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AMENDMENT 2

TO THE

FISHERY MANAGEMENT PLAN

FOR

CORAL AND CORAL REEFS

OF THE GULF OF MEXICO

AND

SOUTH ATLANTIC

INCLUDING A FINAL SUPPLEMENTAL

ENVIRONMENTAL IMPACT STATEMENT

REGULATORY IMPACT REVIEW

AND

INITIAL REGULATORY FLEXIBILITY ANALYSIS

JULY 1994

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ABSTRACT:

The Gulf of Mexico and South Atlantic Councils (Councils) propose an amendment to the Fishery Management Plan for Coral and Coral Reefs of the Gulf of Mexico and the South Atlantic (FMP) that adds "live rock" to the fishery management unit. Live rock means certain living marine organisms or an assemblage thereof attached to a hard substrate (including dead coral or rock). In addition to corals, these organisms include anemones, sponges, tube worms, bryozoans, sea squirts, and algae.

Management will include harvest limitations and prohibitions to prevent fishery habitat loss, permitting of harvesters, and a provision for aquaculture of live rock.

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SUMMARY:

Supplemental Environmental Impact Statement for Amendment 2 to the Fishery Management Plan for Corals and Coral Reefs of the Gulf of Mexico and the South Atlantic (FMP) was prepared by the Gulf of Mexico and South Atlantic Fishery Management Councils to manage live rock. Live rock is a calcareous material containing an assemblage of living marine organisms. It is harvested by hand from the substrate by divers and is sold for use in marine aquaria. The harvest accelerated in the 1980s, with almost all production being off Florida. That state became concerned with the removal of hard bottom habitat for other marine species and prohibited harvest in its waters. The Councils propose management of this resource.

Amendment 2 would: (1) prohibit taking of wild live rock in the Gulf of Mexico EEZ except harvest will be allowed off Florida's west coast, exclusive of Monroe County, only through 1996; (2) establish daily trip limits of 25 five-gallon buckets or an equivalent volume in the allowable zone off Florida's Gulf coast; (3) allow only hand tools limited to chipping hammers and chisels for harvest of live rock and octocorals where allowed in the Gulf; (4) prohibit chipping in harvest of live rock on Florida's west coast north of the Pasco-Hernando County line; (5) establish an annual harvest cap of 485,000 pounds of loose rubble rock in the South Atlantic EEZ south of the Broward-Dade County line, Florida, for 1994 and 1995; (6) ban the harvest of wild live rock in the South Atlantic EEZ no later than January 1, 1996; and (7) prohibit chipping of live rock during the harvest period and allow no take or possession in the EEZ north of Dade County, Florida.

Draft Amendment 2 also would: (8) define live rock and add it to the FMP management unit; (9) redefine octocorals to clarify that only individual colonies, and not whole rocks, may be taken under the octocoral quota; (10) establish a federal permit and reporting system for live rock harvesting during the harvest phase-out period and limit permittees to historic participants; (11) allow and facilitate aquaculture of live rock in the Gulf and South Atlantic EEZ; (12) establish a federal permit system for aquaculture in the Gulf of Mexico EEZ; (13) add live rock to prohibited species requiring a permit for harvesting for scientific, educational, and restoration purposes after the harvest phase-out; and (14) require reporting of landings of all live rock.

Abbreviations and Acronyms Used in this Document

CFMC	Caribbean Fishery Management Council
CVM	Contingent Valuation Method
DSEIS	Draft Supplemental Environmental Impact Statement
EEZ	Exclusive Economic Zone
FDEP (=FDNR)	Florida Department of Environmental Protection (successor to Florida Department of Natural Resources)
FMFC	Florida Marine Fisheries Commission
FMP	Fishery Management Plan
FMRI	Florida Marine Research Institute
GMFMC	Gulf of Mexico Fishery Management Council
IRFA	Initial Regulatory Flexibility Analysis
NMFS	National Marine Fisheries Service
OY	Optimum Yield
RFA	Regulatory Flexibility Act
RIR	Regulatory Impact Review
SAFMC	South Atlantic Fishery Management Council
SPL	(Florida) Saltwater Products License
TCM	Travel Cost Method

1.0 INTRODUCTION

Description of the Fishery

With the recent development of technology to maintain marine aquaria, a market developed for calcareous material to decorate the tanks and to maintain the proper water chemistry. This material, composed mostly of calcium carbonate and the attached marine life occurs naturally off the South Atlantic and Gulf coasts and consists of coral reef rubble and limestone. Coral reefs, hard corals, and sea fans are protected by federal and Florida regulations. Taking or damaging them is prohibited.

Live rock was first marketed in the 1970s, but the fishery expanded greatly in the 1980s and early 1990s to meet the demand from the development of public and private marine aquaria.

Technical advances in saltwater aquarium filtration systems during the mid-1980s led to the feasibility of so-called "mini-reef" systems dominated by invertebrates. These organisms and nitrogen-fixing bacteria serve as a form of filtration to reduce toxins and filter out excess organics as they feed (Blackburn, 1988). Moe (1989) stated that placing 50 pounds of fully seeded, that is cleaned and completely stabilized, live rock in a marine system is the equivalent of transplanting a fully functional biological filter into a new system. Demand for ornamental fish began to include "live rock," consisting generally of calcareous substrates encrusted with a variety of living marine organisms.

Collectors, dealers, and hobbyists state that the presence of live rock is necessary to maintain a balanced marine aquarium. Currently, live rock cannot be reproduced commercially in aquaria or closed systems, but it can be maintained indefinitely. Aquarists often supplement rock in their tanks with pieces containing showy plants and animals (Jeffery Turner, pers. comm.).

Live rock is now being air shipped throughout the United States and to Canada and England. The marine aquarium hobby at first concentrated on fishes because neither the equipment nor the knowledge allowed the keeping of other organisms. Gradually, as knowledge and equipment improved, more and more invertebrates were kept successfully. In recent years, the development of "Living Reef" aquarium systems that were able to maintain stable environments in closed-system aquaria has enabled aquarists to set up and maintain tiny bits of reef ecology in their homes (Feddern, pers. comm.). Florida live rock landings in 1992 reached almost 800,000 pounds (FDEP). During 1992, 50 percent of the landings were reported by 11 collectors, and 75 percent of all landings were reported by only 24 collectors (FDEP pers. comm.).

Robert Stewart, Jr. (pers. comm.), reports that live rock "carries" the marine aquarium trade industry of Florida and estimates that without the sale of live rock, his company would lose 50-75 percent of its gross revenue, since the live rock is very important in stimulating the sales of related marine life products.

Most of the live rock collectors are in the marine life fishery, which also harvests tropicals for the aquarium trade. Live rock is harvested by divers who selectively remove small pieces from the bottom, either by picking up loose rubble rock or chipping rock from reef or ledges. FDEP records show about 102 harvesters in 1993. Harvesters maintain that they do not remove large quantities from a single site, but range over wide areas of hard bottoms choosing aesthetically pleasing pieces that would beautify aquaria. One square mile of hard bottom is estimated to contain about 600,000 to a million tons of live rock in the top one foot of surface comprising slightly over a million cubic yards (Feddern, Pers. Comm). The Fishery Management Plan for Reef Fish Resources in the Gulf of Mexico estimates there to be 19,691 square miles of live bottom within 55 fathoms in the Gulf (GMFMC, 1991). This amounts to almost 20 billion tons in the top one foot of surface. While this is not all available to diver harvesters, it serves as hard bottom habitat.

Purpose and Need

This amendment will provide additional protection to coral reefs and hard bottom habitat by prohibiting the removal of wild live rock by a date certain and allowing a transitional period for harvesters to convert production to aquaculture. The SAFMC has determined that live rock, whether it is broken off of reefs or limestone outcrops, or it is collected as loose rubble associated with mainly coral reef tracts, is the removal of fishery habitat.

In 1989, the Florida Department of Natural Resources (FDNR) (now Department of Environmental Protection) determined that live rock harvest (i.e., the collection of rocks with marine organisms attached for use in home aquaria) was detrimental to the Florida Reef Tract and other hard bottom habitat areas (Wheaton, 1989). Accordingly, Florida prohibited live rock landings from state waters in May, 1989; however, effort shifted to the EEZ off Florida (Florida Marine Fisheries Commission (FMFC) 1991. The Councils deliberated on the live rock issue and requested the state of Florida clarify their position regarding live rock harvest. The intent was to determine if the localized activity could be addressed at the state level without having to develop an entire amendment under an existing or new fishery management plan which would take a great deal longer.

Although the Councils discussed the live rock issue, they deferred previous action because the FMFC had decided to begin rulemaking regarding live rock landings from the EEZ off Florida (FMFC, 1991). During the course of its rulemaking, the FMFC noted that approximately 35 individuals were reporting landings of about 600,000 pounds (1991) of live rock from waters adjacent to the Florida Reef Tract, Florida's east coast reefs, and the west central coast (FMFC, 1992). (Reported landings in 1992 totaled about 800,000 pounds [Florida Marine Research Institute (FMRI, 1993]). (See Table 1 and Figure 1).

Beginning in March 1991, FMFC held five public hearings and two workshops throughout the state regarding the impacts of live rock harvests on coral conservation, habitat preservation, and the effects of harvest restrictions on the marine aquarium industry.
During its rulemaking the FMFC noted that the only current net production of the carbonate substrate underlying live rock occurs on living coral reefs; and, in Florida, these areas are either in equilibrium or eroding. FDNR personnel testified that more than 90 percent of the live rock examined at the request of enforcement agents contained visible colonies of prohibited corals. The FMFC concluded that live rock removal (1) can violate state and Federal laws that prohibit the taking of corals. (2) reduces the surface area and topographic complexity of Florida's coral reefs and other live bottom areas, and (3) removes entire micro-communities along with targeted aquarium species.

The Councils, along with other state and Federal agencies, also received a petition in June of 1991 from Project ReefKeeper requesting rulemaking action to prohibit the taking and landing of live rock within their areas of jurisdiction. The purpose of the request was to protect coral reefs and their associated marine life (Stone, 1991). The Councils and NMFS advised Project ReefKeeper that they were deferring action to obtain additional data and that the state of Florida action (prohibition after phase-out) would address their concern.

In June 1992, the Florida Governor and Cabinet approved the FMFC rule to phase-out live rock landings from the EEZ over a 3-year period, ending on June 30, 1995. The phase-out period was designed to allow development of live rock aquaculture which would be exempt from the harvest ban. The phase-out was to be accomplished by a 25 percent annual reduction in landings (based on the 1991 reported landings) accompanied by a 500 pound daily vessel limit. The quotas set were 450,000 pounds for 1993, 300,000 pounds in 1994, 150,000 pounds in 1995. A July 1 - June 30 season was established, and the 1993 quota was filled by February 12, 1993.

On March 31, 1993, a U.S. District Court Judge issued a preliminary injunction to prevent enforcement of the state's quota or vessel landing limits relating to possession or landing of live rock taken in the EEZ. Florida live rock fishermen argued that the Magnuson Act supersedes state landing laws and that the Councils had made "an affirmative and conscious decision" not to prohibit the taking of live rock in the EEZ. The Councils had deferred action because the implementation of a phase-out of live rock landings by the state of Florida addressed what appeared to be a localized management issue. Subsequently, they became concerned that the removal of live rock from the EEZ was now unregulated, and there now is interest in harvest from North Carolina through Alabama. In April, 1993 the SAFMC approved a motion to include live rock in the Coral Fishery Management Plan and reactivate the South Atlantic Coral Advisory Panel. In May, 1993 the Gulf Council, on being advised of live rock landings in Alabama and on the request of that state and Florida, initiated development of options for live rock management. In June, 1993 the SAFMC held a public scoping meeting in Duck Key, Florida to solicit input from the harvesters and the general public on the management of live rock. In addition, the Councils published notice of a February 3, 1994, control date to accomplish two things; first, it would put all active harvesters and people interested in beginning harvest on notice that the Councils are developing regulations to manage live rock in the EEZ, and secondly, that the Councils would consider all options from total prohibition to a limited entry system. Persons entering the commercial fishery for live rock in the EEZ after that date may not be assured of future access to the fishery if a limited access regime is implemented.

Following receipt of public testimony in the review of draft options to be addressed in this amendment, the Gulf Council in March, 1994 requested emergency implementation of some interim live rock management regulations. These regulations prohibited taking of live rock from the EEZ from the Pasco-Hernando, Florida County line to the Alabama-Mississippi state line (Figure 2a). This would protect the relatively sparse rock structures in that area from depletion. Live rock harvest in the Florida Panhandle increased from 8,500 pounds in 1992 to over 29,000 pounds in 1993.

Testimony from about 60 individuals described removal of live rock by harvesters in the northern Gulf of Mexico as causing severe damage to the limited outcroppings or rock ledges in state and federal waters. Divers and fishermen testified that some small banks have been greatly reduced in size as a result of live rock harvest.

Also included in the emergency request for the area in Florida south of the Pasco-Hernando County line was a limitation of daily vessel trip limits to no more than 25 five-gallon buckets or an equivalent volume, and a prohibition of the use of power assisted tools to break up or dislodge pieces of live rock from outcroppings. The emergency rule is a temporary measure which can extend no more than 90 days but may be extended an additional 90 days.

In July of 1994, the Council requested an extension of the then current emergency interim rule, with modifications to conform with options adopted for Amendment 2 to the FMP. Amendment 2 implements the modified emergency measures on a permanent basis and includes a phase-out schedule for all wild live rock harvests.

The Council requested emergency rule modifications that would (1) re-open the area from the Pasco-Hernando county line to the Alabama-Florida boundary to the harvest and possession of loose rubble rock only, with no chipping allowed; and (2) extend throughout the Gulf EEZ off Florida the current emergency rule's daily vessel harvest and possession limit for live rock of 25 5-gallon buckets. The then current prohibitions on taking live rock in the EEZ off Alabama and on the use of power-assisted tools to break up or dislodge pieces of live rock south of the Pasco-Hernando county line would remain in effect (Figure 2b).

Based on public testimony and a review of written comments, the Council determined that the usual harvest practices and number of participants north of the Pasco-Hernando county line in Florida do not threaten the integrity of the natural hard bottoms and banks in the EEZ in that area, at least in the short-term, provided that chipping is not allowed and a daily vessel limit is established. Harvesters provided charts of natural hard bottom areas, showed videos of reef complexes, and testified that there is sufficient loose rock in this area to support a commercial fishery. They stated that it is not their usual practice to chip rock off the ledges and that without access to live rock during the phase-out period through 1996, they would be financially unable to convert to aquaculture operations.

The EEZ off Alabama, the only other Gulf state to report landings of live rock, would remain closed to harvest because of the scarcity of live rock resources in that area.

Live rock landings for states other than Florida are not available; however, live rock landings have occurred in Alabama, and possibly South and North Carolina. In addition, in SAFMC deliberation on live rock, it was noted that a request had been made to the Georgia Department of Natural Resources for information on the distribution of live rock or hard bottom off Georgia with the intent of identifying possible harvest locations (Figure 3). NMFS recently received a request for licensing information for a new business planning to land live rock in North Carolina (R.Schmied, pers. comm.). Live rock harvest is currently allowed in the Florida Keys National Marine Sanctuary, but may be restricted to specific areas by a developing plan (Figure 4). Subsequently both Councils have decided to consider options regarding live rock management and include these in an amendment to the Coral FMP.

The South Atlantic Council proposes management measures for their area of jurisdiction. All actions to be implemented in the South Atlantic Council's area of jurisdiction are contained in a separate document approved by both Councils. In this document they are identified by an asterisk (*).

Because stocks are separate and have different management needs between the jurisdictional areas of the two Councils, this amendment proposes, in the future, to provide each Council sole responsibility for management within its jurisdictional area.

OBJECTIVES

The FMP identifies the following plan objectives and problems in the fishery: (Objective 2 is modified in this action to include live rock and live bottom habitat.)

PRIMARY MANAGEMENT OBJECTIVE

Optimize the benefits generated from the coral resource while conserving the coral and reefs.

SPECIFIC MANAGEMENT OBJECTIVES

1. Develop scientific information necessary to determine feasibility and advisability of harvest of coral.

2. Minimize, as appropriate, adverse human impacts on coral, coral reefs, live rock and live bottom habitat.

3. Provide, where appropriate, special management for coral habitat areas of particular concern (HAPCs).

4. Increase public awareness of the importance and sensitivity of coral and coral reefs.

5. Provide a coordinated management regime for the conservation of coral and coral reefs.

PROBLEMS IN THE FISHERY

1. Degradation of the stocks through natural and man-made impacts.

2. Limited scientific information on many species and many sections of the management unit, which includes the inability to assess the impact of coral harvest.

3. Susceptibility to stress because of corals being located at the northern limit of their distribution.

4. Inability of corals to escape stress because of their sedentary nature.

5. Complexity and inconsistency of management regimes.

6. Lack of adequate public understanding of the importance of coral and coral reefs.

7. Present lack of jurisdiction over most coral and coral reefs by a federal agency which has traditionally executed authority and jurisdiction.

ENVIRONMENTAL ISSUES TO BE ADDRESSED
HABITAT LOSS - What are the direct and indirect effects of live rock harvests on substrate availability and reef fish productivity?
AQUARIUM SALES - How will restrictions on live rock harvests affect the aquarium trade?
ECOSYSTEM MANAGEMENT - How can we ensure the viability of the entire coral reef ecosystem?
AESTHETIC VALUES - How does the continued collection of live rock affect non-consumptive users/divers.
CONSISTENT REGULATIONS - What is the most consistent management regime for live rock harvests in the EEZ, state waters, and the National Marine Sanctuary.

2.0 ALTERNATIVES INCLUDING THE PROPOSED ACTIONS

A. REJECTED ALTERNATIVE: NO ACTION - STATUS QUO, NO MANAGEMENT OF LIVE ROCK; HARVEST IS UNREGULATED.

Discussion:

Before the mid-1980s, marine aquarium hobbyists concentrated on tropical fish rather than invertebrates. In recent years, however, experienced hobbyists have been able to establish "Living Reef" aquarium systems using live rock and its associated invertebrates (Feddern, pers. comm.). By the late 1980s, the Florida Marine Patrol estimated that about 3 tons of live rock left Miami International Airport daily (Wheaton, 1989; FMFC, 1991). In April 1990, Florida began a licensing and reporting system for live rock landings from the EEZ. In the first year, landings increased 68 percent, but this could have been an artifact of the new reporting system. Between 1991 and 1992, reported landings in Florida increased

by one-third (FMRI, 1993). Florida landings of live rock in 1991 were composed of 41 percent rubble rock, 35 percent algae rock (rubble rock with algae), and 9 percent serpulid (tube worm) rock with sea mat, false coral, and gorgonian rock comprising the remainder (see Section 3.0 for description of rock types). Live rock is now being air shipped from Florida throughout the United States and to Canada and England (Feddern, pers. comm.).

Expert testimony to the FMFC (FMFC, 1991, 1992), to the South Atlantic Council (June 1993) and Wheaton (1989) indicate that live rock harvests represent a consumptive use of an essentially non-renewable resource. In addition, live rock removals are concentrated in only a few areas, primarily off South Florida (Figure 5). About 40 percent of the 1992 landings were recorded along a 40 mile stretch of reef in the Florida Keys (Tavernier to Duck Key) (FMRI, 1993) (Figure 4). Thus, adverse impacts can be expected on hard bottom habitat from a continuation of live rock harvests at reported levels. The FMFC estimated that the 1991 harvest resulted in the loss of at least .39 acre of hard bottom surface (4 inches deep). By 1992, harvest levels had increased from a reported 300 tons to about 400 tons. In the period January through July of 1993, with no harvest allowed in March, 250 tons were landed (FMRI, 1993). Monthly landings increased in 1993 over 1990 (Figure 1).

The SAFMC's Habitat and Environmental Protection Advisory Panel developed the following position statement: "It is the opinion of the majority of scientists familiar with the ecology of live rock habitats that continued harvest of "wild rock" is resulting in a net loss of this important resource, ..." In addition, they referred to live rock as "... habitat of at least high value and, to a larger extent, critical value for a number of managed species including spiny lobster, reef fishes including the snapper/grouper complex and state managed species such as "tropical species" for the aquarium trade."

Florida estimated that the ex-vessel value of the FY 95 live rock harvest in the EEZ off Florida would be about $3.5 million, assuming no state or federal restrictions and a 30 percent annual increase in landings (FMFC, 1992).

B. DEFINITIONS FOR THE MANAGEMENT UNIT

The management unit already consists of the coral and coral reefs of the EEZ within the jurisdiction of the Councils. The species already included in the management unit are:

a. Corals: the corals of the Class HYDROZOA (stinging and hydrocorals) and the Class ANTHOZOA (sea fans, whips, precious corals, sea pens, and stony corals).

b. Coral Reefs: The hard bottoms, deep-water banks, patch reefs, and outer bank reefs.

B.1 Definition of Live Rock and Addition to the Coral FMP's Management Unit

Additions to the management unit:

B.1.a Preferred Alternative for the Gulf and South Atlantic Areas:

c. Live rock: Living marine organisms or an assemblage thereof attached to a hard substrate (including dead coral or rock). For example, such living marine organisms associated with hard bottoms, banks, reefs, and live rock may include, but are not limited to:

Sea Anemones (Phylum CNIDARIA: Class ANTHOZOA:
Order ACTINARIA)
Sponges (Phylum PORIFERA)

Tube Worms (Phylum ANNELIDA)
  Fan worms
  Feather duster worms
  Christmas tree worms
Byozoans (Phylum BRYOZOA)
Sea Squirts (Phylum CHORDATA)
Marine Algae
  Mermaid's fan and cups (Udotea spp.)
  Corraline algae
  Green feather, green grape algae (Caulerpa spp.)
  Watercress (Halimeda spp.)

Discussion:

In order to be included in the management unit live rock must be defined. The Councils are authorized to develop management plans for fisheries (composed of stocks of finfish, mollusks, crustaceans, and all other forms of marine animal and plant life other than marine mammals and birds). This definition aptly describes the product and conforms to those animals and marine life forms subject to management under the Magnuson Act.

The hard substrate which forms the base of the live rock is usually calcareous material such as limestone rock, fossil and dead corals. Individual mollusc shells (scallops, clams oysters, etc.) are not intended to be included in the definition as the hard substrate in live rock.

Live rock is included in the management unit in order to provide additional protection to coral reefs in the Florida Reef Tract and rock ledges and hard bottoms elsewhere. Although damaging coral reefs is currently prohibited, enforcement has been difficult in the absence of possession of living coral.

B.1.b Rejected Alternative:

c. Live Rock: Certain living marine organisms or an assemblage thereof attached to a hard substrate (including dead coral or rock). Such Living Marine Organisms associated with Hard Bottoms, Banks, Reefs, and Live Rock may include:

Sea Anemones (Phylum CNIDARIA: Class ANTHOZOA:
  Order ACTINARIA)
Sponges (Phylum PORIFERA)
Tube Worms (Phylum ANNELIDA)
  Fan worms
  Feather duster worms
  Christmas tree worms
Crustaceans (Phylum ARTHROPODA: Class CRUSTACEA)
  Cleaner shrimp
  Decorator and hermit crabs
Molluscs (Phylum MOLLUSCA)
  Snails
  Nudibranchs
  Bivalves: scallops, oysters, clams, mussels
Echinoderms (Phylum ECHINODERMATA)
  Starfish
  Brittlestars and feather stars
  Crinoids

Sea Urchins
Byozoans (Phylum BRYOZOA)
Sea Squirts (Phylum CHORDATA)
Marine Algae
Mermaid's fan and cups (Udotea spp.)
Corraline algae
Green feather, green grape algae (Caulerpa spp.)
Watercress (Halimeda spp.)

Discussion:

The definition is similar to (1a) but includes, as examples, some crustaceans, molluscs, and echinoderms which may be present on the live rock but are not attached to it. Some species in these phyla may also be subject to other state or federal management.

B.2 Redefinition of Allowable Octocorals

B.2.a* Preferred Alternative for the South Atlantic Area:

Allowable octocorals means erect, non-encrusting species of the subclass Octocorallia, except the prohibited sea fans Gorgonia flabellum and G. ventalina, including only the substrate covered by and within one inch of the holdfast.

Discussion:

Any restrictions on live rock harvests will affect harvest of octocorals allowed under the FMP since most octocorals taken for the marine aquarium trade are removed with some attached substrate. A redefinition of "allowable octocorals" clarifies that only individual colonies, and not whole rocks, may be taken under the octocoral quota. A small portion of the rock is allowed to provide a suitable anchor for the octocoral. Harvest of octocorals encrusting on a hard substrate (i.e., primarily Briareum and Erythropodium spp. or "gorgonian live rock") involves removal of the entire rock substrate and thus is defined as harvest of live rock rather than allowable octocorals. These same octocorals, if encrusted on other than rock substrate, i.e., algae, would be allowable. The intent of this definition is not to protect encrusting octocorals but to protect live rock where prohibited from harvest as allowable octocoral.

B.2.b Rejected Alternative:

No change, allowable octocorals includes no portion of substrate to serve as an anchor for the colony.

Discussion:

When the harvest of live rock is prohibited, the possession of substrate around the holdfast would cause enforcement problems. The substrate provides an anchor for the octocoral in the aquarium. It is the Councils' intent to continue to allow harvest of octocorals.

B.2.c Preferred Alternative for the Gulf Area:

Allowable octocorals means erect, non-encrusting species of the subclass Octocorallia, except the prohibited sea fans Gorgonia flabellum and G. ventalina, including only the substrate covered by and within three inches of the holdfast.

Discussion:

This option and its rational is identical to B.2.a except that a larger portion of substrate is allowed (three inches instead of one inch about the holdfast) to allow sufficient weight to anchor the larger octocorals in aquaria.

MANAGEMENT OF WILD LIVE ROCK HARVEST

C. QUOTAS

Section 12.3.1 of the FMP is to be revised to provide a phase-out of live rock harvest. An additional management measure is added to include a permit and reporting system for live rock harvest, similar to allowable octocorals.

Discussion:

Other than recent production statistics from Florida, there are few data on which to base quotas. Harvesters in Florida reported landings of approximately 800,000 pounds in 1992, the most recent year of unregulated harvest from the EEZ (FDEP). Note: The fishing year for all species of coral and coral resources in the EEZ, under the current FMP as amended, is October 1 through September 30. This amendment establishes a calendar year for live rock harvest.

Florida live rock collectors argue that there is net production of live rock on the Florida Reef Tract. In testimony on the State's rulemaking, marine life fishermen noted that pieces of coral reefs naturally break off during storms - forming the rubble zones or coral rubble - and that this live rock was surplus to the needs of the ecosystem and available for harvest.

About 85 percent of the 1991 live rock harvest was rubble, algae, or serpulid rock (FDEP). It is used as a base in saltwater aquaria to improve filtration. The filtration capabilities of coral rubble depend on the presence of a complex assemblage of micro-organisms, bacteria, larval forms of coral, and other macro-invertebrates. Live rock, however, is probably at least as useful in the reef ecosystem as it is in marine aquaria, i.e., as substrate essential for colonization of sessile organisms including prohibited coral (FMFC, 1991). It also serves as habitat for motile species of reef fishes and invertebrates.

Some commercial live rock is encrusted with "showy" macro-organisms to form a "mini-reef". Based on estimated growth rates for coral reefs, these mini-reefs probably grow extremely slowly, if at all (FMFC, 1991; CFMC in draft).

The wholesale (exvessel) value of live rock varies by location and with encrusting organisms. Bare rubble rock may be priced as low as $0.50 per pound while "Christmas tree rock" brings $3.00 per pound (R. Londeree, pers. comm.).

TABLE 1
FLORIDA LIVE ROCK LANDINGS 1991-1993
BY AREA (SOURCE FDEP)

	WEST COAST			SOUTH/EAST COAST		
Year	**Pounds**	**$ Value**	**Trips**	**Pounds**	**$ Value**	**Trips**
1991	194,681	233,369	887	392,421	411,638	1,764
1992	251,810	239,401	1,254	547,974	363,493	1,976
1993	323,564	402,228	1,072	634,412	661,009	1,609

C.1* Preferred Alternative for the South Atlantic Area

Prohibit all wild live rock harvest north of Dade County, Florida, and prohibit chipping throughout the jurisdiction of the South Atlantic Council immediately. Cap wild harvest at 485,000 pounds annually until January 1, 1996 when all wild harvest will end.

Discussion:

The SAFMC on February 11, 1994, approved a motion that calls for the promulgation of a separate set of management measures and regulations for the South Atlantic. The following issues serve as a basis for the separate management. South Atlantic jurisdiction already includes the Atlantic portion of the Florida Keys and the Florida reef tract, the continental United States' most extensive coral habitat. Coral, coral reefs and hard bottom habitats in the South Atlantic are not mobile or migratory and will remain in South Atlantic jurisdiction.

This alternative allows harvest of loose rubble rock along the Florida Reef Tract only through 1995 at the approximate level of harvest of loose rock in that area in 1992. Of the 548,000 pounds landed in Dade and Monroe Counties in that year, 485,000 pounds were reported as being rubble and algae rock. That is the basis for the quota. Landings of false coral, gorgonian, sea mat, and serpulid live rock from this area are not included. The restriction of harvest to loose material is intended to protect the fragile coral reefs in the Florida Reef Tract which lies south of the Broward-Dade County line near Hollywood, Florida. Unlike the live bottom areas in the Gulf of Mexico, loose rubble rock is abundant along the reef tract and may be collected without damaging the reefs. No harvest is provided north of Dade County, Florida because very little is currently taken there, and rubble rock is not abundant beyond the reef tract.

Studies have shown that the coral rubble communities are extremely rich in species diversity, provide refuge for species that are not found in other habitats, and contribute a substantial amount of the total coral reef biomass (Meesters et al. 1991). Reported landings indicate that only about 30 percent of the 1991 live rock harvest was so-called rubble rock used as a base in saltwater aquaria to improve filtration (FMFC, 1992). Based on estimated growth rates for coral reefs (maximum sustainable growth of about 10 mm/yr [Buddemeier and Smith, 1988]), these "mini-reefs" grow extremely slowly. Serpullid rock, composed of calcareous worm tubes, accretes more rapidly. It comprised about 33 percent of live rock production on Florida's West Coast in 1991.

Florida's live rock harvest in 1992 was about 800,000 pounds as compared with about 590,000 pounds in 1991. With increasing sophistication of marine aquarium facilities there is a potential for increasing the number of participants in the fishery and harvest of live rock. The FMRI reports the exvessel value of the reported 1992 live rock harvest at about $603,000 and $1,063,000 in 1993.

C.2 Rejected Alternative for the Gulf Area

Establish a Gulf of Mexico quota of 252,000 pounds harvest for calendar years 1994 through 1996 from the Pasco-Hernando County line to the Monroe-Collier county line in Florida with no chipping permitted in that area. There is to be no harvest or possession of wild live rock in the Gulf EEZ outside this designated area. Harvest is to continue at the 1995 level in the absence of a federal aquaculture system.

Discussion:

This alternative is compatible with Preferred Alternative C.1 for management in the South Atlantic area of jurisdiction. The Gulf quota level is equal to the reported harvest in the Gulf in 1992. Three years of harvest is allowed to provide time for the current harvesters to convert to aquaculture. The allowable area is limited to Southwest Florida where the hard bottoms containing live rock are abundant, but allowable rock is to be limited to loose rock. Chipping or prying pieces from ledges is not allowed in order to protect rock ledges from destruction from overharvest.

Harvesters of wild live rock in Southwest Florida from Collier through Pasco Counties are provided with a three year period to convert to aquaculture of live rock on leased sites in Florida waters or in federal waters under authorization by permit from the Corps of Engineers. Live rock is abundant in this area (Figure 6).

In the area of the EEZ north and west of Pasco County, Florida, live rock is not abundant and occurs only in limited outcroppings which are valued as habitat for reef fish and favored by fishermen. Divers also utilize these ledges for recreational diving. In March of 1994, the Gulf Council after hearing testimony that removal of live rock was causing severe damage to the popular fishing and diving spots off the Florida Panhandle, requested emergency closure of live rock harvest in that area. A popular string of rock outcroppings "The Eighteens" lies along the 18 fathom curve in federal waters 13 miles off Destin, Florida. Although there are few commercial harvesters of live rock in this area, the resource is not abundant, and the impact is concentrated and increasing. Live rock landings reported to FDEP in 1992 were about 35,000 pounds but increased to almost 69,000 pounds in 1993 in the area from Hernando County Florida through Alabama (Table 2).

TABLE 2
FLORIDA LIVE ROCK LANDINGS NORTH OF PASCO-HERNANDO COUNTY LINE
(Data from: M. Norris, Florida Marine Research Institute, FDEP)

AREA	1992			1993		
	POUNDS	TRIPS	VALUE ($)	POUNDS	TRIPS	VALUE ($)
Hernando County, Florida to Alabama	34,965	218	40,593	66,632	238	77,403

C.3 Rejected Alternative

Establish an annual harvest quota of 400 tons (800,000 pounds) of wild live rock per year in the Gulf and South Atlantic for the years 1995 through 1998 with no wild live rock harvest in 1999 and subsequent years. However, if a federal live rock aquaculture system is not in effect by 1996, wild harvest will remain at the 1995 level.

Discussion:

This alternative caps annual harvest in the Gulf and South Atlantic EEZ at the level of reported landings in Florida in 1992. There are few known landings elsewhere in the management area. This level and duration of harvest is selected to allow orderly conversion from wild harvest to aquaculture without economic hardship and disruption of markets for harvesters and dealers. Because permitting systems are incomplete in Florida and not well identified for the EEZ, the four year period was judged to be appropriate to allow for permitting and growth of marine life on the aquaculture clutch material. If quotas are to be monitored, it becomes necessary to identify participants and requires reporting of landings. The SAFMC desires a more rapid phase-out to protect coral reefs in the Florida reef tract.

C.4 Rejected Alternative

Establish an annual harvest quota of 252,000 pounds of wild live rock per year in the Gulf of Mexico for the years 1995 through 1998 with no wild rock harvest in 1999 and subsequent years. However, if a federal live rock aquaculture system is not in effect by 1996, wild harvest will continue at the 1995 level.

Discussion:

This alternative provides a compatible quota for the Gulf of Mexico to supplement that in Alternative C.2 for a Southeast Florida quota. The Gulf quota of 252,000 pounds equals the total reported landings on Florida's west coast in 1992.

Separate quotas are established for South Florida and the Gulf of Mexico because of the difference in the type of material harvested. That in Southeast Florida is rubble rock while the rock in the Gulf of Mexico occurs in ledge-like outcroppings. The allocation by area approximates the landings in 1992 and allows harvesters five years to continue at that level during the transition to aquaculture. This option does not address the increasing harvest in the Florida Panhandle which has only limited live rock resources, nor does it protect ledges from chipping as proposed in Alternative C.2.

C.5 Rejected Alternative

Establish a quota of 400 tons (800,000 pounds) in 1995, to be reduced by 25 percent in 1996, by 50 percent in 1997, by 75 percent in 1998, and no harvest of wild live rock in 1999 and thereafter.

Discussion:

This alternative would allow a phase-out of wild harvest to provide incentive to convert to aquaculture. Harvesters argued that as small business operators they needed the income while developing the aquaculture ventures to become productive. Decreasing quotas were proposed to provide incentive for harvesters to make the transition to aquaculture. Harvesters maintained that reduced allowable harvest would reduce their income so that they could not afford the cost of aquaculture.

C.6 Rejected Alternative

Allow three more years of unlimited live rock harvest after implementation of the amendment. After three years, live rock could be harvested from or possessed in the EEZ only under permit for aquaculture or scientific collection.

Discussion:

This alternative would allow time for live rock fishermen to convert to aquaculture. There is proposed to be such a system in Florida; however, no such operation has been completely permitted. An applicant may spend a year obtaining a permit once a system is developed and another year or more in culturing the introduced clutch (seed rock) material.

This alternative, however, would allow further expansion of harvest during the terminal harvest period. Accelerated production could risk damage to coral reefs in the reef tract and ledges and outcroppings elsewhere. The Councils prefer to restrict harvest to no more than the 1992 level during the final years of harvest of the wild live rock.

C.7 Rejected Alternative

Set a live rock quota at zero; allow no harvest in the EEZ upon implementation of this amendment.

Discussion:

This position was recommended by a number of persons who were concerned that continued harvest would result in a loss of reef habitat and bottom structure which supports reef dwelling marine life.

This position was initially recommended by the SAFMC, which is concerned that continued harvest would result in a loss of reef habitat and bottom structure which supports reef dwelling marine life. The SAFMC is proposing to prohibit all chipping of live rock immediately in the South Atlantic and prohibit all harvest north of Dade County, Florida, to prevent the expansion of the removal of this habitat. The GMFMC is proposing similar action in the Gulf with prohibition of chipping north of Pasco County, Florida and prohibition of harvest off other states during the phase-out period..

The current Coral FMP prohibits the damaging, harming, killing, or possession of prohibited coral or of coral reefs. Thus, the taking of live rock from these sources is currently unlawful but has proved to be unenforceable. The importance of live rock to the reef ecosystem is threefold. First, the sessile invertebrate communities that comprise live rock provide important habitat for fisheries of commercial and recreational importance. Second, the physical and topographical complexity of the hard substrate and attached living communities provides critical shelter and habitat to a wide range of organisms. Limestone ledges and outcroppings and serpulid rocks which occur in the eastern Gulf of Mexico also provide habitat for invertebrate reef dwelling organisms as well as reef fish assemblages. Indeed, many studies show a positive correlation between increased habitat complexity and increased fish abundance and diversity (e.g., Carpenter et al., 1981; Roberts and Ormond, 1987; Hixon and Beets, 1993). Third, rock and dead coral surfaces are vital substrates for the settlement of larval phases of benthic organisms. Suitability of substrate is one of the major factors controlling the distribution of many species (Kinzie, 1971; Wheaton, 1989). There is little known of the generation rates of live rock complexes. In terms of some hard substrate, replacement is likely to be in the order of geological time and harvest is expected to result in net loss of this substrate, (Jaap, pers. comm.).

In addition, Amendment 1 to the Snapper/Grouper FMP in the South Atlantic (SAFMC, 1988) prohibits trawling a live bottom to protect essential fishery habitat from disturbance. The SAFMC considered disturbance of essential reef fish habitat unacceptable considering the limited distribution of limestone ledges and outcropping which constitute the majority of hard bottom in the South Atlantic north of Cape Canaveral, Florida (Figure 3).

Wheaton, in a presentation to the South Atlantic Council's Habitat Committee, stated that the rubble zone of a reef tract promotes the highest carbonate production from coral and algae which sustains the

living coral reef. She noted that 75 percent of the South Atlantic landings consists of rubble live rock; while 40 percent of Florida's landings have come from Area 748, a 40-mile section of the Florida Reef Tract (Figure 4).

The Councils propose to address these concerns by restricting live rock harvest in the Florida Reef Tract to collection of rubble rock, limiting harvest to South Florida on an interim basis, and by eventually terminating harvest of all wild live rock. Aquacultured live rock would replace the natural product in the market.

C.8 Preferred Alternative for the Gulf Area:

> **Establish a Gulf of Mexico harvest for calendar years 1994 through 1996 from the Florida-Alabama state line to the Monroe-Collier County line in Florida. There is to be no harvest or possession of wild live rock in the Gulf EEZ outside this designated area. After December 31, 1996, there is to be no more harvest of wild live rock in the Gulf EEZ; however, harvest is to continue at the 1995 (unlimited) level in the absence of a federal aquaculture permitting system. No chipping is allowed north and west of the Pasco-Hernando County line to the Florida-Alabama border.**

Discussion:

This alternative was selected to provide a transition from an unregulated harvest of wild live rock through a phase-out to aquaculture. Harvest is to be allowed during the phase-out off Florida's west coast where it now occurs. This will provide current harvesters with a three year period to convert to aquaculture (1994-1996). Harvest level in 1993 from this area was about 324,000 pounds. During this phase-out period, harvest will be controlled by daily vessel trip limits (Alternative G-1) and by issuing harvest permits only to persons who participated in harvest prior to February 3, 1994 (Alternative E.1.a), and by gear restrictions (Alternative F.1).

The practice of chipping or breaking pieces of rock to a smaller size in harvest is limited to the area of the EEZ off Florida's west coast between the Monroe-Collier County line and the Pasco-Hernando County line. In that area, harvesters are economically dependent on the higher valued worm rock. North of that area, chipping is to be prohibited to preserve the integrity of the limited number of rock ledges used as fishery habitat and for recreational diving (Figure 6). Harvesters in the Florida Panhandle in this northern area, have testified that there is sufficient loose rock material and that they do not currently chip the ledges.

D. AQUACULTURE OF LIVE ROCK

Discussion:

Harvest of "wild" live rock could be replaced with live rock from aquaculture in state or federal waters. Experiments on the cultivation of live rock in Tampa Bay, Florida, indicate that marketable live rock can be produced within 6 months (Ehringer and Webb, 1992). A more desirable product would take longer to produce, perhaps a year or longer (Shella Barger, pers. comm.).

The organisms in the management unit for live rock will readily attach to and grow on suitable material introduced into the marine environment given the appropriate conditions. Shipwrecks, offshore platforms, rock jetties, bottles, and artificial reefs all bear evidence of accretion of various organisms. The Coral FMP, for example, specifically exempts the "harvest" of coral in the removal of marine equipment such as that used in offshore petroleum extraction. The Councils propose to provide allowance of and encourage aquaculture of live rock in the EEZ.

The rate of the encrustation of the material by desirable live rock organisms depends on local environment. Some seed rock may be saleable as live rock in as short a period as six months while development of more showy pieces may require several years. In order to identify the cultured rock it may be appropriate to require use of non-indigenous material or some type of mark to separate the aquaculture rock from "wild" live rock.

Presumably, aquaculture operations could eventually replace the harvest of naturally occurring live rock while contributing to a reef type of habitat. Deposition of material would be similar to construction of an artificial reef. In addition, stony corals and other prohibited corals will settle on the aquaculture substrate, and their harvest and sale will need to be addressed specifically.

No aquaculture venture has yet obtained all necessary permits for operation in Florida waters; though several collectors are currently attempting to do so (R. Londeree, pers. comm.). The Florida Department of Environmental Protection expected to develop a rule-making for allowing live rock aquaculture harvest in July 1994 (V. Wetherall, per. comm.). This date has not been met, however. The Minerals Management Service has no history of leasing bottom areas for such purposes in federal waters; though some arrangement may be possible (C. Oynes, pers. comm.). Sufficient phase-out time, perhaps several years after permitting procedures are resolved, would be required to prevent a disruption of the live rock fishery and market.

In testimony received at public hearing, over 3.8 million pounds of live rock have already been deposited in one state aquaculture lease off Pinellas County, Florida, with more scheduled to be deposited in the near future.

A number of aquaculturalists are interested in federal sites for open-system live rock aquaculture. The Mobile District office of the Army Corps of Engineers has indicated a willingness to authorize placement and removal of clutch material for live rock culture within the general permit area for artificial reef construction off Alabama. The Jacksonville District office has issued artificial reef construction permits in the EEZ off the Tarpon Springs area. The permit holders do not have exclusive property rights under the permit.

The U.S. Army Corps of Engineers has been working with NMFS in the development of a protocol for issuing general permits for deposit and removal of clutch material for aquaculture of live rock in federal waters. The protocol is intended to facilitate bonafide live rock aquaculture ventures while providing protection to hardbottom habitat and coral reefs. The following criteria and requirements are contained in the proposed protocol:

I. Site Characteristics/Selection Criteria

1. A Site evaluation report must be submitted by the applicant showing that the proposed site

   a. avoids hazards to safe navigation or hindrance of vessel traffic, traditional fishing operations or other public access; and

   b. avoids impacts on naturally occurring hardbottom habitat, i.e., natural underlying substrate should be primarily hard packed sand, hard shell hash, sand over rock, or sparsely colonized rock (occasional algal, sponge or octocoral colonies) mixed with sand/shell substrate.

2. Sites larger than one acre shall not be approved under the general permit.

II. Site and Product Marketing

1. Identify the site on a chart in sufficient detail to allow for site inspection.

2. Provide accurate coordinates so that site can be located using LORAN or Global Positioning System (GPS) equipment.

3. Rocks deposited on the aquaculture site must be geologically or otherwise distinguishable from the naturally occurring substrate or be indelibly marked or tagged.

III. Operating Procedures

1. Rocks may not be placed over naturally occurring reef outcrops, limestone ledges, or coral reefs.

2. A minimum setback of at least 50 feet must be maintained from natural hardbottom habitats.

3. All materials used in aquaculture operations must be nontoxic and deposited rocks must be free of contaminants.

4. No mechanical dredging or drilling activities are allowed.

5. Harvest of aquacultured live rock is by hand only.

IV. Monitoring and Reporting Requirements

1. Annual reports are required to document the source, type, and weight of rocks deposited on the aquaculture site.

2. Aquacultured live rock landed in the state of Florida must be reported to the Florida Bureau of Marine Research's Fisheries Statistics Section, by using Form #33-610 (Florida Trip Ticket). (Harvesters need a Florida Saltwater Products License and a Marine Life Endorsement.)

3. Aquacultured live rock landed outside of Florida must be reported to the National Marine Fisheries Service, Southeast Fisheries Science Center, using logbook forms provided for this purpose.

V. Other Authorities

1. To be authorized under this general permit for activities within the Exclusive Economic Zone (EEZ), persons must have obtained a permit from the National Marine Fisheries Service to harvest and possess aquacultured live rock in the EEZ.

2. Additional permits may be required for aquaculture operations in areas under the jurisdiction of other state or federal authorities, such as a National Marine Sanctuary.

Billy Causey, Florida Keys National Marine Sanctuary (Sanctuary) Manager, testified at a SAFMC Habitat Committee meeting in June, 1993 that the aquaculture of live rock could be done in the "special use zones" which have been proposed in the Draft Sanctuary Plan. Special use zones, as described in a Sanctuary draft management alternatives document (NOAA, 1993) can be used to, "establish areas that confine or restrict high-impact activities ... and to reduce user conflicts." FDEP personnel met with Sanctuary personnel in October of 1993 to discuss the coordination of aquaculture sitings in the Sanctuary (Wheaton, pers. comm.).

There will be costs associated with permitting and licensing systems to establish and monitor open-system aquaculture operations. A continuation of a supply of aquacultured product, however, could benefit the marine aquarium industry as a whole, including fish collectors, fish wholesalers and retailers, equipment suppliers, and the live rock producers. Although most marine aquarium species are taken from the wild, about 90 percent of the freshwater fish available in the ornamental trade are captive-bred (Andrews, 1990). If prohibitions are placed on wild harvests, the marine aquarium industry could transfer to aquaculture provided the legal means to do so are implemented in state or federal waters.

A provision to allow production and sale of cultured live rock if the harvest of wild live rock is prohibited would at least partially replace the loss to fishermen and others in the business. Exvessel sales of rock in 1993 were estimated to be over $1,000,000 in Florida. If maintenance of marine aquaria are dependent on such materials, then its production would affect the entire industry.

D.1 Preferred Alternative for the Gulf and South Atlantic Areas

It is the position of the Councils to allow and facilitate aquaculture in the EEZ.

Discussion:

While the Councils and NMFS do not have the authority to lease federal water bottoms for aquaculture, other federal agencies (Corps of Engineers, Minerals Management Service, and Florida Keys National Marine Sanctuary) have some regulatory responsibility in that respect.

Without some accommodation to allow harvest and possession of live rock, the fishery would terminate at the end of the terminal harvest period.

D.2 Rejected Alternative

No provision for aquaculture. After termination of the period allowing annual quotas, the harvest or possession of live rock in EEZ would be prohibited.

Discussion:

The U.S. Army Corps of Engineers has issued permits for placement and removal of clutch material in the EEZ, and the Florida Keys National Marine Sanctuary is reviewing applications for aquaculture within its bounds. Without provision for possession of cultured live rock the only source for material would be through imports.

E. PERMITS

E.1 Harvest Permits

E.1.a Preferred Alternative for the Gulf and South Atlantic Areas:

In addition to any applicable state license or permit, a federal permit is required for the harvest and possession of wild live rock in the EEZ during the phase-out harvest period. Permits shall be limited to persons who have commercially landed and, where required, reported wild live rock landings prior to the control date of February 3, 1994. A fee not to exceed the administrative cost of issuance may be authorized.

Discussion:

This alternative is intended to stabilize harvest during the phase-out period near the 1992 level and limit participants to those already in the fishery. The permit requirement would serve to identify the harvesters and facilitate the monitoring of landings. The permits would be issued by NMFS and would be subject to an administrative fee. The permits are to be issued annually and would expire at the conclusion of the terminal harvest period. According to FDEP records during the period of 1990-1993, some 147 permit holders reported live rock landings. In 1993 only 102 permittees reported landings.

E.1.b Rejected Alternative:

Require a federal permit in the absence of a state permit for harvest and possession of "wild" live rock from the EEZ during the phase-out period.

Discussion:

The use of a permit would identify participants if effort limitation or a moratorium is selected as the preferred option.

The use of a permit could also facilitate statistical reporting. Florida already requires a saltwater products license plus marine life and restricted species endorsements for landing live rock from the EEZ, therefore only persons landing live rock in other states would be affected.

This alternative was rejected, because the Councils opted to limit access to the current participants during the terminal harvest period. State permits would be difficult to regulate during this moratorium.

E.1.c Rejected Alternative:

Require no harvest permit for taking commercial quantities of wild live rock during the terminal harvest period.

Discussion:

Permits would serve to identify historical participants during the moratorium and would facilitate reporting of landings. Because the Councils have elected to limit participants and establish annual quotas, federal permits became necessary.

Personal Use Harvest

E.1.d Rejected Alternative:

A personal use harvest and possession of up to a two gallon (0.27 cubic foot) (or more) bucket container of live rock is allowed per person per day in the EEZ. Sale of such material is prohibited. No wild harvest permit is required.

Discussion:

This alternative, proposed without preference for public comment, allows an individual to take live rock from the EEZ for personal use in his aquaria. This is not allowed in Florida waters and could pose an enforcement problem for that state. Aquarists have requested some allocation for their use and have suggested a 5-gallon bucket container as a daily limit.

E.1.e Rejected Alternative:

A personal use harvest and possession of up to a two gallon (0.27 cubic foot) (or more) bucket container of live rock is allowed per person per day during the terminal harvest period in the EEZ. No wild harvest permit is required. Sale of such material is prohibited.

Discussion:

A personal use take of wild live rock would be allowed only during the phase-out terminal periods and would end thereafter. Termination would shorten the period of enforcement difficulty for Florida where taking and possession is prohibited in state waters.

E.1.f Preferred Alternative for the Gulf Area:

Prohibit the harvest of wild live rock for personal use. No take of live rock is allowed without a permit.

Discussion:

This alternative addresses the Gulf Council's consideration of recreational harvest. Aquarists requested a recreational allowance to provide live rock for their personal aquaria, and the Councils included this issue for public comment. The proposal for limited private use collection was rejected after careful review. This is consistent with Florida's proposed phase-out of landings which allowed landings from the EEZ only by Florida commercial permit holders. Harvest would be from the EEZ; thus it would not be a simple matter of collection by snorklers or persons wading from shore. Enforcement to separate recreational users and commercial harvesters would be difficult without an elaborate permit system. Recreational harvesters are unlikely to know boundaries of aquaculture operations and could unintentionally poach in such areas.

E.1.g Rejected Alternative:

A personal use permit is required to take live rock in limited quantities specified for one's personal use.

Discussion:

This alternative has been suggested by representatives of aquarium hobbyists to provide some identification of those persons legally possessing live rock in limited quantity. The Florida Marine Aquarium Society in Miami has 450 members. It is not known how many would be interested in collecting live rock from the EEZ for personal use. A permit for personal use would comply with the preferred alternatives for OY (I.1 and I.2).

E.2 Aquaculture Permits

E.2.a* Preferred Alternative for the South Atlantic Area:

Require a permit for the possession or harvest of live rock from aquaculture operations in the EEZ Such a permit will be required in order to harvest or possess live rock from an aquaculture site. Harvest from the area may only be done by the permittee or his written designee and an administrative fee will be authorized for the permit.

Discussion:

This alternative is similar to E.2.d, but does not tie the aquaculture permittee to possession of a specified aquaculture site authorized by the Corps of Engineers, and does not require the deposition of rock prior to issuance of the permit.

The SAFMC, during Council deliberations, was informed that state aquaculture leasing and permitting systems have already been established in Florida and individuals desiring to acquire a state lease can already apply to the Bureau of State Lands in FDEP (Prentis, FDEP, 1993). A final state permit which provides for removal, scheduled to be available in July 1994, has not yet been implemented.

E.2.b Preferred Alternative for the Gulf Area:

(1) Require a permit for the possession or harvest of live rock from aquaculture operations in the EEZ. Such a permit will be required in order to harvest or possess live rock from an aquaculture site. Harvest from the area may only be done by the permittee or his written designee and an administrative fee will be authorized for the permit.

(2) An aquaculture harvest permit, issued by NMFS, authorizes an exception to taking and possession of otherwise prohibited hard corals, octocorals, and live rock as cultured live rock and attachments thereon.

(3) Permittee must notify designated state or federal enforcement officers no less than 24 hours in advance of harvest.

Discussion:

Part (1) is identical to the preferred alternative E.2.a for the South Atlantic. The permittee would have obtained a Corps of Engineers permit for aquaculture under the protocol described in Section D in order to be able to deposit clutch material in federal waters. The Corps has already issued a number of permits in federal waters off Pinellas County, Florida using this protocol. The permit would identify aquaculturists possessing legal aquacultured rock from their sites after the harvest of wild rock is prohibited. This protects the aquaculturist and enhances enforcement.

Part (2) is an essential component of aquaculture, allowing harvest of the cultured live rock with all attached animals and plants. Without the exemption to allow harvest of otherwise prohibited species which settle on the clutch material, an aquaculturist could be prevented from harvesting his product. He will also be subject to a violation if small polyps of prohibited species of coral are detected on his live rock. While this exemption will conflict with current State of Florida regulations which prohibit possession of prohibited corals, the aquaculture permit for the vessel landing the material will help identify the product from aquaculture sites. Florida is considering an exception for possession of prohibited coral on aquacultured live rock. Furthermore, notice given to enforcement officers prior to harvest from aquaculture sites as required in this alternative will aid in identification. Additionally, aquaculturists are advised to include their aquaculture permit number on the bill of lading for shipping the cultured rock.

Part (3) is intended to facilitate enforcement by allowing officers to observe harvest operations to ensure the material is removed only from permitted locations. This also serves to protect the aquaculturists from poaching by unauthorized harvesters.

E.2.c Rejected Alternative:

No permit required for possession of live rock from aquaculture operations in the EEZ.

Discussion:

Without some means of identifying cultured live rock from prohibited wild live rock, enforcement of a closure would almost be impossible.

E.2.d Rejected Alternative:

Require a permit for the possession or harvest of live rock from aquaculture operations in the EEZ. NMFS permits shall be available only to those individuals who have demonstrated that they have deposited rock or substrate in the permitted site.

To obtain permits for live rock aquaculture in the EEZ, permittees must have an approved Corps of Engineers' permit to place substrate in the EEZ, and have demonstrated that they have deposited approved material in the permitted area. Such a permit shall be subject to an administrative fee. In order to harvest or possess live rock from an aquaculture site a NMFS permit will be required. Harvest from the area may only be done by the permittee or his written designee.

Discussion:

This option would restrict permittees to bonafide participants in aquaculture who have proven that they have deposited material on permitted sites. Because such proof would require unnecessary paper and or field work, the Council elected to eliminate this requirement.

E.2.e Rejected Alternative:

An aquaculture harvest permit, issued by NMFS, authorizes an exception to taking and possession of otherwise prohibited hard corals, octocorals, and live rock as cultured live rock and attachments thereon.

Note: Alternative E.2.b contains this alternative as Section (2).

Discussion:

Once clutch material is deposited in the natural environment it is probable that the free swimming larval forms of hard corals and octocorals may settle on the introduced hard substrate material. In order to allow the culturist access to harvest his material, accommodation should be made to consider it as part of cultured live rock. The FMP currently provides for removal of man-made structures (oil rigs, etc.) on which prohibited corals may have grown. Prohibited corals currently include hard corals and sea fans. Once the harvest of wild live rock is phased out, live rock enters the category of being prohibited unless authorized by aquaculture or scientific collecting permit.

E.2.f Rejected Alternative:

No change, prohibited corals may not be taken or possessed in the EEZ.

Discussion:

Aquaculturists would be unable to harvest their crop of live rock if hard corals or sea fans settled on it. Removal of the prohibited corals from the live rock would be unlawful as it would result in damaging them. The most valuable live rock would contain showy reef organisms which would be likely to contain traces of prohibited corals.

E.3 Permits for Scientific, Educational, and Restoration Collection

E.3.a Preferred Alternative for the Gulf and South Atlantic Areas:

> **Require a federal permit for harvest and possession of prohibited corals and live rock from the EEZ for scientific, educational, and restoration purposes.**

Discussion:

The Coral FMP currently provides for issuance of a federal permit to take prohibited corals for scientific and educational purposes. If live rock is added to the management unit and its harvest is restricted or prohibited, allowance should be made to add it to the scientific collecting permit.

E.3.b Rejected Alternative:

> Do not add live rock to the list of other prohibited species for which a permit is required for harvest and possession for scientific, educational, and restoration purposes.

Discussion:

This is not a viable alternative due to the difficulty of enforcement of possession of prohibited species.

F. GEAR RESTRICTIONS

Discussion:

In order to protect reef structures in the Florida Reef Tract, the SAFMC has proposed that only loose rubble rock be allowed, and no chipping be permitted in that area. The Councils have received testimony that little loose material occurs in the Gulf of Mexico where live rock is harvested from ledges and outcropping rock. Testimony has also been received that power tools and crow bars are being used to break up reefs and ledges for harvest.

F.1 Preferred Alternative for the Gulf Area

> **Unless otherwise prohibited in this plan, only non-power-driven hand tools limited to chipping hammers and chisels may be used in the allowable harvest of species (i.e., live rock and octocorals) in the management unit where chipping is permitted.**

Discussion:

This alternative would prohibit, in the Gulf EEZ, the use of power tools, crow bars and other gear capable of inflicting serious damage to reef and ledge structures. Octocorals could be harvested by hand tools in areas where harvest is permitted. Excluded would be the habitat areas of particular concern and other areas where harvest of octocorals and live rock is prohibited.

The Gulf Council has requested emergency implementation of this provision in the EEZ off southwest Florida south of the Pasco-Hernando County line, the only area in the Gulf where live rock harvest by chipping is to be allowed. This request resulted from public testimony that large vessels with multiple divers were using pneumatic drills and hammers to break up rock ledges into harvestable size pieces. The Council determined that this practice resulted in large scale and unacceptable loss of reef fish habitat.

F.2 Rejected Alternative

No action, no restriction on use of collecting gear.

Discussion:

There would be no regulation of allowable gear to take live rock. Hydraulic or air driven power tools, crow bars, dredges, and other large scale collecting gear would be allowed. Without some limitation serious damage could be inflicted on reefs and ledges.

G. VESSEL TRIP LIMITS

Discussion:

Some harvesters testified at public hearings that they would welcome vessel trip limits in order to extend their harvest of any annual quota of live rock and prevent a market glut. This would tend to deter a derby harvest early in the season. In the absence of a quota, trip limits would tend to maintain the current harvest level during the phase out of wild harvest.

G.1 Preferred Alternative for the Gulf Area

Permitted vessels are to be limited to 25 five gallon buckets or an equivalent volume (16.88 cubic feet) of wild live rock per daily trip in the EEZ.

Discussion:

Harvesters recommended various maximum daily trip limits from 1,000 to 1,500 pounds per day. They noted that they commonly use five gallon buckets to hold their catches. These buckets are described as holding a maximum of about 50 pounds of live rock. They suggested limits of 20 to 25 buckets with a five gallon capacity. Most operators harvest from vessels from 22 to 28 feet in length. Most can accommodate the 25 buckets.

This measure is proposed to prevent a derby and expansion of harvest during the phase-out period. It will also serve to distribute the catch among those holding permits to harvest the wild live rock. The Gulf council has requested emergency implementation of this measure in the Gulf of Mexico.

G.2 Rejected Alternative

No daily vessel trip limits for harvest of wild live rock.

Discussion:

With no trip limits, large vessels with a large group of divers could conceivable expand annual harvest during the phase-out period. However, harvesters would have an advantage of being able to take larger loads between periods of inclement weather which prevents harvest.

H. STATISTICAL REPORTING

H.1 Preferred Alternative for the Gulf Area:

Harvesters must report landings of all live rock from the EEZ in accordance with instructions of the Southeast Fisheries Science Center Director.

Discussion:

This alternative would allow the Center Director to designate a state to receive the statistical information on landings as Florida now does. If, however, additional data are needed, the Director has the option of requiring that data be provided to the Center. Catch data are needed to track harvest levels.

It is intended that aquaculture landings be reported, for that information is needed for management and enforcement.

H.2 Rejected Alternative

In the absence of a state fishery reporting system which requires the reporting of live rock landings, a harvester must report landings data to the Southeast Fisheries Science Center Director in accord with his instructions.

Discussion:

In order to be able to track landings for the terminal quotas in areas where live rock landings are not now reported, some provisions must be made to collect the information. Currently, almost all landings are made in Florida where a live rock reporting system exists, and this would suffice for that area.

H.3 Rejected Alternative

Status quo, no federal requirement for reporting live rock landings.

Discussion:

Currently, almost all live rock is landed in Florida and reported to FDEP. A duplicate system is not needed there to track landings. If landings expand in other states, they could be unreported if not required by state or federal authority. Quota overruns could result.

I. OPTIMUM YIELD (OY) FOR LIVE ROCK

I.1* Preferred Alternative for the South Atlantic Area

OY for wild live rock is to be 485,000 pounds annually for the South Atlantic region where harvest is allowed for 1994-1995 annually, after which it is to be zero except for that which may be allowed by permit.

Discussion:

Optimum yield for coral and coral reefs in the current FMP is already zero with octocorals harvested under an annual quota. As of January 1, 1996, the OY for live rock will also be zero. The SAFMC identifies live rock as essential habitat. This alternative addresses only the harvest from Dade and

Monroe Counties in Florida, along the reef tract in the South Atlantic Council's area of jurisdiction. Permits can provide for scientific collection as well as for aquaculture.

I.2 Rejected Alternative for the Gulf Area

OY for live rock in the Gulf of Mexico: OY for live rock is to be 252,000 pounds annually for the Gulf of Mexico EEZ where harvest is allowed for 1994, 1995, and 1996 after which it is to be zero except for that allowed by permit.

Discussion:

This alternative provides for three years of continued harvest at the 1992 level. The three years would allow harvesters to obtain aquaculture permits and transfer harvest to cultured material. Harvest under permit will provide for aquaculture and scientific collection.

I.3 Rejected Alternative

OY for live rock is to be that established by quota(s) or which may be allowed by permit.

Discussion:

This alternative is flexible enough to accommodate the SAFMC's quota for Southeast Florida and a separate quota for the Gulf of Mexico. Permits can also provide for scientific collection as well as for aquaculture.

I.4 Rejected Alternative

OY for live rock is to be zero except for that which may be allowed by permit.

There is to be no allowable harvest quota under this OY except that which is provided under scientific, educational, or restoration collecting permit or aquaculture permit. The amended FMP currently defines overfishing as an annual level of harvest that exceeds OY.

Discussion:

This alternative would provide the maximum protection to the hard bottom habitat. It is compatible with a prohibition of harvest. There would be no further loss to fisheries from habitat removal due to harvest of live rock. Harvesters and dealers of live rock and those in the aquarium trade would lose access to the natural resource unless and until an alternative source is provided through aquaculture or from imported material.

I.5 Rejected Alternative

OY for live rock to be unlimited for three years after which it is to be zero except for that which may be allowed by permit.

This alternative would provide for a three-year terminal period. After that, harvest would be allowed only under permit for scientific collection or aquaculture.

Discussion:

Live rock harvest would continue, probably at or near current level. The material would be removed from rubble areas and hard bottom areas, and to that extent would degrade the hard bottom habitat.

This option would provide a three-year grace period to allow harvesters, dealers, and users to develop an alternative source of supply.

I.6 Preferred Alternative for the Gulf Area

OY for wild live rock should be unlimited for 1994, 1995, and 1996.

Discussion:

This alternative corresponds to the proposed phase-out of harvest in the Gulf of Mexico through 1996 (Alternative C.8). After that, live rock removal would be done under permit for scientific, educational, and restoration permit or aquaculture permit.

J. SEPARATE MANAGEMENT IN THE JURISDICTIONAL AREAS OF THE TWO COUNCILS

J.1 Preferred Alternative for the Gulf and South Atlantic Areas

Management of coral, coral reefs, live rock and any other part of the management unit in this plan will be the responsibility of the Council in whose jurisdiction it occurs.

Discussion:

The Councils' approach to management of corals, coral reefs, and live rock is different because the issues are different in the two areas of jurisdiction. Most of the Florida coral reef tract lies in the jurisdiction of the SAFMC or adjacent state waters. In the Gulf, there are fewer coral reefs but extensive areas of hard bottom, especially off South Florida. Because the stocks in this plan are sedentary and do not move across Council borders, they can be managed separately without affecting management in the adjacent Council area. Separate management action without involvement by the other Council would allow each Council to address issues specific to its needs and expedite action to resolve problems as they occur.

Separation will streamline amendment development and NEPA review process and would give SAFMC greater flexibility to manage these essential fishery habitats. The SAFMC desires to emphasize need for enhancement of protection of hard bottom habitats in the South Atlantic region. Additional management action may be taken and habitat policies would be developed to address other threats to these systems. There are different live rock removal patterns in Gulf and South Atlantic regions (Gulf largely chipping/South Atlantic collection of rubble). There are different preferred management regimes in Gulf and South Atlantic regions. The SAFMC prefers a different approach to the management of live rock than the GMFMC. The SAFMC desires to implement, at a later date, a more comprehensive aquaculture process than is being proposed by the GMFMC (pattern after Special Management Zone Process).

Permits issued by NMFS for taking or possession of live rock need not differ between areas of jurisdiction; though requirements for operation under the permit may vary between jurisdictions.

J.2 Rejected Alternative

No change, both Councils continue to approve all management actions.

Discussion:

Because this is a joint FMP, both Councils are required to consider every management issue, receive public comment, and approve each for submission to the Secretary for implementation. This can be time consuming and an unnecessary cost to one Council when the other is addressing local issues.

3.0 AFFECTED ENVIRONMENT

Florida's "marine life" or aquarium fishery involves at least 300 species of tropical ornamental fish and invertebrates. In recent years, declining catch-per-unit-effort has led to industry sponsored proposals for limited entry. FDEP has issued marine life endorsements on 198 saltwater product licenses (SPLs); about 60 percent are full-time fishermen. About two-thirds reside in Monroe County and almost 90 percent are from South Florida [Januzzi, 1991; Florida Marine Fisheries Commission (FMFC), 1992].

Wheaton (1989) defined "live rock" as a broad term used by the marine life collection industry to describe several types of substrate colonized by marine organisms and described four main types collected in somewhat specific habitats:

1. Base Rock - "possesses very little life" (few showy attached organisms) but is desirable for the "borers" living in the rock and as a substrate "base" in aquaria.

2. Algae Rock - Also called plant rock, is colonized chiefly by algae, secondarily by feather duster worms and other invertebrates. Algae rock is collected from rubble areas in the back reef and from inshore areas on both the Atlantic and Gulf sides of the Keys.

3. False Coral - Also called anemone rock, is covered with anemones in the genera Ricordea and Rhodactis, which are accompanied by encrusting gorgonians, chicken liver sponges, other invertebrates, and algae. Although collected mostly from patch reef areas, false coral occurs in other reef habitats.

4. Sea Mat - Also called gravel rock, is colonized almost exclusively by anemone-like organisms, usually of the genus Zoanthus, and is principally collected from dredged rock jetties.

Wheaton continues that her sources (dealers and collectors) maintain that the majority of the rock itself is dead coral, and its collection is primarily to obtain the associated organisms. Similar types of live rocks are also harvested from Gulf waters (personal observation/ communication). However, the underlying substrate in the Gulf is chiefly limestone outcropping with carbonate sediments rather than dead coral. Live rock can therefore be defined as a substrate with a composition that varies from dead/eroded coral, to a conglomerate of cemented calcium carbonate sediments, to non-organic rock of various shapes and dimensions with attached and/or associated biota, forming micro-communities. The substrate may exist as reef framework, outcroppings of hard bottom, or unconsolidated rubble.

Description of the Resource

A. Invertebrates Associated with Reefs and Live Rock:

The assemblage that makes up live rock comprises a community of organisms that have recruited at different times, grown at different rates and pursued different life history strategies (Wheaton 1989),

supported by a hard substrate, often composed of dead coral. In general, little is known of the biology of the individual organisms and even less of the communities they form. Some are sessile (do not move) for all of their adult life, some are sedentary and move slowly or rarely, and others range extensively over the live rock and reef habitats. These organisms are members of a variety of species of the Phyla Porifera (sponges), Cnideria (anemones and gorgonians), Annelida (polychaete worms), Bryozoa, and Chordata (tunicates or sea squirts).

Following is a brief summary of the general characteristics of each of these groups.

1. Porifera - Sponges (Phylum PORIFERA) are typically attached to hard substrate. They are all sessile and exhibit little detectable movement. They display great variability in size and shape. Growth rates and body shape are highly dependent on space availability, the inclination of the substrate, and current velocity. They are taken commercially for curios, as bath sponges, and for use in marine aquaria. Certain species are thought to provide critical habitat for juvenile spiny lobster (Butler et al. 1992).

2. Cnideria - Corals and sea anemones (Phylum CNIDERIA) include stony corals, octocorals, gorgonians, and anemones. Coral biology and life history is discussed in the FMP and Amendment 1. Anemones include a wide variety of organisms that may be solitary or colonial. The polyps vary greatly in morphology and colonial structure. Species are often brightly colored and are usually attached to rocks. Solitary anenomes are considered sessile but can change location by slow gliding. Colonies of anemones are comprised of numerous polyps, each 1-2 cm in diameter and interconnected as a mat, which may form large encrusting masses on rocks. The Caribbean or pink-tipped anemone, which spawns off Key West in late spring, provides shelter for a variety of juvenile and adult fish and crustaceans (Jennison 1981). No information is available on its age and growth characteristics.

3. Annelida - Segmented tube worms (Phylum ANNELIDA: Polychaeta) including fan worms, feather duster worms and Chistmas tree worms, live in tubes of varying degrees of complexity attached to hard substrate and filter-feed with their "fans." Because they firmly adhere to the substrate, in many cases it is necessary to remove the underlying rock to collect segmented worms.

4. Bryozoa and Chordata - Other Phyla, principally the BRYOZOA (ectoprocts or 'moss' animals) and CHORDATA (ascidians or sea squirts) may be the animals primarily responsible for the water-filtering characteristics of live rock. Bryozoans colonies can form a thin encrusting layer over rock or they may be erect and branching. As adults, sea squirts usually live attached, singly or in colonies, to hard substrate or to the bases such as gorgonian stalks, and vary greatly in size and coloration.

B. Ecological Relationships

The frequency of commensalism (relationship between two organisms in which one species benefits and the other species, the host, is neither benefited nor harmed) in the coral reef environment is one of the most important contributing factors to high species diversity (Bruce 1974). Hanlon and Hixon (1986) recorded over 30 small West Indian reef fish within the tentacles of a single anemone. Several reef and shrimp species, living in close association with anemones, are believed to play an important role in reef health by their "cleaning" activities. Limbaugh (1961) recorded one cleaning station that was visited by 300 fish over a 6 hour period. Following removal of cleaner species from 2 reefs, he noted a marked decline in fish in the area over the following few weeks and, among those remaining, an increase in infections and parasites.

Other interspecific associations have been documented for other fish, cnidarians, molluscs, crustaceans, echinoderms and bryozoans (Wheaton 1989). For example, sponges are inhabited by a wide variety of animals, including crustaceans, polychaetes, and fish. Several reef fish feed on sponges as does the

endangered hawksbill sea turtle, Eretmochelys imbricata. Zoanthus, a colonial anemone, is a food source of major importance for at least 16 species of fish in 7 families (Randall 1967). In Randall's study, polychaetes were among the most important food items of 62 West Indian reef fish species in 24 families, and were surpassed as preferred foods only by crustaceans. Ophiuroids (brittlestars) were food for 33 fish species and 16 species fed on benthic tunicates. Octocorals have been noted to provide important habitat for fish and invertebrates and may be especially critical for lobster in the 20-40 mm size range (Wheaton pers. obs.).

4.0 REGULATORY IMPACT REVIEW AND INITIAL REGULATORY FLEXIBILITY ANALYSIS

Introduction

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

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

This RIR analyzes the probable impacts on fishery participants of the proposed plan amendment to the Fishery Management Plan for Coral and Coral Reefs of the Gulf of Mexico and South Atlantic (FMP).

Problems and Objectives

The general problems and objectives are found in the FMP, as amended, and in Section 1.0. The purpose and need for the present plan amendment are also found in Section 1.0. The current plan amendment addresses the following nine issues: 1) inclusion of live rock in the management unit, 2) quotas for phasing out harvest of wild live rock, 3) aquaculture of live rock, 4) harvest and possession permits, 5) gear restrictions, 6) vessel trip limits, 7) statistical reporting, 8) optimum yield for live rock, and 9) jurisdictional management by the Gulf Council and South Atlantic Council.

Methodology and Framework for Analysis

The fundamental issue in this plan amendment is the management of "live rock" as part of the FMP. The basic approach adopted in this RIR is an assessment of management measures from the standpoint of determining the resulting changes in costs and benefits to society. The net effects are stated in terms of producer surplus to the harvest sector, net profits to the intermediate sector, and consumer surplus to the final users of the resource.

The harvest sector refers to the commercial harvesters of live rock and the intermediate sector, to dealers of live rock. Final users of the resource are taken to refer to the individuals that derive benefits from the resource in either consumptive or non-consumptive manner. These final users consist of individual buyers of live rock from commercial dealers or harvesters, harvesters of live rock for use in personal aquaria, extractors of live rock for research purposes, and non-extracting users of live rock such as divers.

In addition to changes in the surpluses mentioned above, there are also changes in producer and consumer surpluses of indirect users of the resource, such as those involved in other fisheries and tourist activities, that will be effected through a change in the management of live rock. Moreover, other so-called non-use values, such as existence value, bequest value and option value, will be affected by a change in the management of live rock. Finally, there are public and private costs associated with the process of changing and enforcing regulations on live rock.

Ideally, all these changes in costs and benefits need to be accounted for in assessing the net economic benefit from management of live rock. The RIR attempts to determine these changes to the extent possible, albeit in a very qualitative manner.

In addition to discussions on net economic benefits, some consideration is given on such other issues as community employment and income opportunity, acceptability of the regulatory measures, and present and historical participation in the fishery.

Impacts of Proposed Actions and Alternatives

A. NO ACTION

Global retail sales of in the ornamental fish hobby has been estimated at about $4 billion, and about $1.6 billion of that amount are spent in the U.S. (Derr, 1992; Andrews, 1990). Reportedly, the fastest growing component of the marine life or aquarium trade is minireefs or live reef aquarium systems, the cost of which could range from a thousand to several tens of thousands of dollars (Derr, 1992). The backbone for this type of aquarium is live rock and its associated invertebrates. Consumer demand then for such type of aquaria underlie the derived demand[1] for live rock. Empirical estimates of such demand are not currently available, and in fact there is little known about the demand for live rock. It can be said, however, that as long as such consumer demand for minireefs continues to grow over time, derived demand for live rock or its substitutes will correspondingly grow. The likelihood of such growth in demand depends partly on whether minireefs are a mere fad or a structural shift in demand for aquaria. As a fad, minireef demand would decline in the near future; as a structural shift, such demand would be sustained over time. In the latter case, income and population growth would become significant factors. Looking only at the income factor, one can possibly argue that if a growing demand for minireefs is observable at current times when the economy is at its ebb, a stronger demand can be expected when the economy recovers. Given such prospects for demand, the derived demand for live rock and its substitutes may be expected to keep pace.

Supply of accessories for aquarium trade come from many countries, including the U.S. While domestic production of ornamental fish comprises only a small percentage of the entire U.S. supply, it does reportedly account for a good percentage of live rock supply in the U.S. A portion of domestic production is also shipped to Canada and England.

While live rock landings are reported to have occurred in Alabama and possibly in the Carolinas, only records of landings in Florida are available. The live rock industry in Florida is one major source of live rock supply in the aquarium trade. Since Florida included in trip ticket reporting the harvest of live rock around March 1990, reported landings over the period 1990-1993 have shown a steady increase. This is highly reflective of supply of live rock matching the increase in demand for the product.

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[1]The demand that harvesters of live rock face is termed "derived demand" to stress the fact that live rock is one of the inputs of producing aquaria products. Final consumers demand these aquaria products.

Among the states in the jurisdiction of the SAFMC and GMFMC, only Florida has explicit regulations on the harvest of live rock. Although there are several types of live rock, Florida instituted a management plan for live rock as one unit. This management mainly consists of a regulation closing Florida waters to harvest of live rock and phasing out the landing of live rock harvested in the EEZ over a three-year period ending June 30, 1995 through a gradually reduced harvest quota with trip limits. As mentioned elsewhere in this document, the Florida quota and trip limits on harvest of live rock in the EEZ could not be enforced.

Based on the foregoing discussions, a no action alternative would mean an increasing harvest of live rock in the EEZ that matches with an increasing demand for the product. Closure of Florida state waters to harvest of live rock prompted fishermen to fish in the EEZ. This condition undoubtedly increased harvest cost, but the reopening of the season in the EEZ after March 31, 1993, revealed that increases in harvest costs are far outweighed by revenue gains from the sale of live rock. Of course, fishermen still have the option of fishing in Florida state waters (clearly a violation of state rule), but they have to match revenues with the probability of a higher cost in the event they are caught violating state rules.[2]

A no action alternative essentially means that the producer surplus to the harvest sector, net profits to the dealers, and consumer surplus would be maintained at a level that matches any growth in demand. The level of these benefits cannot be estimated due to lack of information. It may only be stated that about 147 individuals or about 76 percent of those engaged in marine aquarium collection are involved at least part-time in the collection of live rock. Various types of live rock command different exvessel prices, for example, bare rubble rock could be sold at $0.50 per pound while "Christmas tree rock" could get as much as $3.00 per pound. FDEP reports the exvessel value of live rock harvest at about $645,007 in 1991, $602,894 in 1992, and $1,063,237 in 1993 (see Table 1 in the amendment text). If demand continues to improve, more individuals in Florida and other states will be involved in the fishery, likely resulting in increased harvest and larger revenues. Noting the relatively lower cost of harvesting live rock, producer surplus may be expected to increase as well.

While benefits of the no action alternative accrue to the live rock industry and its associated industries, certain potential costs would be borne by other sectors and by society as a whole. These cost items are associated with forfeiting benefits from non-harvest of live rock. These benefits are in turn associated with the value of live rock either by itself or as contributing factor to the survival of other marine organisms that may have commercial, recreational or other uses.

Like any natural resource, live rock commands what has been termed non-use values, specifically existence value, bequest value, and option value. **Existence value** refers to the satisfaction individuals derive from knowledge that a natural resource exists and will continue to exist in the future even though they may never use or see the resource. **Bequest value** is the benefit associated with endowing a natural resource to future generations. **Option value** refers to the benefit individuals obtain from

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[2]This last statement may create certain confusion so that a little clarification is demanded here. First of all only Florida has closed its waters to harvest of wild rock, but other states have not adopted a similar rule. Thus the mentioned statement refers only to Florida state waters. The underlying rationale for the mentioned statement is the economic incentive to fish in either state or federal waters or both. If state waters are closed, fishermen have the option of fishing legally in the EEZ unless a federal rule compatible with that of the state is in place. They may also fish illegally in closed state waters. In choosing which area to fish, the economic decision a fisherman makes is to fish in either state or federal waters or both up to a point where his marginal cost equals his marginal revenue (assuming so-called "second-order conditions" are met). If he fishes only legally, i.e., in the EEZ, his expected cost will be equal to the ordinary fishing cost, but if he also fishes illegally, i.e. in closed state waters, his expected cost will be equal to ordinary fishing cost plus any penalties if caught fishing illegally. If he chooses to fish illegally in closed state waters, it only means that from an economic standpoint, his expected revenue is higher than his expected cost, and he will continue to fish illegally up to such point when his expected marginal revenue equals his expected marginal cost. It may be stressed here that this analysis only shows a probable situation and does not assert that fishermen will fish illegally.

retaining the option to use the resource in the future by conserving it now. These values are undoubtedly difficult to measure, but measurement has been done in few instances. For example, Pearce (1990) estimated the existence value for the Amazonia rainforest to be at least US$3.2 billion and Hundloe (1987) estimated the existence and option values of the Australian Great Barrier Reef of about AUS$45 million per year. It only needs mentioning here that certain degree of the mentioned three values would be forfeited by the harvest of live rock.

Elsewhere in the amendment document are outlined some of the important contributions of live rock of various kinds to the survival and growth of some marine species that have commercial or recreational value and in the particular case of rubble rocks to the promotion of high carbonate production from coral and algae which sustains the living coral reef. The economic issue related to the effects of live rock on other marine species is one of productivity. This issue involves the valuation of the change in the productive capacity of an area relative to the affected marine species where live rock is harvested. The actual estimation of such value requires an enormous amount of data especially that some of the organisms sustained by the food and protection afforded by live rock would command larger than minimal commercial or recreational value only when they reach certain size. The "other uses" referred above relate to the scientific, educational, and pharmaceutical values of those species, including organisms attached to the hard substrate, whose survival partly depend on the presence of live rock.

In the case of live rock's contributions to the living reef, the economic issue involves valuation of such contribution to the overall non-extractive value of reefs such as those derived from tourism and non-extractive research and education activities. While some methodologies exist to estimate such values, data are simply non-existent to undertake the exercise. There are, nonetheless, existing estimates on the value of reefs some of which were conducted in assessing the value of damage to reefs. In connection with the damage assessment of the Mavro ship grounding, the value of bottom habitat was estimated at about $11 per square foot (FMFC, 1991; GMFMC, 1992). This valuation was based on the dockside value of rubble rock with encrusting organisms. In another instance using tourism expenditures, Mattson and DeFoor (1985) estimated the value of coral reefs in seven sites located in the John Pennekamp Coral Reef State Park and Key Largo National Marine Sanctuary to be $15.75 per square meter annually based on direct revenues and $85 per square meter annually based on gross revenues (i.e., inclusive of indirect expenditures). They also estimated the lifetime value of coral reefs in these seven areas to be at least $1.6 billion. Using a different technique, Finch, Julius, and Lopez (1992) estimated at $1.5 million the value of 1,610 square meters of coral reefs in the Florida Keys damaged due to vessel grounding.

While the above estimates for coral reefs are not directly applicable to the issue of valuing live rock as an integral part of coral reef, they do point to the possibility of estimating such values. In the present case, it has been reported that 75 percent of rubble live rock comes from a known area of the Florida Reef Tract, the so-called Area 748 which is a 40-mile section of the Florida Reef Tract. Thus, if valuation of live rock and its contribution to the living reef were attempted, this area would be the prime candidate for study. Spurgeon (1992) spelled out the various components of valuing coral reefs in terms of financial and social benefits associated with reefs. These benefits can be assigned monetary values or a range of monetary values where estimation proves difficult. The two major estimating techniques are travel cost method (TCM) and contingent valuation method (CVM). Valuation under TCM utilizes such information as the number of people visiting a reef site and their corresponding travel costs. One major assumption of this method is that the number of people visiting a site is inversely related to the distance travelled. Under CVM, valuation is undertaken generally by asking people how much they would be willing to pay for certain reef products assuming they could not be obtained elsewhere. The basic idea in CVM estimation is to construct a hypothetical market for reef products and to elicit information from people on the amount they are willing to pay, or be compensated, for any increase or decrease in such products. Both techniques have been employed in the Gulf but only with regard to determining the recreational value of fishing for certain marine species (Green, 1989; Leeworthy, 1990; Milon, 1988, 1993;

Milon et al., 1993). Currently, a study is underway to estimate the economic value of reefs in Florida (Adams, per. comm., 1993).

In sum, the no action alternative may be expected to sustain the benefits derivable from the harvest of live rock, but the attendant costs of an increasing harvest of live rock, although not quantifiable at the present time, appear to be less than negligible and are likely to substantially increase in the future.

B. DEFINITION FOR THE MANAGEMENT UNIT

B.1 Inclusion of live rock in the management unit and provision of definition thereof.

B.2 Redefinition of allowable octocorals

B.2.a Preferred Alternative for the South Atlantic Area: Allowable octocorals means erect, non-encrusting species of the subclass Octocorallia, except the prohibited sea fans Gorgonia flabellum and G. ventalina, including only the substrate covered by and within one inch of the holdfast.

B.2.b Rejected Alternative: No change, allowable octocorals includes no portion of substrate to serve as an anchor for the colony.

B.2.c Preferred Alternative for the Gulf Area: Allowable octocorals means erect, non-encrusting species of the subclass Octocorallia, except the prohibited sea fans Gorgonia flabellum and G. ventalina, including only the substrate covered by and within three inches of the holdfast.

There are two alternatives presented with respect to the definition of live rock, namely B.1.a and B.1.b (Refer to Section 2.B of the amendment document for specific wording of the definitions). Both the Gulf and South Atlantic Councils prefer the definition of live rock as stated under B.1.a. As mentioned in the amendment document, the only difference between the two definitions (B.1.a and B.1.b) is the inclusion under B.1.b of some crustaceans, molluscs, and echinoderms which may be present on the live rock but are not attached to it.

While alternatives under B.1 provide for an explicit definition of live rock and associated organisms, those under B.2. redefine octocorals as one including or excluding a portion of the hard substrate on which certain octocorals grow. The preferred alternatives of both the Gulf and South Atlantic Councils (B.2.a and B.2.c) define octocorals as including a small portion of the hard substrate on which certain octocorals grow. Thus even if octocorals may be harvested, they have to be separated from a large hard substrate on which they may be found. The major difference between B.2.a and B.2.c is the size of the substrate (larger under B.2.c) that is allowed to be taken with the harvest of octocorals.

The inclusion of live rock in the management unit means that management regulations may be enacted directly affecting live rock taken in the EEZ. In part, the need to explicitly manage the harvest of live rock in the EEZ is prompted by the existence of state regulations on the fishery and by a desire to protect fishery habitat. More importantly, however, earlier discussions on the potential effects of a no action alternative points to the need of managing the live rock fishery for purposes of recognizing and estimating the costs and benefits associated with the harvest of live rock. While the no action alternative may seem to afford the live rock industry a more competitive environment, the harvest of live rock results in positive or negative economic externalities that justify government intervention. These externalities have been discussed earlier in terms of costs to society from forfeiting benefits from consumptive and non-consumptive use of live rock and other affected marine species.

C. HARVEST QUOTAS FOR WILD LIVE ROCK

C.1 **Preferred Alternative for the South Atlantic: Cap wild harvest at 485,000 pounds of loose rubble rock in the South Atlantic, south of the Broward-Dade County, Florida line for 1994 and 1995. Harvest of wild live rock in the South Atlantic will terminate no later than January 1, 1996. There is to be no chipping of live rock during the harvest period, and there is to be no take or possession in the EEZ of the South Atlantic, north of Dade County, Florida.**

C.2 Rejected Alternative for the Gulf Area: Establish a Gulf of Mexico quota of 252,000 pounds harvest for calendar years 1994 through 1996 from the Pasco-Hernando County line to the Monroe-Collier county line in Florida with no chipping permitted in that area. There is to be no harvest or possession of wild live rock in the Gulf EEZ outside this designated area. Harvest is to continue at the 1995 level in the absence of a federal aquaculture system.

C.3 Rejected Alternative: Establish an annual harvest quota of 400 tons (800,000 pounds) of wild live rock per year in the Gulf and South Atlantic for the years 1995 through 1998 with no wild live rock harvest in 1999 and subsequent years. However, if a federal live rock aquaculture system is not in effect by 1996, wild harvest will remain at the 1995 level.

C.4 Rejected Alternative: Establish an annual harvest quota of 252,000 pounds of wild live rock per year in the Gulf of Mexico for the years 1995 through 1998 with no wild rock harvest in 1999 and subsequent years. However, if a federal live rock aquaculture system is not in effect by 1996, wild harvest will continue at the 1995 level.

C.5 Rejected Alternative: Establish a quota of 400 tons (800,000 pounds) in 1995, to be reduced by 25 percent in 1996, by 50 percent in 1997, by 75 percent in 1998, and no harvest of wild live rock in 1999 and thereafter.

C.6 Rejected Alternative: Allow three more years of unlimited live rock harvest after implementation of the amendment. After three years, live rock could be harvested from or possessed in the EEZ only under permit for aquaculture or scientific collection.

C.7 Rejected Alternative: Set a live rock quota at zero; allow no harvest in the EEZ upon implementation of this amendment.

C.8 **Preferred Alternative for the Gulf Area: Establish a Gulf of Mexico harvest for calendar years 1994 through 1996 from the Florida-Alabama state line to the Monroe-Collier County line in Florida. There is to be no harvest or possession of wild live rock in the Gulf EEZ outside this designated area. After December 31, 1996, there is to be no more harvest of wild live rock in the Gulf EEZ; however, harvest is to continue at the 1995 (unlimited) level in the absence of a federal aquaculture permitting system. No chipping is allowed north and west of the Pasco-Hernando County line to the Florida-Alabama border.**

The alternatives cover a wide range of allowable harvest, from an immediate ban (Rejected Alternative C.7) to an unlimited harvest of wild live rock for about three years from the implementation of this amendment (Rejected Alternative C.6). The two Councils differ in their selection of a preferred alternative. The Gulf Council favors unlimited overall harvest for the period 1994-1996 in EEZ waters off Florida, to be supplanted later with aquaculture production once the federal aquaculture system is in place. In the absence of the federal aquaculture system, harvest continues to be allowed at the 1995 level. Harvest is prohibited in all other areas of the Gulf of Mexico EEZ. In addition, no chipping is permitted in the allowed area north and west of the Pasco-Hernando County line. The South Atlantic

Council favors imposing an aggregate quota of 485,000 pounds for two years in the South Atlantic areas south of the Broward-Dade County line and outright ban in areas north of the line. The favored position of the South Atlantic Council implies a separate management for harvest of wild live rocks in the two Councils' respective areas of jurisdiction. Aside from the quota level and length of open harvest, the two Councils differ in their respective treatment of an aquaculture program. While for the Gulf Council, an established aquaculture system serves as a precondition for the ban on harvest of wild live rock, the same cannot be said of the South Atlantic Council's position although together with the Gulf Council it prefers adopting the policy of allowing and facilitating aquaculture in the EEZ (see subsection D below).

The economic issue in the choice between a limit on harvest and a prohibition on harvest of live rock is one of trade-off between net benefits derived from consumptive use and net benefits derived from non-consumptive use of live rock. Net benefits from consumptive use are broadly taken to be the resulting change in producer surplus from the harvest of live rock while net benefits from non-consumptive use refer to the increase in values derived from non-harvest of live rock. This latter set of values refers to those values mentioned earlier in the discussion of the no action alternative. Incidentally, the no action alternative is another option appropriately involved in the trade-off of net benefits between consumptive and non-consumptive use. The no action alternative would give the largest allocation of live rock for consumptive use while the harvest prohibition would give the least of such allocation for consumptive use. The option to limit harvest would stand in between the two extreme options. The main indicator involved in assessing the resulting effects of such trade-off is the resulting overall net benefits to society.

The mentioned trade-off in net benefits may be appropriately approached within the context of allocating the wild live rock resource among competing uses, i.e., consumptive and non-consumptive in the present case. For an optimal allocation, the necessary condition stipulates that marginal net benefits are equalized among the various resource uses. Information is obviously too scanty to determine what level of allocation of live rock between consumptive and non-consumptive uses satisfies this condition. This lack of information is compounded by the problem of estimating non-consumptive values for live rock. Under this situation, the ensuing discussion merely points out the likely changes in overall net benefits to society from a given allocation.

As alluded to earlier, the no action alternative presents a good opportunity for the generation of relatively high producer surplus in consumptive use but at the same time the same alternative provides the highest likelihood of a relatively low benefit from non-consumptive use. The economic disexternalities on users of other marine species and reefs enhanced by the presence of live rock may not be quantifiable but is expected to increase as harvest of live rock increases over time. The prohibition on harvest of live rock would also present a situation where net loss is suffered by consumptive users (harvesters) of live rock and a high likelihood for a relatively high net benefit from non-consumptive use. While the net loss to harvesters may be estimated, the resulting net benefit for non-consumptive use may not be known, so that the resulting overall net benefit cannot be determined. In the case of limiting harvest, both consumptive and non-consumptive net benefits would be realized. In many economic decisions involving purely market values, most oftentimes the allocation that results in highest net benefits is one that allows many competing users to remain in "business." The difficulty of directly applying this on live rock is that for a large portion of the benefits derivable from live rock there is no market mechanism that can be tapped to quantify especially the non-consumptive benefits. There are, nevertheless, modeling techniques that can be employed to estimate those benefits, but one has yet to be applied to live rocks in the Gulf and South Atlantic EEZ. The likely possibility that live rock is a non-renewable resource only intensifies the problem of quantifying such benefits. At any rate, there is probably a relatively higher benefit to society afforded by an allocation that does not eliminate any of the competing users of the resource. However, such allocation may be achieved either by simply limiting harvest of wild live rock or by banning such harvest but providing for aquaculture production.

To sum up the foregoing discussion, we may state that an allocation that allows both consumptive and non-consumptive users to remain in the fishery may be deemed to generate a relatively higher net benefit than an allocation that excludes certain group of users. In view of this, Alternative C.7 may be regarded as an one that affords the least benefit to society over the short and long run, since the consumptive group is immediately excluded from the fishery and aquaculture is very unlikely to be a feasible substitute over a very short period of time. The rest of the alternatives allow both types of users to remain in the fishery at varying harvest level and length of time so that their short-term effects vary. Their long-term effects depend largely on the time needed to render aquaculture a viable alternative. The succeeding discussion focuses mainly on the effects of these seven alternatives.

In terms of short-term effects (1 to 3 years), Alternative C.8 offers the highest net benefits to consumptive users of wild live rock. Over the three-year period, benefits grow along with increases in harvest more than increases in costs. On the lower end of the benefit spectrum are Alternatives C.1 and C.2, both of which maintain a relatively low harvest quota (Alternative C.2) or shorter period of open harvest (Alternative C.1) and in addition prohibit chipping of rocks. Prohibition of chipping increases the cost of harvest operation in terms of either a direct harvest cost or of forgone revenues. Recent public testimonies claimed that chipped rocks contribute as much as 85 percent of gross revenues of some wild rock harvesters. The phase-out approach (Alternative C.5) translates to a reduction in consumptive benefits over the three-year period, but in a way that affords overall short-term benefits higher than those obtainable from Alternatives C.1 and C.2. Alternatives C.4 and C.5 may be ranked higher than Alternatives C.2 mainly because of relatively lower fishing cost due to non-prohibition of chipping. Alternative C.3 may be ranked second highest in benefits due to a relatively higher harvest quota and relatively lower fishing cost due to non-prohibition of chipping. While Alternative C.8 also prohibits chipping, it does limit such prohibition in areas, i.e., north and west of the Pasco-Hernando County line, where rubble rocks are also available according to some recent public testimonies. In this case, Alternative C.8, in comparison with the other alternatives, may still be considered as one that provides the highest net benefits to consumptive users.

While implementation of an alternative that results in the least benefits to consumptive users may result in the most benefits to non-consumptive users, it is reasonable to expect that over the short-run increases in benefits to non-consumptive users would be less than decreases in benefits to consumptive users. Thus, the aforementioned ranking of alternatives is considered to hold true even if effects on non-consumptive users are also considered.

In terms of long-term effects, the alternatives clearly appear to enhance the benefits accruing to non-consumptive users. The magnitude of such effects varies inversely with the length of time before a more restrictive measure is adopted. In contrast, the alternatives are going to adversely affect the consumptive users, although such adverse effects would be mitigated by the development of an effective aquaculture program. Considering the long-term effects on both user groups, there appears to be a resulting net benefit from a more restrictive management of wild live rock harvest when there is an accompanying aquaculture program.

Assume for discussion purposes that there are no costly legal obstacles to pursuing aquaculture production. The current absence of aquaculture production may be taken to imply that this type of production is more costly than harvest of wild live rock or that demand is still not large enough to render aquaculture production profitable. In either case, the switch from wild harvest to aquaculture would entail a reduction in producer surplus or a forgoing of larger profits especially in the face of an increasing demand. However, such reduction in producer surplus or forgoing of larger profits have to be modified by the reduction in negative externalities on other fisheries or in non-consumptive use of the live rock resource. In this situation, the switch to aquaculture may not result in significant reduction in overall producer surplus, but it will most likely result in the distribution of producer surplus from those

currently in the fishery who may not be able to afford the investment required for aquaculture to those who can afford and do invest in aquaculture production.

If an aquaculture program proves to be an ineffective substitute for wild live rock harvest, all alternatives would have practically the same adverse long-run effects on the consumptive users. The most stringent alternative (either Alternative C.7, C.5 or C.1) would have the least adverse effects on non-consumptive users, and would turn out to be the alternative that would result in highest net benefits when effects are summed across various user groups. If, on the other hand, an aquaculture program successfully develops, the alternative that allows enough time for its development would generate the most benefits to society since both short-term and long-term adverse effects are minimized. In this regard, Alternatives C.2, C.3, C.4, and C.8 may be ranked higher than the other alternatives. It may be stressed, however, that these alternatives provide only for the establishment a federal system for development of live rock aquaculture, and establishment of such a system may not coincide in time with the development of a successful aquaculture program. Nevertheless, these alternatives provide the best environment for development of live rock aquaculture.

D. AQUACULTURE OF LIVE ROCK

D.1 **Preferred Alternative for the Gulf and South Atlantic Areas: It is the position of the Councils to allow and facilitate aquaculture in the EEZ.**

D.2 Rejected Alternative: No provision for aquaculture. After termination of the period allowing annual quotas, the harvest or possession of live rock in EEZ would be prohibited.

The Councils' preferred alternative complements the various alternatives on restrictions of wild live rock harvests. From the standpoint of benefits to both consumptive and non-consumptive users, this preferred alternative will definitely provide a better avenue for generating higher producer and consumer surplus in the fishery. While the Council and NMFS do not have the authority to lease water bottoms for aquaculture, state and other federal agencies may have some regulatory responsibility for such an activity. The preferred alternative would then lessen regulatory obstacles toward the development of a live rock aquaculture industry.

Under the preferred alternative, the major feature that can potentially negate the positive effects of aquaculture on overall net benefits is the selection of aquaculture sites. If aquaculture is allowed in sites where other fishing activities, like trawling and longlining, become severely constrained the benefits from aquaculture production may not offset the loss in benefits to the affected fisheries. In this situation, the rejected alternative may prove to be the better approach in generating a higher overall net benefits to society. But it is worth mentioning that reef fishing may develop in an otherwise unproductive area for fishing, since the planted rocks could serve as artificial reefs for some recreationally or commercially important species. Such situation would enhance the positive effects of an aquaculture program and thus should to be taken into account in the event that adverse consequences befall on some fisheries in the choice of aquaculture sites.

As alluded to above, the alternatives considered here relate only to what the Council and NMFS can do in reducing regulatory obstacles to the development of an aquaculture program. State and other federal agencies have more direct responsibilities in minimizing regulatory obstacles to the development of this industry. More importantly, the success of this program depends on the industry members who decide to undertake aquaculture production.

E. PERMITS

E.1 Harvest Permits

E.1.a **Preferred Alternative for the Gulf and South Atlantic Areas: In addition to any applicable state license or permit, a federal permit is required for the harvest and possession of wild live rock in the EEZ during the phase-out harvest period. Permits shall be limited to persons who have commercially landed and, where required, reported wild live rock landings prior to the control date of February 3, 1994. A fee not to exceed the administrative cost of issuance may be authorized.**

E.1.b Rejected Alternative: Require a federal permit in the absence of a state permit for harvest and possession of "wild" live rock from the EEZ during the phase-out period.

E.1.c Rejected Alternative: Require no harvest permit for taking commercial quantities of wild live rock during the terminal harvest period.

Personal Use Harvest

E.1.d Rejected Alternative: A personal use harvest and possession of up to a two gallon (0.27 cubic foot) (or more) bucket container of live rock is allowed per person per day in the EEZ. Sale of such material is prohibited. No wild harvest permit is required.

E.1.e Rejected Alternative: A personal use harvest and possession of up to a two gallon (0.27 cubic foot) (or more) bucket container of live rock is allowed per person per day during the terminal harvest period in the EEZ. No wild harvest permit is required. Sale of such material is prohibited.

E.1.f **Preferred Alternative for the Gulf and South Atlantic Areas: No take of live rock is allowed without a commercial harvest permit.**

E.1.g Rejected Alternative: A personal use permit is required to take live rock in limited quantities specified for one's personal use.

There are two subsets of alternatives here. The first subset deals with the permitting of commercial harvest of wild live rock while the second deals with the limiting of recreational harvest. Both the Gulf and South Atlantic Councils have the same preferred alternatives in both subsets.

The basic advantage of requiring permits is the identification of fishery participants and the subsequent effective monitoring and enforcement of rules on wild live rock harvest. This advantage is equally offered by both Alternatives E.1.a and E.1.b. The direct cost outlay for securing permits under these two alternatives is minimal since it may not exceed the administrative cost of issuing them. Alternative E.1.c does not require a federal commercial permit for harvest of wild live rock and thus would forego the mentioned advantage provided by the first two alternatives. Given the likely scenario of eventual prohibition of commercial harvest of wild live rock, the permitting requirement would have mainly short-term effects.

Alternative E.1.a requires a federal permit in addition to any state permits and simultaneously imposes a moratorium on the issuance of such a permit. A moratorium is generally viewed as a prelude to a more comprehensive limited access system in the fishery. The proposed moratorium is not of this kind unless aquaculture producers are later restricted to those holding permits during the moratorium. In the event that a harvest quota is implemented for the fishery, a moratorium would mainly limit the number of

participants in the fishery. FDEP records show that in 1993 about 102 permittees reported live rock landings although in previous years the number of permittees was about 147. The proposed moratorium would then limit the number of participants to probably the lower number.

The proposed quota for commercial harvest of wild live rock in the South Atlantic area is about 77 percent of the 1993 harvest in that area. This implies that additional entrants to the fishery offer the potential of shortening the season for wild rock harvest in this area. Given this condition, a moratorium, as in Alternative E.1.a, may result in higher benefits to the fishery than other alternatives for any given market demand for wild live rock. If demand remains about the same over the phase-out period, a moratorium would prevent a possible reduction in prices since large increases in landings in the early part of the season would be prevented unless of course moratorium participants significantly increase their fishing effort. In a situation of increasing demand for live rock, a moratorium would minimize the likelihood of forgoing higher benefits from harvest of live rock. It appears then that, for the South Atlantic area, Alternative E.1.a would offer higher benefits than the other alternatives in terms of preventing a further deterioration of efficiency in the fishery when more participants enter the fishery.

The effects of a permit moratorium in the Gulf area are not necessarily identical to those in the South Atlantic area. In the Gulf area, there would be no aggregate quota for the harvest of wild live rock from 1994 through 1996 (see Section C) but there would trip limits (see Section G). Under this condition, a derby fishery may not ensue within this three-year period so that the moratorium would have not have the same effects as those mentioned for the South Atlantic area. Beyond 1996, however, the fishery may be subject to an aggregate quota equivalent to the 1995 harvest if the aquaculture system is not yet developed. In addition, it may be expected that if the South Atlantic area is closed to wild rock harvest while the Gulf area remains open, effort in the latter area may be expected to increase. In this event, a moratorium can minimize the adverse impacts of a derby fishery or the deterioration in the efficiency of the harvest sector.

A moratorium may be expected to redistribute the benefits from the fishery in favor of those included in the program. Potentially excluded from the fishery are new entrants, and the adverse effects on these fishermen would vary directly with their amount of investment in the fishery. Depending on the presence of transferability conditions, licenses issued at the start of the moratorium would command some value. It is unlikely that vessels used for harvesting wild live rocks would command an additional value during the moratorium since permits are issued to persons and not to vessels. The live rock industry is currently capable of harvesting the proposed quota for the South Atlantic area and is not limited to an aggregate quota in the Gulf area so that artificial increases in the price of live rocks would be very unlikely. As matter of fact, prices may fall if some form of derby in the South Atlantic area occurs.

The short-term effect of providing for recreational harvest in the Gulf of Mexico is probably minimal if we assume negligible recreational effort in the fishery. A likely scenario over the long-run is an increase in recreational effort due to a possible entrance of many participants, but it cannot be ascertained whether such effort increase would be substantial as to obviate the benefits from an eventual prohibition of commercial wild rock harvest.

E.2 Aquaculture Permits

E.2.a Preferred Alternative for the South Atlantic Area: Require a permit for the possession or harvest of live rock from aquaculture operations in the EEZ. Such a permit will be required in order to harvest or possess live rock from an aquaculture site. Harvest from the area may only be done by the permittee or his written designee and an administrative fee will be authorized for the permit.

E.2.b **Preferred Alternative for the Gulf Area:**

(1) Require a permit for the possession or harvest of live rock from aquaculture operations in the EEZ. Such a permit will be required in order to harvest or possess live rock from an aquaculture site. Harvest from the area may only be done by the permittee or his written designee and an administrative fee will be authorized for the permit.

(2) An aquaculture harvest permit, issued by NMFS, authorizes an exception to taking and possession of otherwise prohibited hard corals, octocorals, and live rock as cultured live rock and attachments thereon.

(3) Permittee must notify enforcement officers no less than 24 hours in advance of harvest.

E.2.c **Rejected Alternative:** No permit required for possession of live rock from aquaculture operations in the EEZ.

E.2.d **Rejected Alternative:** Require a permit for the possession or harvest of live rock from aquaculture operations in the EEZ. NMFS permits shall be available only to those individuals who have demonstrated that they have deposited rock or substrate in the permitted site.

To obtain permits for live rock aquaculture in the EEZ, permittees must have an approved Corps of Engineers' permit to place substrate in the EEZ, and have demonstrated that they have deposited approved material in the permitted area. Such a permit shall be subject to an administrative fee. In order to harvest or possess live rock from an aquaculture site a NMFS permit will be required. Harvest from the area may only be done by the permittee or his written designee.

E.2.e **Rejected Alternative**: An aquaculture harvest permit, issued by NMFS, authorizes an exception to taking and possession of otherwise prohibited hard corals, octocorals, and live rock as cultured live rock and attachments thereon.

E.2.f **Rejected Alternative**: No change, prohibited corals may not be taken or possessed in the EEZ.

For an effective administration of an aquaculture program and enforcement of regulations, there is a necessity to require permits for aquaculture production. It may be noted that while an effective enforcement of regulations does not of itself result in economic benefits to society in terms of producer and consumer surplus, it does provide a higher chance of generating the intended benefits from regulations. In this case, a permit requirement helps to prevent any reduction in net benefits from allowing aquaculture as a complete substitute for wild live rock harvest. Although it may be expected that there would be relatively few who would engage in large scale aquaculture operations, it is still necessary to require permits since each aquaculture operation may require several individuals to harvest live rock.

The state of Florida has initiated the development of rules related to live rock aquaculture. Aquarium Systems, Inc. initially determined the following cost items and amounts (permit and application fees) for undertaking live rock aquaculture in Florida:

Division of State Lands Lease application	$200
DEP Division of Water Management Artificial Reef permit	$100
and/or Special DEP Dredge and Fill permit	$500
and/or General Live Rock Aquaculture permit	$100
U.S. Army Corps of Engineers letter permit	none
Pinellas County Dredge and Fill permit	$150

(Note: Some counties do not require permits)

More recently FDEP conducted public hearings on the issue of live rock aquaculture permit system and fees. Public hearing document indicates relatively higher fees than those determined by Aquarium Systems, Inc. The fee structure consists of the following:

Nonrefundable application processing fee	$3,000.00
Nonrefundable site inspection fee	$2,000.00
Annual lease fee per acre for the first 4 years	$ 45.00
Annual assessment fee per pound commencing the 5th year	$ 0.45

In addition to these fees, another $3,000 or so may have to be expended by the lease applicant for professional magnetometer survey for purposes of determining whether selected aquaculture sites would not adversely impact cultural resources listed, or eligible for listing, in the National Register of Historic Places. We may note, however, that the above amounts are still subject to change. At any rate such fees indicate the type of initial investment that an aquaculture undertaking entails in addition to major cost items incurred in actual operation.

E.3 Permits for Scientific, Educational, and Restoration Collection

E.3.a Preferred Alternative for the Gulf and South Atlantic Areas: Require a federal permit for harvest and possession of prohibited corals and live rock from the EEZ for scientific, educational, and restoration purposes.

E.3.b Rejected Alternative: Do not add live rock to the list of other prohibited species for which a permit is required for harvest and possession for scientific, educational, and restoration purposes.

The preferred alternative is the current position of both the Gulf and South Atlantic Councils. This requirement perfectly complements the enforcement of an eventual ban of commercial harvest of wild rock. It also complements the current requirement to have permits for harvesting prohibited corals for scientific and educational purposes. Like the permit requirement for aquaculture, the preferred alternative can enhance the enforcement and monitoring of regulations on the live rock industry.

F. GEAR RESTRICTIONS

F.1 Preferred Alternative for the Gulf Area: Unless otherwise prohibited in this plan, only non-power-driven hand tools limited to chipping hammers and chisels may be used in the allowable harvest of species (i.e., live rock and octocorals) in the management unit where chipping is permitted.

F.2 Rejected Alternative: No action, no restriction on use of collecting gear.

Considering the eventual ban on wild live rock harvest, both alternatives have mainly short-term effects. Under a quota management, total benefits from wild live rock harvest would not be affected by adopting any of the two alternatives. While Alternative F.2 may result in relatively lower cost to harvesters so that the resulting net benefits would be relatively higher than under Alternative F.1, the concomitant adverse effects on the benefits of non-consumptive users may be larger. The resulting overall net effect depends on how prevalent is the practice of using power tools in harvesting octocorals. Under a quota management, there is a good chance that power tools will be used by an increasing number of participants in order to partake of the fishery before the quota is reached. In this case a lesser overall net benefit may result from adopting Alternative F.2 over Alternative F.1.

G. VESSEL TRIP LIMITS

G.1 Preferred Alternative for the Gulf Area: **Permitted vessels are to be limited to 25 five gallon buckets or an equivalent volume (16.88 cubic feet) of wild rock per daily trip in the Gulf of Mexico EEZ.**

G.2 Rejected Alternative: No daily vessel trip limits for harvest of wild live rock.

Vessel trip limits are bound to penalize larger vessels in the fishery. It has been reported, however, that most operators use vessels with lengths ranging from 22 to 28 feet and harvest up to 18 to 20 five gallon buckets per trip so that the adverse effects of trip limits on the entire industry may not be substantial. It may be stressed, at any rate, that vessel trip limits only introduce further technical inefficiency into the fishery, but to the extent that a substantial increase in fishing capacity is prevented such technical inefficiency on certain segments of the industry may not have a significant effect on the efficiency of the entire industry.

H. STATISTICAL REPORTING

H.1 Preferred Alternative for the Gulf Area: **Harvesters must report landings of all live rock from the EEZ in accordance with instructions of the Southeast Fisheries Science Center Director.**

H.2 Rejected Alternative: In the absence of a state fishery reporting system which requires the reporting of live rock landings, a harvester must report landings data to the Southeast Fisheries Science Center Director in accord with his instructions.

H.3 Rejected Alternative: Status quo, no federal requirement for reporting live rock landings.

Currently, only Florida has an effective reporting system for live rock landings. Inasmuch as Florida accounts for most of live rock landings, a federal reporting requirement may not be cost effective. It does, however, provide the opportunity for determining the extent of the fishery throughout the Southeast and for monitoring the overall quota during the terminal period. Unless there is an expected widespread expansion of the fishery beyond Florida and additional budget for monitoring landings, it does not appear economical to divert existing budget to establishing a federal reporting system for live rocks. It may also be noted that such expansion of the fishery in EEZ beyond waters off Florida will be prevented from occurring under the two Councils' preferred alternatives for harvest restriction.

In the event, however, that aquaculture develops and proliferates throughout the areas of the two councils, there may arise the need to track landings in those areas with no established reporting system that includes live rock.

I. OPTIMUM YIELD (OY) FOR LIVE ROCK

I.1 Preferred Alternative for the South Atlantic Area: **OY for wild live rock is to be 485,000 pounds annually for the South Atlantic region where harvest is allowed for 1994-1995 annually, after which it is to be zero except for that which may be allowed by permit.**

I.2 Rejected Alternative for the Gulf Area: OY for live rock is to be that established by quota(s) or which may be allowed by permit.

I.3 Rejected Alternative: OY for live rock is to be that established by quota(s) or which may be allowed by permit.

I.4 Rejected Alternative: OY for live rock is to be zero except for that which may be allowed by permit.

I.5 Rejected Alternative: OY for live rock to be unlimited for three years after which it is to be zero except for that which may be allowed by permit.

I.6 **Preferred Alternative for the Gulf Area: OY for wild live rock should be unlimited for 1994, 1995, and 1996.**

The inclusion of live rock in the management unit requires the provision for definition of overfishing. The current FMP, as amended, already contains a definition of overfishing which is tied to the definition of OY. Specifically, the FMP, as amended, stipulates that overfishing is an annual harvest that exceeds OY. Any of the alternatives for the definition of OY is appropriate depending on the type of restriction adopted for harvest of live rock.

J. SEPARATE MANAGEMENT IN THE JURISDICTIONAL AREAS OF THE TWO COUNCILS

J.1 **Preferred Alternative for the Gulf and South Atlantic Areas: Management of coral, coral reefs, live rock and any other part of the management unit in this plan will be the responsibility of the Council in whose jurisdiction it occurs.**

J.2 Rejected Alternative: No change, both Councils continue to approve all management actions.

Since the stocks in the management unit of the plan do not by themselves move from one area of jurisdiction to another, actions by one council to manage the stocks will not have an impact on the stocks under the jurisdiction of the other council. In this event Alternative J.1 will mainly involve reductions in the cost of management at the council level. There could be some possibly minor offsetting increase in administrative cost at the NMFS and secretarial level since two sets of actions which may be similar in nature will have to considered separately. Of course, as in the coastal pelagics plan, certain sets of actions applicable to both councils's areas jurisdictions may be submitted under one document. Additionally, plan and regulatory amendments will focus more on issues pertinent to a council's area of jurisdiction, and in that way will be addressed by both managers and fishing public in a timely manner. There could, however, arise certain enforcement, monitoring, or compliance problem in the event that the two councils adopt contrasting regulations on the same issue or in the event that harvesters move from one area to another. Nonetheless, these potential cost increases may be deemed less than the mentioned cost saving and benefits derived from a more timely resolution of issues.

Government Costs of Regulation

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

Council costs of document preparation, meetings, public hearings, and information dissemination	$35,000
NMFS administrative costs of document preparation, meetings and review	20,000
Law enforcement costs	15,000
Public burden associated with permits	10,000
NMFS costs associated with permits	10,000
TOTAL	$90,000

The cost items above have been identified as the likely cost to be incurred in preparing and implementing this plan amendment. The public costs of securing permits refer only to permits issued by NMFS. The public would obviously incur additional permit cost and application fees in undertaking live rock aquaculture. Without knowing the structure of an aquaculture permitting system, it is not possible to determine the fees associated with that system. At any rate, Section E.2 shows some of the possible cost items and amounts to be expended to secure a live rock aquaculture permit in Florida.

Summary and Expected Net Impact of Proposed Action

The proposed regulatory action constitutes changes in management for of live rock harvests in the EEZ under the jurisdiction of both the Gulf Council and South Atlantic Council. The emphasis of the summary is on the expected economic impact of the various options.

The no action alternative could result in a sustained profitability for the live rock harvest sector, but there are attendant costs that could increase along with any increases in the harvest of live rock. Such cost increases may be prevented by the various options to include live rock under the FMP and to provide certain restrictions in the harvest thereof. It has been concluded that an allocation allowing both consumptive and non-consumptive users of the live rock resource to remain in the fishery may be accompanied by a relatively higher net benefit to society than any of the other proposed allocation including the no action alternative. Maintaining the consumptive sector in the fishery may be achieved either by restricted harvest of wild live rock or by aquaculture of live rocks. While aquaculture may be accompanied by reduction in producer surplus in the consumptive sector, it offers a viable alternative of mitigating the adverse impacts on the non-consumptive sector of the live rock fishery.

With respect to harvest quotas for wild live rock, it has been determined that if aquaculture proved to be an ineffective substitute for wild live rock harvest, the most stringent alternative (Alternatives C.7, C.5 or Alternative C.1) would result in highest net benefits summed over the various user groups. If, on the other hand, aquaculture proved to be successful, the alternative that allows enough time for the development of an aquaculture program (Alternatives C.2, C.3, C.4, or C.8) would offer the highest net benefits summed over the various user groups.

To the extent that selection of aquaculture sites does not severely constrain other fisheries, the Councils' preferred position to allow and facilitate aquaculture in the EEZ may be considered the better approach. The permit requirement is deemed necessary to identify the industry participants and to monitor and enforce any rules adopted for the fishery. This renders the preferred alternatives for harvest permits (commercial sector), aquaculture permits and scientific, educational, and restoration collection permit to be ranked higher than other alternatives. The effect of allowing limited harvest but not requiring permits for recreational harvest of wild live rock may have minimal adverse effects in the short run, but such effects could escalate if effort from this segment of the fishery substantially increases. The moratorium on commercial permits offers potential of arresting surges in effort at the start of the fishing season under quota management. The moratorium would be effectively complemented by gear restriction and vessel trip limits although we may point out that these latter measures would introduce further inefficiency into the fishery. Federal statistical reporting is important in both determining the extent of the live rock fishery and monitoring the established quota. If, however, it is expected that the fishery would not substantially expand beyond Florida, establishing a federal reporting system for live rock harvest may not be cost effective. A definition of OY is deemed appropriate if live rock is to be included in the management unit. The appropriate definition of OY depends on the type of restrictions imposed on the harvest of live rock. There is some gains in terms of reduction in costs under the alternative that would give each council the sole responsibility to propose rules applicable to its area of jurisdiction.

Determination of a Significant Regulatory Action

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

The entire Florida commercial harvest sector of the live rock fishery is valued in 1993 at about $1.06 million exvessel which is significantly less than $100 million. Even if the fishery in other states were accounted for, it is very unlikely that the total value would exceed $100 million. The proposed actions in this plan amendment apply to live rock harvests in the EEZ under the jurisdiction of the Gulf Council and South Atlantic Council. Given the size of the fishery and the segment of the fishery directly affected by the proposed regulation, it is concluded that any revenue or cost impacts on the fishery would be significantly less than $100 million annually.

In the event that an outright prohibition or severe restriction on the harvest of live rock is adopted, a major cost increase (in terms of foregone profits) to the industry will ensue. As long as the reduction in domestic production is offset by other supply sources of live rock, prices to consumers are expected to not increase significantly. The possibility of outright ban or severe restriction in the harvest of live rock may be expected to have a significant adverse effect on employment, productivity, and investment; likewise such ban or severe restriction would render the domestic industry less competitive in the international market, specifically in Canada and England. Considering the preferred position of the Councils which is to allow wild live rock harvest to continue for at least two years in the case of South Atlantic EEZ or three years in the case of the Gulf EEZ, the mentioned adverse impacts would not likely materialize over such period. If the ban materializes after the lapse of two or three years, its effects could be mitigated by the development of a successful aquaculture program.

Based on the foregoing, it is concluded that this regulation if enacted would constitute a "significant regulatory action" in the event that the ban on wild rock harvest takes place and no effective aquaculture program is developed.

Initial Regulatory Flexibility Analysis

Introduction

The purpose of the Regulatory Flexibility Act 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 regulatory amendment is that of commercial businesses currently engaged in the harvest of live rock. 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." Although an IRFA focuses more on adverse effects, determination of beneficial significant effects is also an integral component of the analysis. 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). It has been estimated that there are about 147 individuals who are at least on a part-time basis engaged in the harvest of live rock. 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. Since the proposed action will affect practically all participants of the live rock harvest sector, the "substantial number" criterion will be met in general.

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).

While the Councils' preferred position on wild rock harvest would allow continuation of the fishery over two or three years, a ban or severe restriction on the harvest of live rock could ensue. In that eventuality, revenues to the affected individuals may be expected to be reduced by more than 5 percent. A switch from harvest of wild live rock to aquaculture in compliance with the proposed action may be deemed to result in a significant increase in the operating and capital costs to fishermen as a result of complying with the regulations. Considering that all participants in the commercial live rock harvest fishery may be deemed small business entities, the issue of big versus small business operations is not relevant in determining distributional/regional effects of regulations, and it thus also rules out disproportionate effects on capital costs of compliance. A number of current participants of the live rock harvest industry may be forced to cease business or switch to other operations once the ban on wild live rock harvest becomes in place. This number, however, is not known.

It can be inferred from the foregoing discussion that the proposed regulation can be expected to result in a significant economic impact on a substantial number of small entities in the commercial live rock harvest sector. On this account, an IRFA has been prepared. The following comprises the remaining portions of the IRFA.

Explanation of Why the Action is Being Considered

Refer to the section on Problems and Objectives in the RIR and to Section I of the amendment document.

Objectives and Legal Basis for the Rule

Refer to the section on Problems and Objectives in the RIR and to Section 1 of the amendment document. The Magnuson Fishery Conservation and Management Act of 1976 provides the legal basis for the rule.

Demographic Analysis

Refer to the Coral Fishery Management Plan, as amended.

Cost Analysis

Refer to the Government Cost and Summary sections of the RIR.

Competitive Effects Analysis

The industry is composed entirely of small businesses (harvesters and charter boats operations). Since no large businesses are involved, there are no 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. Some of the proposed options may even render federal and state (Florida) rules compatible.

Conclusion

The proposed regulation is concluded to have a significant economic impact on a substantial number of small entities. In this regard, the foregoing information and pertinent portions of the RIR are deemed to satisfy the analysis required under the RFA.

5.0 ENVIRONMENTAL CONSEQUENCES

Habitat Loss: Hard bottoms and reef rubble from which live rock is removed contributes to the habitat for reef dwelling organisms which include reef fish and ornamental fishes and invertebrates. There is concern that the removal of this material degrades the value of the habitat due to the slow rate of regeneration of the material. There is an estimated 19,691 square miles of live bottom in the Gulf of Mexico.

Aquarium Sales: Harvest of live rock at a level of about 500 tons per year is said by producers to be the backbone of the marine aquarium trade because it allows appropriate habitat for captive tropical fishes and invertebrates. Harvest of naturally occurring rock could be replaced by material from aquaculture operations.

Ecosystem Management: An acceleration and continuation of removal of live rock can degrade the quality of fishery habitat, particularly if the activity is concentrated in high use areas.

Aesthetic Values: Removal of coral or damaging coral reefs is already prohibited by federal and Florida regulations. However, the removal of showy material in areas frequented by divers would contribute to aesthetic degradation.

Consistent Regulations: Only the state of Florida currently regulates harvest of live rock. Florida prohibits removal in its waters since 1989 and proposed a phase-out over a 3-year period of landings from the EEZ.

Allowance of a continued harvest of natural live rock annually from the Gulf of Mexico EEZ off South Florida through 1996 and 485,000 pounds in the South Atlantic through 1995 will allow collectors, dealers, and hobbyists the opportunity to maintain their business operations temporarily while converting to alternative sources of supply. The harvest operations are to be directed to loose rock in an area of abundant hardbottom.

The phase-out harvest of naturally occurring live rock in favor of aquaculture will eliminate any detrimental effect of removal of the material from the fisheries environment beyond 1996. The implementation of aquaculture under the proposed protocol with the Corps of Engineers will add hardbottom material that supports reef dwelling organisms and would enhance the environmental conditions for these species.

Gear restrictions, prohibition of chipping, and vessel trip limits will also serve to afford protection to rock outcroppings during the phase-out period.

SUMMARY OF ENVIRONMENTAL CONSEQUENCES

EFFECTS OF LIVE ROCK ALTERNATIVES ON THE ISSUES

LIVE ROCK ALTERNATIVES										
		LIMIT HARVEST		PROHIBIT HARVEST						
ISSUES	**No Action**	**Establish an Annual Quota**	**Limit Access/Effort**	**Prohibit all Harvests**	**Phase Out Harvest Except Aquaculture**	**Provide for Aquaculture**	**Permit Requirement**	**Gear Restriction**	**Vessel Trip Limits**	**Statistical Reporting**
Habitat Loss	Losses increase	Losses could stabilize	Losses could stabilize	No net loss	Short term loss; long term possible gain	Gain from seed material	No effect	Impact reduced	Short term loss reduced	No effect
Aquarium Sales	Profits stable or increase	Profits stable	Redistribute and possible reductions	Adverse effects	Aquaculture could replace wild production without interruption	Temporary loss	No effect	No effect	No effect	No effect
Ecosystem Management	Reef and hard bottom systems unprotected	Some level of loss to reef systems and hard bottoms	Non-renewable losses	Benefits other species	Short term loss; long term potential benefit	Some benefit	Enforcement and protection enhanced	Some benefit	Some benefit	Some benefit
Aesthetic Values	Negative effects	Negative effects	Negative effects	Positive effects	Short term negative; long term positive	Positive Effect	No effect	Some benefit	Some benefit	No effect
Consistent Regulations	Not consistent with Florida regulations	Not consistent with Florida approach	Not consistentwith Florida approach	Consistentwith Florida approach	Consistentwith Florida approach after closure of wild harvest	Consistentwith Florida approach	Consistentwith Florida approach	Not consistent with Florida approach	Not consistent with Florida approach	Consistentwith Florida approach

Conclusion

Habitat of the Stocks - Since corals are sessile animals the FMP section on Description of the Stocks (5.0) and the FMP section on Description of the Habitat (6.0) adequately describe the habitat of the stocks (105 pages in aggregate), including condition of the stocks as well as man-induced and natural impacts to the habitat. Amendment 1 modified the FMP by including the following updated revised subsections: 6.4 Habitat Information Needs; 6.5 Habitat Protection Programs; and 6.6 Habitat Recommendations. These revisions are in Appendix A.

Physical Environment - The proposed actions in this amendment will have no long-term adverse impact on the physical environment.

Fishery Resource - The proposed actions are intended to maintain the coral, coral reefs, and live rock resources and to prevent them from becoming overfished.

Human Environment - Some marine life fishermen would be affected by restrictions intended to conserve live rock. Long-term benefits are expected to exceed short-term loss.

Effect on Wetlands - The proposed amendment will have no effect on any flood plains, wetlands, trails, or rivers.

Mitigating Measures Related to the Proposed Action - The gear restriction and trip limit are designed to mitigate adverse effects of continuing live rock collections. Allowing chipping to continue off the Tampa Bay area will give aquaculturalists time to phase-out wild collections with minimal loss of revenue. Introduction of aquaculture would enhance the hard bottom habitat and tend to mitigate earlier loss from harvest of the natural live rock. Aquaculture would also reduce the economic loss to live rock harvesters who are displaced from harvest of naturally occurring material and who elect to revert to aquaculture.

Unavoidable Adverse Effects - Loose rubble rock will be harvested off the Florida Panhandle area and chipping of live rock will continue south of the Pasco-Hernando county line until the phase-out of all wild harvest begins in 1997.

Relation Between Local, Short-Term Users of the Resource and Enhancement of Long-Term Productivity
Current harvesters of live rock will be phased out of taking wild live rock after 1995 in the South Atlantic and after 1996 in the Gulf of Mexico. Harvesting north of Dade County, Florida in the South Atlantic and those north and west of Pasco County, Florida in the Gulf of Mexico will be terminated upon implementation of this amendment. Harvesters are afforded the opportunity to convert to aquaculture as a long term venture to continue production of live rock.

Irreversible or Irretrievable Commitment of Resources - There are not expected to be any irreversible or irretrievable committments of resources in addition to increased costs of enforcement.

6.0 TIME AND LOCATION OF PUBLIC HEARINGS

January 5 Savannah, Georgia

January 6 Duck Key, Florida

January 11 Pensacola, Florida

January 13 Wrightsville Beach, North Carolina

January 19 Clearwater Beach, Florida

February 10 St. Augustine, Florida

March 16 Gulf Shores, Alabama

April 20 Brunswick, Georgia

June 1 Shalimar, Florida

June 2 Tampa, Florida

July 13 Islamorada, Florida

Written comments on this draft must be received by the responsible agencies by

Responsible Agencies

Gulf of Mexico Fishery Management Council
Lincoln Center, Suite 331
5401 West Kennedy Boulevard
Tampa, Florida 33609
813-228-2815

South Atlantic Fishery Management Council
Southpark Building, Suite 306
One Southpark Circle
Charleston, South Carolina 29407-4699
803-571-4366

National Marine Fisheries Service, Southeast Regional Office
9721 Executive Center Drive
St. Petersburg, Florida 33702
813-893-3141

7.0 LIST OF PREPARERS

Theophilus Brainerd, Fishery Economist, South Atlantic Fishery Management Council
Georgia Cranmore, Ecologist, National Marine Fisheries Service, Southeast Regional Office
Antonio Lamberte, Fishery Economist, Gulf of Mexico Fishery Management Council
Terrance Leary, Fishery Biologist, Gulf of Mexico Fishery Management Council
Roger Pugliese, Fishery Biologist, South Atlantic Fishery Management Council
Martha Norris of the Florida Department of Environmental Protection provided data on live rock landings.

8.0 LIST OF AGENCIES AND ORGANIZATIONS CONSULTED:

Gulf of Mexico Fishery Management Council
- Coral Advisory Panel
- Law Enforcement Advisory Panel
- Scientific and Statistical Committee

South Atlantic Fishery Management Council
- Coral Advisory Panel
- Habitat Protection Advisory Panel
- Scientific and Statistical Committee

National Oceanic and Atmospheric Administration (NOAA)
- Office of General Counsel (SER)
- Florida Keys National Marine Sanctuary

National Marine Fisheries Service (SER)
- Southeast Regional Office
- Southeast Fisheries Center

Florida Marine Life Association
Florida Marine Aquarium Society
Project Reefkeeper
Reef Relief
Florida Live Rock Alliance
Coral Reef Coalition
Florida Live Rock Aquaculture Club
Florida Keys Audubon Society
The Nature Conservancy
American Aquarist Society

9.0 OTHER APPLICABLE LAW

Impacts on Other Fisheries - Unregulated removal of live rock could reduce the available hard bottom habitat for reef fish and invertebrates and subject coral reefs to damage from collectors. Regulated harvest would reduce this adverse impact. Aquaculture by introduction of cultch material has the potential of increasing the hard bottom habitat for reef dwelling species.

Data Needs - Data needs and responsibilities are listed in Appendix A.

Vessel Safety - The proposed actions do not impose requirements for use of unsafe (or other) gear nor do they direct fishing effort to periods of adverse weather conditions.

Paperwork Reduction Act - (depends on permit options)

Coastal Zone Management Consistency - The Assistant Administrator has determined that this proposed action will be implemented in a manner that is consistent to the maximum extent practicable with the approved coastal zone management program of the affected states in the management area. This determination has been admitted for review by the states under Section 307 of the Coastal Zone Management Act.

Federalism - This proposed action does not contain policies with federalism implications sufficient to warrant preparation of a federalism assessment under E.O. 12612.

Effect on Endangered Species and Marine Mammals - Marine mammals do not use coral reef or other hard bottom habitats and will not be directly or indirectly affected by the interim rule. Of the endangered or threatened species under NMFS jurisdiction, the hawksbill sea turtle (Eretmochelys imbricata) and the green sea turtle (Chelonia mydas) may use these areas for foraging and shelter and could be affected by destruction of live rock habitat. However, the magnitude of such effects at current live rock collection levels is not expected to be significant. Therefore, the proposed amendment will have no significant effect on endangered species and marine mammals. A Section 7 consultation was held for Amendment 1 with a "no jeopardy opinion" being rendered. The proposed actions do not alter provisions of the FMP that would affect these animals. An additional Section 7 consultation on Amendment 2 is in progress.

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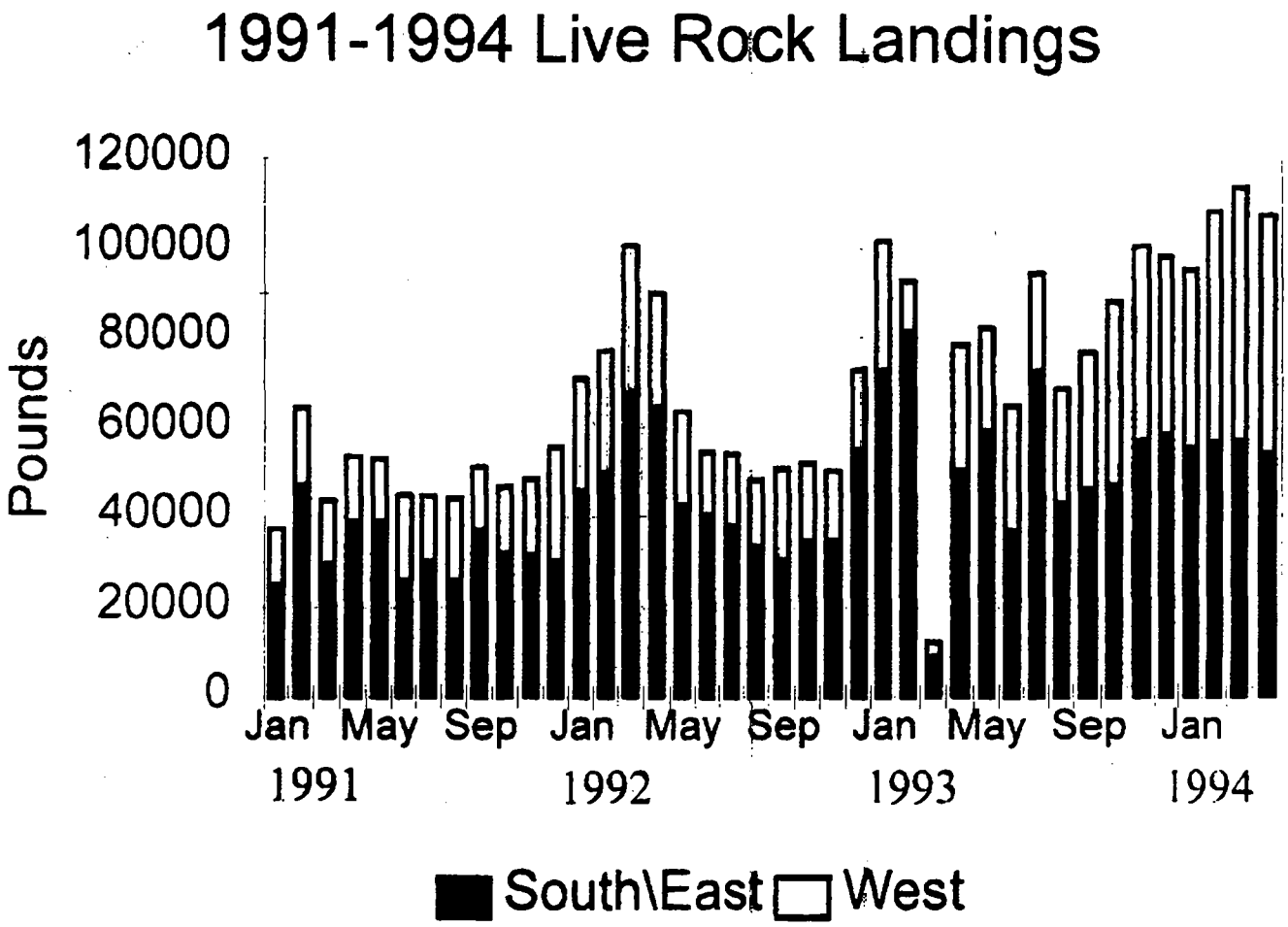
Figure 1



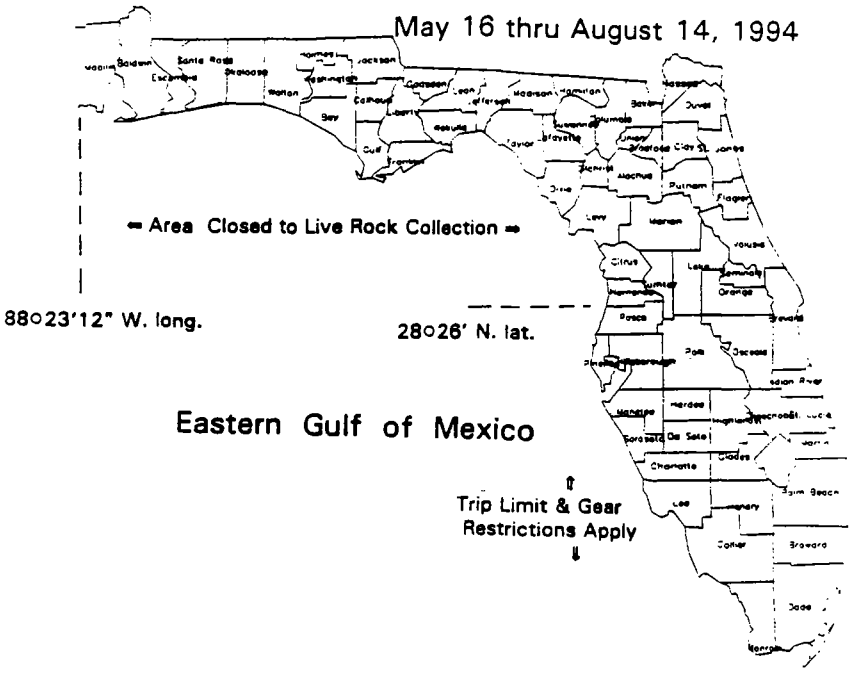
Source: FDEP

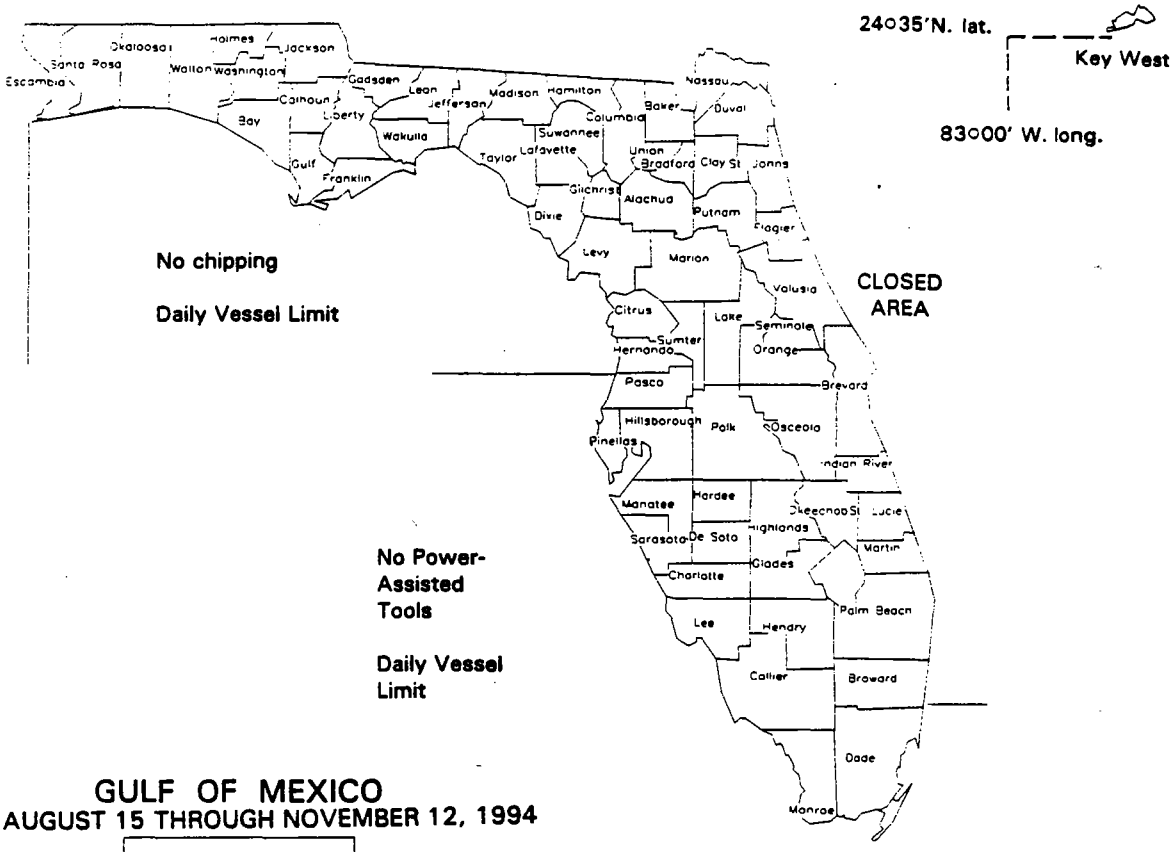
Figure 2

Figure 2a

Area Affected by the Emergency Interim Rule

May 16 thru August 14, 1994



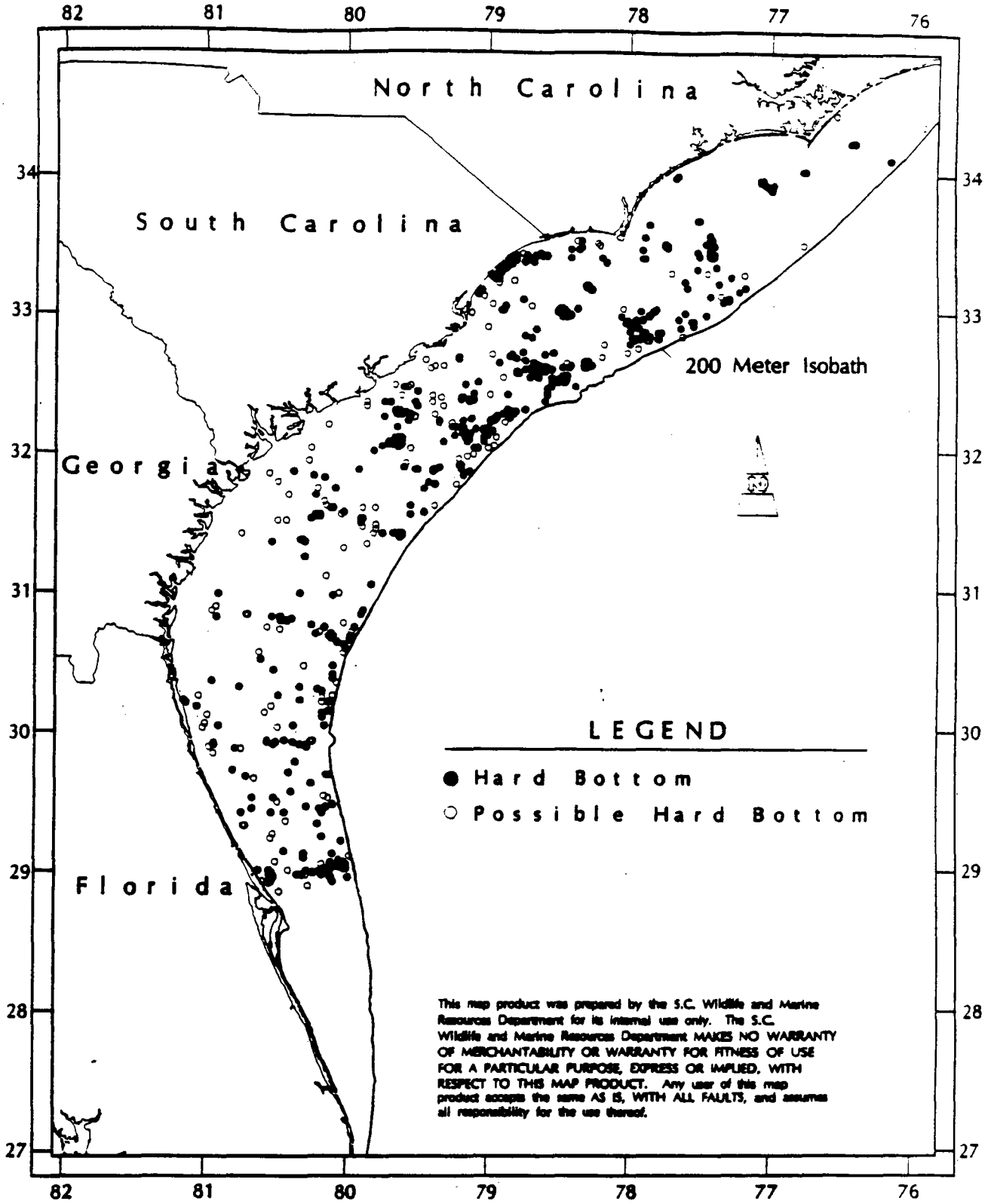


GULF OF MEXICO
AUGUST 15 THROUGH NOVEMBER 12, 1994

Figure 2b

Florida Counties Affected by Emergency Rules

Figure 3



*circles only indicate existance of hard bottom and not actual total bottom area.

Draft distribution map of live bottom habitat in the South Atlantic Bight identified in the SEAMAP bottom mapping program. (NOAA, SCWMRD, 1993)

Figure 4

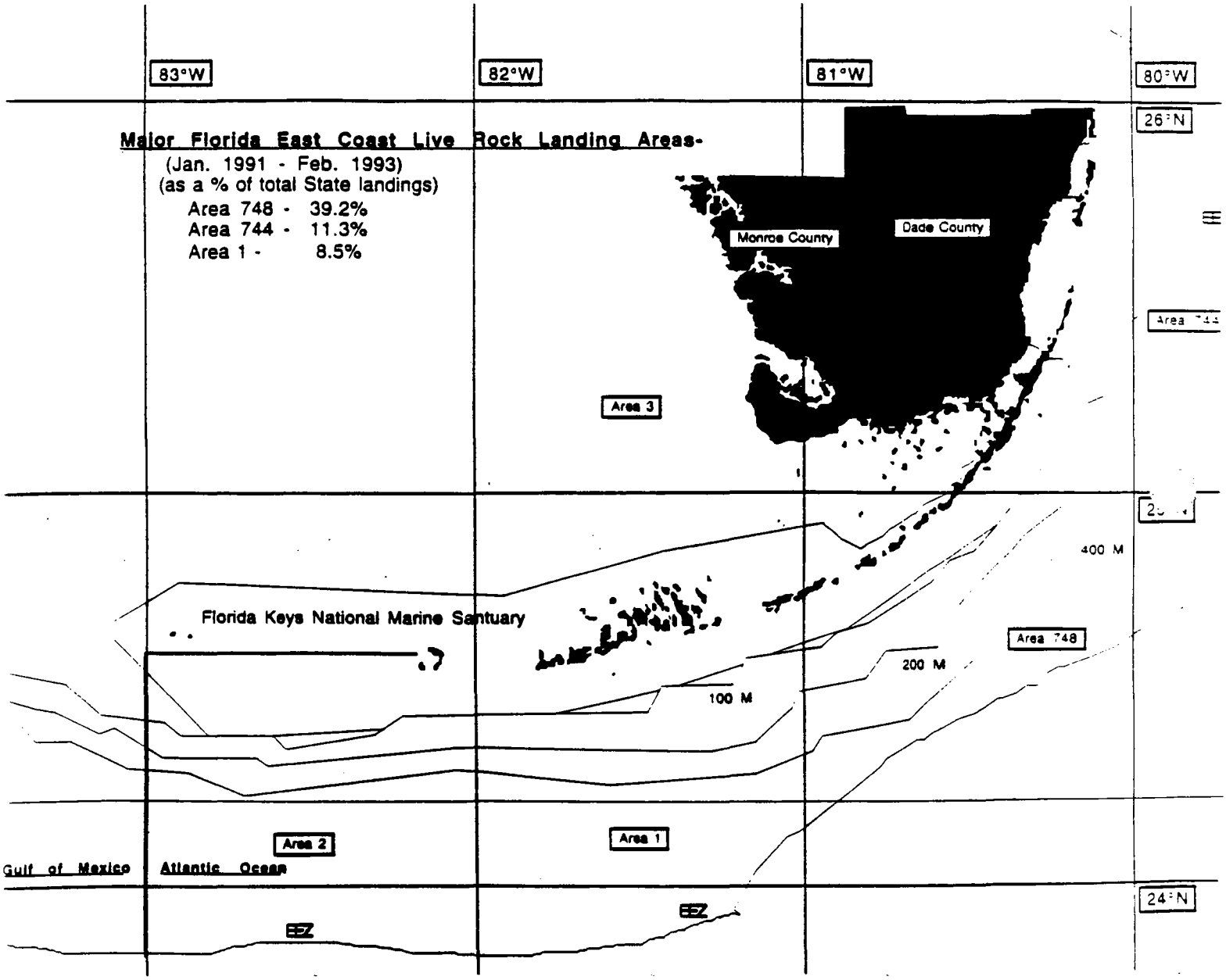
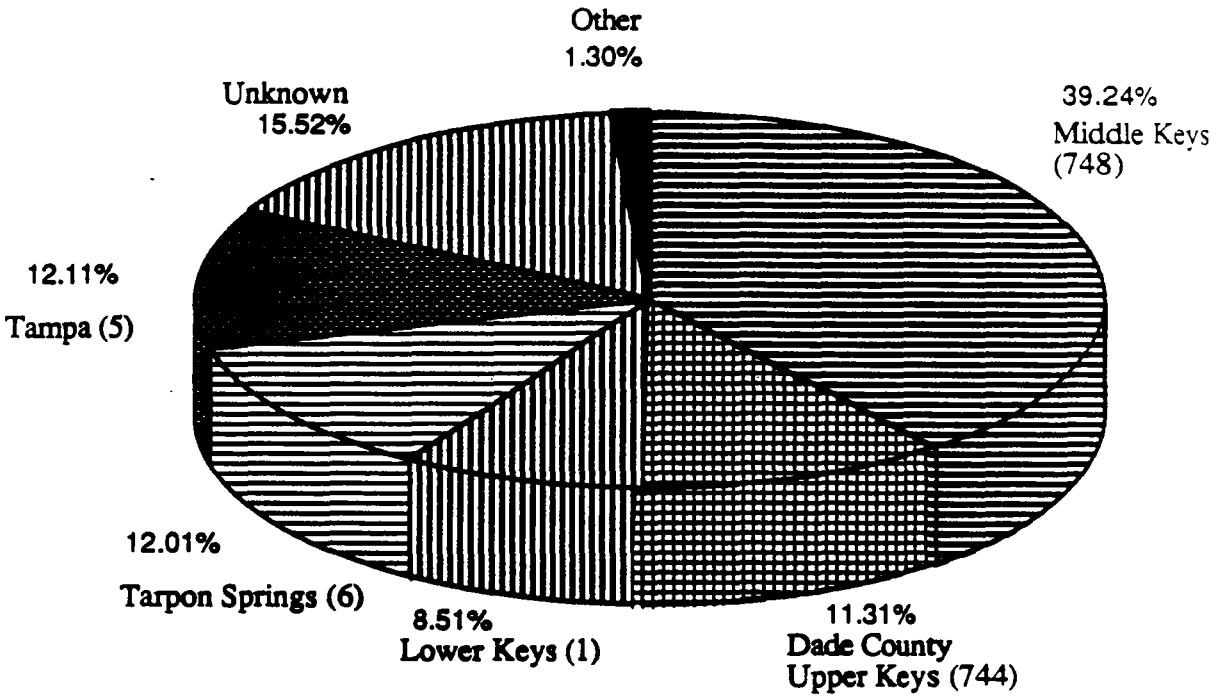

83°W
82°W
81°W
80°W
26°N
24°N
Major Florida East Coast Live Rock Landing Areas-
(Jan. 1991 - Feb. 1993)
(as a % of total State landings)
Area 748 - 39.2%
Area 744 - 11.3%
Area 1 - 8.5%
Monroe County
Dade County
Area 3
Florida Keys National Marine Santuary
400 M
200 M
100 M
Area 748
Area 2
Area 1
Gulf of Mexico
Atlantic Ocean
EEZ
EEZ

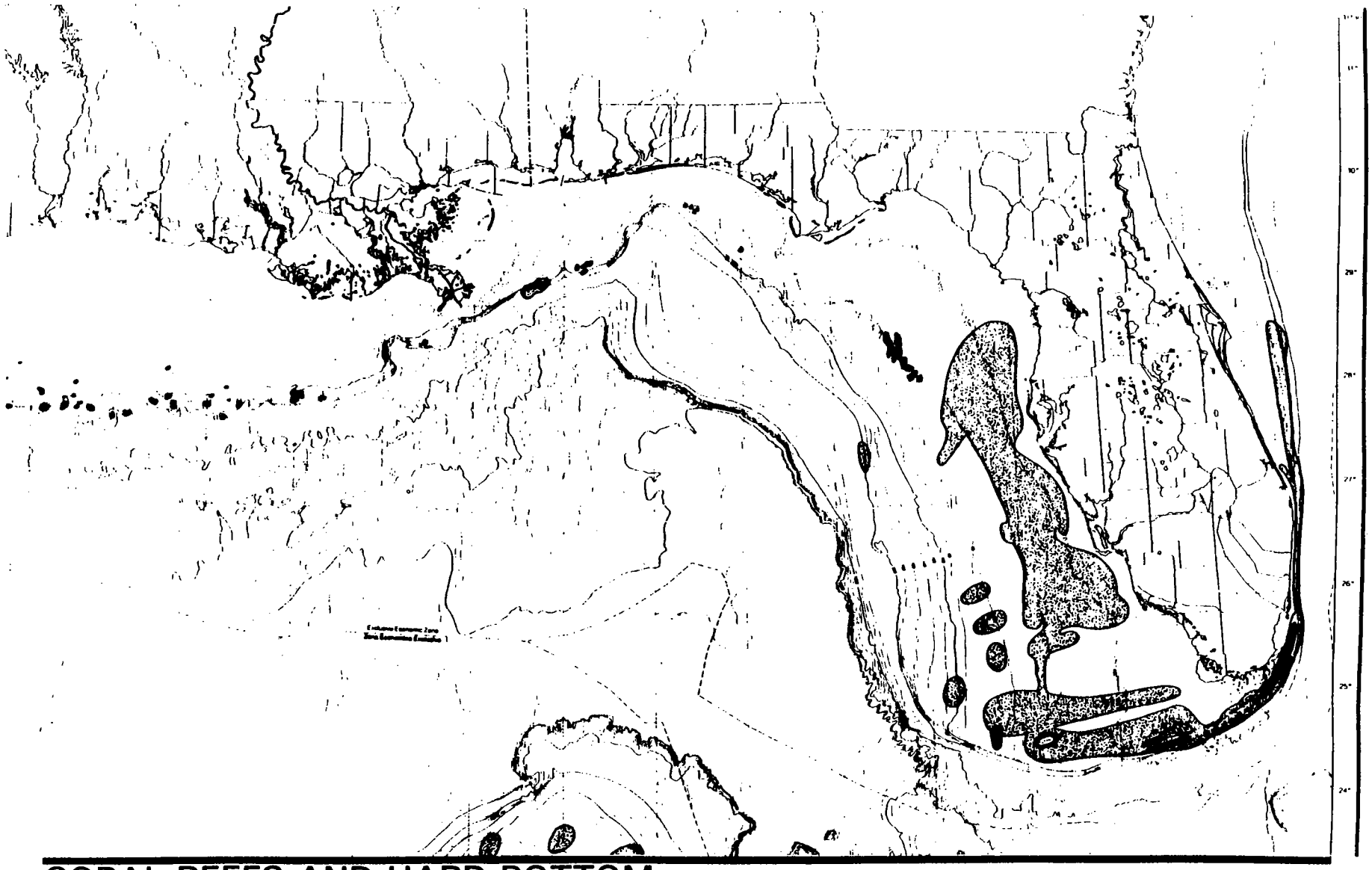
Figure 5

Live Rock Landings, 1991 - Feb., 1993
Collection Areas



Landings by Area of Live Rock from the EEZ off Florida, (FDEP).

Figure 6



CORAL REEFS AND HARD BOTTOM

(from: Gulf of Mexico Coastal and Ocean Zones Strategic Assessment: Data Atlas, NOAA/NOS 1985)

Known Coral Reefs

Scattered Coral Heads, Banks, Hard Bottom

APPENDIX A

Habitat Information Needs

The following research needs relative to coral habitat are provided so that state, federal, and private research efforts can focus on those areas that would allow the Councils to develop measure to better manage coral and their habitat:

1. Identify optimum environmental and habitat conditions that limit coral production;

2. Determine the relationship between coral reefs and estuarine habitat conditions;

3. Quantify the relationships between coral growth and production and habitat;

4. Identify additional areas of particular concern for coral;

5. Determine methods for restoring reef habitat and/or improving existing environmental conditions that adversely affect reefs;

6. Identify mitigative methods for preserving and/or establishing reef;

7. Determine the impacts of trap fishing and trawling on coral and reef habitats.

Habitat Protection Programs

State and federal agencies and laws and policies that affect coral habitat are found in Section 7.0 of the Coral EIS and FMP (1982). 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, sharks, snapper and grouper, and swordfish are in force in the Gulf of Mexico and South Atlantic.

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 Corps contracts and regulates coastal engineering projects, particularly harbor dredging and beach renourishment projects. The Corps 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, Minerals 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 Council's Habitat Protection Committees. Recommendations resulting from these analyses are provided to the permitting agencies (the Corps for physical alterations in inshore waters and territorial seas, the Minerals 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 Corps 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 the Interior, in a nationwide general permit.

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 Council may do likewise under the Magnuson Act and National Environmental Protection Act. The Councils also protect reef fish habitat under the Corals and coral Reefs Fishery Management Plan.

Habitat Recommendation

The coral resources contribute to the food supply, economy, health of the nation, and provides habitat for recreational and commercial fishing opportunities and aesthetic enjoyment. The continued use of these resources can only be assured by the wise management of all aspects of habitat. Increased productivity 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 Councils 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 Councils have formed Habitat Protection Committees and Advisory Panels. The purpose of the committees is to bring to the Council's attention activities that may affect the habitat of the fisheries under their management. The Councils pursuant to the Magnuson Act, will use their 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 habitat. The goal is to ensure that habitat losses are kept to the minimum and that efforts for appropriate mitigation strategies and applicable research are supported.

APPENDIX B

COMMENTS FROM AGENCIES AND RESPONSE

1. Comment: The FEIS should address if the proposed mariculture might generate conflicts with Florida laws protecting sea fans and corals. (EPA)

   Response: Discussion in Section E.2.b has been broadened to include this issue.

2. Comment: We request some discussion on how regulators will distinguish between live rock cultured on seeded limestone and native wild live rock that is to be protected under the proposed management plan. (EPA)

   Response: The protocol for aquaculture as established with the Corps of Engineers is described in Section D. Operation under an aquaculture permit in the Gulf area is discussed in Section E.2.b. Operation in the South Atlantic area is to be prescribed in Amendment 3.

3. Comment: Relaying of wild live rock on aquaculture leases for harvest at a later date by unscrupulous operators could occur. (EPA)

   Response: Although the aquaculture protocol requires the use of seed rock to be geographically or otherwise distinguishable from the naturally occurring substrate, once coated with encrusting marine animals and plants source identification may prove difficult. After phase-out, the only legal collection of live rock will be from aquaculture sites under permit with prior notification of enforcement authorities. Collection outside aquaculture sites for relaying would be a flagrant violation.

4. Comment: If the Councils intend a personal use harvest, Amendment 2 must contain additional justification for continued harvest despite the loss of fishery habitat and quantify the amount to be taken. Also, address the likelihood of inadvertent possession of prohibited species as bycatch by inexperienced collectors and conflict with state of Florida regulations. (NMFS)

   Response: Personal use harvest has been rejected.

5. Comment: Clarify who qualifies for a harvest permit during the phase-out period under the February 3, 1994 control date. (NMFS)

   Response: Persons who commercially landed and where required, reported live rock landings prior to the control date, would qualify. Florida, where almost all live rock was landed, requires reporting by persons authorized by state permit and endorsement to land live rock.

6. Comment: Update live rock landings and incomplete estimates for 1993. (NMFS)

   Response: The final document has been revised accordingly.

7. Comment: Revise the Abstract and Summary to identify chosen alternatives. (NMFS)

   Response: The final document includes these revisions.

8. Comment: Include some form of identification requirement to set cultured material apart from wild live rock. (USCG)

   Response: See response 2.

9. Comment: Prohibitions on hand operated chipping tools will be most difficult to enforce from the surface. (USCG)

   Response: The Council has revised its intent to allow use of chipping hammers and chisels to take live rock only off the portion of Florida's west coast where they are commonly used.

10. Comment: The Council is to be commended for adopting trip limits based on common containers rather than by weight, which is difficult to determine at sea. (USCG)

    Response: How about that!

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

June 29, 1994

4FAB/EPS/JBH

Ms. Donna Wieting, Acting Director
Ecology and Conservation Office
National Marine Fisheries Service
Room 6222, CS/EC
U.S. Department of Commerce
Washington, DC 20230

SUBJ: Draft Amendment 2 to the Fishery Management Plan for Coral Reefs of the Gulf of Mexico and South Atlantic, including a Draft Environmental Impact Statement (DEIS)

Dear Ms. Wieting:

The U. S. Environmental Protection Agency (EPA) has reviewed the referenced DEIS in accordance with EPA's responsibilities under Section 309 of the Clean Air Act and Section 102(2)(C) of NEPA. The referenced DEIS describes impacts of a management plan for the harvesting of "live rock" in the South Atlantic and Gulf of Mexico.

Live rock is a calcarious material containing an assemblage of living marine organisms - such as sponges, tube worms, anemones, etc. - attached to a hard substrate such as dead coral or rock. It is harvested by hand from the substrate by divers and sold for use in marine aquaria. The removal of this hard bottom habitat for marine species - including protected corals - is an increasing cause for concern, because the rock and rubble substrate is non-renewable, and encrusting organisms require a hard substrate on which to attach themselves.

Because most of the live rock harvesting was off Florida, the State prohibited harvest in its waters in 1989. However, legal live rock harvesting continues in the Exclusive Economic Zone (EEZ) off Florida; live rock landings in 1992 amounted to 800,000 pounds, much of which was taken from waters adjacent to the Florida Reef Tract, Florida's east coast reefs, and the west central coast. Live rock harvesting is now occurring in Alabama, and possibly North and South Carolina. Landing data for these states are unavailable.

The cornerstone of the NOAA Management Plan calls for the gradual phase-out of wild live rock harvesting and a complete ban to be achieved by 1996. The Management Plan instead promotes

live rock mariculture using seeded or planted rocks of terrestrial origin that are deposited in designated aquatic habitats. Within six months to several years the seeded rocks are said to become colonized with marine organisms, and thus saleable to the aquarium trade. Mariculture using seeded rock appears to be an attractive alternative to an outright prohibition of live rock sales. EPA generally supports the suite of management proposals proposed by NOAA. The following comments are provided.

There may be potential conflict between mariculture operations situated in State jurisdictional waters and Florida regulations prohibiting the taking of corals and sea fans. The free-swimming sexual reproductive stage of most corals is highly motile, and recruitment on the cultured live rock within the culture zones by protected coral species cannot be avoided. As the protected species will accumulate on the cultured product, and harvest of these protected species is prohibited by state regulations, there needs to be some enabling legislation to accommodate the mariculture trade. This situation is not unlike the commercial fishery "bycatch", where unwanted or protected fish species are captured in the same net as desired or legal fish species. There is a potential for corals and sea fans to become unintended "bycatch" attached to rocks that are exposed to the marine environment for an extended period of time. The PEIS should address if the proposed mariculture might generate conflicts with Florida laws protecting sea fans and corals.

Another concern is how regulators will be able to distinguish between native live rock - which would be protected - and the cultured product. The only native limestone available in South Florida is marine-derived limestone, which is composed largely of calcium carbonate. One of the benefits in using carbonate rock or shell in marine aquaria is the salubrious effect carbonates have as chemical buffers maintaining a pH regime favorable to marine organisms. Non-carbonate rocks - such as granite or gneiss - would not provide the pH buffering capacity needed for marine aquaria.

We would expect the seed rock, or cultch, chosen by mariculture operators to be largely Pleistocene marine-derived limestone, which in its original depositional configuration contains numerous coral inclusions imbedded in a matrix of oolitic sands. The fossilized coral species found in the Florida limestones are very similar, or are in some instances the same species that dwell in Florida marine waters today. Also, carbonate rocks containing fossil coral inclusions would have a greater aesthetic appeal to the trade. It may be difficult - if not impossible - to distinguish between local Florida limestones and the native wild live rock. We request that NOAA provide some discussion on how regulators will distinguish between live rock cultured on seeded limestone substrates and the native wild live rock that would be protected under the proposed Management Plan.

Another concern is the temptation for unscrupulous operators to remove wild live rock from protected areas for deposition in designated culture areas and subsequently harvested as "cultured" live rock. (This activity is called "relaying" in the oyster fishery, but serves a different function: relaying is a legal means to cleanse unsalable oysters taken from polluted waters. Several weeks residence in pristine waters reduces the oysters coliform bacteria to levels acceptable for consumption and sale.) We would like to see additional information on how the practice of live rock relaying into culture areas might be controlled.

Based upon these concerns we rate this proposed action EC-2; i.e., EPA has environmental concerns and requests additional information on the proposed alternatives. We appreciate the opportunity to review this interesting document, and commend NOAA for considering innovative approaches to the very vexing problem of accommodating an industry's need for product while protecting a non-renewable resource essential to the marine environment. If more information is needed, please call me or John Hamilton at (404) 347-3776.

Sincerely,

Heinz J. Mueller, Chief
Environmental Policy Section

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
9721 Executive Center Drive
St. Petersburg, FL 33702

F/SE011:GC

JUL 7 1994

Mr. Wayne Swingle
Executive Director
Gulf of Mexico Fishery
Management Council
Lincoln Center, Suite 331
5401 West Kennedy Boulevard
Tampa, Florida 33609-2468

Dear Wayne:

These are our informal comments on Amendment 2 to the Fishery Management Plan for Coral and Coral Reefs of the Gulf of Mexico and South Atlantic (dated 5-2-94), including a Draft Environmental Impact Statement, Regulatory Impact Review, and Initial Regulatory Flexibility Analysis. They supplement our January 13, 1994, comments on an earlier draft of the amendment.

Our comments are separated into critical and substantive categories. Critical comments are recommendations for consideration that could affect the approvability of the specified action. Substantive comments are recommended changes to better explain and improve the rationale for the action.

CRITICAL COMMENTS

Personal use harvest

The National Marine Fisheries Service and both Councils have agreed that the harvest of wild live rock represents the take of an essentially nonrenewable resource and a net loss of fishery habitat. However, we have agreed to a delay in implementation of the commercial harvest prohibition to mitigate adverse economic impacts on the industry and allow a transition to live rock aquaculture. This justification does not exist for the recreational sector. Consequently, if the Council intends to approve a personal use harvest, Amendment 2 must contain additional justification for a continued harvest of live rock for personal use despite the consequent loss of fishery habitat. Additionally, the amendment should contain estimates of the amount of live rock expected to be taken under each of these alternatives and the likely locations of these collections.

During the course of its rulemaking, the state of Florida concluded that live rock is likely to contain live prohibited corals. Commercial harvesters testified that they carefully choose pieces to avoid taking prohibited corals. Occasional, recreational divers are less likely to be able to make these

distinctions. Amendment 2 needs to address the likelihood of increased takes of prohibited corals as a result of an allowable recreational take of live rock.

The state of Florida banned both commercial and recreational harvest of live rock from state waters in 1989. A personal use harvest from the EEZ could seriously complicate state enforcement efforts. Amendment 2 needs to address the effects of these alternatives on state and Federal enforcement, both during and after the phase out period.

SUBSTANTIVE COMMENTS

Harvest permits/control date

Amendment 2 contains a retroactive control date of February 3, 1994 that is to be used to limit the availability of the commercial harvest permit during the phase out period. Testimony at public hearings and written comments to the Council indicate that there are a number of individuals who claim to have made substantial investment in the live rock harvesting business prior to the control date, but who did not, for whatever reason, report landings before the control date. Amendment 2 needs to specifically address these claims and clarify the meaning of "participant" in this fishery. This can ensure that there are no misunderstandings or delays in implementing this alternative should it be submitted by the Council and approved by the Secretary.

Update landings and prices

Amendment 2 contains incomplete estimates for 1993 live rock landings and exvessel prices. This information should be updated with the latest figures.

Revise summary

The Abstract and Summary need to be revised to identify the chosen alternatives and clearly indicate the Councils intentions regarding live rock harvest.

Sincerely,

Andrew J. Kemmerer
Regional Director

cc: F/CM, GCSE, SAFMC

U.S. Department of Transportation
United States Coast Guard

Commander
Eighth Coast Guard District
Hale Boggs Federal Building

501 Magazine St
New Orleans, LA
Staff Symbol (o1e)
Phone (504) 589-6237

RECEIVED

JUL 11 1994

GULF FISHERIES COUNCIL

16214

JUL 6 1994

Wayne E. Swingle
Executive Director
Gulf of Mexico Fisheries Management Council
Lincoln Center, Suite 331
5401 W. Kennedy Blvd.
Tampa, FL 33609-2486

Dear Mr. Swingle:

I would like to thank you for the opportunity to review and comment on the Draft Amendment 2 to the Coral FMP. The District Commander's staff has reviewed the document from both vessel safety and enforcement perspectives.

From a vessel safety standpoint, there were no issues of concern identified. The comments within Section 9 are accurate.

Enforcement issues identified include:

(1) Identification of live rock by enforcement personnel, both wild and cultured forms - Our position is that any significant quantity of hard substrate, consistent in appearance with both the approved definition of live rock and local bottom conditions, found aboard a vessel in such a condition that it appears to have been deliberately gathered and kept for transport ashore may be presumed to be live rock. With the probable shift to aquaculture of live rock in the foreseeable future, we encourage the Council to include some form of identification requirement in the regulations to set cultured material apart from "wild" live rock.

(2) With regard to personal use/recreational harvest, we have no preference. The trip limits proposed for a recreational harvest are not objectionable.

(3) Prohibitions on hand operated chipping tools will be most difficult to enforce from the surface since their use would largely go unobserved. Power tools operated off of surface power supplies such as compressors or hydraulic pumps are more easily detected and thus restrictions on them more easily enforced.

(4) The Council is to be commended for adopting trip limits based on the common containers used by commercial harvesters rather than weight. We have gone on record many times decrying the difficulty of determining weights at sea accurately enough for enforcement purposes.

No other enforcement concerns were noted among the alternatives presented.

If you have any questions about our review of this amendment, please feel free to contact my Fisheries Officer, LCDR Mark Johnson at (504) 589-6237.

Sincerely,

R. F. POWERS
Chief, Operations Division
Eighth Coast Guard District
By direction of the District Commander

Copy: Commandant(G-OLE-2)
Commander, Coast Guard Atlantic Area(Aoo-2)

APPENDIX C

RESPONSE TO PUBLIC COMMENTS

1. Comment: Chipped live rock is the product of choice in the live rock market and is the backbone of the west coast fishery. (Letter 1)

   Response: The Gulf Council concurs and proposes to allow chipping to continue during phase-out in Collier through Pasco Counties where it now occurs. This would allow an orderly transfer to aquaculture by 1997 when all wild harvest is to terminate.

2. Comment: There are not the large rubble rock zones on the Florida west coast as there are in the Keys. (Letter 1)

   Response: See Response 1; harvesters north of Pasco County testified that they do not chip live rock.

3. Comment: We believe the value of live rock harvested from the West Coast of Florida is underestimated in the EIS. (Letter 1)

   Response: The amount and value of harvest were the figures that harvesters are required by law to have reported to the Florida DEP. The numbers updated in Table 1 were provided by that Department. There may have been additional illegal or unreported landings, but they are not quantified.

4. Comment: Chipped rock accounted for 85 percent of our company's sales in 1993. Our aquaculture material has not yet attained sufficient value for harvest. We need to be able to continue to harvest by chipping the more valuable rock during the phase-out period. (Letter 1)

   Response: See Response 1.

5. Comment: I have been a professional live rock harvester for a year but worked for a Florida permit holder who sold and reported our landings. I made substantial investment of my own business without knowledge of the approaching control date. I qualified for the Florida permit shortly after the control date. I would like to be qualified for a harvest permit. (Letter 2)

   Response: The control date of February 3, 1994 is intended to limit harvesters to those who landed and reported live rock landings prior to that time. This is intended to prevent a derby with new entrants during the phase-out. Those harvesters who do not qualify for a permit during the phase-out may continue to collect as an employee aboard a permitted vessel.

6. Comment: Both Councils should provide for limited non-commercial harvest of a 5-gallon bucket of live rock per day under a personal use permit. This amount more accurately reflects the amount for a home marine display. (Letter 3)

   Response: The Gulf Council carefully considered this option but rejected it for several reasons. Collection off Florida's west coast would be available only in the EEZ which begins nine nautical miles offshore. Recreational harvesters may not be able to identify polyps of prohibited species and are unlikely to know which areas contain aquaculture sites. Enforcement would be very difficult.

7. Comment: In designing an allocation scheme a Council should consider (among other issues) enhancement of opportunities for recreational fishing. (Letter 3)

   Response: See Response 6.

8. Comment: Concern is expressed that the Gulf Council will adopt a rejected alternative for a total closure to live rock harvest before a viable federal aquaculture system is in place. (Letter 3)

   Response: The Corps of Engineers has issued permits for aquaculture in the Gulf EEZ and NMFS is prepared to issue aquaculture harvest permits in the EEZ on implementation of the FMP.

9. Comment: Alarm is expressed that harvest is to be terminated as of January 1, 1996 in the South Atlantic because of the lack of a federal aquaculture system as well as a myriad of problems surfacing in the jurisdiction of the Florida Keys National Marine Sanctuary. (Letter 3)

   Response: The Florida Keys National Marine Sanctuary is currently reviewing applications for aquaculture sites within the Sanctuary . The South Atlantic Council proposes to address the issue in its Amendment 3.

10. Comment: Why is the proposed quota for live rock harvest in the Gulf of Mexico based on the 1992 harvest and not the 1993 harvest. (Letter 4)

    Response: The Florida Marine Fisheries Commission had predicted a growing market and increasing harvest over the next four years. The Councils initially elected to establish the quota at 800,000 pounds, the record landings in Florida of 1992, the 1993 year being incomplete at that time. Subsequently, the total Florida landings for 1992 were separated by area, and the West Coast landings as reported by harvesters to the FDEP were 251,810 pounds. Finally, the phase out annual quota for the Gulf was eliminated.

11. Comment: Can the Florida trip ticket system monitor a quota? (Letter 4)

    Response: On species under a catch quota, trip tickets must be submitted weekly by dealers. When a substantial portion of the quota is filled, FDEP agents contact dealers by phone on a frequent basis to estimate when the quota is reached. The quota is to be applied only in the South Atlantic area south of Broward County.

12. Comment: Why is there one quota for all Gulf harvesters and not an individual quota for each? (Letter 4)

    Response: Quotas are no longer proposed in the Gulf.

13. Comment: The ex-vessel value of just three harvesters was $145,100; therefore, the value used in the document is inaccurate. (Letter 4)

    Response: See Response to comment 3.

14. Comment: Landing value of live rock on page 12 is reported as being $603,000 but on page 44 is reported at $628,000. (Letter 4)

    Response: The value of live rock landings reported to the FDEP in 1992 was $603,000. The $628,000 figure used in the RIR was a preliminary estimate of 1992 landings and has been revised

15. Comment: How were the ex-vessel values of live rock compiled? They are inconsistent with dealer records. (Letter 4)

    Response: Ex-vessel value of live rock was calculated by Florida's DEP using type of rock reported on trip tickets and values reported voluntarily for various types of rock.

16. Comment: What is the basis for the assumption that a 30 percent increase in harvest would be worth $3.5 million in 1995 (Section 2.0A)? (Letter 4)

    Response: In 1992 the Florida Marine Fisheries Commission estimated the 1995 value of live rock to be $3.5 million assuming no state or federal restrictions and a 30 percent annual increase in landings.

17. Comment: Government cost of regulation is estimated to be $70,000 and cost of a Florida agriculture lease is estimated at only $1,050 in the RIR. (Letter 4)

    Response: More recent information has provided new estimates which have been included.

18. Comment: We currently land live rock in Citrus County. A closure north of Pasco will put us out of business. (Letter 5)

    Response: Harvest of loose rock is to be allowed by permitted vessels north of Pasco County to Alabama during the phase out through 1996. This reflects a change in the preferred alternative.

19. Comment: The Center supports the amendment as drafted because it provides aquaculture as an equitable and rational replacement for the unacceptable harvest of wild live rock. (Letter 6)

    Response: The preferred alternatives have been revised somewhat from the public hearing draft in response to comments received; however, a phase out of wild live rock harvest in favor of aquaculture is still the objective.

20. Comment: I am a marine aquarium hobbyist concerned that there is no mention of the hobbyist or recreational users. (Letter 7)

    Response: See Response 6.

21. Comment: Remove the redefinition of allowable octocorals as they are difficult to identify and may encrust material other than live rock. (Letter 8)

    Response: The discussion of the redefinition has been revised to describe the intent more clearly.

22. Comment: One inch of rock is insufficient to anchor a large octocoral. (Letter 8)

    Response: The Gulf Council concurs and proposes up to three inches of rock around the holdfast for octocorals in the Gulf.

23. Comment: The prohibition of chipping (off southwest Florida) will be unenforceable. (Letter 8)

    Response: See Responses 1 and 2.

24. Comment: The phase-out annual quota of 252,000 pounds in the Gulf will cause early seasonal closures. Harvesters will not be able to fund a conversion to aquaculture. (Letter 8)

    Response: The Gulf Council concurs and has dropped the proposal for an annual quota in the Gulf during phase-out.

25. Comment: E.1.e which allows limited personal harvest during phase-out is fair, but enforcement must check for permits. (Letter 8)

    Response: See Response 6.

26. Comment: The act of a permitted vessel towing another circumvents the intent of the daily limit. (Letter 8)

    Response: Each vessel is required to have a harvest permit during the phase-out period whether or not it is under power.

27. Comment: If retail sales of the aquarium industry, retail stores, and product suppliers were considered, the annual effect on the industry would approach $100 million. (Letter 8)

    Response: Reported landings in Florida in 1993 with an ex-vessel value of $1.06 million were used. A multiplier in the range of five to seven times the ex-vessel value to estimate direct, indirect, and induced effects would still be far below the $100 million definition of significant regulatory impact pursuant to E.O. 12866.

28. Comment: With the 25 bucket vessel trip limit, no annual quota should be necessary. (Letter 9)

    Response: The Gulf Council concurs and has eliminated the annual quota for Florida's west coast. However, in the South Atlantic area no trip limits are proposed.

29. Comment: The allowance of one inch of substrate should be increased to three inches and should also apply to sponges. (Letter 10)

    Response: See Response 22.

30. Comment: Prohibition of chipping on Florida's west coast would create problems: (1) it is unenforceable, (2) requires an unacceptable change in product, (3) there are not large rubble zones available, (4) I will go out of business, and (5) elimination of power tools and implementation of trip limits will end destructive fishing methods. (Letter 10)

    Response: The Council concurs. See Response 1.

31. Comment: I viewed and videotaped a live rock harvest operation off Destin, Florida. I do not believe that the rock collecting I saw presents any significant environmental consequence since such a small percentage of the overall amount of rock is removed. (Letter 11)

    Response: The Council concurs and proposes to allow harvest of loose live rock north of Pasco County to the Alabama border through 1996. Trip limits apply and harvesters must have a permit.

SEAVIEW

LETTER 1

WHOLESALE MARINE LIFE, INC.
13015 Sea Critter Ln. • Dover, FL 33527 • (813) 986-4993 • FAX 986-5669

Gulf of Mexico Fishery Management Council
Lincoln Center Suite 331
5401 West Kennedy Boulevard
Tampa, Florida 33609-2468

June 29, 1994

To Whom It May Concern;

Graham Carleton has been a Marine Life and Live Rock collector for the past eight years. During this time he has built a business, Seaview Wholesale Marine Life, Inc. With a growing wholesale business, operating costs have increased from year to year. We have moved and expanded our facility, added employees, and the taxes that come with having them and the medical insurance Seaview pays in full for them. But, we are by no means a large business.

Seaview Wholesale was the first Florida company to get the permit for aquaculture in Federal waters and we have rock out there. We do have an eye toward the future. Some of the rock has been out there for 1 1/2 years. While it is showing remarkable growth, it is still no better than our lowest grade rubble or algae rock, which we sell for $1.50 per pound. It is not a viable replacement, at this time, for the chipped rock which has been the staple of our business for the past eight years. The Florida West Coast area, Pinellas and Pasco counties, do not have the extensive "rubble rock" areas that are in the Florida Keys.

Chipped rocks accounted for at least 85% of Seaview's live rock sales for 1993. In 1993, Graham Carleton and Roy Herndon both collected live rock for Seaview. As, can be verified by trip ticket reporting, during that time nearly 30,000 pounds of chipped rock and 8200 pounds of "rubble", (plant and coralline algae base rock), were collected from Federal waters off Pinellas County by them. The ex-vessal value of the combined types of rock was approximately $100,000., with close to $85,000., of that amount, being the ex-vessal value for the chipped rock alone.

Taking chipped rock away at a time when we are undertaking the additional expenses of buying rock for aquaculture and trying to maintain normal business operations, would be a severe economic hardship for us. Our gross annual income would be severely reduced, while business operating expenses continue to rise.

In discussion with other local collectors, the conclusion was reached that the Economic Impact Statement is not accurate for the Florida West Coast area. We believe the income derived from live rock, and specifically "chipped" live rock is far greater than the estimated figures in the Statement. Therefore the impact of the chipping ban, on the small businesses in our area, will be much greater. A farther reaching economic impact will be felt nationwide. The ban will result in reduced manufacture and sales of aquariums and aquarium related items, on the wholesale level. Also impacted will be the retail shops specializing in the sale of Mini-Reef systems, equipment, and the Marine Life that goes in them.

We believe the Economic Impact Statement should be reassessed, and the chipping of live rock should be allowed to continue on the Florida West Coast until the conclusion of the faze out period, when aquaculture will be fully implemented.

Thank you for your time and attention.

Sincerely,

Margarete C. Carleton

Margarete C. Carleton,V.P.
Seaview Wholesale Marine Life, Inc.

LETTER 2

June 23, 1994

GULF OF MEXICO FISHERY MANAGEMENT COUNCIL
Lincoln Center, Suite 331
5401 West Kennedy Boulevard
Tampa, FL 33609

Dear Council Members:

I am writing this letter to inform the Gulf Council of my predicament. Although I have already stated my case at the last meeting, Mr. Terrance Leary suggested that I write a letter to the Council to more clearly state my issues.

Approximately one year ago, I made a decision to earn my living by collecting tropical fish and live rock. I realized immediately that there were not enough tropical fish in this area to make a decent living and therefore chose to collect live rock.

I purchased a salt water system for approximately $2,000 and spent over $1,500 on SCUBA equipment. I followed the law and purchased both a wholesale and a retail license. I also started my own company, Key West Marine, Inc.

The only item I was missing was the Saltwater Products License with ML and RS endorsements. Since it was required that I earn $5,000.00 in this field I began working for a "rocker." I should have earned the $5,000.00 quickly as we worked 6-7 days per week at 12-14 hours per day. Unfortunately, by this time it was winter and unfavorable weather conditions made it almost impossible to collect rock. Instead of qualifying for the $5,000.00 last winter, I did not qualify until early this year. Since there was not a control date set or notice of one, my employer did not rush to submit my crew share statement. As a result, I missed the February 3rd control date.

In short, the only thing I was missing to begin transactions through my own company was the $5,000.00. Had there been timely notice that a control date would definitely be established (1-2 months), I would have been able to find other alternatives, such as shrimping, longlining, etc., in order to qualify in time. There was talk of a control date at the meetings, but never any definite official notice.

I followed all of the rules and regulations, i.e. purchasing the necessary licenses, I pay taxes on the monies earned, I have all of my receipts, and I earned my $5,000.00 qualifier.

I would like to request an exception to the control date based on the fact that I worked only in the rock harvest industry and can prove, without a doubt, that my sole intention was to start my own company and that I have made considerable financial investments in this effort.

Please feel free to contact me at (813)347-4725 or by mail 1013 59th Street South, Gulfport, FL, 33707.

Sincerely,

Eric A. Coffey

LETTER 3

American Aquarist Society

A Non-Profit Corporation Dedicated to the Interests of the Aquarium Hobbyist

Box 100, 3901 Hatch Blvd.
Sheffield, AL 35660

Telephone...205-386-7687
Facsimile...205-386-7615

June 28, 1994

Mr. Terrance Leary
Gulf of Mexico Fishery Management Council
Lincoln Center, Suite 331
5401 West Kennedy Boulevard
Tampa, Florida 33609

Dear Terry:

Subject: Amendment 2 to the Coral and Coral Reef FMP

The American Aquarist Society (AAS) appreciates the opportunity to comment on the latest (April 1994) draft of "Amendment 2 to the Fishery Management Plan for Coral and Coral Reefs of the Gulf of Mexico and South Atlantic." AAS has been monitoring the discussions and progress of Amendment 2. Recently, I was privileged to appear before the South Atlantic Council to present the aquarists' perspectives on Amendment 2. AAS, through its national board of distinguished aquarium hobbyists and focused Steering Committees, is closely in tune with the biological, political, and social realities involving the harvest of wild live rock.

In general, AAS believes that both Councils should provide for and allow a limited harvest of wild live rock for "personal use." This use should be strictly non-commercial in nature and reflect the quantity needs of an average marine aquarium. Of the current alternatives present in the April 1994 draft of Amendment 2, AAS clearly favors approval of Alternative E.1.d as modified by Alternative E.1.g. Stated otherwise, AAS supports:

> A personal use harvest and possession of up to a five gallon bucket container of live rock is allowed per person per day in the EE2. Sale of such material is prohibited. A personal use permit is required to take live rock specified for ones personal use.

AAS believes that a "personal" or "recreational" allowance in this instance would be consistent with the applicable requirements of the National Standards. As set forth in National Standard 5:

> In designing an allocation scheme, a Council should consider other factors relevant to the FMP's objectives. Examples are economic and social consequences of the scheme, food production, consumer interest, dependence on the fishery by present participants and coastal communities, efficiency of various types of gear used in the fishery,

transferability of effort to and impact on other fisheries, opportunity for new participants to enter the fishery, and enhancement of opportunities for recreational fishing.

AAS is aware of the criticism that has surfaced at public hearings of Amendment 2 concerning methods used by some commercial collectors to harvest live rock. After an exhaustive review of the cited literature and transcripts of hearings, AAS is unable to find any specific condemnation of the methods used for "personal use" taking that are tied to the limited harvest quantities envisioned by Amendment 2. For these and other reasons, AAS favors the limited five gallon "personal use" allowance.

On a related matter, AAS also wishes to express its support for a five (5) gallon limit. Having experienced wild live rock collection in the EE2, AAS feels compelled to request the higher allowance. From a practical standpoint, a two (2) gallon harvest amount is insufficient to aid in the set-up of the most nominal of marine aquariums. A five (5) gallon allowance more accurately reflects a harvest amount which would substantively aid in the maintenance of a home marine display.

Though the establishment of a "personal use" allowance is the primary interest of AAS, an additional item bears mention.

AAS is concerned that the Gulf Council will adopt a "drop dead" date as envisioned by some of the noted "Rejected Alternatives." These alternatives, appropriately noted as "rejected," would establish a specific date for the cessation of wild live rock harvest notwithstanding whether a viable federal aquaculturing system is in place. AAS, thus, lends its support that the Council adopt Alternative C.2 for its jurisdictional area.

AAS is notably alarmed that the South Atlantic Council is moving toward an absolute "drop dead" date of January 1, 1996. AAS considers this action inappropriate under the circumstances and status of a federal aquaculturing system as well as for the myriad of problems that are now surfacing in areas subject to jurisdiction by the Sanctuary. Such action certainly appears ill-advised and an abuse of discretionary rule-making authority.

In conclusion, AAS commends the time and effort the Gulf Council has spent addressing the issues involved in Amendment 2. At times it has readily appeared that the emotions and public harranging inflicted by some groups and individuals under the ostensible umbrella of "environmentalists" would overshadow legitimate rule-making efforts. The alternative for "personal use" allowance should be deemed appropriate as well as justified by interests of "recreational" users.

Again, we thank the Gulf Council for this opportunity to comment, and stand ready to assist the Council in its future endeavors affecting aquarium hobbyists. AAS expects to have a representative present in Islamorada to speak in favor of this communication and answer any questions which may arise.

Thank you for your time and consideration,

Cordially,

John R. Benn
General Counsel

JRB/jb

LETTER 4

6-29-94 Rcvd. JUL 01 1994

Gulf of Mexico Fishery Management Council
5401 W. Kennedy Blvd.
Tampa, Fl. 33609-2468

RE. Environmental Impact Statement on Amendment 2

Dear Council Members,

In going through the draft on Amendment 2, I have found that old, incorrect, incomplete and estimated information has been repeatedly used. Not only are figures based on 1992 information, the economic figures on exvessel amounts and on the cost of obtaining a state lease are incorrect. Below is a list of questions I would like answers to. I know I have asked some of these questions before and have not received answers.
Why is the live rock harvest amount being used from 1992 which is the figure of 800,000 pounds?
Why is the quota amount of 252,000 pounds being used based on figures from 1992?
Why can't current amounts be used from 1993?
Is the trip ticket department so far behind that current figures can't be used?
If the trip ticket department is behind, how can figures be arrived at to closed an entire industry when the quota is reach?
Will the figures be incomplete or estimated?
Why are the remaining estimated 16 collectors being held accountable for the total collected amount on the west coast and closed when the quota is reached?
Why isn't the collected amount for the 16 collectors being used to calculate the quota amount?
If one of Gulf Council Members reached his or her credit limit would it be right to stop any additional credit to the rest of the council members or to shut down all of their businesses?

I contacted a few of the west coast collectors for total amounts of rock collected and the amount of income earned from the rock harvested. I have found with just a few of us that the exvessel amount is completely inaccurate. Many of us at previous meetings have brought this to the councils attention and the **same inaccurate** figure is still being used. The exvessel amount between just three of us is 145,100+ dollars. To be fair I only calculated the 102 harvesters that FDER records show in 1993 and multiplied that number by a low figure of 30,000 dollars per harvester, this will give an exvessel amount of over three million dollars. Now if you count the 147 individuals as page 45 states and only apply 28,000 dollars to each this would be an exvessel amount of 4,116,000 dollars. If this draft continues as written, over three million **plus** will be lost from circulating revenue.

Even in the draft two different exvessel amounts have been shown. On page 12. FMRI reports $603,000 exvessel value and on page 44 it was "about" $628,000 exvessel amount. No where in the draft does it explain how these figures were arrived at. To be fair, lets say only 80 harvesters show on FDER records and that the exvessel amount was only 25,000 dollars, this still amounts to two million dollars. This reduced calculation **to be fair**, still proves that a "significant regulatory action" does exist.
The draft continues to say that the Gulf Council is allowing four years to continue harvest and the South Atlantic two years. However, the South has started emergency actions as of 6-27-94 and the Gulf Council if they continue on the current wording will allow less than two years, with

reduction in harvest amount to a daily limit and a yearly quota which will create closed periods. The environmental impact statement did not take this into account. Complete assumptions exist on the part of the determination of a "significant regulatory action." All I need is possibility, IF. As long as, this conclusion is premised on the development of an aquaculture program that would effectively substitute wild live rock harvest. HOW CAN THIS BE DONE!!!
NO ONE, REPEAT, NO ONE KNOWS WHAT IS CONSIDERED AN EFFECTIVE SUBSTITUTE!!!!
AT THIS POINT NO ONE HAS A LEASE THAT IS COMPLETE, INCLUDING THE APPROVAL TO REMOVE THIS CLUTCH MATERIAL. Now we have been told by the State of Florida that only 25% can be harvested from the maximum amount allow of 100,000 pounds per acre. As long as stupid restrictions exist on the amount we can harvest of the clutch material that WE have deployed no effective substitute exist! If economic information was collected from all competition, employment, investment, productivity, innovation and the United State and foreign-based enterprises, complete qualification will be met on all points to support a "significant regulatory action" that will cause a "significant economic impact on a substantial number of small entities."

Page 11, Table 1, Florida live rock landings you will see that in 1991 the cost per pound was figured at $1.20, in 1992 it reduced to .95 and in 1993 which is noted to be incomplete is $1.02. HOW were these figures arrived at? Every year in business, cost has increased and so has the price and demand for rock. HOW CAN THESE FIGURES BE CONSIDERED, even for a guideline. THE NUMBERS ARE INACCURATE!!! In 1991 the cost of live worm rock was $3.00 per pound. If 33% of the west coast rock was worm rock the exvessel amount allow calculates out to be $192,735. Rubble collection is said to be 30% of the 1991 rock harvest. Rubble sold at .75 would be worth $43,803. If we were to use the thirty percent increase that FMFC assumes for 95 as current figures, which is more accurate for current cost, over $307,499 would produced an exvessel amount. **Note: 1991** figures used for the estimates in the draft. This does not take in to account algae or plant rock amounts or prices.
Page 8, states that a **assumed** 30% increase(based on what figure?) would be worth about 3.5 million, for the year 95. HOW can assumptions like this be used????? If the 30% increase is true, the 1993 exvessel amounts are not accurately figured, nor is the guessed amount for the 1995 year. A 30% increase did not exist from 1991 to 1992 or from 1992 to 1993, so why has it been **ASSUMED** that a 30% increase will exist in 1995, when in fact no increase will exist in this fishery due to the emergency rules, control date set by NOAA and the draft rules currently being considered. NO LONGER does the threat of increased participants in the live rock harvest fishery exist!!
AGAIN, THE ENVIRONMENTAL IMPACT STATEMENT IS WRONG AND COMPLETELY INACCURATE!!!

I noted how the government cost of regulation is estimated at 70,000 dollars and that to obtain a state lease is only estimated to be at $1,050 dollars. HOW UN-TRUE! No consideration has been given to the cost incurred by persons undertaking aquaculture for all the other required surveys, fees, cost of clutch material, labor, deployment, boat expense and most important the cost of lost time played in the waiting game with state agencies and with mother nature!!
Significant economic impact on small business entities does exist, NO QUESTIONS, Period!!

All harvestors who remain involved in the live rock industry hereby request this draft be invalidated and that a correct environmental impact statement be completed. This regulation can not continue with the above lacking information!!!

Shella Barger

Dear members of the Council

My name is Jesse Cook, I hold a valid SPL/RS/ML along with a Octocoral Permit.

I did not recieve any information on the meetings until June 3rd which was a day late For attending the Tampa meeting, I Live and work out of Homosassa, FL / Citrus County.

I realize that there is a need For Control on Live rock but to put a Closure on Law abiding People is wrong. I use No Power tools and Collected only rubble like Rock off our Rock piles in 40' of water. The Homosassa area is not short of rock in this depth, as a matter of fact it's all Rock bottom there. We do not have Tourists diving off Citrus County because it's To far to run to make it Feasible. We are a small Father? Son business that Collect Fish? rock and are devastated by this Closure. I Could drive 20 mile farther South to the 28° 26', but isn't that putting more Pressure on those Areas. Please Consider us at your next meeting on Live rock, and yes I have obtain information on aqua Culture but Citrus County has a Frown about it. Thank You

Jesse J. Cook

LETTER 6

Center for Marine Conservation

July 5, 1994

Ms. Georgia Cranmore
National Marine Fisheries Service
9450 Koger Blvd.
St. Petersburg, FL 33702

Dear Ms. Cranmore,

The Center for Marine Conservation appreciates the opportunity to comment on Draft Amendment 2 (DSEIS) to the Fishery Management Plan for Coral and Coral Reefs of the Gulf of Mexico and south Atlantic drafted for the purpose of managing the harvest of "live rock." The Center has carefully followed the live rock issue in Florida over the past three years, first in state waters and now in adjacent federal waters. The need to conserve this non-renewable natural resource, while balancing the interest and demand by the public and private interests, has been carefully considered in our review.

First, the Center commends the speedy action taken by the NMFS and the respective Councils in closing the federal waters between the Pasco/Hernando County line to the Alabama/Mississippi state line in the Gulf of Mexico, and in the waters north of Dade County, Florida in the Atlantic to live rock harvest.

The Center supports the Amendment as drafted because it provides aquaculture as an equitable and rational replacement for the unacceptable harvest of wild live rock. If implemented properly, the important reefal community upon which live rock is associated will be protected along with the needs of the aquarium trade and personal hobbyists. The phased-in two year transition period from wild harvest to farmed culture is ambitious, but provides the harvesters a predictable time-frame to make adjustments necessary to reduce economic hardship. The corresponding quotas proposed for the transition period for the Gulf (252,000 pounds) and South Atlantic (485,000 pounds) appear reasonable in light of past harvest levels. All efforts should be focused to ensure enforcement of the above quotas and a definable system for aquaculture production to occur within the allotted time frame.

The Gulf Council's recommendation for a minimum 50 foot setback limit for placement of an aquaculture site should, we believe, include a range, as recommended by the South Atlantic Council, from 50 to 500 feet. This would provide the needed flexibility to ensure the safety of adjacent reefal habitat upon the specific aquaculture site.

One Reach Drive, SE Suite 304 • St. Petersburg, FL 33701 • (813) 895-2188 • Telefax: 895-3248

The Center appreciates the significant efforts thus far by the National Marine Fisheries Service, the Councils, and industry in resolving this marine resource problem and looks forward to providing assistance in facilitating a smooth transition to a viable and professional live rock aquaculture industry for the nation.

Sincerely,

Ellen M. Peel

Ellen M. Peel
Special Counsel,
Florida Living Marine Resources Program

LETTER 7

TO: Terry Leary
THE Gulf of Mexico Fishery Management Council

From: ALAN BICKFORD (305-981-5975)
5312 McKinley ST
Hollywood FL 33021
RE: LIVE ROCK HARVESTING

Dear, Terry

I'm writing to you in responce to the recent public hearings on the commercial harvest of
31 LIVE ROCK. I am a marine aquarium hobbyist and very concerned about the fact that there is no mention of the hobbyist or recreational user for this renewable resource.

In the past with regulations involving the fishing industry there has always been concern given to the recreational user. Why is it in this issue there is none? Does it mean we will be able to collect live rock without any regulation? Or are we included with the commercial interests?

I have been collecting for my hobby since I was 15 years old and at 40 I'm still very active. Also I belong to the FLORIDA MARINE AQUARIUM SOCIETY and stay abreast of the most current ways in which to maintain my tanks.

Live Rock management is an important issue and I do agree with regulation, but a complete ban on a renewable resource which could be around forever if properly managed? A ban does not make sence.

Please decide this issue with facts and not emotions and do consider the interests of the hobbyist.

Sincerely yours.
Alan Bickford

LETTER 8

JUN 9 1994

Gulf of Mexico Fishery Management Council
Lincoln Center, Suite 331
5401 W. Kennedy Blvd.
Tampa, Fl. 33609-2468

Shella Barger 6-7-94
8715 N. Dexter Ave.
Tampa, Fl. 33604
813-935-4025

RE: Live Rock Draft Amendment 2

Dear Council Members,

I wanted to thank all of you for working with us to achieve a draft to regulate live rock. The Tampa meeting went well and we even had new testimony from local scientists who pointed out some very valid arguments, one of which I have been saying all along. How can this draft proceed with little to no data from the regulating agencies? I will be working with one of these scientist to help collect data that will be of further assistance.

With the councils decision to have separate rules, I hereby request that strong consideration be given to the following suggestions. As the wording stands on some of the alternatives we are close to a final draft. However, a few of the alternatives as worded need to be changed.

1) To include non-encrusting species as specified in B.2.a will be an enforcement nightmare. Identification of this species is quite difficult for enforcement now. When encrusting species are not in bloom it is nearly impossible to correctly identify these species to the untrained eye. Many enforcement officers have mistaken encrusting sponges, plants and briazoan as hard or soft corals. Encrusting species can cover substrate other than rock such as mussles, clams, briazoan, and dead gorgonian branches. If this wording is used it will disallow the collection of this species, which is requested by the marine aquarium stores and hobbiest. Please do enforcement a favor and remove this wording. Stick to the prohibited sea fans only.

The other problem is the allowed amount of substrate from the holdfast. One inch will not be sufficient to allow for the collection of a product that is to be maintained as a healthy species in an aquarium. Examples were brought to the Tampa meeting and shown to Georgia Cranmore and Terry Leary. Gorgonians that measure up to 6 to 12 inches in height, keeping in mind how bushy the species can be, will need at least a 3 inch substrate to maintain a healthy species in an upright position. Examples proved that the one inch substrate will need to be buried in the gravel to stand these species upright, thereby kigging the base of the Gorgonian. This is far from healthy. The same applies to sponges for the aquarium trade. In the beginning when three inches was requested it was not based on a whim, but on studies done in upland aquariums.

Russ Nelson's suggestion of only one inch was based on a whim, and accepted by the council with no explanation or data. After discussion with Terry and Georgia, we agreed that the small amount of three inch substrate from the holdfast can not be distorted to say that vast amounts of live rock are being harvested, even after the closure of wild live rock harvest. I wanted to bring samples to the meeting scheduled in the Keys, however dealing with a bucket full of water and products may be more than I can handle along with my boxes of data and information on live rock. Please review this information and make adjustments necessary to allow for the harvest of healthy products.

2) I must address the wording of no chipping as stated in C.2.. As Andy pointed out at the Gulf Shores meeting and backed up by enforcement, why should the collectors be held accountable for the harvest of rock that appears broken. A lot of the rock we harvest is broken by other occurrences such as anchors and mother nature. Weak ledges break all the time and are found in the sand at the bottom of ledges and outcroppings. If left because it appears broken/chipped this rock with marine life attached will die. I spoke with enforcement and they say this issue will be unenforceable.

We all heard testimony even from Terry Leary that the West Central Gulf does not have many rubble zones. This wording in itself will be the demise of many small business entities. As stated earlier, with split council regulations governing the live rock issue, can we drop the wording "no chipping?" This will greatly assist enforcement on a subject that if left unaltered will end up challenged in court.

The quota of 252,000 lbs. will cause the closure of wild live rock for 1994 by the time this draft is approved. I'm not sure you all are aware of this because that seems to be in contradiction with your concerns to allow time to convert to aquaculture. The few people who have obtained the required State lease or Federal permit for aquaculture will be further along, but not by much. We have heard from many people including qualified scientists who gave testimony that time will be needed to achieve a product that will replace what is currently being collected. On top of the time needed, we need all the new permits required by NMFS. As of June 1994 no meeting has been set to prove that NMFS is moving forward to supply these permits. Without these permits, we **can not** harvest our deployed material. At this point in time my deployed material is not considered marketable. Below are a few concerns I'd like answered.

1. How will I derive my income to fund my aquaculture project during the closed period?
2. Could consideration be given to lease and permit holders to continue wild harvest after the quota is reached?
3. What assistance is really being provided for the collectors to convert to a commercially feasible aquacultureoperation?

Regarding E.1.e, Personal Use Harvest: This wording is fair. I believe enforcement can check for personal use permits without any problems, if enforcement is aware they are to inquire about them. I have found that local enforcement has difficulty asking for all the required endorsements involved with the marine life industry.

Regarding G.1, We have found that **one** person is towing a boat behind another to harvest the limit for each boat. Granted both boats hold all required licenses, however, the act of one boat towing another is a way of circumventing the intent of the daily allowed limit. This wording needs to be changed in the final draft to read: Permitted vessels under it's own power are to be limited to 25 five gallon buckets or an equivalent volume of wild live rock per daily trip in the EEZ.

I have enclosed a list of collectors from the central west coast. As you will see we have 16 collectors. One local collector/wholesaler has his State lease. One(out of state person) not on the list has his State lease. Three wholesalers have federal permits, One of which is also applying with the state and one has received a letter of tentative approval on a federal lease. That makes 6 people on our coast who are trying their best to convert to aquaculture. If it is truly the preferred alternative of both councils as D.1 states, we need more assistance!

As this draft stands a "significant regulatory action" will take place. If the Aquarium industry, retail stores and product suppliers were considered, the annual effect on the economy would approach $100 million, and all other related definitions of a "significant regulatory action" would apply as well. Due to **all** the unknowns in developing a **successful** aquaculture program, significant negative economic impact will occur on a substantial number of small business entities in the live rock industry.

What are we going to do to fix the problems facing the live rock collectors chance to fund and possibly achieve aquaculture?

Interested in your answers and ideas,

Shella Barger

Shella Barger

DEP LIST OF ACTIVE LIVE ROCK COLLECTORS/WEST COAST

*A/BARGER, DALE (WHS. NAME)	TPA, FL	935-4025	SPL/ML/RS/WHS
BARGER, SHELLA	SAME		SPL/ML/RS
*A/WEST, STEVEN (WHS. NAME)	WESLEY CHAPEL, FL	973-3914	SPL/ML/RS/WHS
*B/LONDEREE, RICHARD	TPA, FL	875-3574	SPL/ML/RS/WHS
TAMPA BAY SALTWATER (WHS. NAME)			
*B/CALDWELL, MARK	TARPON SPGS, FL	943-9325	SPL/ML/RS
*C/MONTELARO, STEVE	PALM HARBOR, FL	937-2920	SPL/ML/RS/WHS
FLORIDA FINS MARINE (WHS. NAME)			
*C/SPIER, DAVID	TARPON SPRINGS, FL	937-5906	SPL/ML/RS
*D/INTERNATIONAL SEABOARD/MANILA	TAMPA, FL	247-7444	SPL/ML/RS/WHS
*D/NEWSOME, ANTHONY	RUSKIN, FL	641-1387	SPL/ML/RS/WHS
BALLARD, DANIEL(WHS NAME)	TAMPA, FL	626-8377	SPL/ML/RS/WHS
BRIDGES, BRADLEY AKA GULF WATCH	HOLIDAY, FL	934-5941	SPL/ML/RS/VESSEL LIC.
W/W COFFEY, ERIC 938-7994 **			
PARKER, TIM	SEMINOLE, FL	934-4597	SPL/ML/RS/VESSEL LIC.
W/W MARTY MOHNEY **			
CARLETON, GRAHAM/SEAVIEW (WHS. NAME)	DOVER, FL	986-4993	SPL/ML/RS/WS
HERNDON, ROY/SEA CRITTERS(WHS. NAME)	DOVER, FL	986-6521	SPL/ML/RS/WHS
SEA SEARCH, INC./MAYNE,ROBERT(WHS. NAME)	TARPON SPGS, FL	942-3903	SPL/ML/RS/WHS

LOCKED OUT BY CONTROL DATE

BAILY, JERRY I JR./OCEAN AQUATICS	TAMPA, FL.	621-6915	SPL/ML/RS/WHS/VESSEL
BRILLINGTON, KEVIN	DON'T HAVE LOCATION OR NUMBER OR LICENSE INFORMATION **		
MOBLY, STEVE E SR.	RUSKIN, FL	645-9204	SPL/RS/NO ML/CURRENT LANDINGS!
PARDOS, DIAMOND/ MEXI-GULF	CLEARWATER, FL	442-6808	VESSEL/SPL/ML/RS/RETAIL **

COLLECTS IN THE KEYS

DOWNEY, RAYMOND ERIC	LUTZ, FL	949-7899	SPL/ML/RS/WHS/COLL IN KEYS
SABAT, WILLIAM	HUDSON, FL	862-6890	SPL/ML/RS/WS (COLL IN KEYS)

CLOSED AREA COLLECTORS

BUTLER, ROBERT	FT. WALTON DCH, FL	904-243-6467	SPL/ML/RS
HOWELL, JOE	DESTIN,FL	904-654-1616	SPL/ML/RS/WHS
SMITH, DAVID	SANTA ROSA BCH,DESTIN,FL		SPL/ML/RS/WHS
REEF ENCRUSTRCEANS (WHS. NAME)			
WALKER, MICHAEL(WHS. NAME)	DESTIN,FL	904-231-1529	SPL/ML/RS/WHS

(* A,B,C,D,) 4 WORKING TEAMS/6 INDIVIDUAL COLLECTORS, NOT INC. PEOPLE WHO WORK WITH(W/W)
LICENSED COLLECTOR/ 2 WORK ONLY IN KEYS TOTAL: 10 LIVE ROCK COLLECTORS INC W/W
** PEOPLE NOT ON DEP LIST OF LIVE ROCK LANDINGS/LOCKED & CLOSED PEOPLE NOT INC. IN TOTALS

LETTER 9

6-9-94

Gulf of Mexico Fishery Management Council
Lincoln Center, Suite 331
5401 W. Kennedy Blvd.
Tampa, Fl. 33609-2468

Dale Barger
8715 N. Dexter Ave.
Tampa, Fl. 33604

RE: Live Rock Draft Amendment

Dear Council Members,

Thank you for allowing my views to be expressed concerning "live rock" and aquaculture. I believe with the 25 buckets allowed per vessel per trip and the limited collectors on the West Coast that no quota should be necessary. This will only remove the harvestors chance to fund an attempt at aquaculture.

The rock I am purchasing comes from the Bahamas and is very costly due to being hand selected and bagged per size and shape. On top of that I must pay for freight, custom fees, brokers fees, forklift rental, scale rental and payroll for employees. Approximate cost is three thousand dollars per five tons of rock. This figure does not account for the cost to deploy and monitor my seed material.

It has been over one year since our first deployment of seed material. When the yearly harvest of wild live rock is stopped due to the quota being reached, I will need to collect my aquacultured rock. Income will be needed to support not only the cost to operate the business but also to meet the demands of the industry. However, there are no NMFS permits available. What am I to do to avoid going out of business?

The substrate allowance on gorgonians without question needs changed. The substrate allowed from the holdfast is just as important as the species. This change should reflect an amount that would be sufficient to hold up the species. The one inch allowance just is not enough. This allowance of substrate should include sponges as well, as Lisa Furstenwerth attested to at the Clearwater meeting on January 19, 1994. Without this additional allowance of at lease three inches of substrate it will cause the slow death of this species in an aquarium, for it can not hold itself up. Examples have been shown to Georgian Cranmore as well as Terry Leary to validate this point.

There are other concerns involving with the wording of this draft but I believe that others have addressed these issues. Thank you again for your interest and support in the regulation of live rock. If you can be of any assistance to speed up NMFS with the permitting process I will be greatly appreciative.

Sincerely,

Dale Barger
Owner/Diver/Wholesaler

LETTER 10

TAMPA BAY SALTWATER
1720 ELDRED DR.
TAMPA, FL 33603
1-813 875-3574
WHOLESALE
MARINE LIFE
Fax (813) 875-8501

June 17, 1994

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

Dear Council Members:

My name is Richard Londeree, co-owner of Tampa Bay Saltwater. I am writing about my concern over the proposed change in the Gulf Council's position on chipping of live rock. Chipping cannot be prohibited on the west coast as I have spent 17 years developing a market for chipped live rock. Chipped rock is the product I produce and market worldwide. If the Gulf Council prohibits chipped live rock, it will create a number of problems.

First, in consideration, is that enforcement has already come to the conclusion that a ban on chipped rock is unenforceable.

Second, asking me to change my product, i.e chipped rock, is like asking a grouper fisherman to become a mullet fisherman and sell his mullet as grouper -- it won't work.

Three, there are not the large rubble zones as in the keys here on the west coast. Thus, there would be a run on these zones which would quickly deplete these rubble areas.

Fourth, if chipping is not allowed I will go out of business as the $100,000 I have invested in the Gulf Council's preferred option, aquaculture, will be lost as I must be able to stay solvent during the phase out period.

Fifth, the Council has already eliminated power tools and restricted vessel limits, which has effectively ended the problem of over and destructive fishing methods. With those rules in place, a ban on chipping surely would force our industry into some sort of legal challenge, to survive the phase out and facilitate a move to aquaculture live rock.

At this point, I have over 3,000,000 pounds of rock under cultivation in the gulf. We must be allowed to continue to fish with our traditional methods or be forced with a legal challenge, or disappear as a small business entity altogether. Thus, I urge the Council to allow our traditional method of fishing during the phase out period.

Sincerely,

TAMPA BAY SALTWATER

Richard Londeree
Co-Owner

RL/jb

LETTER 11

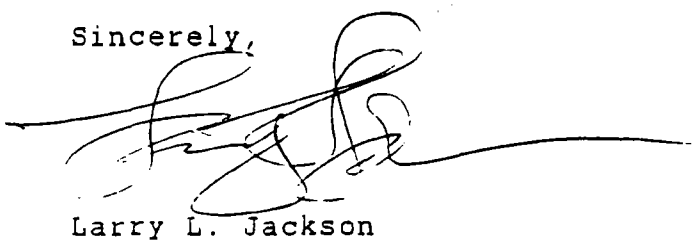
July 5, 1994

Gulf of Mexico Fishery Management Council
Lincoln Center Suite 331
5401 W. Kennedy Blvd.
Tampa, Florida 33609-2468

Dear Sirs:

I submit this written information to complement the video of David Smith's live rock collecting off the coast of Florida in the Destin area. I dived with David during April of 1994 and video taped approximately 45 minutes of actual underwater rock collecting. I edited the tape to about 30 minutes worth of coverage and sent a copy of the tape to David Smith. The tape is distinctive since I forgot to moved the comparator feature to the side after setting the color, contrast, and enhancement features. As a consequence the video has a line down the center of the picture and the color is slightly different on each side. Although unintentional, this does make the tape distinct. I dived 5 times with David Smith and spent two very full days about 9 miles off the coast of Destin, Florida. Based upon what I could tell from the bottom sensing device aboard the boat, there is quite a bit of hard bottom in the area and David collects it in a manner that has little affect on the bottom communities. The rock on the bottom is mostly massive and could not be harvested without power equipment and considerable time and effort at depth. If broken during collecting, the rock would not have the visual appeal and usefulness that it has when it collected the way it is. David Smith does not use any power equipment to harvest the live rock. Pieces of live rock that are small enough to fit into a lift bag with a capacity of about 50 lbs of rock are used. A single diver can send up about 5 bags per trip if he is very good and happens to be on a spot with enough loose rock. Due to the depth, trips to the bottom are limited to about 3 dives per day. As a certified diver, I would also point out that the number of days per year suitable for collecting the rock would be limited on many occasions by weather and sea conditions. I pride myself on being conservation oriented and would not feel good about destructive methods of collecting. I do not believe that the rock collecting that I saw presents any significant environmental consequence since such a small percentage of the overall amount of rock is removed. I appreciate the opportunity to be heard with regard to this subject and will retain a copy of this letter and would be happy to discuss it with interested parties should they choose to contact me. I include my phone and fax numbers for any interested party.

Sincerely,



Larry L. Jackson

501 S. Jackson St.
San Angelo, Texas 76901-4363
Phone (915) 655-1655
Fax (915) 658-3585

CC: Reef Encrustaceans

APPENDIX D

MINUTES OF PUBLIC HEARINGS DURING COMMENT PERIOD ON AMENDMENT/DSEIS

cmn:06/08/94

MINUTES

GULF OF MEXICO FISHERY MANAGEMENT COUNCIL

CORAL AMENDMENT 2 PUBLIC HEARING

SHALIMAR, FLORIDA

JUNE 1, 1994

ATTENDANCE:

David Anthony
Terrance Leary
Caroline Mc Neill

93 Members of the Public in Attendance

The hearing was called to order by Chairman David Anthony at 6:10 p.m., at the Okaloosa County Courthouse, Shalimar Florida. He presented the opening statement. The hearing was to allow public comment on the Public Hearing Draft of Amendment 2 to the Fishery Management Plan for Coral and Coral Reefs. The public may again comment directly to the Secretary of Commerce when the proposed regulations are published.

Mr. Leary presented the details of the proposed Draft Amendment 2.

The public was invited to comment:

Julie Keen, Fantasea (diver) Niceville, Florida, opposed the harvest of live rock from the Gulf. She felt it should be for everyone's enjoyment and not commercial profit.

Shawn Keen, Fantasea, Valparaiso, Florida, expressed agreement with Ms. Keen's comments. He supported a complete ban on the taking of live rock.

John Keen, Fantasea (diver), Niceville, Florida, felt live rock should be left for future generations.

Derek Lemke, PADI Instructor (teacher and diver), Destin, Florida, stated he is new to diving and was disappointed to see what has happened to the reefs. He felt restricting power tools is not enough, much damage can be done with small hand tools. He opposed the harvest of live rock for private personal gain.

Mark Watts (diver and fisherman), Theodore, Alabama, opposed the ban on live rock collection. He argued that live rock does grow back. He referred to the Dry Tortugas stating it is dry rock out of the ocean. He supported aquaculture and felt it needed to be implemented as soon as possible. He argued that people who make a living from live rock collection were going to be hurt and that fisherman would also be hurt due to overfishing, not

collection of live rock. He suggested tagging aquaculture rock with a metal tag or tie wrap with a code to protect the people who are putting it down. He stated the only people who should be able to remove this rock was the user of home aquarias. He supported the 25 5-gallon bucket trip limit for the next two years until aquaculture rock can be put in place. He favored allowing possession of prohibited corals on aquacultured live rock.

Fredrick Sayeg (engineer), Destin, Florida, favored the harvest of live rock. He argued if fishermen were allowed to fish, collectors should be allowed to collect. He opposed diving tournaments in salt water and jet ski operators. He contended the loss of fish was due to overfishing and not live rock harvesting. He referred to the cobia and shark tournaments. He stated the seaside in Mississippi had been damaged due to shrimpers dragging nets. He felt offshore drilling was also an environmental problem. He stated fertilizer runoff from farmland caused algae bloom resulting in loss of habitat. He noted the loss of everglades due to the development in south Florida. He stated the everglades were a natural filter for the system. He pointed out boat anchors contribute to the damage. He favored aquaculture of live rock.

Anna Schmitz, Emerald Coast Scuba School, Destin, Florida, thanked the Council for the temporary ban on the harvest on live rock. She hoped the ban would become permanent throughout North America. She agreed pollution was a problem affecting the reefs. She felt the profiteering of a few was not worth the demise of a non-replenishable natural resource. She opposed aquaculture due to lack of control and regulation. She pointed out sea oats are the ornamentation of sand dunes and reefs and they would disappear without them.

Maryellen Gibson (diver), Destin, Florida, stated in the last two years the destruction to the reefs from the harvest of live rock had become distinctively obvious. She stated many rockers were still collecting from state waters. She opposed the harvest of live rock in both state and federal waters.

Patrick Dineen, Okaloosa County Water Monitoring Program, Fort Walton Beach, Florida, opposed the collection of live rock. He pointed out their reef system was very different from the Dry Tortugas. He contended the natural resources were stressed and the loss of habitat was due to the harvest of live rock. He disagreed that collection of live rock was helping the system grow and its viability. He opposed the harvest of live rock.

Stacia Dineen (diver), Fort Walton Beach, Florida, opposed the harvest of live rock and net fishing. She felt they were taking a public natural resource, harvesting it, and using it for personal gain. She stressed future generations would suffer.

Dr. Anthony noted the emergency regulation effective now bans the harvest of live rock north of the Dade/Pasco line extending to the Mississippi/Alabama line. He noted it was effective for 90 days but could be extended to 180 days.

Rebecca Gray, Emerald Coast Scuba School, Destin, Florida, supported a total ban on harvest of live rock and felt there was no alternative.

Jason Knight, Adventure Quest, Inc., Destin, Florida, opposed the harvest of live rock. He read a letter addressed to the Council from Adventure Quest, Chris Kopecky, President, opposing the harvest of live rock (attached).

Jackie Tatjes, Hydro Sports of Destin, Destin, Florida, opposed the harvest of live rock.

Andrew Reid, Destin, Florida, supported a total ban of live rock harvest.

Lori Reid (dive master), Emerald Coast Scuba Products, Destin, Florida, thanked the Council for the implementation of the emergency action and hoped the ban would become permanent.

Garry Howland (scuba diver), Shalimar, Florida, stated people come from all over the world to dive in Destin, Florida. He stated the rocks were houses for fish. Without the few ledges the offshore bottom was a desert. He felt the rocks and limestone were washing away. He supported the permanent ban on the harvest of live rock.

Tom Klosterman, Destin Charter Boat Association, Destin, Florida, felt the Council needs to protect and preserve live rock and build more artificial reefs to aide the live rock, in order to have it to manage in the future. He felt the temporary ban on the harvest of live rock was just the first step and the only alternative was a complete ban on the harvest of live rock. He contended without live rock the fishermen had nothing to work or build on for the future. He stated live rock was the basis for all growth.

Captain Rex Chambless, Destin, Florida, stated he has fished in Destin for 65 years. He contended if you remove live rock there will be no fish and no bottom. He urged the Council to take whatever steps necessary to stop the harvest of live rock.

Ken Beaird, Reveille II Charter Boat, Destin, Florida, stated he was unaware of the live rock issue until January, 1994. He stated 50,000 pounds of live rock was reported to have been harvested from Walton/Okaloosa County in 1992-1993. He stated until the emergency action was implemented, the rockers were in full force collecting as much rock as possible. He pointed out a reef in state waters was nine feet deeper than in previous years. He stated rockers were still collecting in state waters due to lack of enforcement. He felt the only alternative was to ban the harvest of live rock permanently. He opposed the harvest of live rock and stated 90 percent of the people in attendance also opposed the harvest of live rock.

David Knight, Backcountry Fishing Charters, Inc., Destin, Florida, agreed with Mr. Beaird's comments on enforcement. He felt tagging was not a solution. He opposed the harvest of live rock.

Mark Walker, Dive Team E.O., Inc., Destin, Florida, opposed the harvest of live rock. He supported aquaculture.

Jason Eskew, Fort Walton Beach, Florida, felt aquaculture was a good idea but questioned the enforceability. He contended live rock does grow, however, it does not grow quickly. He stated it was obvious the rock supports the fish, and felt rocking was not very important to the local economy. He supported a permanent ban on the harvest of live rock effective immediately.

Major Jack Spey (USAF, retired), Fort Walton Beach, Florida, referred to the Magnuson Act from 1976. He stated the apparent depletion of fish, first noted and reported by marine biologists in 1970, was the reason for the development of the Magnuson Act. He stated the

U.S. Congress realized that the food fishery represented an important part of the economy in this nation and was being threatened due to overfishing. The Councils were formed to develop plans over the years to affect bag limits, seasons, size, etc. to protect the fishery. He noted in 1984 the public was lead to believe that the substrate on the ocean seabed was a renewable resource and could be harvested the same way food fish were harvested. He stated this was incorrect. He requested the Council members recognize that the substrate was a part in parcel of a successful productive marine ecosystem. He felt the removal of live rock would leave nothing but a sand bed. He urged the Council to take whatever actions necessary to ban the harvest of live rock throughout the Gulf of Mexico and encourage the South Atlantic Council to do the same south of Dade County.

Bobby Turner, Fort Walton Beach, Florida, stated 50,000 pounds of live rock was harvested in Walton and Okaloosa County in 1994. He felt 50,000 pounds was a minimal amount. He cited a report that states one square mile of reef contains 600,000 to one-million tons of rock. He argued that filling the room with live rock would not make a noticeable difference on the reefs and offered to dive with anyone who disagreed. He stated if he was incorrect, he would support the ban on the harvest of live rock. He contended the decline of fish was not due to the harvest of live rock and they could put down artificial reefs. He has seen bigger fish on artificial reefs. He stated the facts show the rock will grow and replace. He asked the Council to be fair.

Adam Bethea, Fantasea Scuba, Destin, Florida, opposed the harvest of live rock.

Shannon Grasley, Fantasea Scuba, Destin, Florida, opposed the harvest of live rock.

Tim Adams (charter boat captain and diver), Fantasea Scuba Headquarters, opposed the harvest of live rock.

Steve Worlund, Fantasea Scuba, Destin, Florida, had left the hearing but wanted to voice the opinion that he opposed the harvest of live rock.

Robin Bradley, Scubatech of NW Florida, Inc., Destin, Florida, had left the hearing but wanted to voice that she opposed the harvest of live rock.

Bill Koch, Fantasea, Navaree, Florida, opposed the harvest of live rock. He emphasized his desire to leave the live rock for future generations to enjoy.

Steve Powell, Fantasea Scuba, Fort Walton Beach, Florida, opposed the harvest of live rock. He supported a permanent ban. He stated in Destin they dive up to 130 feet, beyond the 15-mile limit, and believed the reef was not a replenishable resource.

Tom Schmitz, Under Pressure charter boat, Destin, Florida, supported the complete ban on the harvest of live rock. He felt there were many loopholes. He contended enforcement was the biggest problem, determining whether it came from state or federal waters.

Mike Eller (charter boat captain and scuba diver), Destin, Florida, stated the taking of live rock goes against the National Marine Fisheries Service and Council's efforts. He questioned the point of making rules to govern fishing when the habitat of the entire fisheries was being

destroyed. He supported the emergency action. He felt the Gulf of Mexico should be closed completely. He stated south Florida was not the same and they had many more reef structures. He questioned the need for live rock in tanks. If it is used for a filter, a filter can be bought. He felt the quality of life would not be affected without live rock in the tank. Having live rock in the tank would, however, affect the state of Florida. He supported aquaculture. He contended enforcement was the problem with aquaculture. He stated the harvesters were only taking the good rock. He stated marine growth grows quickly, however, the limestone rock that it attaches to does not. He concluded eventually there would be no more limestone. He supported the ban. He urged the Council to do whatever was necessary to completely ban the harvest of live rock in the Gulf of Mexico.

Richard Rahilly (new diver) stated he had not yet observed the destruction to the reefs, and opposed the harvest of live rock. He felt there was no need for live rock in the tanks.

David Yardley (dive instructor), Fantasea Scuba Headquarters, Destin, Florida, opposed the harvest of live rock and supported a permanent ban.

Meganne Powell, Fort Walton Beach, Florida, stated she did not want a phase-out, but supported a complete ban on the harvest of live rock. She suggested regulating tagging to determine what is being picked-up is what was put down.

Christine Aufderheide, Shalimar, Florida, commented she has seen reefs that have been harvested and reefs that have not been and they were very different. She stated there were many similarities in the ocean to places in the environment that are unreplaceable, i.e. Redwood Forest, Everglades. She felt live rock was not replaceable. She opposed the harvest of live rock.

Viki Bowen, Scuba Connection/Hurlburt Dive Club, Fort Walton Beach, Florida, supported a total ban on the harvest of live rock.

April Hall, Scuba Connection, Fort Walton Beach, Florida, opposed the harvest of live rock.

Joe Hall, Scuba Connection, Fort Walton Beach, Florida, felt one problem was that not all the rock being collected was being reported. He expressed concern regarding enforcement. He felt the problem was the marine ecology was being damaged beyond repair and it was a non-renewable resource that needs to be protected. He supported aquaculture and supported a total ban on the harvest of live rock and felt this would initiate aquaculture.

Ron DiPolo, Divers of Destin, Destin, Florida, stated the rock collectors had only been collecting for a few years and would survive without it. He opposed the harvest of live rock.

Robert Green (commercial and sports diver), opposed the harvest of live rock.

Larry Henderson, Crestview, Florida, opposed the harvest of live rock. He expressed concern regarding lack of enforcement.

Robert Butler, Aquanaut, Destin, Florida, opposed the harvest of live rock.

T.L. Disler, Emerald Coast Scuba School, Destin, Florida, opposed the harvest of live rock. He supported the Council on their emergency rule. He contended aquaculture was another way to continue the natural reef destruction. He urged the Council to ban the harvest of live rock permanently.

Donna Phillips, Manta Ray Divers Co-op, Destin, Florida, opposed the harvest of live rock and supported a permanent ban.

David Smith, North Gulf Reef Collection, Santa Rosa Beach, Florida, stated he understood the opposition against the harvest of live rock due to the testimony given. He presented a map of offshore waters of Okaloosa and Walton County and pointed out the map marked the hard bottom that NOAA had printed. He noted it does not show a fraction of the reefs off Destin. He stated they were diving in approximately 120 feet of water. He stated he would submit videos at the Islamorada Council meeting that would dispute the testimony given. He surveyed the reefs off Destin and observed algae bloom. Algae bloom was caused by nitrates being put out into the Gulf. He contended algae bloom kills the coral reef, the coralline was gone, causing bare rock. He stated he had been diving for 28 years. He cited a book written by Mr. Bailey sold in the dive shops. He quoted "One can dive Destin Reefs a lifetime and never explore them all, however, many are well explored and frequently visited. The following is a list of the more popular reef systems. Off Destin lies a huge reef area that gets its name from the holes popped in the limestone reefs." He argued that was not where live rock had been taken. He concluded the reefs were not gone and never would be gone. He stated he wanted to continue his business in the EEZ to collect enough rock to finance aquaculture. He provided rock to show the difference between aquaculture rock and live rock. He proposed to have forms made that would be easily identified and tagged. He contended if rock was not able to be sustained in tanks, the coralline on his rock would be gone. He stated it was not until they started putting live rock in the tanks that they were actually able to grow stony corals. These corals were now being used to reproduce bones for people dying in hospitals. He stated a good year of collecting rock would be 30,000 to 40,000 pounds. He felt this was not much. His videos would reveal that his practices were not harmful and would provide benefits. He concluded they would just like to continue their livelihood. He felt the area could benefit from aquaculture because the water was clear, good substrate, and good areas for aquaculture beds. He stated he was not asking for a lifetime of collecting rock, he just wanted time to continue to start aquaculture. He suggested revoking licenses if it was determined that individuals were not pushing aquaculture. It should increase until you are putting back what you put down through the phase-out. He suggested at least a 25 percent mitigation requirement. He stated there were many fishermen that were not able to attend the meeting that support his views.

Hailey Smith, Reef Encrustaceans, supported aquaculture and felt it was the future. She felt it would work and stated her dad had proof. She felt banning the collection of live rock was a good idea, however, aquaculture permits should be supplied before doing so. She stated in her dad's fish tanks she sees the fish eating the sponge. She contended without live rock in the tank, the angel fish or similar fish, would not be able to get the sponge they need to survive. She stated many tropical fish in tanks would get diseases without the proper food, i.e., angel fish.

Kathy Smith, Reef Encrustaceans, stated there were 15,000 to 25,000 boxes of live tropical fish that leave Tampa Airport each day. The aquarium trade was a viable industry in Florida. She felt they should be allowed to harvest the corals attached to the aquaculture rock. She supported the recreational bag limit. She felt after two years when it closed down there should be no more recreational bag limit. She argued the statement "there is no more rock out there," was not true. She felt the tagging process should be an easy task. She doesn't see any problem with the people making the rock in Alabama tagging it with a piece of plastic; plastic does not dissolve. The tags should not be removed until it was actually taken home to the aquarium. She favored the tagging process or an imprint on the bottom of the rock. She stated it would cost approximately $100,000 to start aquaculture. She contended the rock from the Bahamas does not differ from the rock in south Florida. She felt because of illegal dumping, i.e., buses, tires, etc., Okaloosa County had stopped the artificial reefs. She stated this has stopped them from putting down their aquaculture beds. She requested the Council consider not closing down Okaloosa County and let them put their rock down in the EEZ zone . She felt the rock from south Florida would be very desirable. She felt they should trade with the people in Florida rather than the Bahamas. She asked the Council to take into consideration that much of the testimony was not true and there are many rocks out there. She stated there may have been enforcement problems in the past, however, the Marine Patrol circles her boat everyday.

Karon Radizk, Reef Encrustaceans, Destin, Florida, stated she has a degree in marine biology with emphasis on ichthyology. She believed the emergency action was made in haste based on emotional testimony. She questioned why the ban was imposed in the northern part of Florida rather than in south Florida. She stated the reefs are different in northern Florida and the collectors were few. She felt the major problems facing Florida's reefs were sewage, anchors, and human development, and felt that was where the focus should be. She cited a magazine article that stated there was no published scientific proof that the marine aquarium trade has had a negative impact on coral reefs. She felt the ban should have been in south Florida, where live rock had been harvested since the 1970's. She contended the decline in fish was a separate problem and was due to overfishing. She emphasized the importance of aquaculture. She felt this would end the small impact that marine collectors may have on natural reefs. She felt the accusation that collectors would put down their rock and collect the real thing was not likely because it costs so much to put down the aquaculture rock. She emphasized the need for live rock in the fish tanks. Without live rock the fish do not survive very long. She stated the reproduction of several species of fish would have been impossible without natural habitat in the tank. She believed the live rock would benefit the scientific community providing much information that would not be possible without the marine aquarium. She stated the livelihood of the collectors had been put in jeopardy. She supported the Council's efforts to protect aquaculture from potential looters. She stated the resource could be considered renewable if the collector was allowed to replace it with natural rock.

Jeff Burns felt the collectors should be allowed a grace period to start the aquaculture and give aquaculture time to become a valuable resource.

Kenny Girot (PADI scuba instructor), Destin, Florida, opposed the harvest of live rock.

Mary Burns, Destin, Florida, supported the collection of live rock. She felt the aquarium trade would be hurt if rock was banned. She stated the rock was not being killed, it was being placed in aquariums. She contended the fish were benefiting from the rock. She suggested collaborating to determine a method to promote the aquaculture and a way to tag.

Louis Denmark (dive instructor), Eglin AFB, Florida, felt the reef would eventually become bare and opposed the harvest of live rock.

Sharon Denmark agreed that you will not see the damage, however, future generations will. She felt the collectors were robbing from the earth.

PUBLIC HEARING ADJOURNED AT 8:33 P.M.

h:\e\coral\liveph.694

Live Rock
6/1/94

Adventure Quest

Re: Live Rock Harvesting - An Economic Perspective

Dear Sirs:

Adventure Quest is a full service SCUBA Diving facility, located in New Orleans, LA. We organize trips all over the world for our divers, including a substantial number trips to the Destin - Panama City area.

Cutting straight to the point, our shop's organized group trips alone pump in excess of $150,000 directly into the local economy each year. These funds are distributed into the real estate market, restaurants, gas stations, dive shops, grocery stores, hardware stores and clothing shops. After being familiarized with the areas diving, the natural progression is for them to return to a site that is familiar. The economic impact of this follow-up activity is impossible to calculate. We are only one of a large number of shops from surrounding states that travel to the Gulf Coast - to dive the natural reefs.

Our activity helps strengthen the economy while taking nothing from it. I see no long term benefits to the community in getting rid of the main underwater attraction. It seems the activity of "harvesting live rock reefs" only benefits the entities destroying the reef.

Aside from the inevitable long term financial loss that will befall the local citizens, receiving national attention should also be a concern. Since we travel the world's oceans, we have been fortunate enough to see the action taken by responsible local authorities to protect their natural "economic" resources. In many areas, divers are not allowed to wear gloves, much less pick axes. There is a reason why our Federal laws prohibit these practices.

Prudence demands that proper action be taken before the word gets out and local officials have to explain why this strip-mining has been condoned. Be assured that the only reason that public out cry has just begun to mount is that they are just beginning to find out about it. Upon the completion of this letter, Adventure Quest will be spreading this word to our economic partners in the local and surrounding areas.

Thank you for addressing these concerns.

Chris Kopecky

Chris Kopecky - President

3230 S. I-10 Service Road West • Metairie LA 70001 • 504) 831-5291

jak: 6/10/94

MINUTES

GULF OF MEXICO FISHERY MANAGEMENT COUNCIL

CORAL AMENDMENT 2 PUBLIC HEARING

TAMPA, FLORIDA

JUNE 2, 1994

ATTENDANCE:

Approximately 60 members of the public were in attendance.

David Anthony
Terrance Leary
Georgia Cranmore
Julie Krebs

The hearing was called to order by Chairman Anthony at 6:10 p.m., at the Ramada Airport Hotel and Conference Center in Tampa, Florida. He presented the opening statement. The hearing was held to allow public comment on Draft Amendment 2 to the Fishery Management Plan for Coral and Coral Reefs. Written comments would be accepted until July 5, 1994, and the public were invited to testify before the Council on any of the proposed changes during the Wednesday, July 13, 1994, session of the Council to be held at the Cheeca Lodge in Islamorada, Florida. 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. Leary presented the details of the amendment.

The public was invited to comment:

Shella Barger, Tampa, Florida, noted that several recent newspaper articles on live rock had provided inaccurate reports of the status of the live rock fishery. She cited a 1989 NOAA Memorandum that referred to live rock harvesters requesting permits, which were issued with a significant amount of objection from the public. The author of the memorandum felt that in comparison to the live rock collection, disturbances by the impacts of many other activities produced a larger impact on the environment, i.e., groundfish and scallop fisheries, beach renourishment projects, maintenance dredging, and discharge from canals and filling. Harvesting was supported by the Department of Natural Resources, and Department of Environmental Protection. She had compiled a list of live rock harvesters on the west coast of Florida from the Florida Department of Environmental Protection which totaled 17 to 18, some of whom had shown inaccurate landings or were inactive in the fishery. She urged that testimony be considered without the emotional feelings that would inevitably be expressed. She commended the Gulf Council's ability to deal with the live rock industry in the development of the amendment, and supported many of the preferred alternatives.

Ms. Barger felt that alternative B.2.a, allowing the harvest of non-encrusting species of octocorals including only the substrate covered by and within one inch of the holdfast, would be difficult to enforce especially on the east coast of Florida. Most identification books used by enforcement lacked quality descriptions or pictures to allow proper enforcement. She had provided many enforcement officials with fish gauges and pictures. It was possible for encrusting species to cover substrate other than rock. The present wording of the alternative would disallow the collection of the product, which she noted was a highly requested item.

Ms. Barger informed that the one-inch allowable holdfast for allowable octocorals would not be sufficient to support the weight of a medium size gorgonian. She acknowledged that the wording had been developed to facilitate in the collection of a healthier product, while not distorting the inclusion of the collection of vast amounts of rock. She noted that 3 inches around the holdfast had originally been requested, but upon recommendation by a Council member the holdfast was reduced to 1 inch, which she noted would not be sufficient to anchor the octocoral in an aquarium.

Ms. Barger favored Preferred Alternative C.2, which would establish a Gulf quota with restrictions, however, felt the wording of the alternative would be unenforceable. Since there were not many rubble zones in the Gulf, she felt that chipping should not be prohibited.

She was uncertain that aquacultured rock would support life in a closed system, and stressed the need for a more efficient aquaculture permitting of harvesters.

Ms. Barger supported the allowance of personal use harvest, and suggested personal use harvest also be restricted during closure periods personal use harvest also be restricted.

Thom Demas, Tampa, Florida, worked for Ms. Barger as a fishery biologist primarily for aquaculture research. He had observed no damage to the reefs by commercial wild live rock harvesters. Management of the fishery would be necessary to protect harvesters from poachers and those destroying the reefs. He supported personal use harvesting. He referred to a local newspaper article accusing live rock harvesters of causing the disappearance of the local grouper fishery, and maintained that commercial harvesters were not raping the Gulf.

Eric Coffey, Holiday, Florida, a commercial harvester of wild live rock, supported the Council's preferred alternatives, however, felt the control date had been established unfairly. It was effective on the date of publication, February 3, 1994. He had become a member of all live rock organizations and had remained informed by all of the proper authorities while preparing to participate in the fishery. If the control date remained at February 3, 1994, he would be economically devastated. In 1993, he attempted to base his business out of Tarpon Springs starting with tropical fish and live rock. He earned crew shares to allow investment in a 700 gallon holding tank, scuba equipment, and a saltwater products license with a marine life and a restricted species endorsement. After the purchase of his saltwater products license, Florida experienced severe weather conditions which prevented participation in the fishery. He concluded that the control date had eliminated him from the fishery that he worked laboriously and honestly for the right to participate in.

Robert Mayne, Tarpon Springs, Florida, a live rock collector, has six employees in his business. He stressed that commercial harvest of wild live rock does not damage the

resource. He compared the large amount of rock available to collectors to sand on the beach. He considered himself to be a conservationist and noted he belonged to conservation organizations. He felt the community had been misinformed about the practices of commercial harvesters. He requested the Council provide the ability to harvest wild live rock commercially to provide financial support for the conversion to aquaculture. He supported restriction of the harvest with trip limits as opposed to an annual quota.

Michael Walker, Destin, Florida, expressed concern for a misconception that divers were damaging the reefs and offered to prove that the reefs still existed. He informed that when diving to 110 feet (in federal waters), a person could only remain below the surface for 13 minutes; and therefore did not have time to chip at reefs, only to pick up rubble rock. He felt the controversy in the industry had only been experienced over the past two years.

Mr. Leary asked if he had collected loose rock in the Tampa area. Mr. Walker replied that he had done some diving in the area and felt although there was a lot of rubble rock, the difference is the type of rock, and algae tended to cover the rock more.

Danny Carbaugh, Tarpon Springs, Florida, President of the North Sun Coast Chapter of the Florida Conservation Association, supported Mr. Walker's opinions. He expressed concern with enforcement of the regulations. He was a dive master, and made approximately 30-40 dives annually. He did not have a vested interest in the live rock commercial industry. He offered to provide videos and underwater pictures demonstrating damage to the reefs which he felt had been caused by harvest. He opposed live rock harvesting, however, felt the industry should not be condemned because of illegal harvesters. He supported aquaculture, and felt the industry should be supported in it's conversion to aquaculture systems to end the harvest of wild live rock.

Janice Wojcik, Tampa, Florida, a recreational diver and hobbyist for 12 years, had not purchased live rock, but collected live rock and tropical fish for her tanks. She felt live rock was not necessary for fish tanks only for mini reefs. She reported abuse of a 12 foot ledge off John's Pass in about 60 feet of water (federal waters) where large cavities had appeared. Mr. Mayne asked if the damage could have been caused by anchors. Ms. Wojcik felt the cavities were well defined, and described them as appearing to be done by mini-depth charges. Mr. Mayne maintained that in commercial harvesting large chunks were not removed, preferred commodities were small rocks. Ms. Wojcik reported that she had seen and reported resale stores holding rock in containers. She supported permits for recreational and commercial harvesters alike.

John Georgiou, Tarpon Springs, Florida, headboat fisherman, asked why is not included in the prohibited area. Dr. Anthony explained that the Gulf Council had considered the amount of reef material in the areas, and excluded the regions where the reef material was uncommon. Mr. Georgiou questioned the government's reasoning for issuing permits to collect live rock without a feasibility study on the possible damage that could result from the harvesting. He asked Mr. Mayne how he could claim to be a conservationist when he had removed live rock from the same area for one week. Mr. Mayne denied harvesting from the same area for a whole week. Dr. Anthony advised the discussion occur at the conclusion of the public hearing. Mr. Georgiou felt the government had endorsed the existing permits to collect live

rock. He attributed the lack of fish in the reefs to live rock harvesting. Ms. Barger maintained that the grouper were in 20 foot depths of water because of the algaebloom.

Dr. Anthony pointed out that the nature of government was to be reactive to situations that were brought to its attention. Many of the proposed modifications to the Magnuson Act suggested the need to be more proactive, and have more concern for areas of the habitat. Mr. Georgiou stressed the need to consider future generations in the development of regulations.

Steven West, Wesley Chapel, Florida, a marine life collector and wholesaler, stressed the need for enforcement of the regulations. He felt the collectors should not be held responsible for those who did not comply with regulations. He informed that within the two-square mile area that he dove, hundreds of ledges could be found, and he harvested from smaller ledges. He felt the habitat was being restored by the placement of aquaculture cultch at a greater rate than it was being removed. He requested the Council allow two to three years of harvest to develop a profitable aquaculture system.

Jeff Hart, Palm Harbor, Florida, a full-time charter captain and member of the Florida Conservation Association, expressed concern for the time required to renew fisheries. He noted the many efforts that had been made in the Gulf to restore overfished stocks. He had observed harvesters abusing the resource, and expressed concern for the future generations.

Roy Herndon, Tampa, Florida, a live rock collector and marine life wholesaler, recognized that wild live rock harvest was limited and would be prohibited by January 1997. He noted that in 1992, 800K pounds of live rock was harvested in Florida, and in 1993 Mr. Richard Londeree placed 1 million pounds of aquaculture cultch producing a net gain for the entire state of Florida. He noted the severe natural damage that resulted from the great March storm. He stated that during the harvesting some marine life was culled from the product, such as chicken liver sponge, to prevent damage to other products and retaining systems.

Mr. Georgiou questioned why rocks could not be reproduced for aquariums with an immediate complete elimination of wild live rock harvest. Mr. Herndon maintained that an aquaculture system was presently being established, however, would take approximately two to three years for a high-quality live rock product. Dr. Anthony clarified the question was whether production could be made in closed systems. Mr. Herndon informed that one experiment had been performed which produced only an unattractive green algae rock.

Anthony Newsome, Riverview, Florida, owner and operator of Blue Ocean Products a commercial harvesting company noted that the anchor from a headboat had damaged a reef more than a harvester could do in one month. He felt the wording of the amendment would create difficulties for the industry. He opposed the statement that the live rock was a non-renewable resource. He stated that 95 percent of all of the live rock from Hernando County to the Sarasota County line had been dumped by the phosphate mining industry, and was cultured rock. He felt the aquaculture permits had not been scientifically supported by the federal government. He noted the treasure hunting industry had been given a 20 year lease and felt the suggested 5 or 10 year leases for aquaculture would not be sufficient. Dr Anthony questioned why a 10 year lease would not be sufficient if a high-quality aquaculture rock could be produced in 2 to 3 years. Mr. Newsome felt a period longer than 2 to 3 years

would be necessary. He questioned why the Council had not addressed the issue of the phosphate product that had been placed by the industry, which he felt should be categorized under the Maritime rules allowing the harvester to be the rightful owner of the product. Dr. Anthony requested Mr. Newsome present the Council with any information that could substantiate the placement of the substrate by the phosphate industry. Mr. Newsome recalled that he had presented the information to the state of Florida.

Paul Johnson, St. Petersburg, Florida, representing the Center for Marine Conservation, complimented the Gulf Council on its balanced approach with the industries conversion to aquaculture. He supported the preferred alternatives. He felt live rock was a public resource and stated that it was a privilege to harvest rock and not a right. He felt the quota was an appropriate amount based on the data provided. He stated that the resource was limited, and not renewable. He stressed the need for accurate reporting for quota monitoring, and encouraged more discussion on incidental bycatch and the regulation on personal harvest. He expressed concern that personal harvest could amount to more than expected.

Kevin Bruington, St. Petersburg, Florida, owner of a commercial dive vessel that was used for spear fishing, decided to enter the commercial live rock industry and purchased an saltwater products license with an endorsement in November 1993. Due to new Coast Guard regulations, he was required to invest in vessel upgrades, such as a life raft. He reaffirmed the bad weather that had been sustained over the winter months precluded participation in the fishery and he had been eliminated by the control date. He felt sufficient notice had not been given to the issuance of a control date, and requested the Council establish a grievance committee to address persons in situations similar to his.

Dr. Anthony noted the difficulties that had been experienced with the establishment of a control date and the request for an appeals board in the reef fish fishery. Mr. Bruington asked if an appeals board would definitely not be granted. Dr. Anthony replied that there were some differences between the two situations, and clarified that his inclination was that the Council's final vote on an appeals board was 9 to 8 against development.

Mr. Bruington felt so few persons would be harvesting the large amount of rock available, that a quota would not be necessary. The commercial harvesters would require a reliable resource for funding of an aquaculture system. He recalled an estimate in the amendment of approximately 17 billion pounds of rock within the 55 fathom contour of Florida's west coast, which was obviously more than sufficient to support those participating in the fishery. Dr. Anthony added that the estimate included the product that was not appropriate for harvesting.

Mr. Bruington favored personal use harvesting with a permit, and suggested a one day permit limited to 3 or 4 times per year. He recommended a two-gallon bucket limit.

Roland Budd, Tarpon Springs, Florida, supported Mr. Bruington's opinions.

Costa Vatikiotis, Tarpon Springs, Florida, an engineer for and representing the City of Tarpon Springs, was not familiar with live rock harvesting or diving, felt that live rock was a non-renewable resource. He supported aquaculture and related the removal of wild live rock to removal of rock from archeological sites. He felt additional discussion was necessary on

personal permitting for personal use harvesting. He recommended the commercial harvesters form a coalition.

Sandy Nettles, Clearwater, Florida, a groundwater hydrologist, had a masters degree in marine geology and was currently enrolled at the University of South Florida's Marine Science Center. He funded his college education, through his masters degree, by collecting tropical fish and live rock. He objected to the lack of scientific evidence provided in the amendment. He questioned how the Council could continue with development of regulations without scientific research. He related a job experience with Manatee County, who hired him in an attempt to end phosphate mining in the reservoir which they owned. He suggested funding be provided to develop a database to demonstrate that the mining had been done uneconomically. He supported aquaculture development.

Mr. Johnson asked what was implied by no database. Mr. Nettles replied that a database had not been presented. Dr. Anthony stated that as a scientist, he felt uncomfortable making decisions on the Council with inadequate science.

Mr. Bruington questioned whether a provision had been proposed for action to be considered at the end of the two year period of the attempt to develop aquaculture, if success had not been obtained. Dr. Anthony advised that although a provision did not presently exist, a new amendment or an emergency rule could be addressed at that time.

Mr. Bruington suggested the Council have representatives participate in a dive during a wild live rock harvest, and assess the impact on the area after the dive.

Graham Carleton, Tampa, Florida, a live rock harvester and aquaculturist, felt the quota should be reconsidered with inclusion of the 1993 harvest which was 315K pounds. He indicated the need for a control date.

Michael Henson, Palm Harbor, Florida, a member of the Florida Conservation Association, was not familiar with the live rock industry, but understood that a large economic impact could occur. As an electrical engineer, he had lost jobs three times over the past five years. He felt that as a country, the needs of a few harvesters should not affect the needs of the majority of the country. He favored development of an aquaculture system. He spoke against the extension of a wild harvest after the cutoff date if aquaculture systems had not developed as expected.

Jack Smith, a recreational diver, favored a surcharge on licenses to provide for live rock research. He related that he started a laboratory business in a different field in his garage five years ago with grant money, and this year would do several million in business.

Mr. Walker requested reconsideration of the emergency closure that had been implemented in the Destin area by reviewing the impacts of harvesting. He restated his offer to take a Council member on a commercial harvesting trip, and suggested an observer program be initiated. Dr. Anthony noted that he did not support observer programs as a scientist.

Don Turek, a member of the Florida Conservation Association, related that a major problem in the industry was that when a fishing violation occurred, judges did not prosecute sufficiently, and regulations were not being enforced.

Jennifer Wheaton, St. Petersburg, Florida, Florida Marine Research Institute, presented an update on the status of the aquaculture leases that were in the process of being surveyed. Mr. Londeree and Mr. Frakes had deposited rocks on there sites. Three surveys would be performed in the Keys during the next week, and two surveys to be performed in July and August. She recommended application for leases be submitted as soon as possible, because the lease fees would increase significantly when the new regulations were implemented. A system had been proposed whereby the surveys could be performed by consultants or in-house by the applicants themselves, and she would perform a site inspection. The surveys were presently costing between $3,000 and $4,000. She noted that a permit would be issued on Mr. Londeree's lease site in the near future.

Mr. Budd asked if the lease sites were bare sand areas. Mr. Londeree replied that the areas were almost completely sand. Ms. Wheaton recommended that an area of thin veneer sand over hardrock should be located for good recruitment.

MEETING ADJOURNED AT 9:15 P.M.

SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

GMFMC CORAL/LIVE ROCK AMENDMENT
PUBLIC HEARING
Marathon, Florida
June 23, 1994

DRAFT SUMMARY MINUTES

The meeting was called to order by Mr. Schill. He stated the purpose of the hearing and instructed the speakers on procedures and presentation. Mr. Pugliese presented an overview of the proposed management actions for the Gulf of Mexico contained in Amendment 2 to the Fishery Management Plan.

Major Jack Spey (Ret. U.S.A.F.) said he is representing the Board of County Commissioners in Okaloosa County, Florida. He said following his retirement from the United States Air Force in 1976, he was appointed to the Water Ways Advisory Commission for the Board. He operated a sailboat charter business in Ft. Walton Beach. He said he chaired the Board for four years. Since 1983 he has acted on behalf of Okaloosa County in the artificial reef construction program. This has included the use of box cars, tugs, barges, 2 nautical miles of concrete/steel modules (last year), and 3,600 tons of the Midbay Bridge material that was deemed to be excess. And Okaloosa County has been extremely involved in the reef construction program. He said for that and other reasons, is why he is attending the hearing. He wanted to ask the council a question, on Page 12 of the Scoping Document, Item C.2, is that the preferred alternative that you are discussing? He said he was a little bit confused procedurally wise. He asked if Mr. Pugliese could help him with this, and is this the preferred alternative in the Gulf, C.2 on Page 12.

Mr. Pugliese responded this was correct.

Major Spey stated that he was not aware that the harvest is to continue at the 1995 level in absence of a federal aquaculture system. He said this was generally news to them. In any case, we in Okaloosa County, which he thought you would recall, includes representation of all the major political entities in northwest Florida, the business entities, and the chambers of commerce are concerned. If the general public were made aware of this activity, would unanimously oppose the removal of any vertical structure and it's attached biomass. Because we recognize, both the fishermen and the divers, and common sense has told us all along, this is essential on the ocean's ability to reproduce itself. And for that reason he has been boring the council for the past 6 months. It has been their effort to try and emphasis that those objects, whether they be created by other forces in nature with it's attached biomass, regardless of the latin name, or whether that vertical structure was placed there by man and became an attachment point. He stated this is what we have been attempting to protect for the past six months. As it applies to live rock, that is just simply one, not necessarily a well defined term, and quotations should be placed on either side of it in their opinion. We are opposed to any kind of removal of vertical structure with the attached biomass because we believe that this is going to degrade the reproductive capacity of that marine ecosystem. The Magnuson Act charges all of us to be harvesters but it also charges all of us to try to care for that marine ecosystem. He would like to see the last sentence be deleted. He said it confuses him as to why it is there. He said it was their opinion and understanding that it was a 1996 cut-off on the part of the Gulf with not the inclusion of that last sentence. Obviously we will take that to Islamorada. But we have

believed as a community and he thinks the public response is demonstrated that, we have to preserve that natural outcropping, regardless of it's point of origin if the ocean can remain to be productive.

Mr. Mahood said to Major Spey, you said you have been boring us but you have not bored us for the last six months. He asked Major Spey how many meetings has he had to come and go to under the way we are managing this fishery right now?

Major Spey said when it was first brought to his attention as the Reef Coordination Officer for the County; it was just after Christmas. The first workshop we attended was on January 9th in Pensacola. Subsequently the Gulf Full Council in Clearwater and following that it was St. Augustine and Brunswick, etc. each one of those council meetings. Basically we have been trying and attempting to carry this same message. And to get it before the public eye on television. The broadest possible coverage that we could. Recognizing if the general public were aware that this activity has been going on, the outcry would be enormous.

Dr. Nelson said he understands his concern over the last sentence and it was kicked around a bit at the Gulf Council meeting. It is his understanding that and he believes, the passage of the amendment is going to constitute, if approved, the development of a federal aquaculture system. That is with the permitting requirements that NMFS is going to be able to issue, the Memorandum of Understanding between the Corps of Engineers and NMFS. He does not think it is going to be problematic. He said maybe Dr. Kemmerer would like to speak to that point. He thinks this is it and what has been proposed will fulfill the condition so that the quota will not continue.

Major Spey asked if he could make a comment on that and was it permissible? There are many in this room and many of the folks you are all aware of, who have the impression that we are a bunch of radical ecologists from northwest Florida and Spey doesn't know what he is talking about. He said he has been on boats and since he got out of the flying business, he has about 40,000 miles under his keel. He said we are very concerned and their main concern with this entire aquaculture, quote on quote, concept. As in many cases it will become an avenue used and that the present practice will continue by a few. And we know that to be true in our own community and the term has already been used as a smoke screen. "Oh I have my permits" to get the local fishermen off their backs. And those statements are lies. They don't have their permits and they haven't requested their permits. Our concern is if the system is not made fairly tight, it will be simply be used as an avenue for the continuation of the removal of natural occurring bottom. That is the objection we have to it. Fundamentally it works building artificial reefs and putting vertical structure on the ground. But from an academic standpoint, it is a wonderful program. But from a realistic standpoint, it may have an awful lot of holes in it and that is our concern and only concern.

Dr. Kemmerer said to Major Spey that he just wanted to point out he also objects to the same sentence. He doesn't think it is necessary and there was some concern expressed by some of the council members from the Gulf Council. This was because of the experiences people have had in trying to get permits. He is absolutely certain that we will be moving forward with the permitting system long before this time and essentially, implementation by the time this amendment goes through, he is confident we will have a permitting system in place. Secondly, as you are well aware, although I know you are not just concerned about your particular area, beginning on May 16th all live rock harvest was prohibited and so we are taking some steps in that direction. And that was in your general area, northwestern Florida. He asked if he was aware of this?

Major Spey responded that he very definitely was. He added his concern is not for northwest Florida and northwest Florida only.

Dr. Kemmerer said he appreciates that and he qualified his remarks that it has been prohibited and had a lot to do with Major Spey's efforts. And the many efforts of the other people in this general area.

T.L. Disler said he was sorry he pointed out the alternative to Major Spey because he stole all his material. He identified himself and said he owns and operates the Emerald Coast Scuba School in Destin, Florida. He would also like to address Alternative C.2 and he will make his statement brief since Major Spey pretty well covered it. If this remains the way it is, the last sentence, harvest to continue at the 1995 level in the absence of a federal aquaculture system, it will give the collectors no incentive to participate in the development of aquaculture. Especially in the light of yesterday's observations at the amount of rock collected and the amount of rock reported maybe two different numbers. Accordingly this alternative should be changed to agree with the position taken by the South Atlantic Council on Page 11, C.1. This is where it states that harvest of wild live rock will terminate no later than January 1, 1996. He said he had nothing further to say.

Dr. Henry Feddern said he has read through the Gulf Council recommendations here and he thinks they are very fair and a good compromise. He thinks everyone can live with them speaking as a harvester. He can certainly live with that type of regulation. It is something that is a good compromise that has been worked out through many meetings and it can definitely work. The gentlemen from Okaloosa County thinks that it should be changed merely because there maybe one or two people who are not going to abide by it. Well these one or two people may occur but they occur in all walks of life, including charter boats, and government, all sorts of organizations. Just to ban something merely because one or two people may not follow is an enforcement problem, it is not a management problem. After all you don't prohibit driving a car because a few people speed. He said any vertical structure is a part of the environment and you should ban and prohibit the taking of any vertical structure because it injures the environment. Me speaking as a biologist, can say that all organisms even if they are swimming fishes, invertebrates, and plankton all contribute to the biomass and the diversity. And harvesting of any of these affects the environment. The question is: what percentage is harvested that will determine what the effects will be. Would the gentlemen be willing to advocate a ban on harvesting all marine organisms including food fishes to preserve the environment. After all there has been a lot of evidence, scientific, that indicates that overfishing by both recreational and commercial fishermen have contributed to the serious depletion of fish stocks. Basically he is happy with the Gulf position and he would hope the South Atlantic Council might see fit to do that as well.

Mr. Jeffery Turner he wholeheartedly concurs with what Dr. Feddern has said in reference to the Gulf Council's management position. He believes if you read that sentence correctly it says, in the absence of a federal aquaculture system. Dr. Kemmerer is telling us we will have a system to go with. He said that is just a mute point really. If there is a system then you can close it. He said he doesn't see a lot of public outcry here on Major. Spey's behalf either. He would invite him wholeheartedly to come with him tomorrow on his boat and see us collect rubble rock out here in the Keys. There are two different animals and there is a lot of it out there. He would hope that you all would approve the amendment for the Gulf position and possibly sway that way also for the South Atlantic Council position.

Mr. Carl Haggenkotter, Victims of NOAA, said he didn't want to talk too much about what is going on with the live rock but he wanted to reiterate a few things. This has been a long process and a lot of these people have been in this process and actively working with you

and with the Gulf Council. He said they deserve a lot of credit. He added you deserve a lot of credit. NMFS and everybody has worked real hard to get this process to where it is at. However, he doesn't feel that this will be in place by the time of the cut-off date. So he urges the council to keep your options open to allow these people to be able to fish past that date should it become necessary so they can get into aquaculture. He said this was basically all he had to say.

Ms. Lisa Furstenworth, Reef Scapers, said she just wants to talk about the aquaculture one more time. She has received a letter that was faxed to her by Mr. Richard Londeriere this morning. She stated there is another group that wants to get involved in our aquaculture leases. They want us now to have a professional magnetometer reading of the bottom to make sure there are no shipwrecks underneath our site. She said she could provide a copy of the letter. She said Richard did look into it and it is $3,500.00 for this survey. She said every time we turn around someone is sticking their hand in our pocket on these leases. She said we have got to do something. It would be easier to fight to keep wild harvest open than it looks like its being to get an aquaculture lease. We need the council's help with this. She said there are just more and more things coming up and we are running short of time. So we need your help.

Mr. Peace asked who was the letter from?

Ms. Furstenworth said the letter is from the Secretary of State. She said she would ask Ms. Knight if she will make copies for all the council members.

Ms. Shipman asked along those lines and continuing with Mr. Peace's question, was that from the State of Florida, Secretary of State?

Ms. Furstenworth responded yes.

Ms. Shipman asked if she had any indications from MMS or the Corps of Engineers or anybody in the federal jurisdiction, that they would be requiring a magnetometer trace?

Ms. Furstenworth said that Richard did say they are trying to do that with his federal lease sites also?

Ms. Shipman asked who is?

Ms. Furstenworth said she was not sure and would have to ask him. She said she only had a few minutes on the phone with him this morning. But they are also trying to do it in federal waters also.

Mr. Brownlee asked was not Richard's sites off Tampa?

Ms. Furstenworth responded right.

Mr. Brownlee said so that is the state saying anywhere in state waters you have to get this not just in the Sanctuary?

Ms. Furstenworth said anywhere in state waters.

Public Hearing was adjourned.

TAPE OF PROCEEDINGS ON FILE (1 TAPE)

plb: 07/19/94

DRAFT

MINUTES

GULF OF MEXICO FISHERY MANAGEMENT COUNCIL

ONE HUNDRED AND THIRTY-THIRD MEETING

ISLAMORADA, FLORIDA

JULY 11-14, 1994

The one hundred and thirty-third meeting of the Gulf of Mexico Fishery Management Council was called to order by Chairman Thomas Wallin at 8:30 a.m., July 13, 1994. Council members in attendance were:

VOTING MEMBERS

David Anthony	Florida
Julius Collins	Texas
Frank Fisher	Texas
Joe Gill	Mississippi
Philip Horn	Mississippi
James Jenkins	Louisiana
Andrew Kemmerer	National Marine Fisheries Service
Albert King	Alabama
R. Vernon Minton	Alabama
H. Gilmer Nix	Florida
Hal Osburn (designee for Andrew Sansom)	Texas
L. Don Perkins	Texas
William Perret	Louisiana
Kenneth Roberts	Louisiana
Robert Shipp	Alabama
Thomas Wallin	Florida
Roy Williams (designee for Russell Nelson)	Florida

NONVOTING MEMBERS

LCDR Mark Johnson (designee for RADM North)	U.S. Coast Guard
Ron Lukens (designee for Larry Simpson)	Gulf States Marine Fisheries Commission

STAFF

Wayne Swingle	Executive Director
Terrance Leary	Fishery Biologist
Antonio Lamberte	Economist
Steven Atran	Population Dynamics Statistician
Cathy Readinger	Administrative Officer
Patricia Bear	Secretary
Camilla Moyer	Secretary
Michael McLemore	NOAA General Counsel
E.V.E. Joy	NOAA General Counsel

OTHER PARTICIPANTS

Jerry Bailey, Seffner, Florida
Rick Barber, Key West, Florida
Shella Barger, FMLA, FLRA, ASBA, West Coast Wholesale and Collectors, Tampa, Florida
Freeman Bateman, Sr., Captain Cliff's Seafood, Marathon, Florida
Glen A. Bend, Key West Charter Boat Association, Key West, Florida
John R. Benn, America Aquarist Society, Sheffield, Alabama
Mark Beragen, Department of Environmental Protection
Graham Carleton, Dover, Florida
Maragrete Carleton, Dover, Florida
Martha Campbell, Sea Critters, Tampa, Florida
Captain Ed Davidson, Florida Audobon Society, Marathon, Florida
Don DeMaria, Summerland Key, Florida
T.L. Disler, Emerald Coast Scuba School, Destin, Florida
Harold Drake, West Palm Beach, Florida
Bill Ferrell, Abyss Pro Dive Center, Marathon, Florida
Katie Fitzsimmons, St. Petersburg, Florida
Doug Gregory, Monroe County Cooperative Extension Service, Key West, Florida
Larry Goins, Summerland Key, Florida
Carl Hagenkotter, Victims of NOAA, Key West, Florida
Marty Harris, Tallahassee, Florida
Jack Haskins, Islamorada, Florida
Roy Herndon, Sea Critters, Dover, Florida
Teresa Herndon, Sea Critters, Dover, Florida
Anthony Iarocci, Monroe County Commercial Fishermen, Inc., Organization of Florida Fishermen, Grassy Key, Florida
Walter Japp, Florida Department of Environmental Protection, Florida Marine Research Institute, St. Petersburg, Florida
Ray Jensen, Tavernier, Florida
Paul Johnson, Center for Marine Conservation, St. Petersburg, Florida
William Lindall, National Marine Fisheries Service, St. Petersburg, Florida
Richard Londeree, Tampa Bay Saltwater, Tampa, Florida
Leanne J. Miller, Florida Department of Environmental Protection, Florida Marine Research Institute, St. Petersburg, Florida
Tom Murray, Tampa, Florida
Tony Newsome, Riverview, Florida
Gary D. Nichols, II, state Vice President of Organized Fishermen of Florida, Director of Monroe County Commercial Fishermen, Inc.
Bennett Orr, Marathon Chaper of Organized Fishermen of Florida, Marathon, Florida
Tom Palmer, Springhill, Florida

Mary Roth, Center for Marine Conservation, Marathon, Florida
John Sanchez, Monroe County Commercial Fishermen, Inc., Marathon, Florida
David L. Smith, Reef Encrustaceans, North Gulf Reef Collections, Santa Rosa Beach, Florida
Hailey Smith, Santa Rosa Beach, Florida
Kathy Smith, Reef Encrustaceans, Destin, Florida
Robert Sierpiejko, Key West, Florida
Bob Spaeth, Southern Offshore Fishing Association,Treasure Island, Florida
Jack Spey, Board of County Commissioners, Oklaoosa County Florida, Ft. Walton Beach, Florida
Jeffery A. Turner, Exotic Aquaria, Inc., North Miami Beach, Florida
Carolyn Walker, Key Largo, Florida
Michael Walker, Tropaquarium, Destin, Florida
Lance Waters, Mango, Florida
Mark Watts, Theodore, Alabama
Steven West, Sea and Sky Marine Life Wholesaler, Wesley Chapel, Florida
Jennifer Wheaton, Florida Department of Environmental Protection, Florida Marine Research Institute
Bill Wickers, Jr., Key West Charter Boat Association, Key West, Florida
Kay Williams, Save America's Seafood Industry, Pascagoula, Mississippi
Johnny L. Yarbrough, Big Bend Seafood Producers Association, Steinhatchee, Florida
Dan A. Yeider, Monroe County Commercial Fishermen, Inc., Organization of Florida Fishermen, Marathon, Florida

Mr. Wallin presented service plaques to Mr. James Jenkins and Dr. David Anthony for their participation on the Council. Mr. McLemore introduced Ms. E.V.E. Joy of NOAA General Counsel, to the Council.

- **Adoption of Agenda**

  The agenda was adopted with the following modifications: Under item IV. Public Testimony include discussion for the sale of fish from charterboats, and the revoking of spiny lobster permits. Under other business the nomination of an additional person to the SMZ monitoring team.

- **Approval of Minutes**

  The minutes of the Gulf Council meeting held in Corpus Christi, Texas May 10-12, 1994, were approved with the following corrections: page 3, line eight change CMDR to CDR; page 31, second paragraph change Lieutenant Johnson to LCDR; page 41, first paragraph under Enforcement Reports, change CMDR Johnson to LCDR and in the following paragraph change CMDR O'Shea to CDR; page 43, seventh line from the bottom, change CMDR Johnson to LCDR; page 20, last line, change 304.85 to 304(a). Mr. Perret requested clarification of the last sentence in the first paragraph on page 43 and the inclusion of any additional information he may have referred to.

- **Public Testimony**

  Coral Amendment 2

  Hailey Smith, Santa Rosa Beach, Florida, supported the allowance to collect live rock. She noted she helped her father collect live rock, and has her own reef tank. She indicated there was a need for her parents to collect live rock to generate an income while developing an aquaculture site.

  Mark Watts, Theodore, Alabama, noted he was an enthused hobbyist of live rock and supported aquaculture. He indicated he had not seen damage to the reefs in the closed area of the north EEZ

He noted hard bottom along with outcroppings existed in the area as indicated on a map presented to the Council. Mr. Minton asked if he was only a recreational hobbyist. Mr. Watts responded yes, he had no financial gain from his collecting. Mr. Minton asked how many recreational harvesters there were. Mr. Watts felt there were approximately 900,000 aquarium hobbyists. He supported a licensing system for recreational harvesters to prevent damage to the reefs. Mr. Watts suggested a poundage limit instead of a bucket limit. Dr. Anthony asked how much rock he personally collected. Mr. Watts informed that his 100 gallon reef tank held approximately 120 pounds of rock and the 30 gallon tank held approximately 50-60 pounds of rock. He noted the rock collection for the tanks was a one-time take. Dr. Anthony questioned what a reasonable amount would be for a recreational harvester. Mr. Watts felt 100 pounds was an average amount of live rock required by a harvester in one year. Mr. Gill asked if a permit was presently required, and if so, how much the permit cost. Mr. Watts replied that a permit was not required to be a hobbyist.

Captain Ed Davidson, Florida Audobon Society, Marathon, Florida, an original member of the Coral Advisory Panel noted that he participated in writing the coral and coral reefs fishery management plan, and felt the authors of the FMP were unaware of the live rock fishery which was a relatively new industry. He felt the reef system was declining because of aggregate cumulative impacts that included the taking of live rock, water quality, etc. He opposed the recreational harvest of live rock.

Teresa Herndon, Sea Critters, Dover, Florida, supported the management of the live rock industry and the development of aquaculture. She stressed the need for recognition of the economic and social impacts on harvesters involved in the fishery, while developing the management plan. She noted that discussions has occurred with person knowledgeable of live rock issues on the Comp-U-Serve network. Dr. Anthony asked where was she based. She noted her business was based out of Tampa, Florida. Dr. Kemmerer asked what the impacts of the proposed February 1994 control date would be on their business. She felt more time was needed to develop their aquaculture system before the control date was implemented.

Shella Barger, FMLA, FLRA, ASBA, West Coast Wholesalers and Collectors, Tampa, Florida, urged Council to discern between emotional and factual testimony. She disagreed with the figures that had been cited in Coral Amendment 2. She favored a minimum of a three-inch radius from the holdfast in order to support the octocorals. She felt disallowing chipping would have severe financial impacts. She requested the west coast be allowed to harvest live rock without a quota. Mr. Williams asked if a six-inch piece of rock would be required regardless of where the holdfast was. Ms. Barger replied that only three inches from the holdfast on at least one side would be necessary to support the gorgonian. Mr. King asked what the total was for the state permitting fees. Ms. Barger noted the currently proposed state permit fees for aquaculture sites included a non-refundable application fee of $2,000 to $3,000, a non-refundable survey fee of $2,000, a $500 Department of Environmental Regulation fee and other additional fees for a total of approximately $9,000. Mr. King requested the Council be provided written documentation of the total impact fees. Mr. Williams stated that the permitting fees were proposed figures. Mr. Collins asked if a site survey fee would be required for federal waters. Dr. Kemmerer indicated a federal site survey fee may be required as well as an administrative fee of approximately $40.

T.L. Disler, Emerald Coast Scuba School, Destin, Florida, referred to a document which stated that Virginia Tech Aquaculture Center had allocated funding to develop aquaculture research. He noted that J. M. Arringer and T.L. Forrest Sea Grant had prepared a short paper titled "Live Rock Aquaculture, a Guide to Getting Started".

Martha Campbell, Tampa, Florida, an employee of Sea Critters, noted much care was taken by them in the harvesting of live rock. She felt basing the quota on 1992 landing figures would cause Sea Critters to close for several months at the end of each year. She noted the company had placed aquaculture rock offshore, which was currently growing corals.

Roy Herndon, Sea Critters, Tampa, Florida, was against a quota and the limiting of chipping during the phase-out period. He noted there would be an 85 percent loss in his business if chipping was prohibited. Mr. Perret asked how many years he had been harvesting live rock, and whether he had been boarded by law enforcement agents. Mr. Herndon responded that he had been collecting live rock for seven years and had been boarded by law enforcement agencies several times. He felt a harvester in a sport-type boat was less likely be boarded than a working type boat. He noted the Florida Marine Patrol, located in the same marina as his vessel, had used his boat for training personnel in the identification of live rock, and felt there was an increase in law enforcement. He felt personal collecting was not an issue because the number of persons qualified to take live rock was limited by the diving depth required to harvest live rock in the EEZ. Mr. Williams asked if he had been boarded by law enforcement agents in the EEZ. Mr. Herndon recalled one occasion in the EEZ, but noted he was usually boarded within state waters. Mr. Osburn asked how much recreational harvest occurred. Mr. Herndon felt the number of recreational harvesters was abnormally low. Mr. Osburn asked if there were many recreational dive shops. Mr. Herndon noted there were a few on the west coast, but more on the east coast of Florida.

Mark Beragen, Department of Environmental Protection (DEP), Aquaculture-Shellfish Licensing Division, noted the DEP had been developing a submerged land management rule and was amending the aquaculture portions of the rule to develop specific policies, standards and criteria for the aquaculture of live rock. He stated the current fee structure for live rock included an application fee of $200, a $15 per acre lease fee, and a $5 surcharge. The first draft rule contained higher numbers such as a $3,000 non-refundable application fee, and a $2,500 non-refundable fee for the inspection sheet. He noted the higher fees had been developed to cover administrative costs for the 10-year term of the lease, but were expected to be lowered before implementation. He felt the fees would be assessed periodically as the aquaculture sites begins to develop.

Mr. Perret asked if a maximum amount of land per person would be established for aquaculture lease and whether there would be a severance fee. Mr. Beragen responded that there was no limit, and there would not be a severance fee. He indicated the criteria for the general permit would define the size and tonnage of materials that would be put on a site unless the applicant applied for a full dredge and fill permit. Mr. Minton asked if the permit would give the applicant any exclusive rights. Mr. Beragen replied the applicant's exclusivity would only apply to the live rock. Dr. Anthony asked if a magnetometer survey would be required. Mr. Beragen responded it would not be, however, a survey fee of approximately $3,000 to $5,000 would be assessed. Mr. Perret asked if an aquaculture lease would be allowed on a site with an oil and mineral lease. Mr. Beragen felt it would not be allowed.

Mr. Perret asked if a mineral lease would be allowed on an aquaculture site, considering that a mineral lease would be of greater financial gain to the state. Mr. Beragen responded that if a mineral lease was expected to have a negative effect on an aquaculture site, it would be denied. Dr. Kemmerer asked when the new rule be implemented and how long it would take to process applications currently on hand. Mr. Beragen was unsure whether the current applications would be processed before the rule was implemented. He felt the rule would be implemented within six months to one year. He noted site selection was the most difficult and timely part of the application process. He felt the applications currently on hand may take up to one year to process.

John Benn, American Aquarist Society, Sheffield, Alabama, explained that the Society had been developed to review the ethical, moral, and legal challenges for hobbyists. He supported a recreational harvest of five gallons per day, per individual for non-commercial use, and a permitting system to allow for harvest amounts to be recorded and used for educational purposes or reference. He opposed a weight limit, but supported a five-gallon bucket limit because it was easier to measure. He supported the Council's preferred option, that there not be a "drop dead" date regardless of whether there was an aquaculture permitting system in place.

Dr. Kemmerer asked how many recreational harvesters there were, and how that number would be affected if a hobbyist permit was available. Mr. Benn felt an increase in recreational landings of live rock would not occur and estimated less than 500 individual hobbyists harvesting live rock.

Dr. Roberts asked whether he would support a permitting system that allowed recreational harvest without a trip limit, two times per year. Dr. Anthony favored a limitation of the number of trips per year. Mr. Benn suggested three trips per year. Mr. Williams asked if he would support the $40 administrative fee. Mr. Benn felt the $40 administrative fee was high and suggested a $5 to $10 fee. Mr. Perret asked if a daily trip limits would be supported. Mr. Benn supported daily trip limits provided permits were required to be on board.

Mr. Osburn asked if the mortality of live rock organisms was higher for recreational harvesters than commercial. Mr. Benn felt the mortality of the live rock organisms collected by a hobbyist may be slightly higher than those collected by commercial live rock harvesters.

Steven West, Sea and Sky Marine Life Wholesaler, Wesley Chapel, Florida, felt a temporary closure each year would cause a negative impact on aquaculture efforts. He opposed a quota during the phase-out period. He felt rubble zones did not exist, and attributed the minimal amount of rubble rock available was created naturally and by chipping. He felt divers disliked the West Coast because of the limited visibility. He supported allowing chipping.

Paul Johnson, Center for Marine Conservation (Center), St. Petersburg, Florida, noted he had submitted a letter dated July 5, 1994 (Tab B, No. 5(w)) which addressed most of his comments. He attributed the development of the wild live rock harvest issue to a concern for the habitat and felt live rock was a limited and non-renewable resource. He reported am increase in the market value of live rock since the implementation of the emergency rule. He felt the fees charged for the permitting process should support the management and regulatory programs of the resource. He noted the most difficult aspect was law enforcement, and there would have to be a permitting system. He felt there was a need for technical support to aid the harvesters in the transition from wild live rock to aquacultured live rock harvest.

Mr. King questioned Mr. Johnson's statement that wild live rock was a non-renewable resource. Mr. Johnson maintained that the resource was non-renewable in the wild environment because the reefs that persons were chipping took millennia to establish. Dr. Kemmerer asked what the Center's position was on chipping. Mr. Johnson related the Center supported chipping without power tools during the phase-out period, which should be a predetermined date.

David Smith, Reef Encrustaceans and North Gulf Reef Collections, Santa Rosa Beach, Florida, concurred with Mr. Benn on allowing a recreational harvest since the amount landed would be very minimal. He felt the emergency rule was implemented due to emotional testimony given at the January 1994 Council meeting in Clearwater, Florida. He noted the persons testifying were informed that Destin would become a "ghost town" should live rock harvest is allowed. He referred to Figure 6 in Coral Amendment 2, noting that the diagram was misleading and that hard bottom and reefs existed in the area. He referenced the book titled "The Divers Guide to the Northern Gulf of Mexico" which noted the numerous reefs available to dive. He additionally referenced the video by Larry Jackson, shown to the Council earlier. He requested the emergency rule be ended and noted he would support no chipping because they have never chipped in that area. He felt the quota was too low and would be filled early and thus a long closure period. Mr. Perret asked Mr. Smith to clarify that chipping did not occur in his area. He pointed out differences existed between live rock in the northern Gulf area versus the Tampa Bay area, which created the need for chipping only in certain areas.

Jack Spey, Board of County Commissioners (Board), Oklaoosa County, Florida, relayed the Board passed a resolution stating their opposition to the removal of habitat regardless of the nature of the habitat whether it be a rock or the biomassess attached to it. He quoted from the resolution "whereas the removal of outcropping of any kind will destroy the home of many biological species or microganisms which could destroy the ecosystem and ultimately sea life. The City Counsel of Destin Florida opposed the destruction of and removal of, or harvesting of, any natural outcropping including coral rock or other natural objects upon which marine life attached itself." Mr. Perret noted the Commssioner's statement was inconsistent with the land development for the Oklaoosa County area. Mr. Spey noted they were not referring to a fishery but an important part of the ecosystem. Dr. Kemmerer asked how many meetings had Mr. Spey attended. Mr. Spey responded he had attended three meetings.

Richard Londeree, Co-owner of Tampa Bay Saltwater, Tampa, Florida, noted he received the first marine life permit from the State of Florida. He requested that chipping of live rock be allowed on the west cost of Florida. He supported vessel limits and eliminating power tools. Mr. Londeree informed he has committed 14 years developing an industry for chipped live rock, and if this industry were banned, he would be financially devastated. He requested a two year phase-out period without a quota and an allowance for chipping. He strongly urged the Council to base their decisions on the best available scientific data. He applied for a state aquaculture permit in 1991 under the impression it would take 8 to 12 months, however, it took four years to be issued. He noted permits were not available for aquaculture in federal waters. He related he had 300,000 pounds of aquaculture rock in federal waters placed under a COE permit which did not allow for the removal of the rock. He noted his permit allowed him to deploy two million pounds of rock each year on his site. He currently had three million pounds of aquaculture rock on his sites in state water. Mr. Perret questioned whether the other permit applicants encountered the same complications in obtaining a permit. Mr. Londeree responded yes, noting there was one other person who had an aquaculture lease site in state waters, however he did not possess a license to remove that rock. Mr. Osburn asked how many of his trips exceeded the 25 5-gallon bucket limit. Mr. Londeree responded the most he had landed in one trip was approximately 18 5-gallon buckets harvested by three men and three tanks each. He felt the 25 5-gallon bucket limit was a good management measure noting there were currently large vessels with multiple divers and power tools collecting more than the current limit of 25 5-gallon buckets. He requested that the Council develop the licensing system for the vessel that would be under its own power (not towed).

Bill Ferrell, Abyss Pro Dive Center, Marathon, Florida, referred to a letter by the Professional Association of Diving Instructors whose position was against the taking of live rock during the phase-out period. Mr. Ferrell personally felt there was not a problem with recreational harvesters but law enforcement would be difficult. Mr. King asked how many divers from the Center would be interested in collecting live rock. Mr. Ferrell did not have the numbers and did not know if they would be available.

Jennifer Wheaton, a coral reef biologist with the Florida Department of Environmental Protection, Florida Marine Research Institute, clarified that the worm rock (Christmas Tree Worm) portion of the live rock was the main organism that was being collected by chipping along the west coast of Florida. She noted that Christmas Tree Worms inhabit substrate, thus it was impossible to collect the worm without a portion of the substrate. She noted that in the Destin area there was no need to chip, however she had not dived in the Destin area.

Jeffery A. Turner, Exotic Aquaria, Inc., North Miami Beach, Florida, noted he collected live rock for over 25 years. He supported a two year phase-out period with chipping allowed and no quota, thus allowing for the income needed to develop an aquaculture system. He noted that his bank was not willing to lend money to invest in an aquaculture system. He felt there was a great amount of live rock available for harvest. He felt it would take at least five years to develop a high quality aquacultured rock product.

He requested that he be allowed to harvest the aquacultured rock which had coral growth upon, it noting that provision should be included on the application and in state rules.

Michael Walker, Tropaquarium, Destin and Tampa, Florida, suggested limiting the base on gorgonians to the size of the item growing upon it, i.e, 18-inch piece with a 3-inch base, and 12-inch piece with a 2-inch base, etc. Currently the 1-inch base was not sufficient. He felt the live rock harvested from Destin, Florida was the best quality rock harvested from Florida. He felt the live rock in Destin was very fragile and created more rubble rock than in Tampa and the Keys. He noted in the Destin area there was a great amount of hard bottom versus reefs that have height. He supported a limited number of trips or amount per year for recreational harvesters.

GULF OF MEXICO FISHERY MANAGEMENT COUNCIL
Lincoln Center, Suite 331 • 5401 W. Kennedy Blvd.
Tampa, Florida 33609-2486 • 813/228-2815 • Fax 813/225-7015

Identical letter sent to:

Terry Howey, Joe Gill, George T. Everett, Estes Whitfield, Dr. H. Wayne Beam, and Sally Davenport.

May 20, 1994

Mr. David Barley
Office of State Planning and Federal Programs
State Capitol
Montgomery, Alabama 36161

Dear Mr. Barley:

This is to advise your State of proposed action and the conclusion of the Gulf of Mexico and South Atlantic Fishery Management Councils of the consistency of such action with the provisions of your Coastal Zone Management Program. This letter is submitted pursuant to provisions of 15 CFR §930, et seq. and §307 of the coastal Zone Management Act of 1972, as amended.

In a proposed Amendment 2 to a Fishery Management Plan for Coral and Coral Reefs and its Supplemental Environmental Impact Statement, the Gulf of Mexico and South Atlantic Fishery Management Councils lay out a series of options to regulate the harvest of live rock. Used in marine aquaria, live rock is a calcareous material, usually fossil coral or limestone, which supports an assemblage of marine organisms. The rock can be quite showy with encrustation anemones, tube worms, and gorgonians. It is harvested by hand by divers, and most of the recent production (about 950,000 pounds per year) came from federal waters off Florida. Florida currently prohibits the taking of live rock from state waters so most harvest is now from federal waters off Florida.

Corals, coral reefs, and sea fans are already protected in federal waters under this fishery management plan, and this amendment would phase out the taking of natural live rock to be replaced by harvest of aquacultured rock.

We have reviewed the proposed action with regard to the provisions of your state's Coastal Management Program and have concluded that it is consistent to the maximum extent practicable with the provisions thereof. In accordance with the provisions of 15 CFR §930.41, we are requesting that you advise us of agreement or disagreement with our determination. In the event that there is no response from your agency within 45 days of receipt of this letter, we will presume your agency's concurrence with our determination of consistency.

Sincerely,

Terrance R. Leary

Terrance R. Leary
Fishery Biologist

TRL:ccm

Enclosure: Coral Amendment 2

c: Thomas Wallin
Robert Shipp
Frank Fisher
Robert Mahood
William Lindall
Staff

coral\czm.ltr

State of Louisiana

EDWIN W. EDWARDS
GOVERNOR

JOHN F. ALES
SECRETARY

RECEIVED
MAY 27 1994
GULF FISHERIES COUNCIL

DEPARTMENT OF NATURAL RESOURCES

May 25, 1994

Gulf of Mexico Fishery Management Council
Lincoln Center, Suite 331
5401 West Kennedy Boulevard
Tampa, FL 33609-2486
ATTN: Terrance R Leary

RE: **C940136**, Coastal Zone Consistency
Gulf of Mexico Fishery Management Council
Tampa, Florida
Direct Federal Action
Amendment 2 to the Fishery Management Plan for Coral and Coral Reefs of the Gulf of Mexico and South Atlantic

Dear Mr. Leary:

The above referenced project has been reviewed for consistency with the approved Louisiana Coastal Resource Program (LCRP) as required by Section 307 of the Coastal Zone Management Act of 1972, as amended. The project as proposed in the application, is consistent with the LCRP. If you have any questions concerning this determination please contact Mr. Ben Kropog of the Consistency Section at (504)342-7949.

Sincerely,

Terry W. Howey

Terry W. Howey,
Administrator

TWH/PC/bjk

COASTAL MANAGEMENT DIVISION P.O. BOX 44487 BATON ROUGE, LOUISIANA 70804-4487

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL
Office of Ocean and Coastal Resource Management

SOUTH CAROLINA COASTAL COUNCIL

Ashley Corporate Center
4130 Faber Place
Suite 300
Charleston, S.C. 29405
(803) 744-5838
FAX 744-5847

Keith M. Kinard
Chairman

H. Wayne Beam, Ph.D.
Executive Director

July 18, 1994

Mr. Terrance R. Leary
Gulf of Mexico Fishery Management Council
5401 W. Kennedy Boulevard
Tampa, Florida 33609-2486

Re: Gulf of Mexico Fishery
Management Council
Various Counties
Federal Consistency

Dear Mr. Leary:

The staff of the Office of Ocean and Coastal Resource Management (OCRM) certifies that the above referenced project is consistent with the Coastal Zone Management Program. This certification shall serve as the final approval by the OCRM.

Interested parties are provided ten days from receipt of this letter to appeal the action of the OCRM.

Sincerely,

H. Stephen Snyder
Director of Planning
and Certification

JHA
JHA:A5:20294/jk

cc: Dr. H. Wayne Beam
Mr. Christopher L. Brooks

EXECUTIVE OFFICE OF THE GOVERNOR

GULF OF MEXICO FISHERY MGT
ATTN: TERRANCE R. LEARY
LINCOLN CENTER, STE 331
TAMPA, FL33609-2486

RECEIVED
JUN 15 1994
GULF FISHERIES [illegible]

SAI# FL9405310535C CFDA# 11.441

AMENDMENT 2: FISHERY MANAGEMENT PLAN, CORAL AND CORAL REEFS OF THE GULF OF MEXICO AND SOUTH ATLANTIC DRAFT SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT REGULATO IMPACT REVIEW AND INITIAL REGULATORY FLEXIBILTIY ANALYSIS

RECEIVED: 05/31/94

The **Florida State Clearinghouse** has received your recent correspondence requesting review under its intergovernmental coordination and review process. This correspondence has been assigned a **State Application Identifier (SAI) Number**, shown above, which should be used in all communications with the office concerning the application or project.

The State Clearinghouse will coordinate a review of the application or project pursuant to Presidential Executive Order 12372; Gubernatorial Executive Order Number 893-150; section 216.212, Florida Statutes; the National Environmental Policy Act; the Florida approved coastal management program; the Outer Continental Shelf Lands Act; and other federal or informational review requirements.

The review begins on the date the correspondence is received by the State Clearinghouse and normally is completed within 60 days. Completion of the review may be delayed if additional information is needed by reviewing agencies, in which case you will be notified.

Please send three (3) copies of your application or project to the appropriate Regional Planning Council (RPC), if applicable.

FLORIDA STATE CLEARINGHOUSE
Executive Office of the Governor/OPB
The Capitol, Tallahassee, FL 32399-0001
(904) 488-8114; SunCom 278-8114