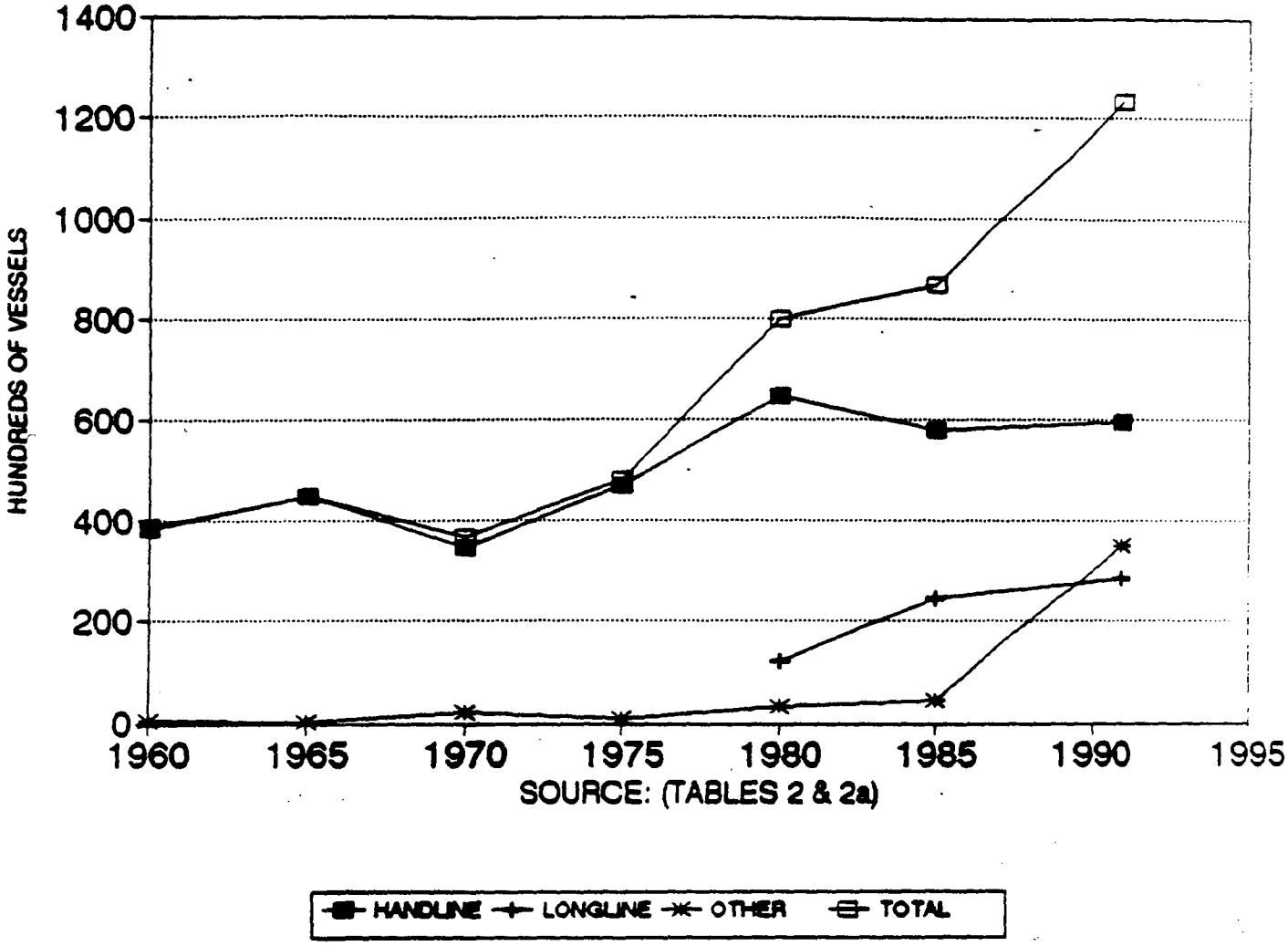


FIGURE 3. REAL AND EXVESSEL PRICE PER POUND FOR RED SNAPPER AND REEF FISH

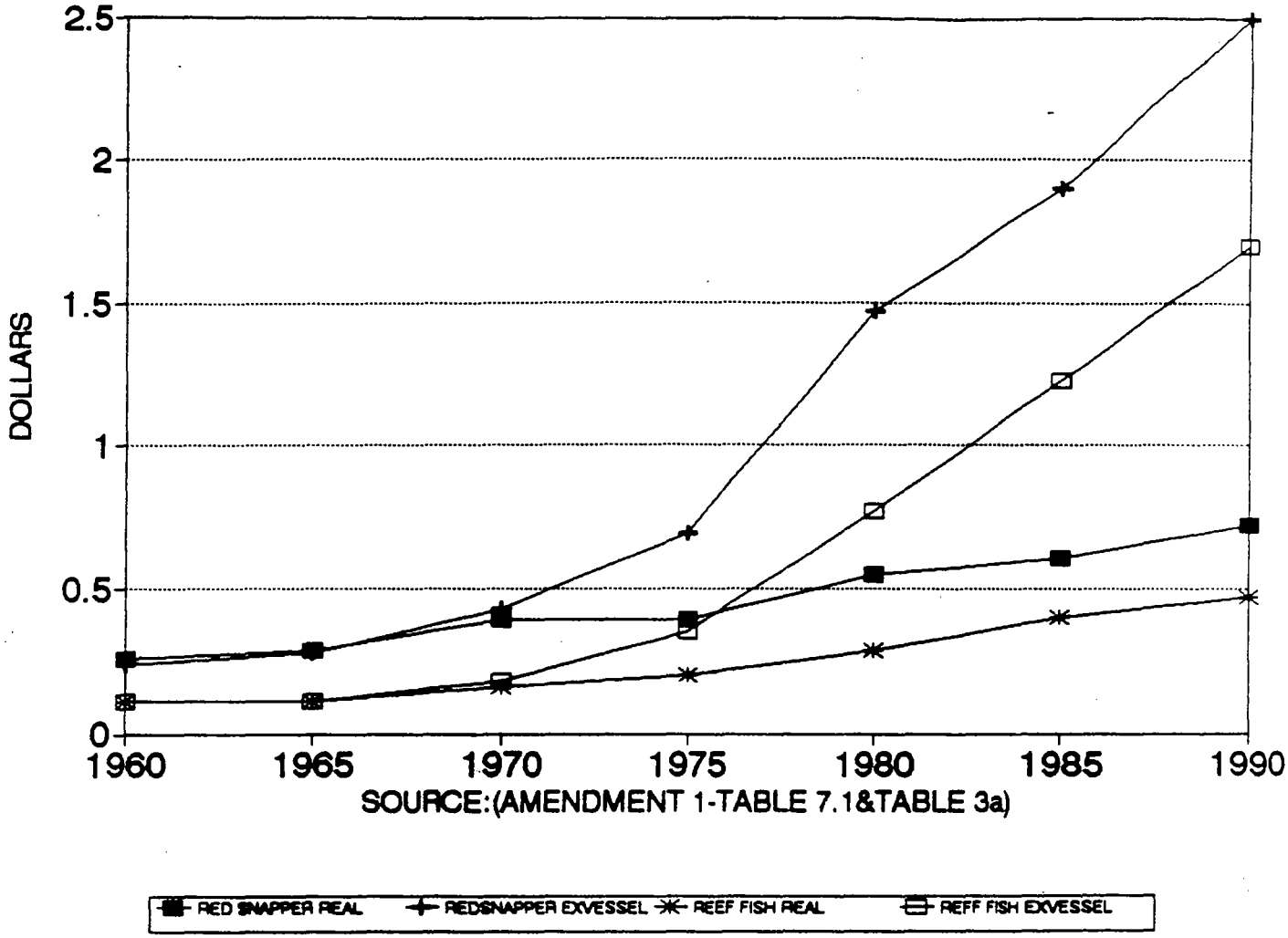
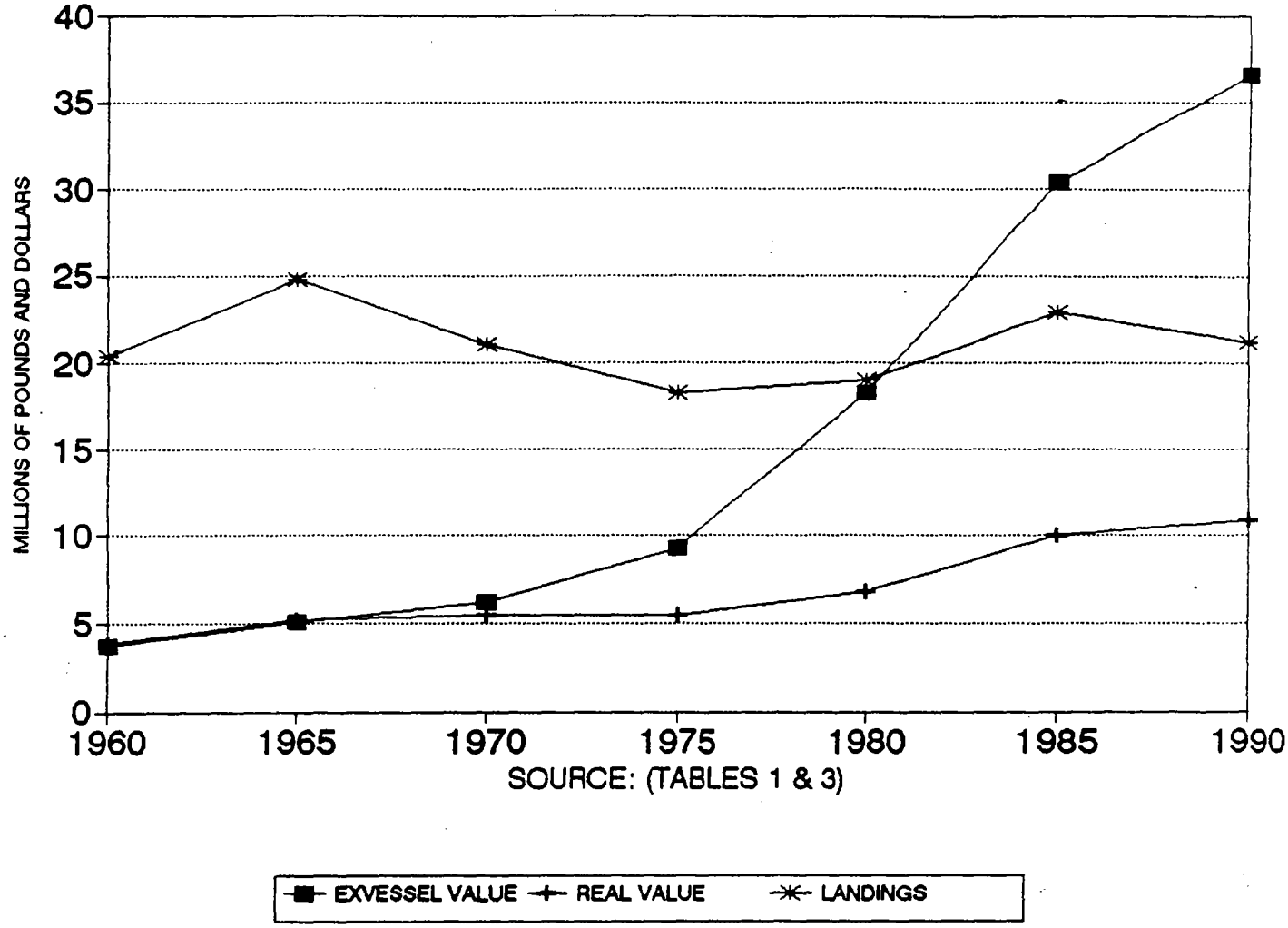


FIGURE 4. REEF FISH LANDINDS AND EXVESSEL & REAL VALUE



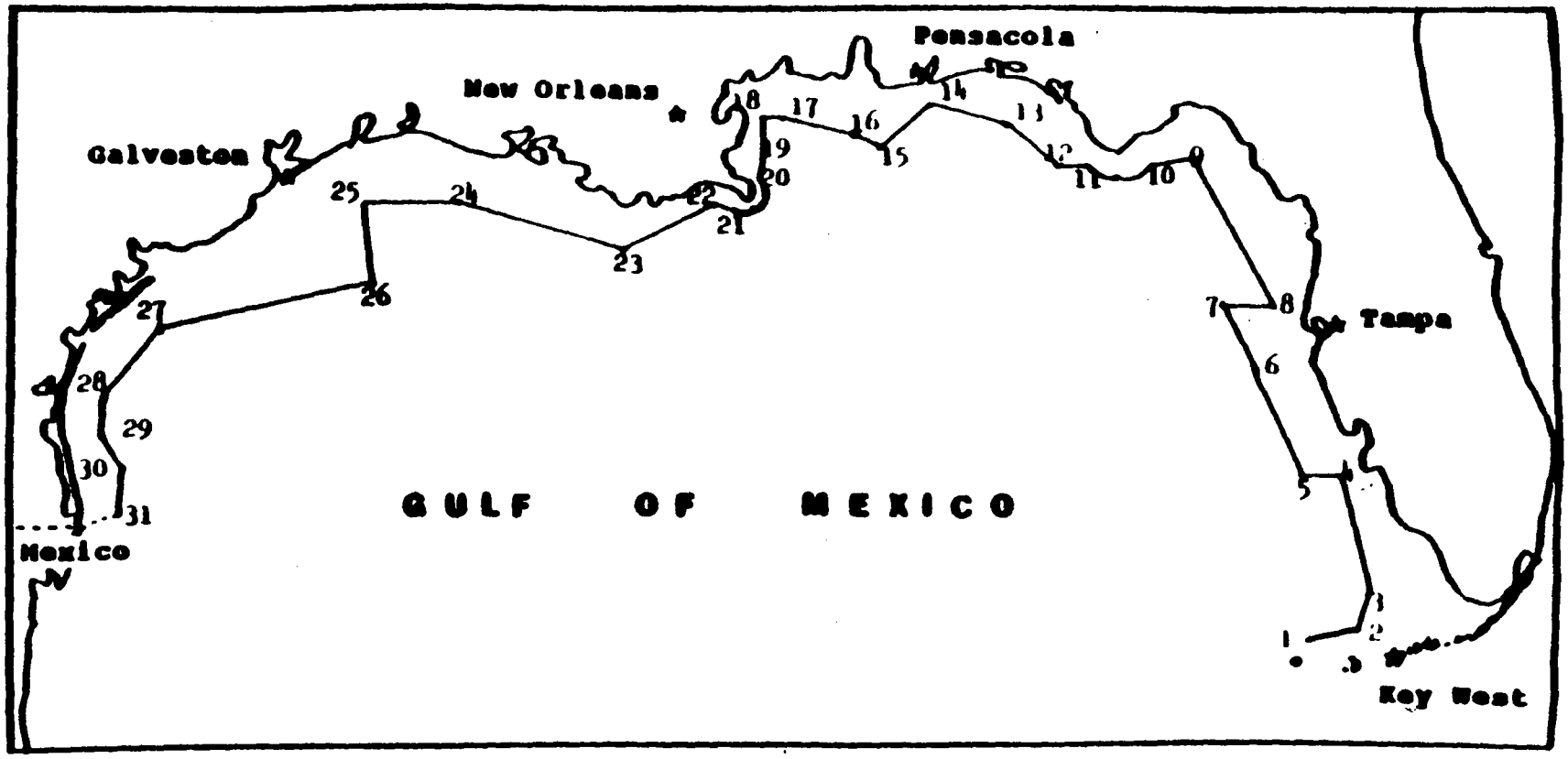


Figure 5. Seaward Limits of the Stressed Area.

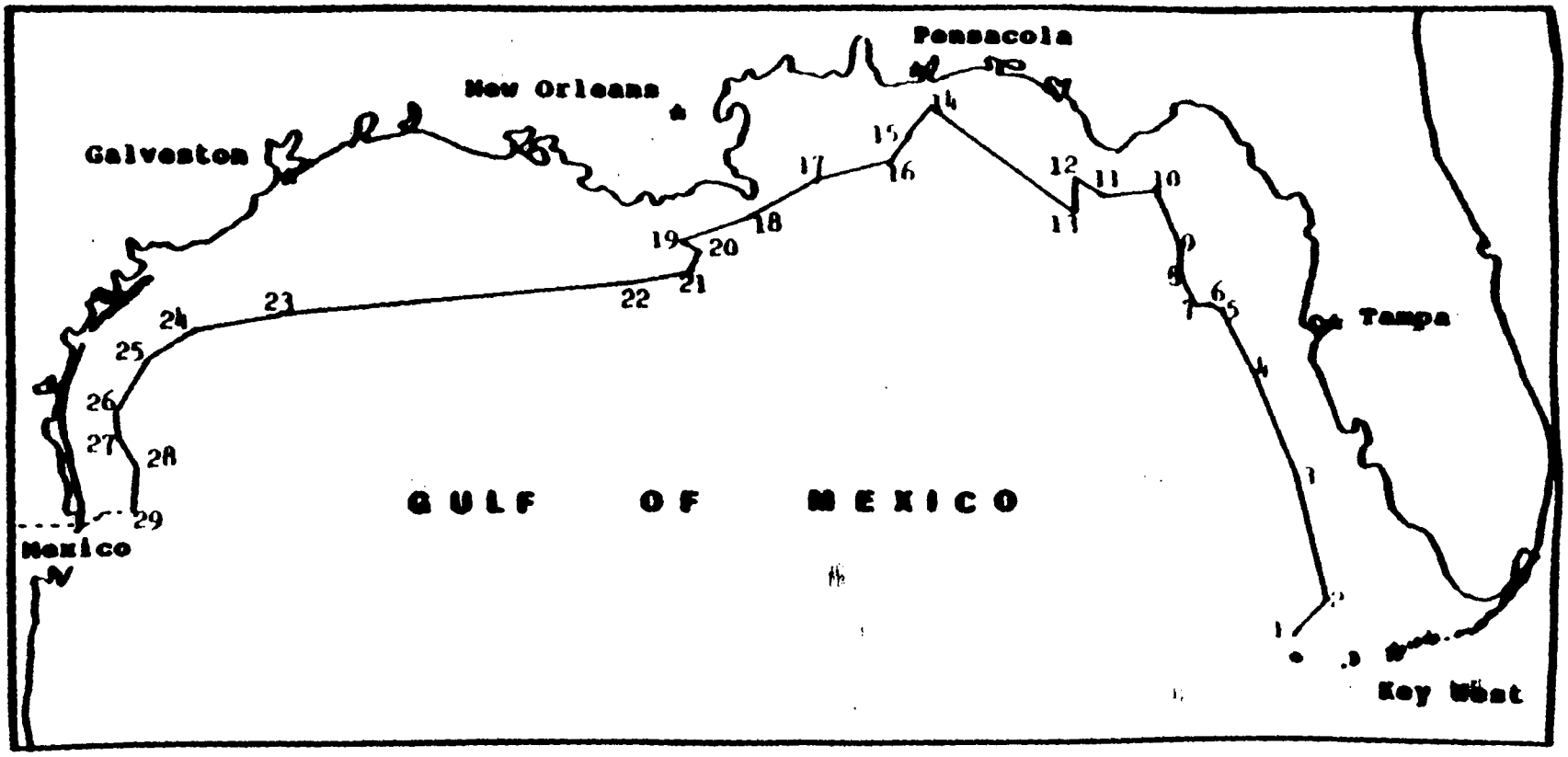


Figure 6. Seaward Limits of the Longline and Buoy Gear Restricted Area.

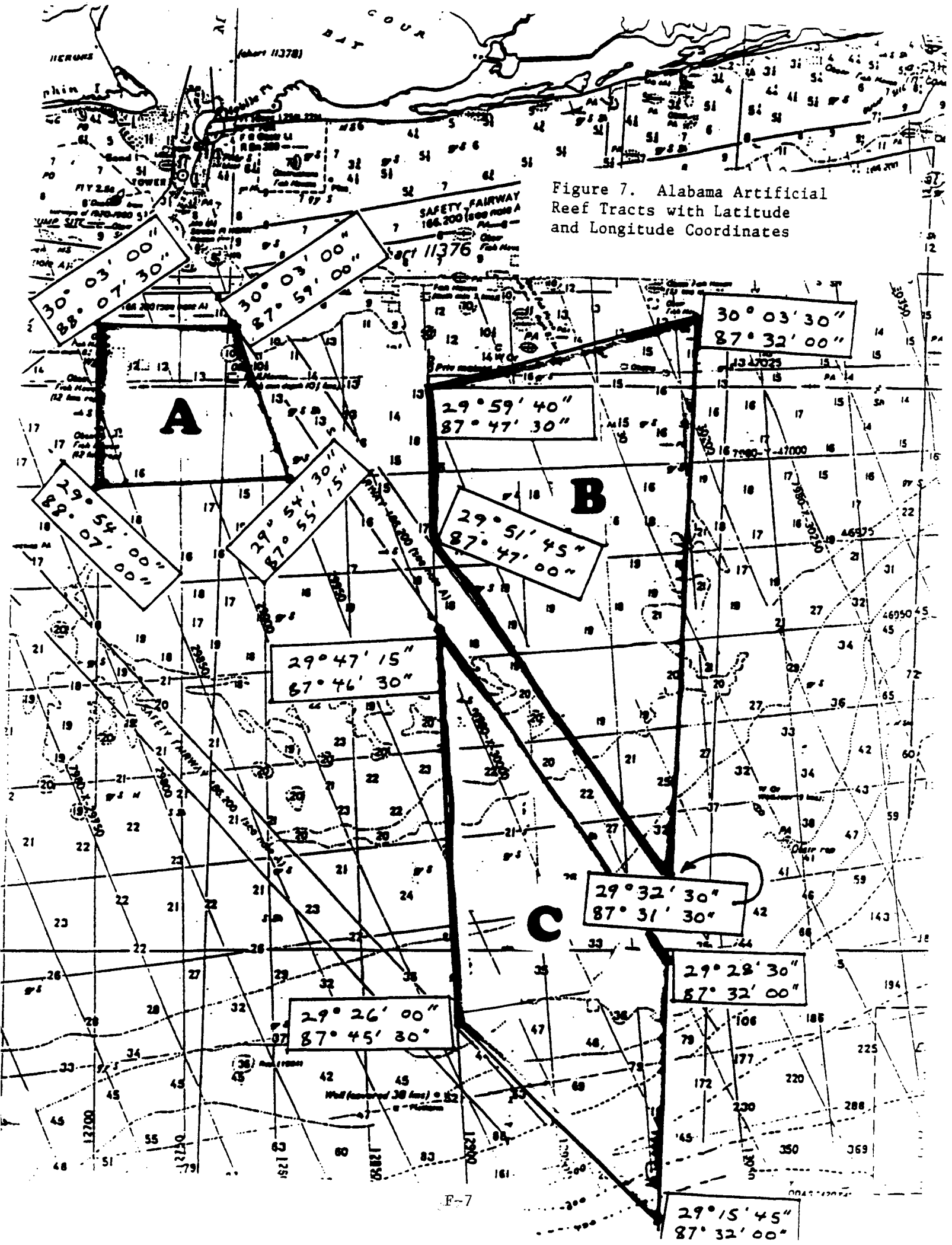


Figure 7. Alabama Artificial Reef Tracts with Latitude and Longitude Coordinates

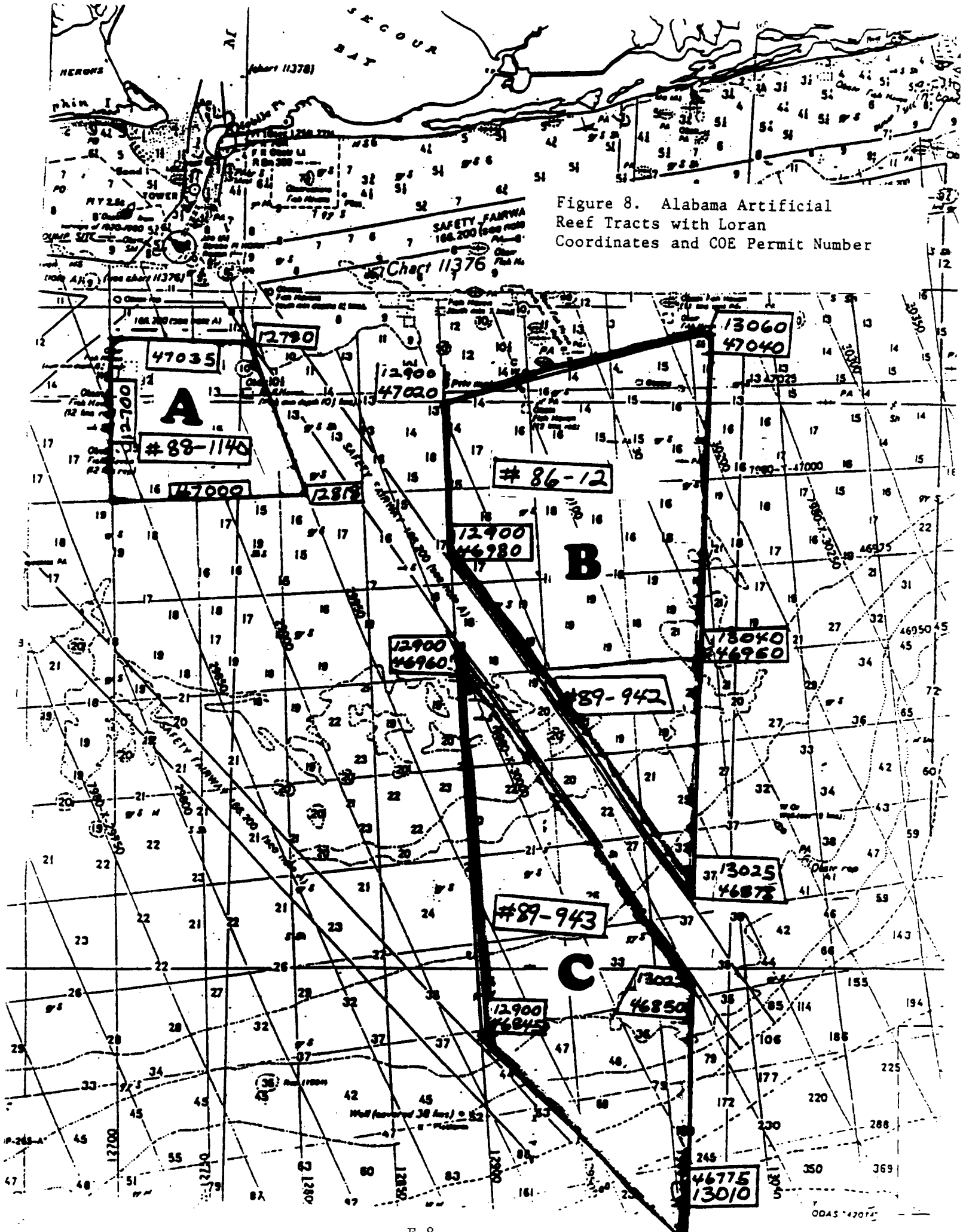


Figure 8. Alabama Artificial Reef Tracts with Loran Coordinates and COE Permit Number

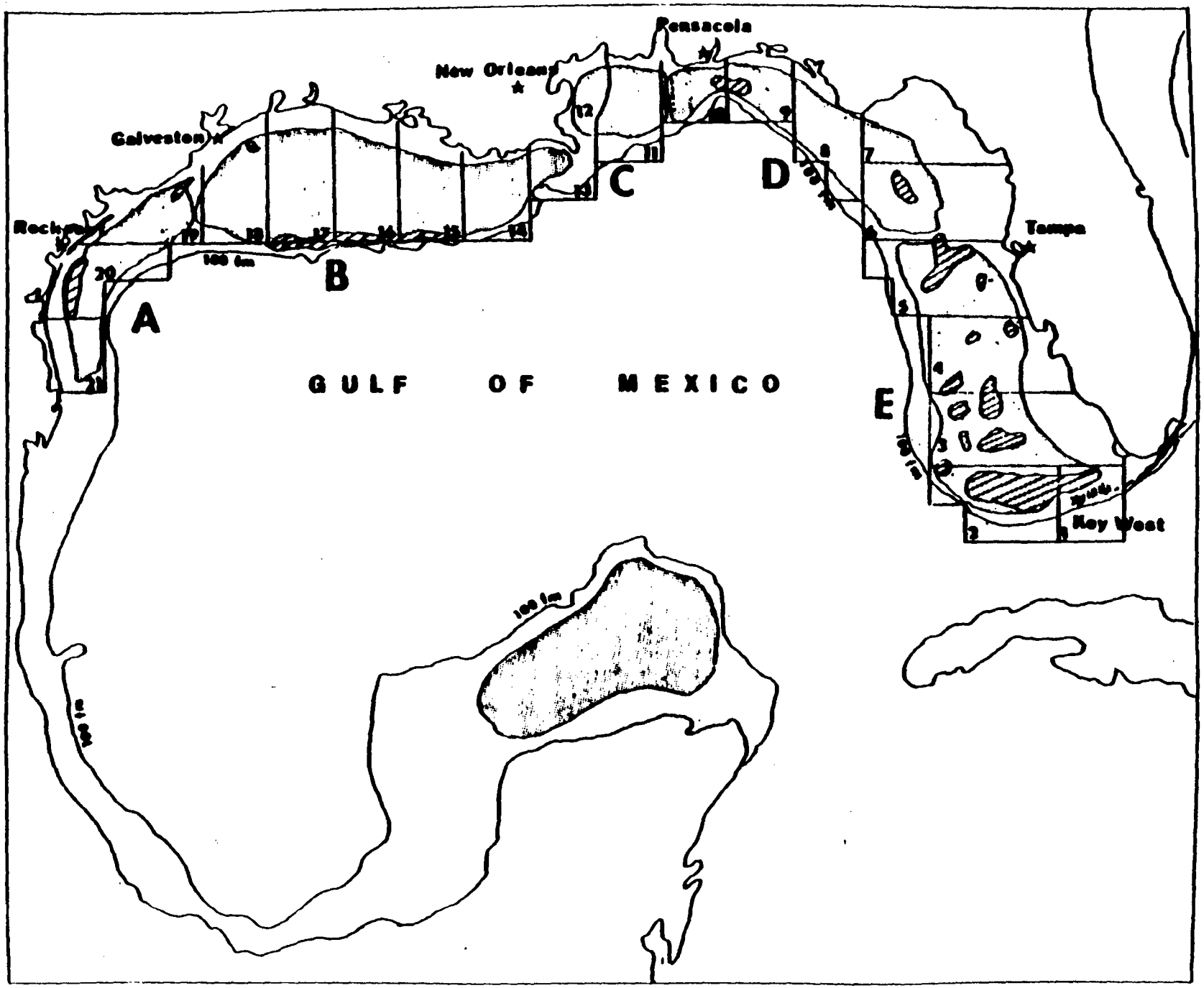


Chart of Gulf of Mexico historical red snapper fishing grounds and statistical reporting zones (A - Western zone, B - Galveston Lumps, C - Delta, D - Middle Grounds, E - Tortugas)

FIGURE 9

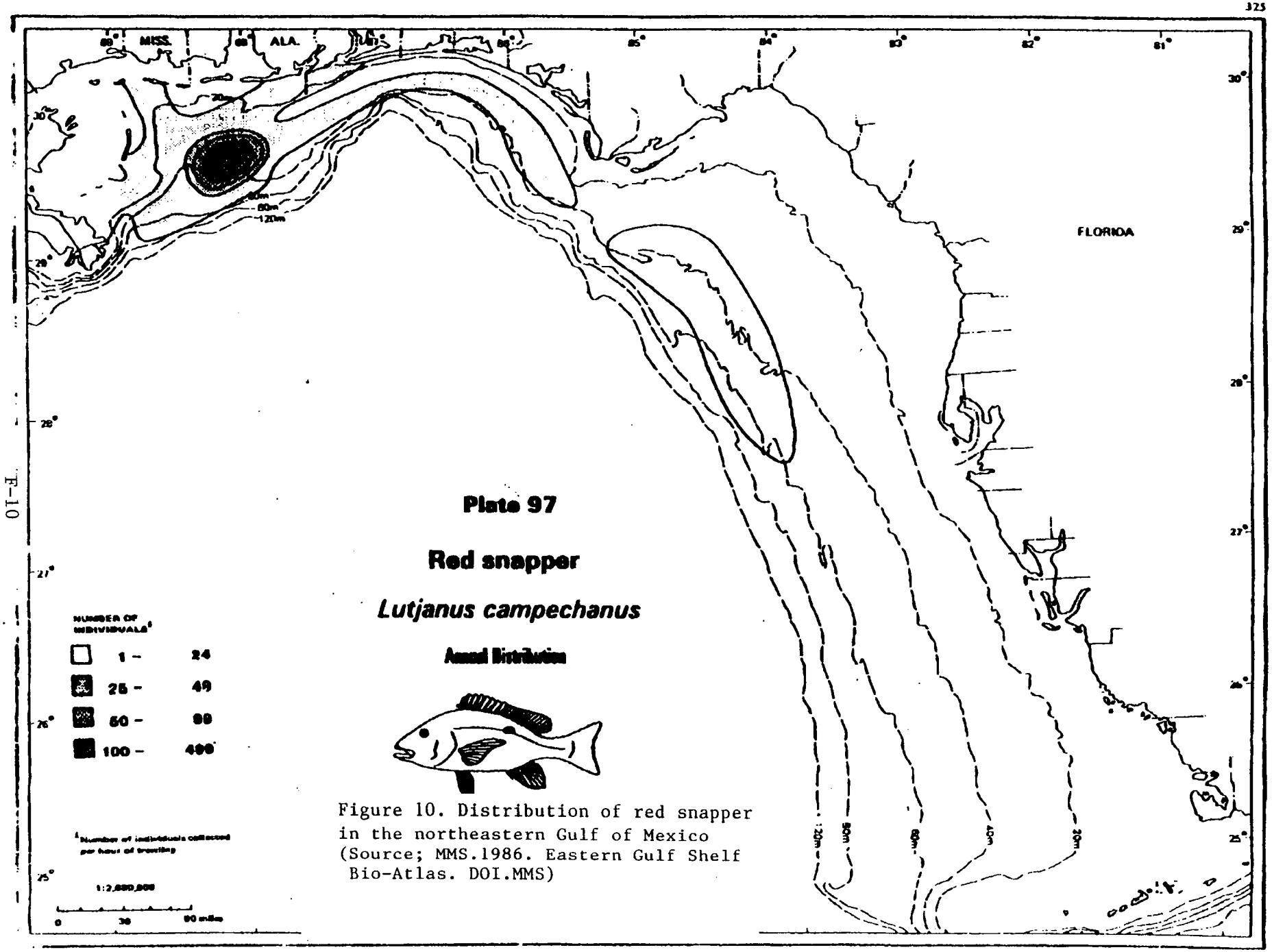


Figure 10. Distribution of red snapper in the northeastern Gulf of Mexico (Source; MMS.1986. Eastern Gulf Shelf Bio-Atlas. DOI.MMS)

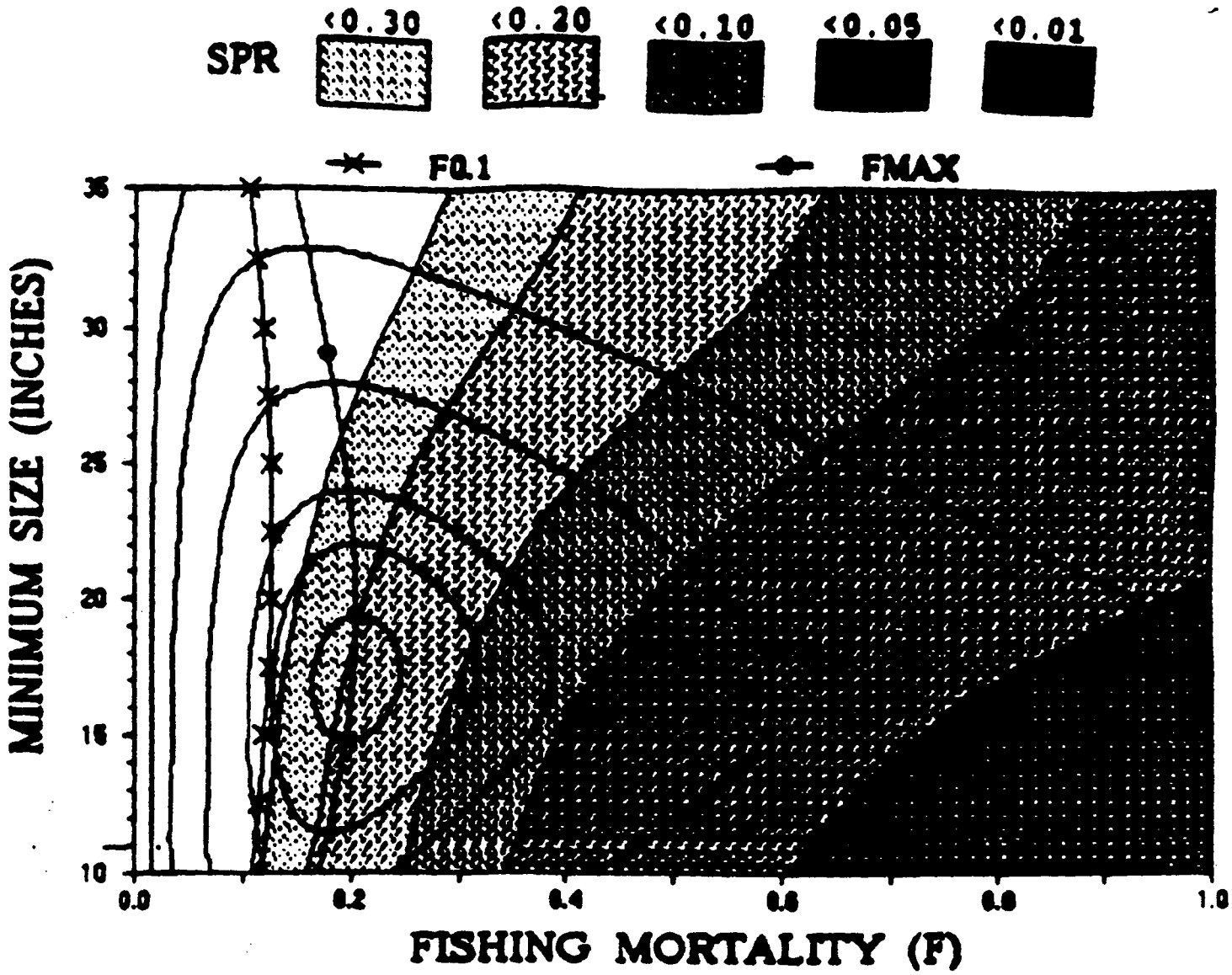


Figure 11 Yield and SPR for red snapper in the absence of any shrimp trawl discard mortality as a function of minimum size and F for a release mortality of 0.33.

Source: Goodyear (1992)

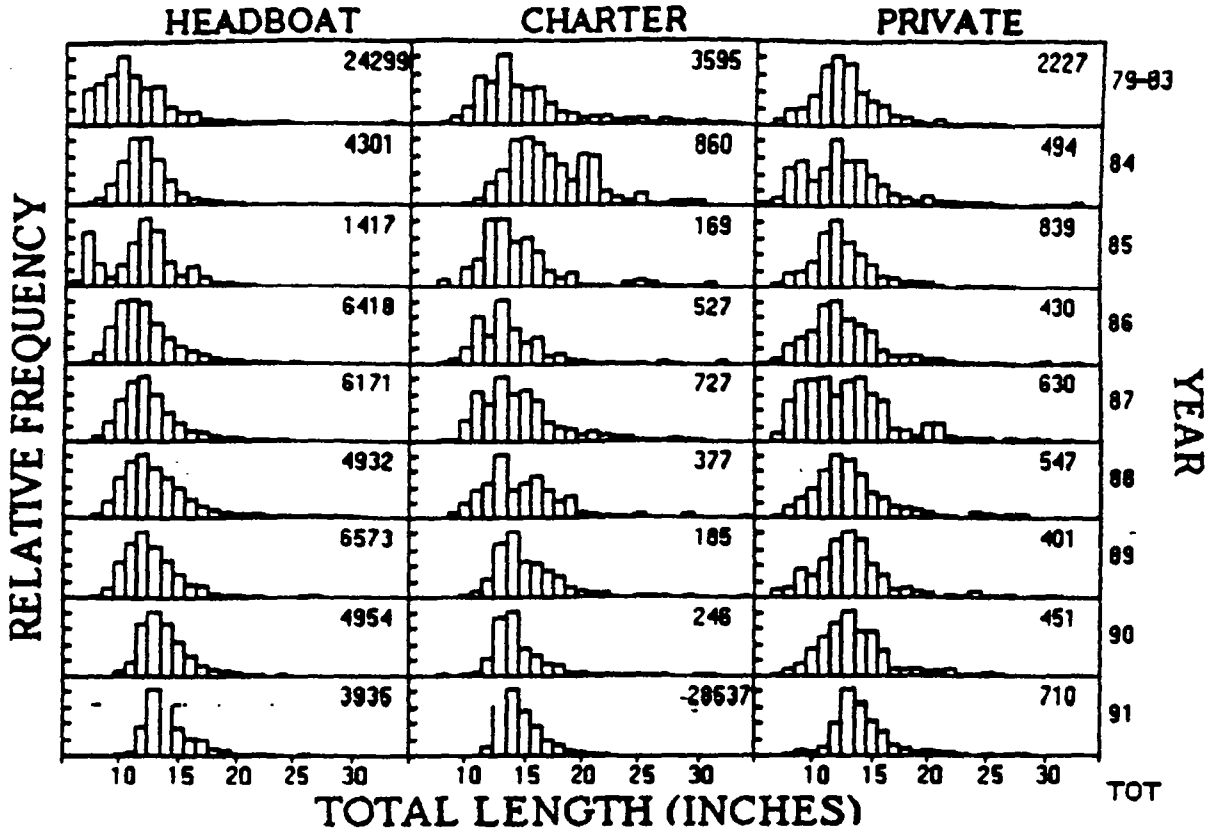


Figure 12 *Length frequencies of the recreational harvest by mode and year.*

Source: Goodyear (1992)

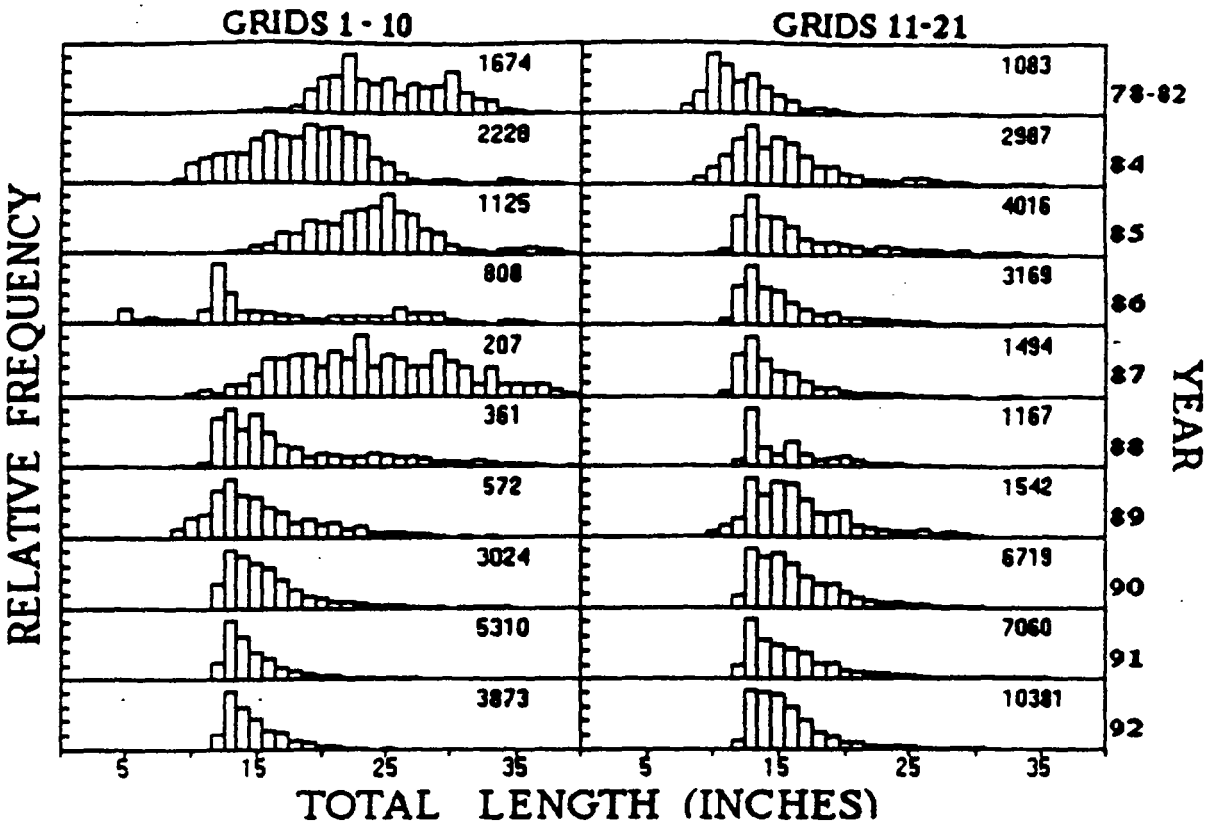


Figure 13 *Length frequencies of red snapper caught by handline by area, 1978-1992.*

Source: Goodyear (1992)

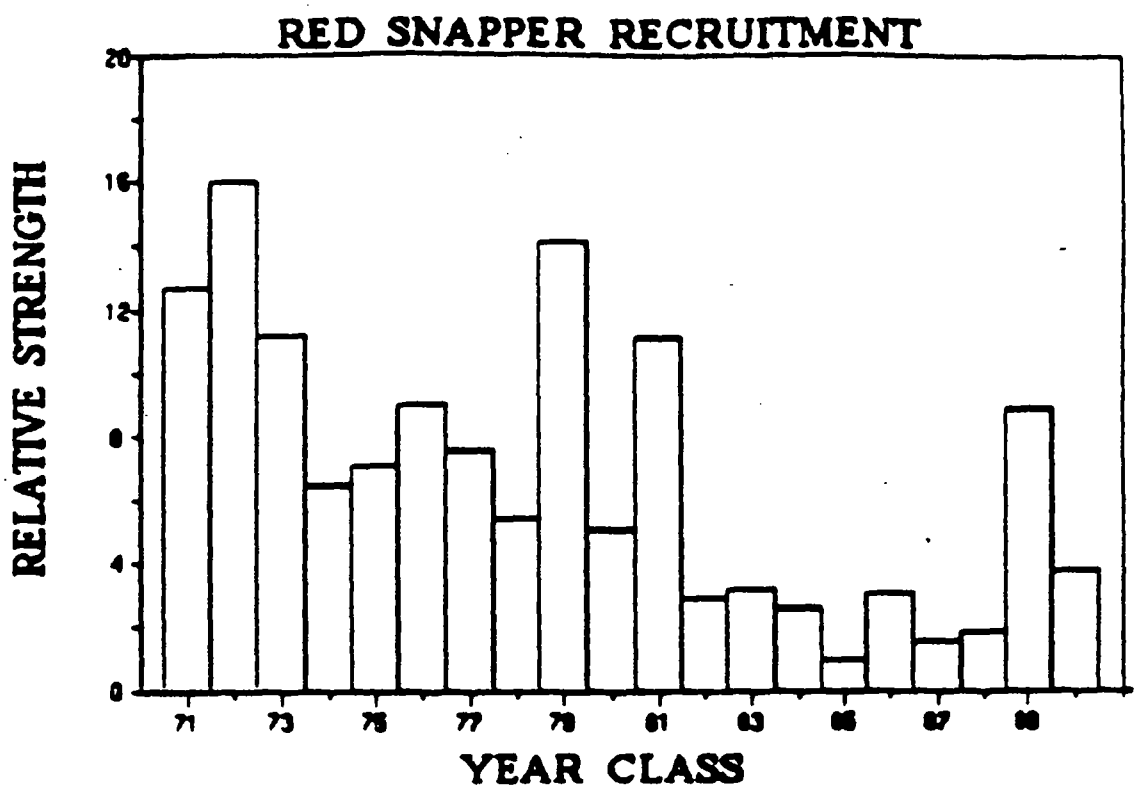


Figure 14 Year class strength estimate for red snapper 1971-1990.

Source: Goodyear (1992)

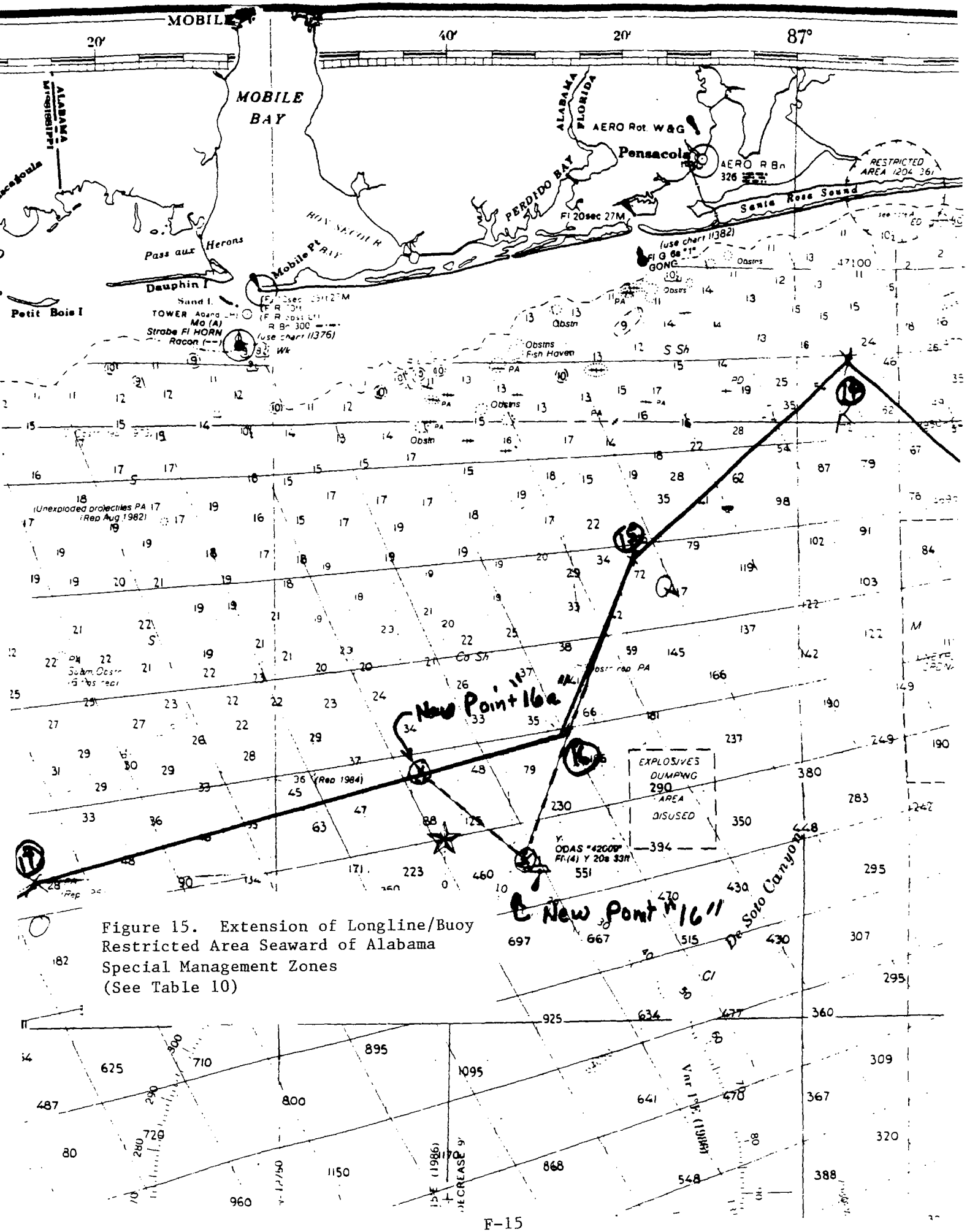


Figure 15. Extension of Longline/Buoy Restricted Area Seaward of Alabama Special Management Zones (See Table 10)

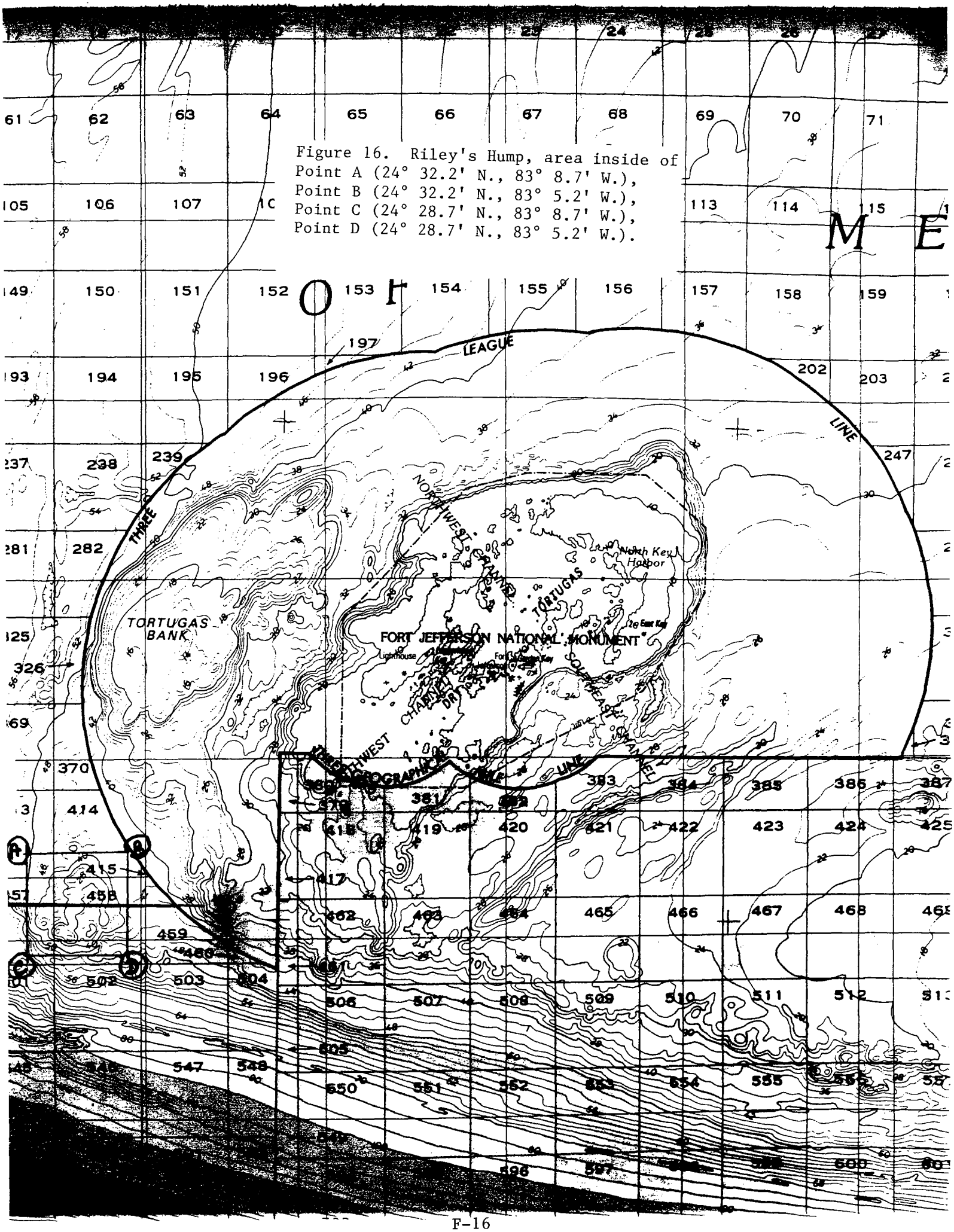


Figure 16. Riley's Hump, area inside of
Point A (24° 32.2' N., 83° 8.7' W.),
Point B (24° 32.2' N., 83° 5.2' W.),
Point C (24° 28.7' N., 83° 8.7' W.),
Point D (24° 28.7' N., 83° 5.2' W.).

Figure 17

Mutton Snapper Ave Recreational Harvest
Gulf of Mexico, 1987-1991

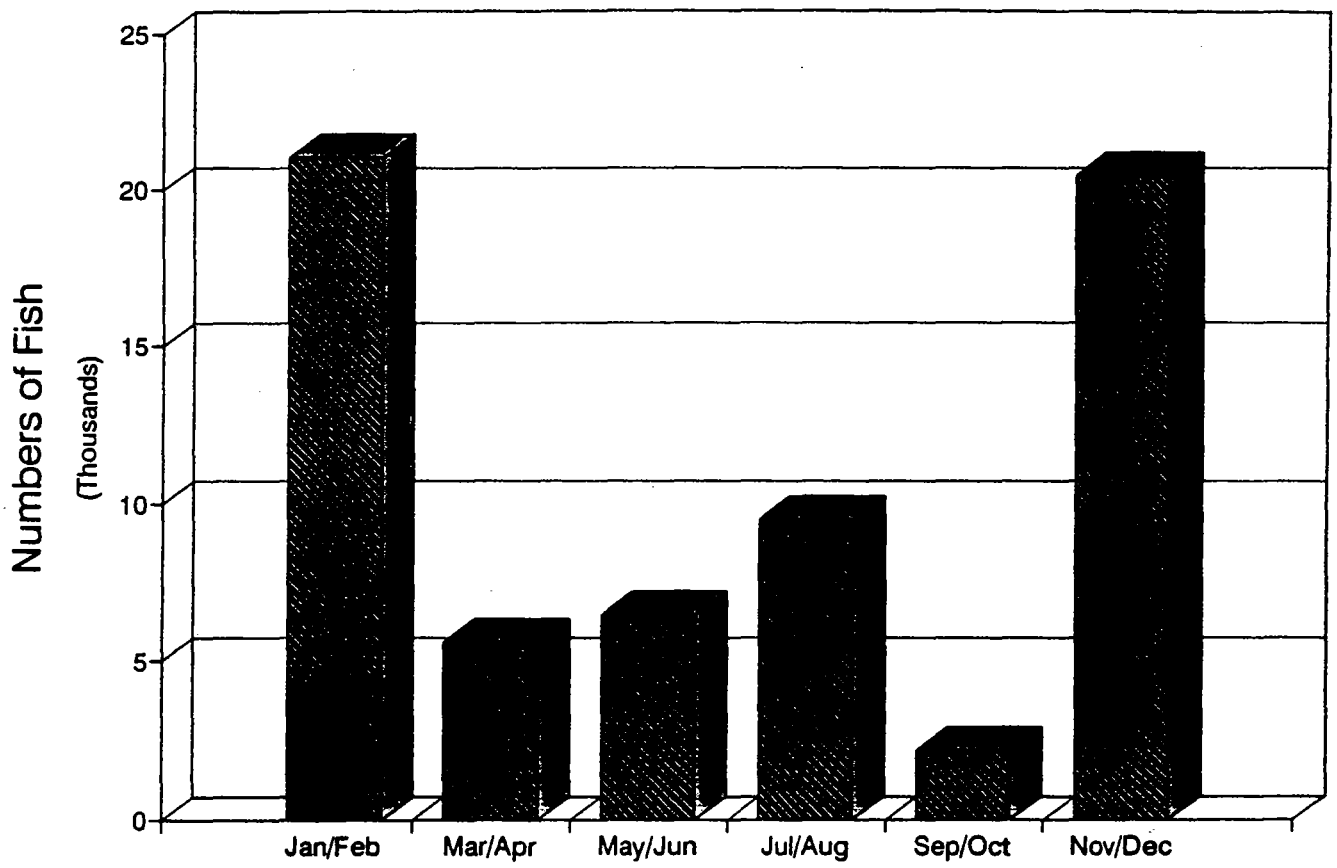


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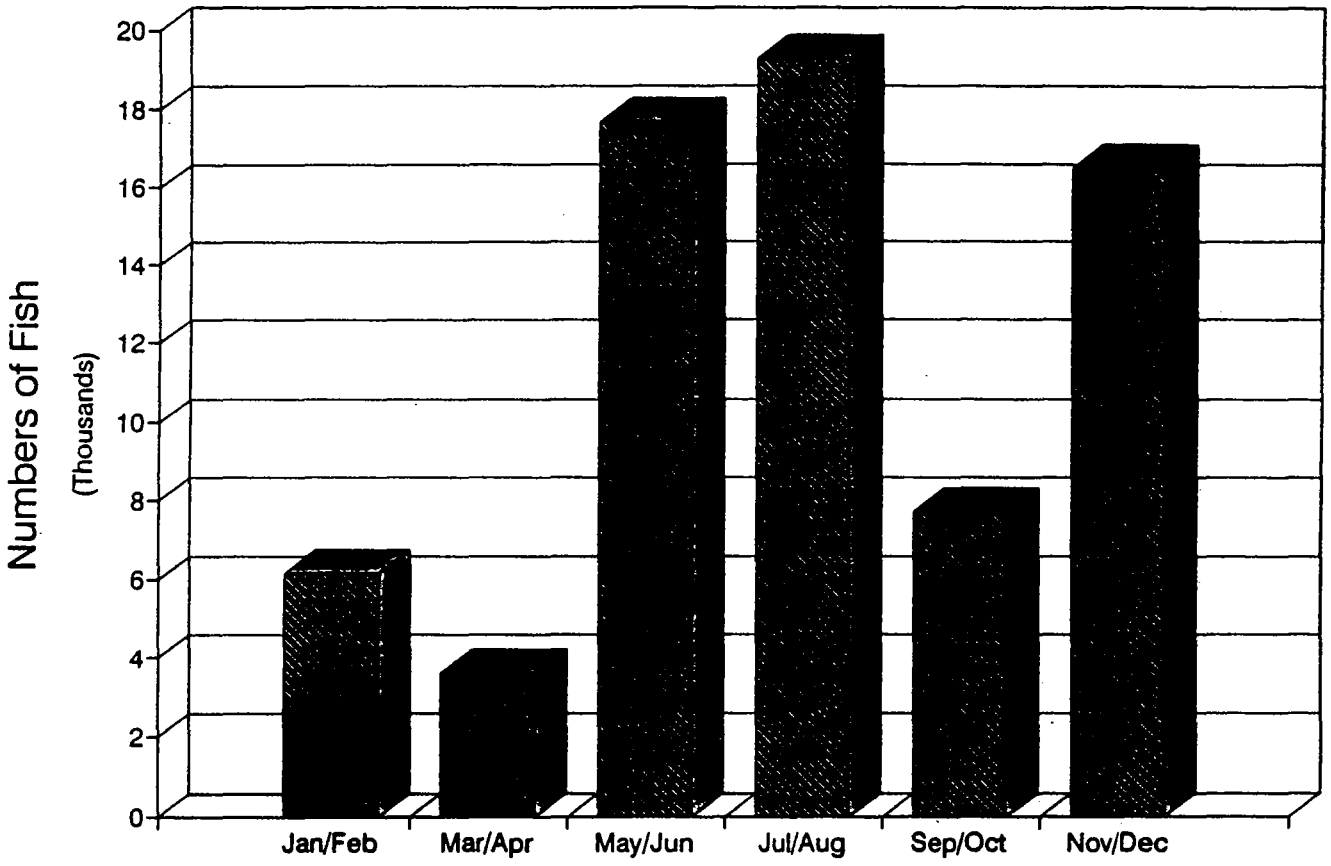
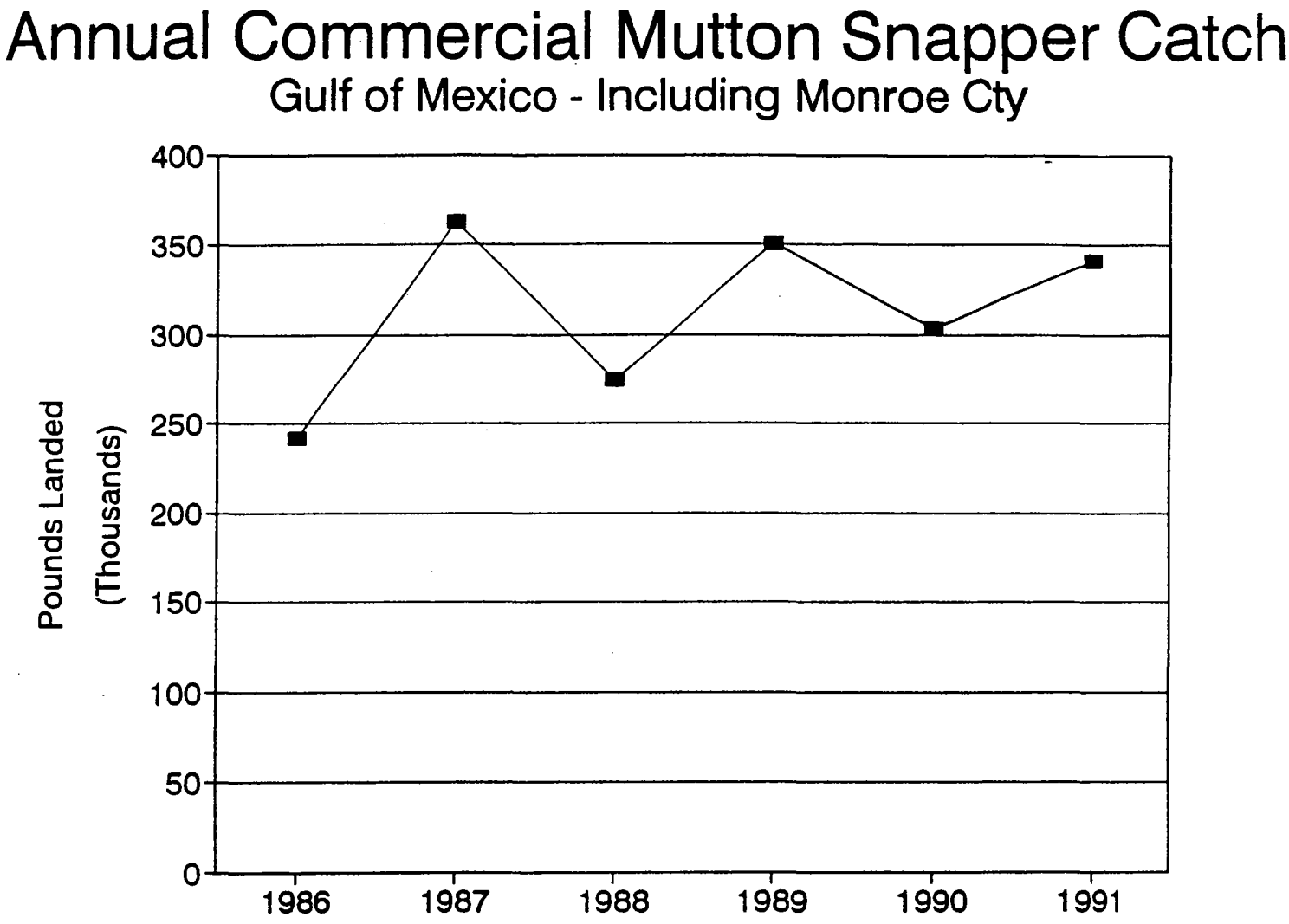
Figure 18

Mutton Snapper Ave Recreational Harvest
South Atlantic, 1987-1991



Source: Table 12

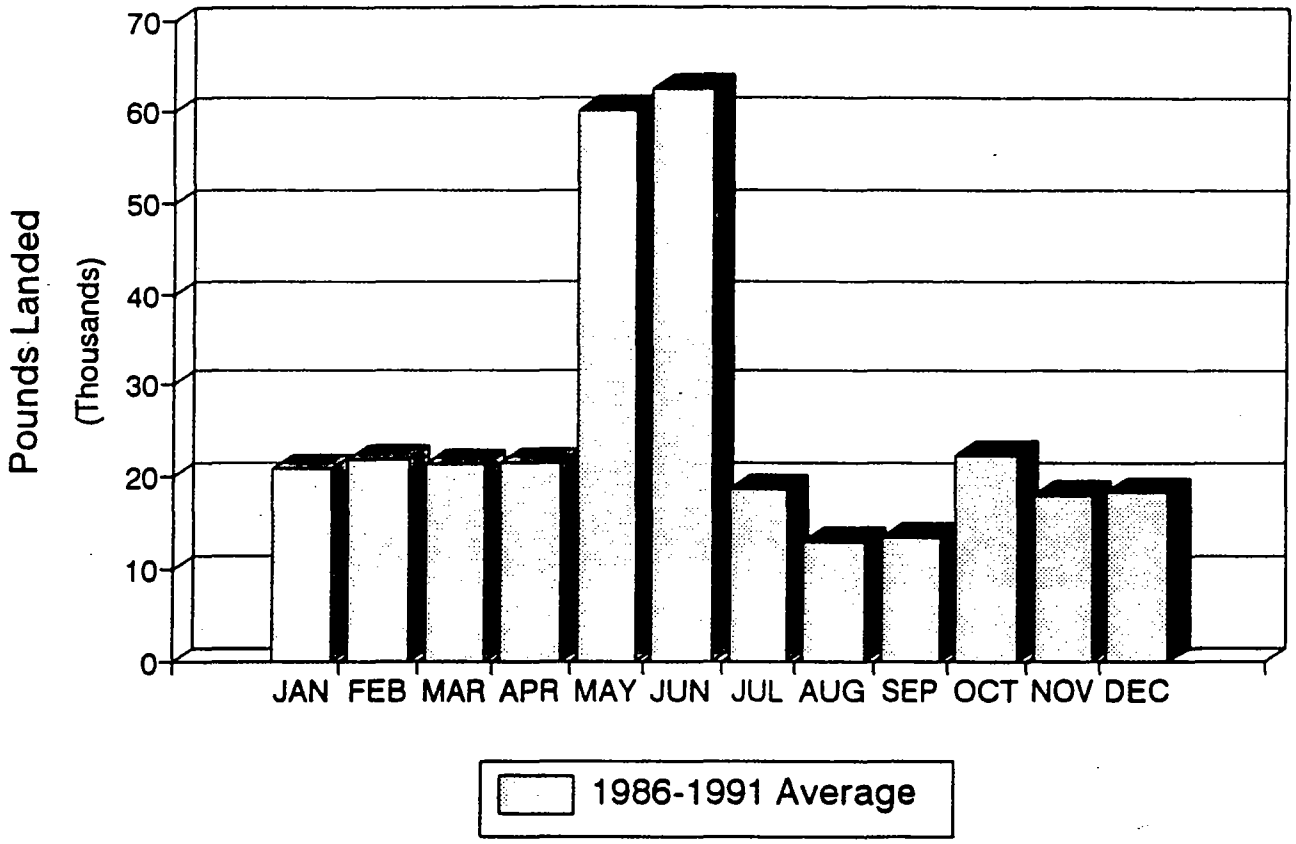
Figure 19



Source: Table 13

Figure 20

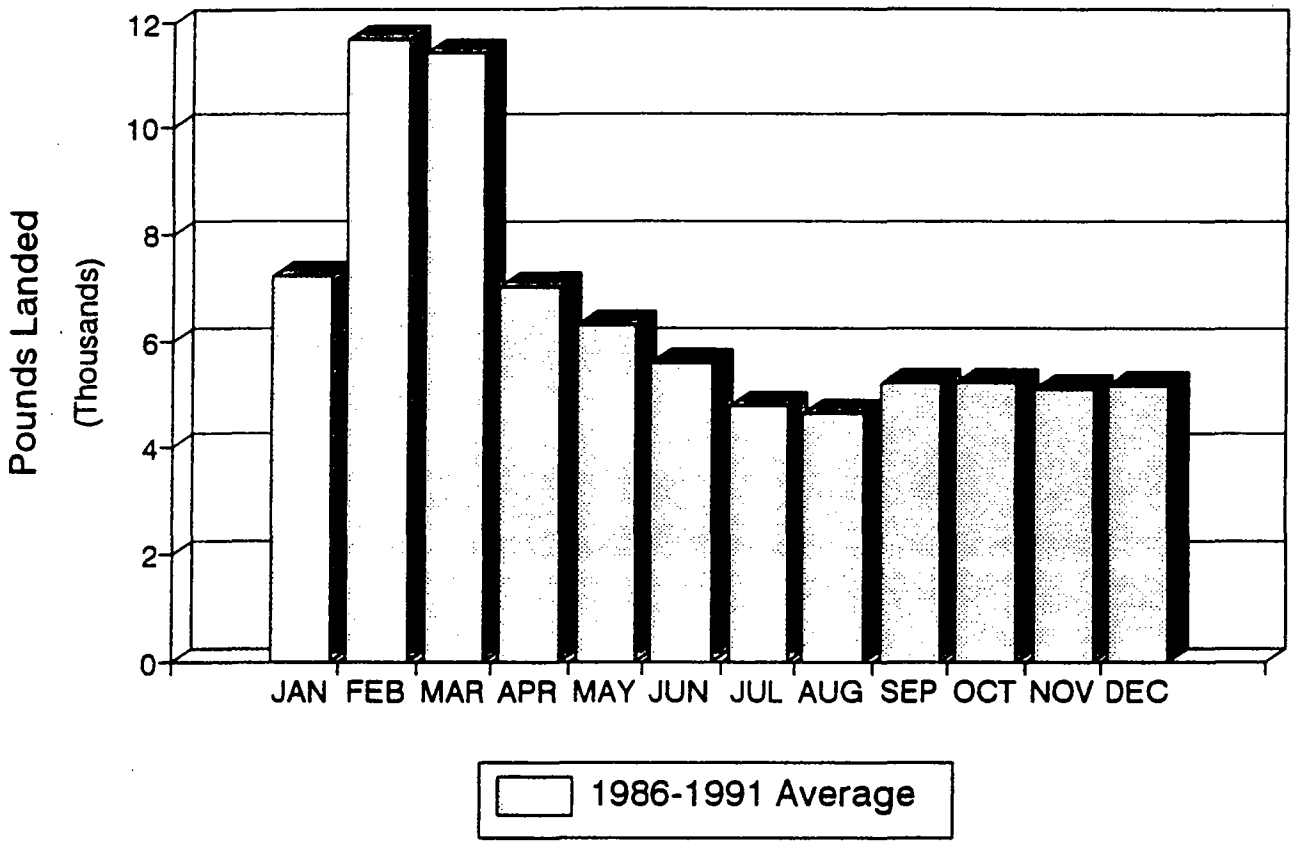
Mutton Snapper Commercial Harvest
(Gulf Coast including Monroe County)



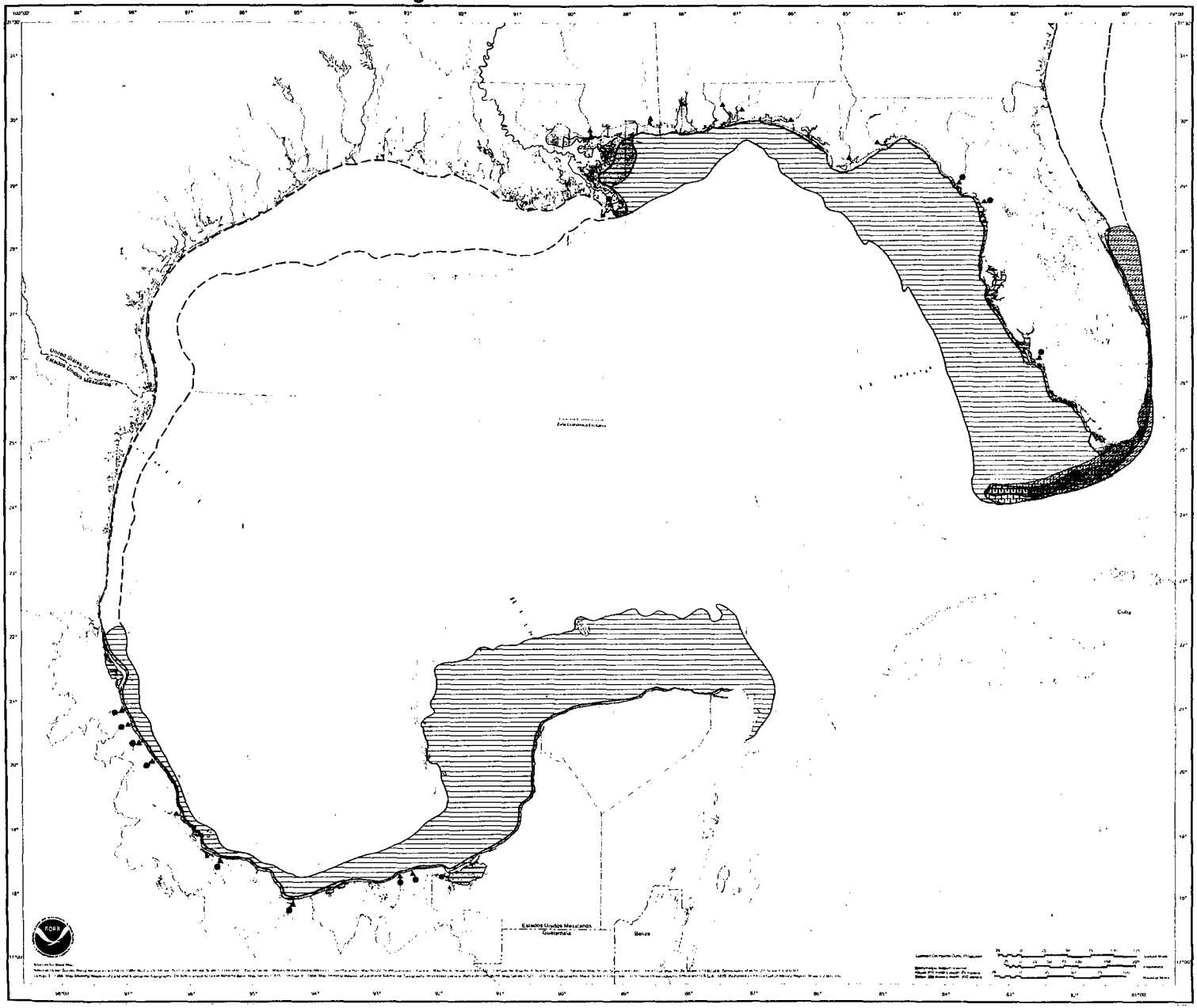
Source: Table 13

Figure 21

Mutton Snapper Commercial Harvest
(Gulf Coast excluding Monroe County)



Source: Table 14



Mutton snapper

Lutjanus analis
Pargo criollo

Description

Range: The mutton snapper, a bony fish of the family Lutjanidae, is found throughout the waters of the western Atlantic from the Gulf of Maine to Brazil and throughout shelf areas of the Gulf of Mexico. This species is most common in the eastern Gulf. Along the western Gulf, mutton snapper are present in smaller numbers during the spring, summer, and fall.

Habitat: Adult mutton snapper are generally found offshore, around reefs, and in waters to depths of 60 meters. Inshore, adult mutton snapper favor mangrove swamps, grassy bays, reefs, and tidal creeks.

Feeding and Behavior: This snapper feeds mainly on crustaceans, other fishes, and some gastropods found at or near the bottom. The mutton snapper forms small aggregations during the day and may disperse during the night.

Reproduction: This species forms schools during the spawning season. Summer spawning is reported throughout the adult area. Juveniles are found year-round in shallow nearshore waters and estuaries, particularly in mangrove swamps.

Movement: Mutton snapper are not known to migrate.

Fisheries: The mutton snapper is a relatively small component of the larger commercial snapper fishery. The species is commercially harvested almost exclusively in the Florida Keys. Catches are marketed fresh and frozen. The mutton snapper's flesh is considered to be of exceptional quality. This snapper is also a component of the snapper spon fishery present along the east Florida coast and the Keys.

References: Fischer, W., ed., 1978, Gulf of Mexico Fishery Management Council, 1980b, US DOI, FWS, Office of Biological Services, 1978.

- Adult Area (Year-round)
- Nursery Area (Year-round)
- Occurrence (Spring, Summer, Fall)
- Commercial Fishing Ground (Year-round)
- Recreational Fishing Ground (Year-round)

Summer spawning occurs throughout adult areas.

Figure 22.

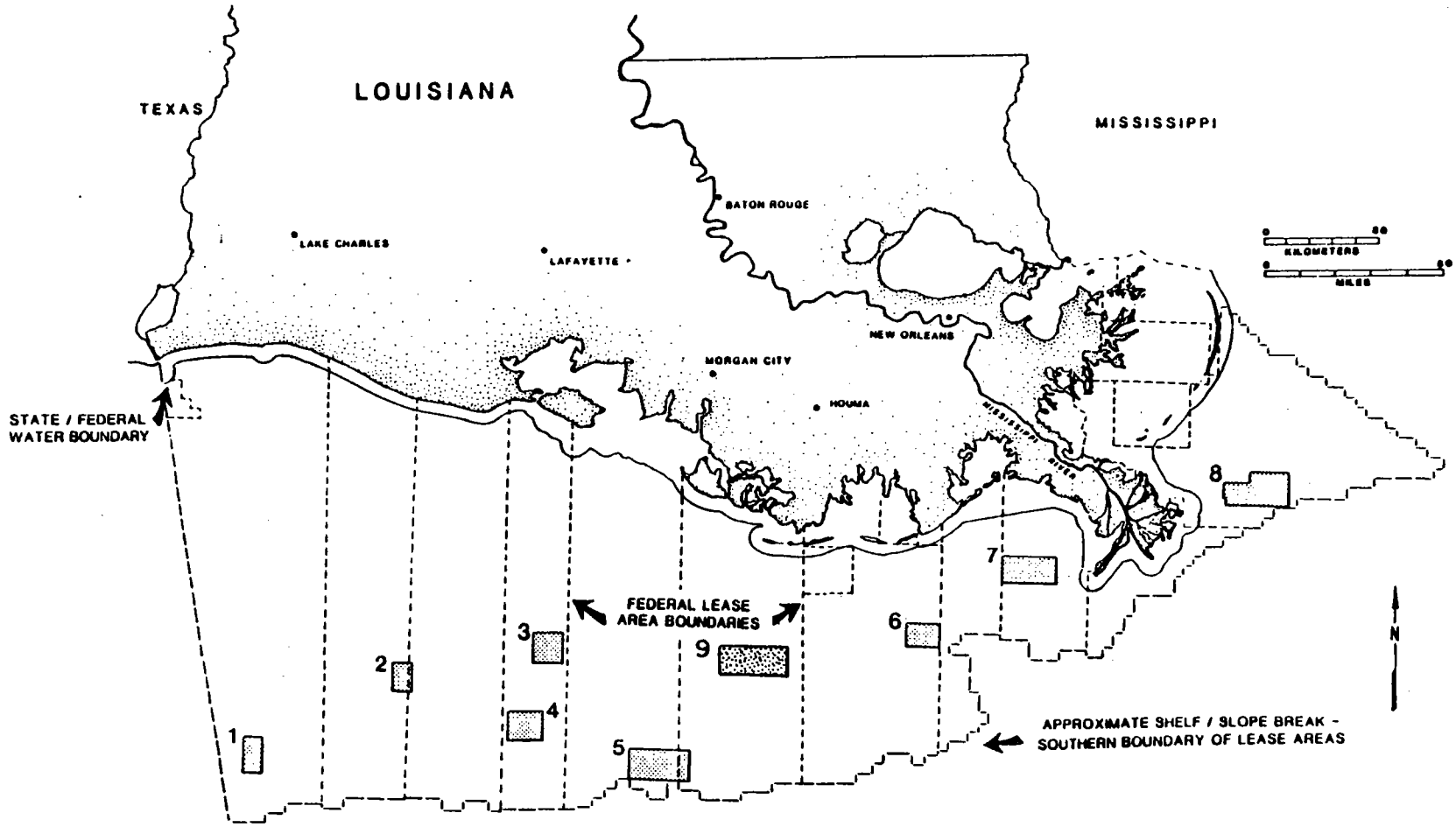
References

Hildebrand, H.H., pers. comm.; Rivas, L.R., pers. comm.

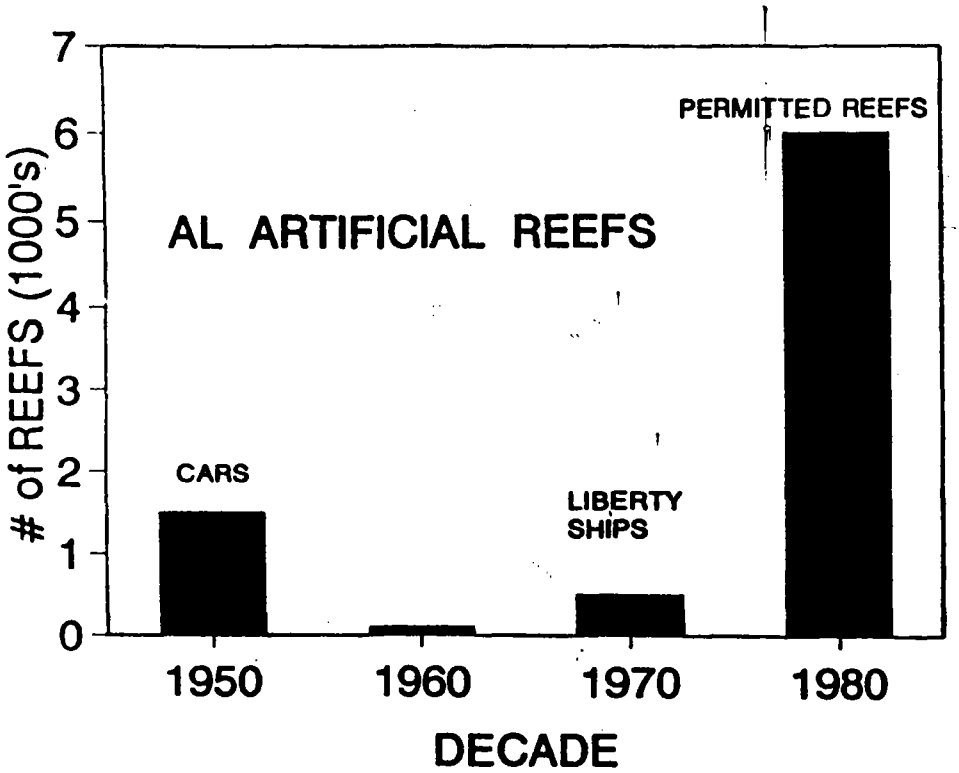
Strategic Assessment Branch
Ocean Assessments Division
Office of Oceanography and Marine Assessment
National Ocean Service/NOAA
and the
Southeast Fisheries Center
National Marine Fisheries Service/NOAA

FIGURE 23

Offshore Louisiana Artificial Reef Planning Areas



1. West Cameron Planning Area
2. East Cameron Planning Area
3. South Marsh Island (76) Planning Area
4. South Marsh Island (146) Planning Area
5. Eugene Island Planning Area
6. South Timbalier Planning Area
7. West Delta Planning Area
8. Main Pass Planning Area
9. Ship Shoal Planning Area



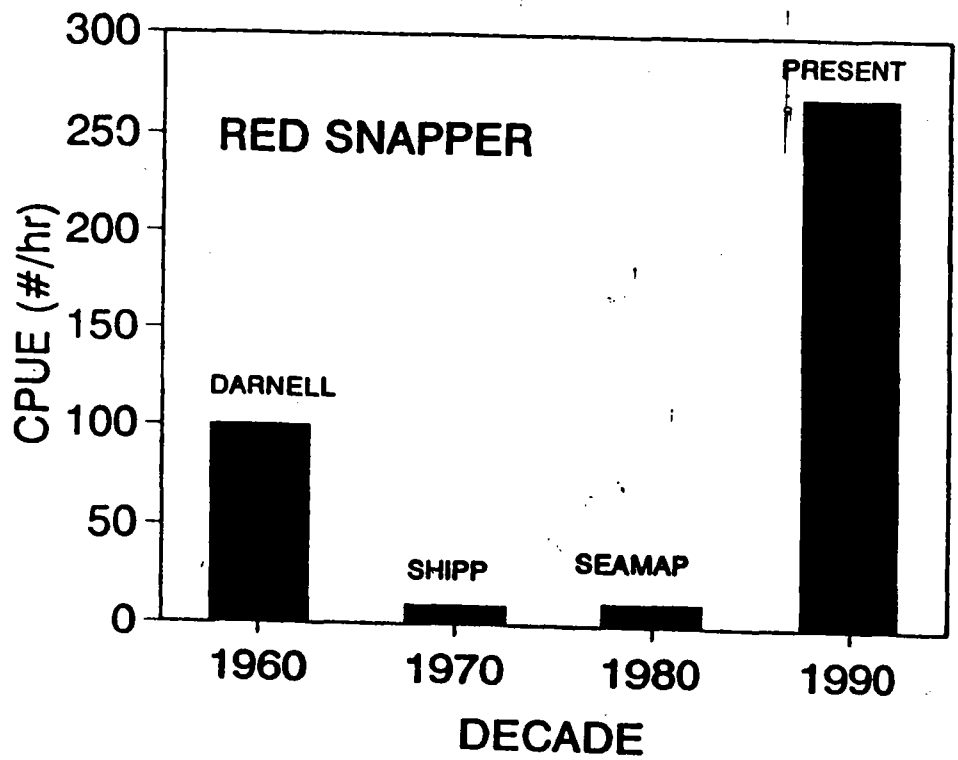


Figure 24. Comparison of estimated number of Alabama artificial reefs and trawl CPUE of red snapper.

Source: Szedlmayer and Shipp (In Press)
Note: See Figure 10 for Darnell's MMS study.

Table 1

Average Landings[1] (Thousands of Pounds) of Red Snapper and Reef Fish in Gulf Ports and Portion (Thousands of Pounds) of Red Snapper Caught from Foreign Waters

Year	Red Snapper Landed	Red Snapper Caught From Foreign Waters	Reef Fish[2] Landed
1960	11,362	[3]	20,385
1965	13,349	6,422[4]	24,169
1970	9,541	2,299	21,064
1975	7,762	759	18,334
1980	5,417	431	19,037
1985	5,239	[5]	22,858
1990[6]	3,287		21,240

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[1]Five-year average with year the midpoint of the period, e.g., 1960 value is for 1958-1962 period.

[2]Includes red snapper landings.

[3]Data not available before 1964.

[4]Four-year average for 1964-1967.

[5]Mexico prohibited U.S. vessels after 1981.

[6]Three-year average ending in 1990, i.e., for 1988-1990 period.

Table 2

Average Number of Vessels in the Reef Fish Fishery
1960-1992

Year[1]	Handline	Longline	Other	Total
1960	385	-	3	388
1965	447	-	1	448
1970	346	-	20	366
1975	472	-	9	481
1980	648	122	31	801
1985[2]	580	245	43	868
1990-1992[3]	598	286	351[4]	1,234

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Sources: FMP Appendix Table 29 (1957-1974), Fishery Statistics of U.S. (1975-1977), Amendment 1 Tables 7.17 and 7.18 (1978-1986).

[1]Five-year average with year the midpoint of the period.

[2]Four-year average ending in 1986.

[3]From vessel permit file; charter vessels and fishing craft under 30 feet not included (see Table 2a).

[4]77 percent are fish trap vessels.

Table 2a

Number of Vessels[1] Permitted in the Reef Fish Fishery
By Gear Type[2], 1990-1992

Year	Handline[3]	Longline	Other	Total
1990	486	368	368	1,222
1991	675	245	306	1,226
1992	633	244	378	1,255
Average	598	286	351[4]	1,234

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Source: (NMFS Permit File).

[1]Charter vessels and fishing craft less than 30 feet not included. Total permits issued: 1990 (1,622); 1991 (1,762); and 1992 (1,964).

[2]Principal gear listed by permit applicant; many listed multiple gear types.

[3]Includes bandit rigs and rod and reel.

[4]77 percent are fish trap vessels.

Table 3

Ex-Vessel and Real[1] Value (Thousands of Dollars)
of Gulf Landings of Reef Fish and Red Snapper

	Reef Fish[2]		Red Snapper	
Year[3]	Ex-Vessel	Real	Ex-Vessel	Real
1960	3,673	3,879	2,761	2,915
1965	5,098	5,247	3,799	3,911
1970	6,195	5,598	4,010	3,627
1975	9,320	5,516	5,403	3,228
1980	18,316	6,837	7,696	2,904
1985	30,440	9,968	10,144	3,318
1990[4]	36,553	10,937	7,753	2,332

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Source: (Amendment 1 Table 7.1; NMFS Statistics)

[1]Real value is ex-vessel value adjusted for inflation by dividing the consumer index for all commodities (1967 = 100).

[2]Includes value of red snapper.

[3]Five-year average with year the midpoint of the period.

[4]Three-year average ending in 1990.

Table 3b

Real[1] and Ex-Vessel Annual Price Per Pound
Paid to Fishermen for Red Snapper and Other Reef Fish

Year	Red Snapper Price		Reef Fish Price	
	Real	Ex-Vessel	Real	Ex-Vessel
1960	$0.26	$0.24	$0.11	$0.11
1965	$0.29	$0.28	$0.11	$0.11
1970	$0.39	$0.43	$0.16	$0.18
1975	$0.39	$0.69	$0.20	$0.35
1980	$0.55	$1.47	$0.29	$0.77
1985	$0.61	$1.90	$0.40	$1.23
1990	$0.72	$2.50	$0.49	$1.70

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[1]Real value is ex-vessel value adjusted for inflation by dividing producer price index for all commodities (1967 = 100).

Table 4. Number of vessels, traps and landings from traps for Gulf of Mexico, 1978-1985.

Year	Vessels	Traps	LANDINGS (1,000's pounds)			
			Groupers	Snapper	Other Reef Fish	Total
1978	32	2,102	315	82	54	451
1979	38	2.284	149	161	37	347
1980*	36	1,434	99	93	22	214
1981	35	1,404	106	72	27	205
1982	13	534	125	45	15	185
1983	18	540	50	64	8	122
1984	43	1,290	675	55	21	751
1985	60	1,800	962	72	25	1,059

Source: Amendment 1, Tables 7.13 through 7.18

* Beginning in 1980 fish traps were prohibited in south Florida waters

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Table 5. 1987-1988 Canvass of reef fish trap fishing vessels/boats in the Southeast Florida and Gulf of Mexico by NMFS port agents.

Area	Total Number of Vessel Permits	Active	Fishing Status Inactive	Unknown	Vessels not in Area
Collier	86	22	17	11	36
Lee	18	0	0	6	12
Sarasota	6	0	0	2	4
Manatee	3	0	0	3	0
Monroe	149	9	7	70	63
EC FL	12	7	0	1	4
WC FL	60	7	0	33	20
Panama City	7	0	4	3	0
Apalachicola	8	0	1	4	3
Louisiana	8	0	8	0	0
Total	357	45	37	133	142

EC FL is the area on the east coast covering Martin, St. Lucie, and Indian River Counties.

WC FL is the area on the west coast of Florida in Collier County around Everglades City and Naples.

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Table 6. Reef Fish permit information on the importance of fish traps to fishing operations of permittees, purchasing trap tags and the importance of stone crab and spiny lobster fisheries to those Florida permittees.

Home Port	Year	IMPORTANCE OF TRAPS[1]					AVERAGE OF TAGS REQUESTED			
		1	2	3	4	TOTAL	1	2	3	4
AL	1991			1		1			20	
	1992									
FL	1991	152	40	31	16	239	50	29	26	16
	1992	194	38	36	23	291	50	28	23	33
LA	1991	2	3	2	2	9	55	17	100	35
	1992		2	1	2	5		100	10	60
MS	1991		1			1		25		
	1992									
TX	1991		1	8	1	10		10	5	20
	1992		1	1	1	3		10	10	5
TOTAL	1991	154	45	42	19	260				
	1992	194	41	38	26	299				

[1] 1 = Principal gear used by vessels, etc.

FISHERY	YEAR	FISHERY IMPORTANCE[2]				
		1	2	3	4	TOTAL
Stone Crab	1991	60	13	10	5	88
	1992	104	14	10	9	137
Spiny Lobster	1991	10	3	9	2	24
	1992	14	5	2	3	24
Both Above	1991	39	5	6		50
	1992	48	4	2	1	55
TOTAL	1991	109	21	25	7	162
	1992	166	23	14	13	216

[2] 1 = Principal fishery vessel is engaged in, etc.

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Table 7. Annual Landings (Thousands of Pounds) by Fish Traps from Statistical Zones (Percent in Parentheses) and Number of Vessels for 1986-1991

YEAR	VESSELS	STATISTICAL ZONE(S)[1]				TOTAL
		1 & 2	3 & 4	5 & 6	7	
1986	79	246 (27)	657 (72)	3 (0.4)		905.9
1987	92	134 (24)	411 (75)	3 (0.5)		548.3
1988	100	176 (26)	401 (60)	5 (0.7)	83 (12)	664.8
1989	94	535 (44)	572 (47)	19 (2)	77 (6)	1,204.3
1990	NA	419 (42)	315 (32)	64 (6)	193 (19)	990.3
1991[2]	87[3]					1,455.0

YEAR	LANDINGS			
	GROUPER	SNAPPERS	OTHER	TOTAL[4]
1986	896	83	35	1,014
1987	617	57	62	737
1988	698	96	83	877
1989	782	221	233	1,236
1990	498	202	287	987
1991	739	184	532	1,455

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[1]See Figure 9 for Statistical Zones.

[2]Catch by Statistical Zone not available.

[3]Vessels reporting landings by log book; values for other years from canvass.

[4]Total not same for totals above since it includes some landings from south of Florida Keys which are excluded above.

TABLE 8

Seaward coordinates of reef fish stressed area boundary.

Point No.	Reference Location[1]	North Latitude	West Longitude
1	Seaward limit of Florida's waters Northeast of Dry Tortugas	24°45.5'	82°41.5'
2	North of Marquesas Keys	24°48.0'	82°06.5'
3	Off Cape Sable	25°15.0'	82°02.0'
4	Off Sanibel Island - Inshore	26°26.0'	82°29.0'
5	Off Sanibel Island - Offshore	26°26.0'	82°59.0'
6	West of Egmont Key	27°30.0'	83°21.5'
7	Off Anclote Keys - Offshore	28°10.0'	83°45.0'
8	Off Anclote Keys - Inshore	28°10.0'	83°14.0'
9	Off Deadman Bay	29°38.0'	84°00.0'
10	Seaward limit of Florida's waters, East of Cape St. George	29°35.5'	84°38.6'
	Then westerly along the seaward limit of Florida's waters to		
11	Seaward limit of Florida's waters, South of Cape San Blas	29°32.2'	85°27.1'
12	Southwest of Cape San Blas	29°30.5'	85°52.0'
13	Off St. Andrews Bay	29°53.0'	86°10.0'
14	Desoto Canyon	30°06.0'	86°55.0'
15	Alabama/Florida line	29°34.5'	87°38.0'
16	Off Mobile Bay	29°41.0'	88°00.0'
17	Mississippi/Alabama line	30°01.5'	88°23.7'
18	Horn/Chandeleur Islands	30°01.5'	88°40.5'
19	Chandeleur Islands	29°35.5'	88°37.0'
20	Seaward limit of Louisiana's waters off Mississippi River North Pass	29°16.3'	89°00.0'
	Then southerly and westerly along the seaward limit of Louisiana's waters to		
21	Seaward limit of Louisiana's waters off Mississippi River Southwest Pass	28°57.3'	89°28.2'
22	Southeast of Grand Isle	29°09.0'	89°47.0'
23	Quick flashing horn buoy south of Isles Dernieres	28°32.5'	90°42.0'
24	Southeast of Calcasieu Pass	29°10.0'	92°37.0'
25	South of Sabine Pass on 10 fathom contour	29°09.0'	93°41.0'
26	South of Sabine Pass on 30 fathom contour	28°21.5'	93°28.0'
27	East of Aransas Pass	27°49.0'	96°19.5'
28	East of Baffin Bay	27°12.0'	96°51.0'
29	Northeast of Port Mansfield	26°46.5'	96°52.0'
30	Northeast of Port Isabel	26°21.5'	96°35.0'
31	U.S./Mexico EEZ boundary	26°00.5'	96°36.0'
	Then westerly along U.S./Mexico EEZ boundary to the seaward limit of Texas' waters.		

[1] Nearest identifiable landfall, boundary, navigation aid or submarine area.

Table 9 Expected mean total lengths (inches) of red snapper at the beginning of month by model age.

	Month											
Age	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
0	-	-	-	-	-	1.0	2.0	2.5	3.0	3.5	4.0	4.6
1	4.8	4.9	5.2	5.5	6.0	7.0	7.9	8.4	8.7	8.9	9.0	9.2
2	9.2	9.3	9.6	9.9	10.4	11.3	12.1	12.5	12.7	12.9	13.0	13.1
3	13.1	13.3	13.5	13.8	14.3	15.1	15.7	16.1	16.3	16.5	16.6	16.7
4	16.7	16.8	17.0	17.3	17.7	18.5	19.0	19.4	19.5	19.7	19.8	19.8
5	19.8	20.0	20.2	20.4	20.8	21.5	22.0	22.3	22.4	22.5	22.6	22.7
6	22.7	22.8	23.0	23.2	23.5	24.2	24.6	24.9	25.0	25.1	25:2	25.2
7	25.2	25.3	25.5	25.7	26.0	26.5	26.9	27.2	27.3	27.4	27.4	27.5
8	27.5	27.6	27.7	27.9	28.2	28.7	29.0	29.3	29.4	29.4	29.5	29.5
9	29.5	29.6	29.8	29.9	30.2	30.6	30.9	31.1	31.2	31.3	31.3	31.4
10	31.4	31.4	31.6	31.7	31.9	32.3	32.6	32.8	32.9	32.9	33.0	33.0
11	33.0	33.1	33.2	33.3	33.5	33.9	34.1	34.3	34.3	34.4	34.4	34.5
12	34.5	34.5	34.6	34.7	34.9	35.2	35.5	35.6	35.7	35.7	35.8	35.8
13	35.8	35.8	35.9	36.0	36.2	36.5	36.7	36.8	36.9	36.9	36.9	37.0
14	37.0	37.0	37.1	37.2	37.3	37.6	37.8	37.9	37.9	38.0	38.0	38.0
15	38.0	38.1	38.1	38.2	38.4	38.6	38.7	38.8	38.9	38.9	38.9	39.0
16	39.0	39.0	39.1	39.1	39.3	39.5	39.6	39.7	39.7	39.8	39.8	39.8
17	39.8	39.9	39.9	40.0	40.1	40.3	40.4	40.5	40.5	40.5	40.6	40.6
18	40.6	40.6	40.7	40.7	40.8	41.0	41.1	41.2	41.2	41.2	41.2	41.3
19	41.3	41.3	41.3	41.4	41.5	41.6	41.7	41.8	41.8	41.8	41.8	41.9
20	41.9	41.9	41.9	42.0	42.1	42.2	42.3	42.3	42.4	42.4	42.4	42.4
21	42.4	42.4	42.5	42.5	42.6	42.7	42.8	42.8	42.9	42.9	42.9	42.9
22	42.9	42.9	43.0	43.0	43.0	43.2	43.2	43.3	43.3	43.3	43.3	43.3
23	43.3	43.4	43.4	43.4	43.5	43.6	43.6	43.7	43.7	43.7	43.7	43.7
24	43.7	43.7	43.8	43.8	43.8	43.9	44.0	44.0	44.0	44.1	44.1	44.1
25	44.1	44.1	44.1	44.1	44.2	44.3	44.3	44.4	44.4	44.4	44.4	44.4
26	44.4	44.4	44.4	44.5	44.5	44.6	44.6	44.6	44.7	44.7	44.7	44.7
27	44.7	44.7	44.7	44.7	44.8	44.8	44.9	44.9	44.9	44.9	44.9	44.9
28	44.9	44.9	45.0	45.0	45.0	45.1	45.1	45.1	45.1	45.1	45.1	45.2
29	45.2	45.2	45.2	45.2	45.2	45.3	45.3	45.3	45.3	45.3	45.4	45.4
30	45.4	45.4	45.4	45.4	45.4	45.5	45.5	45.5	45.5	45.5	45.5	45.5

Source: Goodyear (1992)

TABLE 10

Seaward coordinates of reef fish longline restricted area.

Point No.	Reference Location[1]	North Latitude	West Longitude
1	Seaward limit of Florida's waters North of Dry Tortugas	24°48.0'	82°48.0'
2	North of Rebecca Light	25°07.5'	82°34.0'
3	Off Sanibel Island	26°26.0'	82°59.0'
4	West of Egmont Key	27°30.0'	83°21.5'
5	West of Anclote Keys	28°10.0'	83°45.0'
6	Southeast corner of Florida Middle Ground protected area	28°11.0'	84°00.0'
7	Southwest corner of Florida Middle Ground protected area	28°11.0'	84°07.0'
8	West corner of Florida Middle Ground protected area	28°26.6'	84°24.8'
9	Northwest corner of Florida Middle Ground protected area	28°42.5'	84°24.8'
10	South of Carrabelle	29°05.0'	84°47.0'
11	South of Cape St. George	29°02.5'	85°09.0'
12	South of Cape San Blas bell buoy - 20 fathom contour	29°21.0'	85°30.0'
13	South of Cape San Blas bell buoy - 50 fathom contour	28°58.7'	85°30.0'
14	Southeast of Pensacola (Desota Canyon)	30°06.0'	86°55.0'
15	South of Pensacola	29°46.0'	87°19.0'
16	South of Perdido Bay	29°29.0'	87°27.5'
17	East of Mississippi River - North Pass	29°14.5'	88°28.0'
18	South of Mississippi River - Southwest Pass	28°46.5'	89°26.0'
19	Northwest tip of Mississippi Canyon	28°38.5'	90°08.5'
20	West side of Mississippi Canyon	28°34.5'	89°59.5'
21	South of Timbalier Bay	28°22.5'	90°02.5'
22	South of Terrebonne Bay	28°10.5'	90°31.5'
23	South of Freeport	27°58.0'	95°00.0'
24	Off Matagorda Island	27°43.0'	96°02.0'
25	Off of Aransas Pass	27°30.0'	96°23.5'
26	Northeast of Port Mansfield	27°00.0'	96°39.0'
27	East of Port Mansfield	26°44.0'	96°37.5'
28	Northeast of Port Isabel	26°22.0'	96°21.0'
29	U.S./Mexico EEZ boundary	26°00.5'	96°24.5'
	Then westerly along U.S./Mexico EEZ boundary to the seaward limit of Texas' waters.		

[1] Nearest identifiable landfall, boundary, navigation aid or submarine area.

Recreational Mutton Snapper Harvest by Number, 1987-1991 (MRFSS Statistics)

Gulf of Mexico Harvest — Table 11

Year	Month							
	Jan/Feb	Mar/Ap	May/Jun	Jul/Aug	Sep/Oct	Nov/Dec	Total	
1980							203,356	
1981							199,030	
1982							284,626	
1983							102,973	
1984							368,802	
1985							29,174	
1986							43,407	
1987	67,571	9,015	3,800	7,241	273	0	87,900	
1988	1,466	0	0	4,662	1,919	86,150	94,197	
1989	17,442	2,095	21,015	945	0	0	41,497	
1990	0	5,982	5,229	21,603	0	10,853	43,667	
1991	18,908	10,954	2,225	13,013	8,737	5,406	59,243	
Total	105,387	28,046	32,269	47,464	10,929	102,409	326,504	(5 yr. total)
Average	21,077	5,609	6,454	9,493	2,186	20,482	65,301	(5 yr. ave.)

South Atlantic Harvest — Table 12

Year	Month						
	Jan/Feb	Mar/Ap	May/Jun	Jul/Aug	Sep/Oct	Nov/Dec	Total
1987	11,587	3,215	7,099	19,773	0	47,716	89,390
1988	7,269	7,717	18,582	32,503	12,093	6,218	84,382
1989	3,201	590	16,738	28,059	8,298	9,354	66,240
1990	2,502	5,154	18,211	4,092	12,496	9,568	52,023
1991	6,137	1,455	27,817	11,878	5,602	9,697	62,586
Total	30,696	18,131	88,447	96,305	38,489	82,553	354,621
Average	6,139	3,626	17,689	19,261	7,698	16,511	70,924

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Mutton Snapper Commercial Landings - Gulf of Mexico
(From Florida trip tickets)

Including Monroe County

Table 13

	1986	1987	1988	1989	1990	1991	Total	Average
JAN	26,490	19,977	16,827	17,896	20,842	23,435	125,467	20,911
FEB	12,364	33,540	29,163	21,924	13,256	20,771	131,018	21,836
MAR	12,121	29,389	21,583	24,042	17,318	23,194	127,647	21,275
APR	18,142	23,614	21,428	24,090	20,330	21,454	129,058	21,510
MAY	27,733	82,526	26,750	99,558	53,950	71,177	361,694	60,282
JUN	37,939	72,774	64,920	66,094	81,884	52,020	375,631	62,605
JUL	21,805	17,435	15,641	12,977	12,830	31,488	112,176	18,696
AUG	9,639	14,937	12,445	13,146	16,436	11,130	77,733	12,956
SEP	13,327	12,960	12,621	11,084	16,144	15,186	81,322	13,554
OCT	24,980	25,064	14,526	24,739	24,195	21,113	134,617	22,436
NOV	18,272	14,387	19,171	16,715	15,079	24,002	107,626	17,938
DEC	19,127	16,007	19,694	18,295	10,924	26,067	110,114	18,352
Total	241,939	362,610	274,769	350,560	303,188	341,037		

Excluding Monroe County

Table 14

	1986	1987	1988	1989	1990	1991	Total	Average
JAN	6,810	5,768	7,904	5,693	6,935	10,129	43,239	7,207
FEB	4,878	17,785	17,594	13,708	6,403	9,692	70,060	11,677
MAR	6,006	18,220	11,847	15,314	7,504	9,548	68,439	11,407
APR	5,373	6,955	7,036	8,575	7,851	6,328	42,118	7,020
MAY	4,456	6,175	3,632	11,400	7,491	4,640	37,794	6,299
JUN	4,964	2,974	6,926	3,204	8,072	7,361	33,501	5,584
JUL	4,887	6,156	4,362	4,424	3,355	5,577	28,761	4,794
AUG	3,091	5,245	6,269	2,768	7,557	2,848	27,778	4,630
SEP	4,842	2,426	4,147	3,466	8,985	7,475	31,341	5,224
OCT	7,680	6,535	5,654	1,673	5,925	3,753	31,220	5,203
NOV	5,572	4,437	10,190	2,710	4,720	2,867	30,496	5,083
DEC	6,888	6,802	4,692	2,107	2,349	8,031	30,869	5,145
Total	65,447	89,478	90,253	75,042	77,147	78,249		

Table 15

Number of Charter and Party Boats
Operating in the Gulf Coast

State	Charter	Party
Alabama	35	2
Florida	628	66
Louisiana	45	2
Mississippi	18	2
Texas	112	20
TOTAL	838	92

Sources of data: Holland, S.M. and J.W. Milon (1989), "The Structure and Economics of the Charter and Party Boat Fishing Fleet of the Gulf Coast of Florida"; Ditton, R.B. et al. (1988), "The Social Structure and Economics of the Charter and Party Boat Fishing Fleets in Alabama, Mississippi Louisiana and Texas".

Table 16

Mean Percent Time Targeted for Each Species by All Charter/Party Boats Operating in the Gulf States

	Charter Boats					Party Boats	
Species	FL	AL	MS	LA	TX	FL	Al-TX
Snapper	12.1	51.1	8	14.1	8.1	38.4	50.4
Grouper	15.7	5.5	1.9	0.1	1.5	28.8	3.9
Amberjack	7.7	6	0.8	0.9	0.5	7.5	0.3
Sp. Trout	2.6	2	3.4	42.7	34.6	1.6	3.6
King mack.	9.4	9.8	7.8	3.2	12.2	0.9	8.1
Span. mack.	3.7	3	6.9		0.2	2.6	2
Red drum	1.5	3	7.4	13.2	16.8	1.7	4.4
Bluefish	0.9	0.6	3.3			0.1	1.2
Cobia	3.1	2.2	4.8	2.1	0.5	1.9	0.2
Billfish	12.3	0.4	1.6	0.1	0.2	1.7	0.4
Tuna	3	0.2	0.8	0.4	0.2	1.3	0.3
Shark	5.2	0.6	3.3	1.1	0.4	1.4	0.9
Dolphin	10	0.8	1.8	1.2	1.1	1.6	0.3
Barracuda	3.3	0.3	0.8	0.1	0.3	0.9	0.2
Wahoo	2.6	0.4	0.8	0.1	0.6	0.3	0.2
Bonito	3.8	1.3	1.8		0.8	1.2	0.8
Ladyfish	0.7	0.6	2.3			1.7	0.2
Others	5.2	3.4	4.7	4.6	2.1	3.5	5.2

Notes:
1. Percents for each species are averages for the entire year.
2. Percents may not add up to 100 because some operators target none of some species or more than one species.
3. No entry means no operator targets the particular species.
4. AL-TX refers to party boat operators in Alabama, Mississippi Louisiana and Texas.

Sources of data: Holland, S.M. and J.W. Milon (1989), "The Structure and Economics of the Charter and Party Boat Fishing Fleet of the Gulf Coast of Florida"; Ditton, R.B. et al. (1988), "The Social Structure and Economics of the Charter and Party Boat Fishing Fleets in Alabama, Mississippi, Louisiana and Texas".