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FINAL

AMENDMENT 18A

TO THE

FISHERY MANAGEMENT PLAN

FOR THE REEF FISH RESOURCES OF

THE GULF OF MEXICO

(including Environmental Assessment, Regulatory Impact Review, and Initial Regulatory Flexibility Analyses)

October 2005

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Fishery Impact Statement

This table of contents and summary of impacts on participants and communities are provided to aid the reader in reviewing fishery impacts by referencing corresponding sections of the amendment that are inclusive of the Fishery Impact Statements (FIS).

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Summary See below
Fishery Impacts of Alternatives

Under construction

Summary

Regulations impose restrictions on fishery participants, which can result in adverse effects on fishermen and fishing communities. Amendment 18-A to the Fishery Management Plan (FMP) for the Reef Fish Fishery of the Gulf of Mexico, U.S. Waters" proposes to: (1) Prohibit vessels from retaining reef fish caught under the recreational size and possession limits when commercial reef fish harvests are onboard the vessel (Action 1); (2) Adjust the number of crew members allowed onboard when a dually permitted vessel is taking a commercial reef fish trip (Action 2); (3) Prohibit reef fish species, except sand perch and dwarf sand perch, from being used as bait by any gear type in the commercial and recreational fisheries (Action 3); (4) Require VMS units onboard all commercially permitted reef fish vessels, including charter vessels with commercial reef fish permits operating in the Gulf of Mexico (Action 4); (5) Adopt rewording changes to the framework procedure and incorporate the SEDAR process into the TAC framework procedure (Action 5); and (6) Require vessels with commercial or for-hire reef fish vessel permits to comply with sea turtle and smalltooth sawfish release protocols, possess a specific set of release gear, and, to adopt guidelines for the proper care for incidentally caught sawfish (Action 6).

Each proposed action is expected to have a positive, although insignificant, long term effect on the human environment. Prohibiting vessels from retaining reef fish caught under the recreational size and possession limits when commercial reef fish harvests are onboard the vessel would assist fishery managers in accurately assigning landings to either the commercial or recreational sectors. This action is also expected to enable enforcement officials to more easily determine if a vessel is in compliance with the regulations. Adjusting the number of crew members allowed onboard when a dually permitted vessel is taking a commercial reef fish trip would enable fishery managers to eliminate the inconsistency between existing USCG minimum manning requirements and fishing regulations. Prohibiting reef fish species, except sand perch and dwarf sand perch, from being used as bait by any gear type in the commercial and recreational fisheries would positively impact enforcement by making it easier for officials because they would no longer have to determine whether the reef fish used as bait was purchased onshore or caught at sea. Requiring VMS units onboard all commercially permitted reef

fish vessels, including charter vessels with commercial reef fish permits operating in the Gulf of Mexico would allow to better monitor offshore restricted areas and season closures. Adopting rewording changes to the framework procedure and incorporating the SEDAR process into the TAC framework procedure would result in more accurate stock assessments, which in turn, will help fishery managers' select appropriate management instruments. Requiring reef fish vessels to comply with sea turtle and smalltooth sawfish release protocols and possess a specific set of release gear and, to adopt guidelines for the proper care for incidentally caught sawfish will constitute an important step in improving the survival rate of incidentally caught sea turtles and smalltooth sawfish in the long run.

Actions proposed in this amendment are not likely to result in significant impacts on the majority of fishery participants. Under Action 1, Preferred Alternative 2 would improve the effectiveness of enforcement without significantly impacting fishermen. By contrast, Alternative 3, which prohibits vessels from having both a commercial and a charter permit at the same time, would have been burdensome. It would have impacted fishing activities of owners of dually permitted vessels by forcing them to divest of one permit. Persons that must rely on both commercial and charter fisheries to maintain an economically viable operation may not be able to stay in business.

Preferred Alternative 2 under Action 2 corrects an inconsistency existing between USCG and fishing regulations and allows owners of dually permitted vessels to adjust their crew size depending on the purpose and expected length the trip. USCG regulations currently require a minimum of four persons (two captains and two crew) when a vessel with a COI is out over 12 hours, while the fishing regulations currently limit the maximum number of persons to three when a vessel has both a commercial and charter vessel permit when it is fishing commercially. This limitation only applies to vessels with both commercial and charter permits. Since charter vessels that carry more than six passengers must have a COI in order to carry passengers for hire, this creates a discrepancy in the regulations for dual-permitted vessels. This action would not impact fishing activities but would have a positive impact on the safety at sea of fishery participants by affording them valuable additional assistance in case of emergency. If Alternative 3 were selected under Action 1, the suite of alternatives considered under Action 2 would become irrelevant.

Under Action 3, Preferred Alternative 2 (sub-options c and d) is expected to improve the enforcement of the ban on using reef fish for bait without substantially affecting fishery participants. Alternative 3, which would require enforcement officials to identify the reef fish species used for bait before assess any potential violation, would be less effective.

Preferred Alternative 2 (sub-option b) under Action 4 would apply VMS requirements to all commercially permitted reef fish vessels. Vessel owners are expected to bear equipment and communication costs. First-year compliance costs range from a minimum of $2,032 to a maximum of $3,517 per vessel. This action is expected to improve the efficacy of enforcement efforts and the effectiveness and timeliness of at-sea rescue efforts. Marginal fishing operations may be impacted because they may not have the resources to comply with these requirements. Alternative 3, which considers using

federal resources to pay for VMS units, would have been less onerous for fishery participants.

Under Action 5, Preferred Alternative 2 adopts minor rewording changes to the TAC framework procedure and incorporates the SEDAR process into the framework procedure. This action is essentially an administrative measure and is not expected to impact fishing activities in any noticeable way.

Finally, Alternative 6 under Action 6 would require commercial and for-hire reef fishery participants to comply with sea turtle and smalltooth sawfish release protocols, possess a set of release gear required by the NMFS Office of Protected Resources, and adopt specific guidelines for the proper care for incidentally caught sawfish. Apart from expenses incurred to purchase mandated release gear, this action is not expected to impact fishing operations. Per vessel, out-of-pocket expenses are estimated between $267 and $459. For fishery participants Alternative 3 would have been costlier; the extensive set of release gear that it requires would cost up to $1,282 per vessel.

A more detailed analysis of the impacts to participants and their communities relative to the alternatives for open or limited access is found in Sections 5 and 8 herein.

1 INTRODUCTION

The Reef Fish Fishery Management Plan (FMP) and environmental impact statement (EIS) was originally implemented in 1984. It contained a description of the fishery and a limited number of regulations, including area restrictions on the use of fish traps, roller trawls, and powerhead-equipped spear guns, a minimum size limit for red snapper, and data reporting requirements. In subsequent amendments, a number of regulations were implemented that eventually led to the issues addressed in this amendment. A brief history of the relevant changes to the FMP follows. A more complete history of management is contained in Appendix A.

Amendment 1 and environmental assessment (EA), regulatory impact review (RIR), and regulatory flexibility analyses (RFA) (implemented in 1990) was a major revision of the FMP. It set size and recreational bag limits for several reef fish species and prohibited the sale of reef fish caught under a bag limit, established a commercial reef fish permit, and established a longline boundary inshore of which longlines were prohibited from being used to target reef fish. Additional size and bag limits were established or revised in Amendments 12/EA/RIR/Initial Regulatory Flexibility Analyses (IRFA) (implemented 1997) and 16B/EA/RIR/IRFA (implemented 1999), regulatory amendments including EA RIR and IRFA implemented in January 1994, January 1995, April 1998 and June 2000, and Secretarial Amendment 1/EA/RIR/IRFA (July 2004). Amendment 1 also established a maximum 3-person crew for charter/head boats with commercial reef fish permits to fish under the commercial quota, and it established the original framework procedure for setting total allowable catch (TAC), which was subsequently modified by Amendments 3 (1991), 4 (1992), and 6 (1993).

Amendment 5/Supplemental EIS (SEIS)/RIR/IRFA (implemented in 1994), established restrictions on the use of fish traps, created a special management zone (SMZ) with gear restrictions off the Alabama coast, and closed the region of Riley's Hump (near Dry Tortugas, Florida) to all fishing during May and June to protect mutton snapper spawning aggregations. This amendment also required that all finfish except for oceanic migratory species and bait be landed with head and fins attached, and established a definition for bait as a footnote (page 22 of the amendment)

Amendment 14/EA/RIR/IRFA (implemented in 1997) provided for a ten-year phase-out for the fish trap fishery;

Amendment 16A/EA/RIR/IRFA (implemented in 2000) provided that NMFS design (with implementation to be accomplished in a future amendment) a vessel monitoring system (VMS) for vessels engaged in the fish trap fishery, and that fish trap vessels in the interim submit trip initiation and trip termination reports.

A regulatory amendment/EA/RIR/IRFA implemented in June 2000 established marine reserves for a period of four years at Steamboat Lumps and the Madison-Swanson area off of Florida within which no fishing was allowed except for highly migratory species. These marine reserves were subsequently continued for an additional 6 years, until July 2010 by Amendment 21/SEIS/

RIR/IRFA (implemented in July 2004), which also modified the fishing restrictions within the reserves to allow surface trolling on a seasonal basis.

Amendment 19/SEIS/RIR/IRFA, also known as the Generic Amendment Addressing the Establishment of the Tortugas Marine Reserves (implemented in 2002), established two marine reserve areas off the Tortugas area and prohibited fishing for any species and anchoring by fishing vessels inside the two marine reserves. The Tortugas South reserve encompassed and replaced the Riley's Hump seasonal closed area.

Amendment 20/EA/RIR/IRFA (implemented July 2002) created a charter/headboat vessel permit for the Gulf EEZ with endorsements for reef fish, coastal migratory pelagic and dolphin/wahoo (if FMP implemented). It also established a 3-year moratorium on the issuance of new charter and headboat vessel permits effective on June 16, 2003.

Amendment 24/EA/RIR/IRFA (submitted to NOAA Fisheries in January 2005) contains a proposal to replace the commercial reef fish permit moratorium that expires after December 31, 2005 with a permanent limited access system.

This amendment is intended to improve enforcement and monitoring in the Gulf of Mexico reef fish fishery, particularly with respect to illegal sale of reef fish caught under recreational bag and size limits, the use of reef fish for bait, and monitoring of vessels for compliance with closed or restricted areas. The amendment also resolves a conflict between NMFS maximum crew size regulations and U.S. Coast Guard minimum crew size regulations for certain vessels (and also considers a crew size related safety issue with respect to commercial spearfishing vessels), updates the framework procedure for setting TAC in order to recognize current practices and terminology, sets protocols to reduce the mortality of incidentally caught endangered sea turtles, and sets safe release practices for sea turtles and smalltooth sawfish incidentally captured during fishing operations. A brief description of each issue and preferred alternative follows. Refer to Section 8 (Environmental Consequences) for a discussion of the environmental effects of each of the alternatives.

Under **Simultaneous Commercial and Recreational Harvest on a Vessel**, this amendment proposes to improve enforceability on the prohibition on sale of reef fish caught under recreational bag limits by vessels holding both charter and commercial reef fish permits. An alternative that would have required that vessels have only one type of permit was rejected. However, the preferred alternative in this section prohibits possession of recreational bag limits of reef fish aboard a vessel that has commercial quantities of reef fish. Since commercial quantities are higher than recreational bag limits, this effectively impacts only situations when commercial season is closed but recreational season is open, or when the recreational harvest minimum size limit is smaller than the commercial size limit (e.g., gag). It also resolves a question of whether a vessel could keep a commercial trip limit plus a recreational bag limit of reef fish species that have both trip and bag limits.

Under **Maximum Crew Size on a Charter Vessel When Fishing Commercially**, this amendment proposes to address a conflict between United States Coast Guard regulations and

NOAA fishing regulations with regard to allowable crew size. The Coast Guard regulations specify that a vessel with a certificate of inspection, which is out more than 12 hours, must have a minimum of four crew members (which includes two captains). However, NOAA fishery regulations set a maximum crew size of 3 for vessels that hold both a commercial and charter reef fish permit while fishing commercially (if more than 3 persons are aboard, the vessel is assumed to be charter fishing and recreational bag and size limit regulations apply). To resolve this conflict, this amendment proposes increasing the maximum crew size under NOAA fishing regulations from three to the minimum required by the Coast Guard (4 persons) for vessels that are commercially fishing over 12 hours. Commercial vessels with both types of permits that are out for less than 12 hours would continue to have a 3-crew maximum. A non-preferred alternative would have created an exemption to the 3 person maximum for commercial spearfishing vessels in order to allow an additional crewmember on the surface for safety reasons. The Council considered this alternative, but felt that the additional crewmember would have provided the potential for additional spearfishing effort on a trip, and would not have provided a significant increase in the margin of safety.

Under **Use of Reef Fish in or from the EEZ for Bait**, this amendment proposes to close a loophole in the regulation requiring that reef fish be landed head and tails intact. The legal definition of bait contained in 50 CFR 628.38(d) exempts fish from the head and tails intact rule if they are cut into strips no larger than 3 inches by 9 inches with the skin attached and are kept frozen, refrigerated, or held in brine. Under this definition, reef fish could be legally cut up into strips. To eliminate this possibility, the preferred alternative explicitly prohibits the use of reef fish, other than sand perch and dwarf sand perch, as bait, except for the traditional use of fish parts and carcasses in the crustacean trap fisheries. Note that this also prohibits the use of legal size whole reef fish as bait. The use of whole, live vermilion snapper for bait has been a practice of some fishermen. Provided the vermilion snapper meets the minimum size limit regulation (10 inches total length, with a proposal to increase the limit to 11 inches currently under review) such actions have been legal in the past. However, in many cases it is believed that the vermilion snapper being used for bait are undersized and are being used illegally. Vermilion snapper are classified as overfished and undergoing overfishing. This proposal reinforces the prohibition against the use of such fish for bait.

Under **Vessel Monitoring System**, this amendment proposes to establish and implement a VMS in the reef fish fishery in order to improve enforceability of area restrictions. The Gulf of Mexico EEZ contains several areas with restrictions on reef fish fishing or type of gear allowed (e.g., longline boundary, Middle Grounds HAPC, Flower Gardens HAPC, Tortugas Ecological Reserves). Because of the sizes of these areas and the distances from shore, the effectiveness of enforcement through over flights and at-sea interception is limited. An electronic vessel monitoring system (VMS) allows a more effective means to monitor vessels for intrusions into restricted areas, and could be an important component of a possible future electronic logbook system.

Under **Modifications to the TAC Framework Procedure**, this amendment proposes to update the framework procedure for setting total allowable catch (which was created in Amendment 1 and has been periodically revised) to incorporate the Southeast Data, Assessment and Review

(SEDAR) process for conducting stock assessments, and to update the terminology. These changes will not directly impact fishermen but will streamline the administrative environment and reduce possible confusion over the appropriate procedure that could result from outdated terminology or from discussion of non-SEDAR procedures that are no longer used.

Under **Sea Turtle and Smalltooth Sawfish Bycatch**, this amendment proposes requiring that certain type of sea turtle bycatch release gear and documentation on careful release protocols be aboard reef fish vessels. In February 2005, the NMFS Office of Protected Resources issued a biological opinion, in accordance with section 7 of the Endangered Species Act (ESA) that evaluated the impact of the reef fish fishery on endangered sea turtles and smalltooth sawfish (NMFS 2005). Although the biological opinion concluded that the anticipated incidental take of these species by the reef fish fishery is unlikely to jeopardize their continued existence, it did require that reasonable and prudent measures be taken to minimize stress and increase survival rates of any sea turtles and smalltooth sawfish taken in the reef fish fishery.

2 PURPOSE AND NEED FOR ACTION

Introduction

The primary purpose of Amendment 18a is to resolve several issues related to monitoring and enforcement of existing regulations, to update the framework procedure for setting total allowable catch (TAC) to reflect current terminology and stock assessment procedures, and to reduce bycatch mortality of incidentally caught endangered sea turtles and smalltooth sawfish.

The purpose and need for each of these sections and the issues contained within them is summarized below.

Simultaneous Commercial and Recreational Harvest on a Vessel

Need for Action

There were 229 vessels with both commercial and charter reef fish permits as of March 1, 2005 (personal communication, Janet Miller, NMFS). This is approximately one fifth of the 1,108 vessels (as of March 1, 2005) with commercial reef fish permits, and 15% of the 1495 vessels (as of March 1, 2005) with charter reef fish permits. Existing reef fish regulations make it illegal to sell reef fish caught under a recreational bag limit, but it may not be possible to determine whether a vessel, once it returns to the dock, was operating as a commercial or charter for purposes of determining whether a catch was saleable. Anecdotal information suggests that some vessels may be selling reef fish caught on a recreational charter trip. Therefore, there is a need to improve the enforceability of the prohibition on the sale of recreationally caught reef fish. In addition, the current rules governing recreational harvest on a commercial fishing vessel are inconsistent. For example, during the commercial closed season for red snapper, commercial vessels are allowed a recreational bag limit (which cannot be sold). However, during the February 15 to March 15 commercial closed season on red grouper, black grouper and gag,

vessels with a commercial reef fish permit are prohibited from possessing even the recreational limits of those species (unless the vessel also has a charter permit and is operating as a charter vessel). Furthermore, those same vessels are allowed to retain recreational bag limits during a grouper quota closure. The result is a confusing set of regulations as to when a commercially permitted vessel may or may not retain a recreational harvest of reef fish.

Purpose of Action

The purpose of the alternatives in this section is to improve enforceability of the provision prohibiting sale of reef fish caught under the recreational bag limit, either by restricting the simultaneous possession of commercial and charter reef fish permits on a vessel, or by restricting recreational fishing aboard vessels while those vessels are engaged in commercial fishing. An additional purpose is to make consistent across all reef fish the rules regarding retention of recreationally caught reef fish on a vessel that is fishing commercially.

Maximum Crew Size on a Charter Vessel When Fishing Commercially

Need for Action

The USCG regulations currently require a minimum of four persons (two captains and two crew) when a vessel with a certificate of inspection (COI) is out over 12 hours, while the fishing regulations currently limit the maximum number of persons to on board to three when a vessel with both a commercial and charter vessel permit when it is fishing commercially. Since charter vessels must have a COI in order to carry passengers for hire, this creates a discrepancy in the regulations for dual-permitted vessels, and there is a need to resolve this discrepancy. In addition, the Council received a request from the operator of a dual-permitted vessel who spearfishes commercially to allow a crew size of four persons when commercially spearfishing, so that for safety purposes, there could be two persons in the boat while there are two divers in the water.

Purpose of Action

The purpose of the alternatives in this section is to resolve the discrepancy between USCG minimum crew size regulations and NMFS maximum crew size regulations, and to consider the safety issues suggested when spearfishing under the maximum crew size rule.

Use of Reef Fish in or From the EEZ for Bait

Need for Action

It is illegal to cut up reef fish at sea for use as bait. However, it is not illegal to use cut up reef fish that were purchased on shore, nor is it illegal to use a whole reef fish provided it complies with applicable size and bag limits. Allowing cut up reef fish to be used when purchased makes it impossible to enforce the rules prohibiting the cutting up of reef fish that are caught, since there is no way to differentiate the two. It also makes it difficult to enforce minimum size limit

regulations that are intended to protect juvenile fish. Anecdotal information suggests that this practice is occurring, creating a need to improve enforceability of the rules prohibiting cutting up reef fish at sea. In addition, public testimony has been given to the Council on several occasions that vermilion snapper, and possibly other reef fish species, are frequently used as bait by recreational and commercial fishermen. The vermilion snapper stock is classified by NMFS as overfished. Allowing reef fish to be used for bait hinders efforts to conserve stocks that are overfished or approaching an overfished condition.

Purpose of Action

The purpose of the alternatives in this section is to improve enforceability and clarify the regulations prohibiting the cutting up of reef fish at sea, and to better protect undersize reef fish from illegal harvest.

Vessel Monitoring System

Need for Action

The Reef Fish FMP contains several area-specific regulations where fishing is restricted or prohibited in order to protect habitat or spawning aggregations, or to reduce fishing pressure in areas that are heavily fished. Unlike size, bag and trip limits, where the catch can be monitored onshore when a vessel returns to port, area restrictions require at-sea enforcement. However, at-sea enforcement of offshore area restrictions is difficult due to the distance from shore and limited number of patrol vessels, resulting in a need to improve enforceability of area fishing restrictions through remote sensing methods. A vessel monitoring system (VMS) is needed to improve enforcement of area restrictions.

Purpose of Action

The purpose of this section is to improve enforceability of area restrictions in order to prevent excessive fishing pressure in stressed areas or on spawning aggregations of reef fish, and to enhance the ability of enforcement agencies to detect and prevent the use of fishing gear in areas where that gear is restricted because it could potentially damage sensitive habitat.

Modifications to the TAC Framework Procedure

Need for Action

The administrative procedures for setting total allowable catch (TAC) have changed with the development of the Southeast Data, Assessment, and Review (SEDAR) process to assess stock status. The framework procedure for setting TAC was created in Amendment 1 and has been periodically revised. It currently specifies that the Reef Fish Stock Assessment Panel (RFSAP) evaluate stock assessments and recommend acceptable biological catch (ABC) ranges. However, the RFSAP has been discontinued and stock assessments and ABC recommendations are now conducted through the SEDAR process. In addition, some of the terminology and

agency or department names have changed since the last revision of the framework procedure. This creates a need to revise the framework procedure to replace the RFSAP process with the SEDAR process, and to bring the terminology up to date.

Purpose of Action

The purpose of the alternatives in this section is to update the TAC framework procedure to reflect current TAC setting practices.

Sea Turtle and Smalltooth Sawfish Bycatch

Need for Action

In February 2005, NMFS Office of Protected Resources (OPR) issued a biological opinion on the impact of the reef fish fishery on endangered sea turtles and smalltooth sawfish. Although the biological opinion concluded that the anticipated incidental take of these species by the reef fish fishery is unlikely to jeopardize their continued existence, it did require that reasonable and prudent measures be taken to minimize stress and increase survival rates of any sea turtles and smalltooth sawfish taken in the reef fish fishery. Therefore, the Council and NMFS need to take action to comply with the biological opinion and to enhance the protection of endangered sea turtles and smalltooth sawfish.

Purpose of Action

The purpose of the alternatives in this section is increase the likelihood of survival of released sea turtles and smalltooth sawfish caught incidentally by the reef fish fishery.

3 PROPOSED ALTERNATIVES

The following are the preferred alternatives selected by the Council for this public hearing draft. Based on public testimony, the Council may retain or change these preferred alternatives when it takes final action

<u>Section 4.1.1 Simultaneous Commercial and Recreational Harvest on a Vessel</u>

> Alternative 2: Vessels may simultaneously have commercial and charter vessel reef fish permits, provided the necessary NMFS qualifications for each permit have been met. However, persons aboard a vessel with a commercial reef fish permit may not retain reef fish species caught under recreational size and possession limits when the vessel has commercial harvests of any reef fish species aboard.

<u>Section 4.1.2 Maximum Crew Size on a Charter Vessel When Fishing Commercially</u>

Alternative 2: A for-hire vessel with a USCG Certificate of Inspection (COI) which specifies minimum manning requirements may fish for reef fish under its commercial fishing license provided:

a) When underway for more than 12 hours, that vessel meets, but does not exceed the minimum manning requirements outlined in its COI for vessels underway over 12 hours or,

b) When underway for not more than 12 hours, that vessel meets the minimum manning requirements outlined in its COI for vessels underway for not more than 12-hours (if any), and does not exceed the minimum manning requirements outlined in its COI for vessels that are underway for more than 12 hours.

Section 4.1.3 Use of Reef Fish for Bait

This section has more than one preferred alternative.

Alternative 2: Prohibit the use of all species in the reef fish management unit or parts thereof, except sand perch and dwarf sand perch, with any gear for bait. This condition applies to:

Pref. sub-option=>	c.	Both commercial and recreational fishing
Pref. Sub-option=>	d.	Notwithstanding any other restrictions, reef fish parts and carcasses, as well as sand perch and dwarf sand perch, can be used for bait in the trap fisheries for blue crab, stone crab, deep-water crab, and spiny lobster, unless restricted by the FMPs or fishing regulations for those species.

Section 4.1.4 Vessel Monitoring System

Alternative 2: Require reef fish vessels engaged in the following fishing activities to be equipped with an electronic vessel monitoring system (VMS) that would be on seven days a week, 24 hours a day. The cost of the vessel equipment, installation, maintenance and, month-to-month communications to be paid or arranged by the owners as appropriate. NMFS will maintain and will publish in the Federal Register a list of type-approved units and communications protocols. VMS systems will be required for:

Pref. sub-option=> b. All gear-types of commercially permitted reef fish vessels, including charter vessels with commercial reef fish permits.

The geographic area where VMS would be required is Gulf-wide

It is the intent of this alternative that vessels fishing with fish traps under the fish trap phase-out program be exempted from a VMS requirement and that such vessels remain subject to mandatory trip origination and termination reporting requirements through February 7, 2007.

Section 4.2 Modifications to the TAC Framework Procedure

Alternative 2: Adopt the minor rewording changes and the changes to incorporate the SEDAR process into the framework procedure for setting TAC.

Section 4.3 Sea Turtle and Smalltooth Sawfish Bycatch

Alternative 6: Vessels with commercial and for hire reef fish vessel permits must possess inside the wheelhouse, or within a waterproof case if no wheelhouse, a copy of the document provided by NMFS titled, "Careful Release Protocols for Sea Turtle Release With Minimal Injury," and must post inside the wheelhouse, or in an easily viewable area if no wheelhouse, the sea turtle handling and release guidelines provided by NMFS. Those permitted vessels with a freeboard height of four feet or less must have on board a dipnet, shorthandled dehooker, long-nose or needle-nose pliers, bolt cutters, monofilament line cutters, and at least two types of mouth openers/mouth gags. This equipment must meet the specifications described in 50 CFR 635.21(c)(5)(i)(E-L) with the following modifications: the dipnet handle can be of variable length, only one NMFS approved short-handled dehooker is required (i.e., CFR 635.21(c)(5)(i)(G or H)); and life rings, seat cushions, life jackets, and life vests may be used as alternatives to tires for cushioned surfaces as specified in 50 CFR 635.21(c)(5)(i)(F). Those permitted vessels with a freeboard height of greater than four feet must have on board a dipnet, long-handled line clipper, a short handled and a long handled dehooker, long-nose or needle-nose pliers, bolt cutters, monofilament line cutters, and at least two types of mouth openers/mouth gags. This equipment must meet the specifications described in 50 CFR 635.21(c)(5)(i) (A-L) with the following modifications: only one NMFS approved long-handled dehooker (50 CFR 635.21(c)(5)(i)(B or C)) and one NMFS approved short-handled dehooker (50 CFR 635.21(c)(5)(i)(G or H)) are required; life rings, seat cushions, life jackets, and life vests as alternatives to tires for cushioned surfaces as specified in 50 CFR 635.21(c)(5)(i)(F).

Alternative 7: Require vessels with commercial and/or recreational for-hire reef fish permits that incidentally catch a smalltooth sawfish to: (1) Keep sawfish in the water at all times, (2) If it can be done safely, untangle the line if it is wrapped around the saw, (3) Cut line as close to the hook as possible, and (4) Do not handle the animal or attempt to remove any hooks on the saw, except for with a long-handled dehooker.

4 MANAGEMENT ALTERNATIVES AND DISCUSSION

4.1 Enforcement and Monitoring Issues

4.1.1 Simultaneous Commercial and Recreational Harvest on a Vessel

Alternative 1: No Action (status quo) - Vessels may simultaneously have commercial and charter vessel reef fish permits, provided the

necessary NMFS qualifications for each permit have been met. Persons aboard a vessel with a valid commercial reef fish permit may also retain reef fish species caught under recreational size and bag limits. Reef fish species harvested under the recreational size and bag limits may not be sold. (This alternative does not alter the prohibition on possessing any quantity of red grouper, black grouper or gag aboard a vessel with a commercial reef fish permit during the February 15 to March 15 commercial closed season for those species).

Preferred=> **Alternative 2: Vessels may simultaneously have commercial and charter vessel reef fish permits, provided the necessary NMFS qualifications for each permit have been met. However, persons aboard a vessel with a commercial reef fish permit may not retain reef fish species caught under recreational size and possession limits when the vessel has commercial harvests of any reef fish species aboard.**

Alternative 3: A vessel may not simultaneously have both a commercial reef fish permit and a charter vessel reef fish permit assigned to it. In order to transfer a charter permit to a vessel currently assigned a commercial permit (or vice-versa), the current permit must first be transferred to another vessel, turned in to NMFS, or allowed to expire.

Discussion: The primary purpose of this section is to improve enforcement of the regulation prohibiting sale of recreationally-caught fish from a vessel that has a commercial reef fish permit, and may also have a charter vessel permit. The sale of recreationally caught fish has been getting closer attention by enforcement agencies recently. The NOAA Fisheries Office of Law Enforcement is conducting a number of investigations into the illegal sale of recreational fish. Included in these investigations are recreational vessels retaining red snapper during closed season for potential sale. The following investigations were reported by the NOAA Fisheries Office of Law Enforcement in their April 1, 2005 – June 30, 2005 quarterly report:

- NOAA Texas Special Agents apprehended one Head Boat captain after an investigation revealed that he and his crew had been catching and keeping fish during closed seasons.

- NOAA Texas Special Agents have completed an additional case against another Head Boat captain. This case involved the sale of recreationally caught fish to area restaurants Sales in this case exceeded forty thousand dollars in red snapper.

- In another case, a Head Boat captain was issued a penalty by NOAA Texas Special Agents after being caught taking and keeping red snapper in federal waters after the season closure.

- NOAA Special Agents in the northeastern Gulf are currently investigating a Florida charter boat for possession of red snapper during the closed season.

In addition, the Florida FWC Enforcement Division is conducting its "No More Backdoor" campaign to catch businesses that illegally purchase recreationally caught fish. As of July 2005, FWC has reportedly investigated more than 70 incidents of illegal seafood purchases and has issued over 30 citations.[1] However, this campaign focuses on the buyer, not the fisherman.

Alternative 1, the no action (status quo) alternative, continues to allow vessels to simultaneously have both commercial and charter permits, and allows a recreational harvest of reef fish aboard a vessel while that vessel is fishing commercially. In times when the commercial season is closed but the recreational season is open for a given species, or when recreational minimum size limits are smaller than commercial size limits, this allows reef fish vessels to retain up to the recreational bag limits of that species of fish while fishing commercially for other species. Vessels may not legally sell reef fish caught under recreational bag and size limits. However, since the vessel would be selling its commercial catch to a fish house, the opportunity would be present to also illegally sell its recreational catch. This problem would be limited in that the bag limits are generally much lower than the commercial harvest limits, although a vessel could retain multiple bag limits, one for each fisherman aboard. Also, this alternative does not resolve the problem of determining whether a dual-permitted vessel (a vessel with both a commercial and charter reef fish permit), once it returns to the dock, was operating as a commercial or charter for purposes of determining whether a catch was saleable.

Alternative 2 (Preferred Alternative) would prohibit vessel captains and crew on a vessel with a commercial reef fish permit from retaining reef fish caught under bag and size limits while fishing commercially for reef fish. By prohibiting retention of recreational catches on a commercial fishing trip, this alternative adds an at-sea component to enforcement of the prohibition on sale of recreationally caught reef fish. It also makes consistent across all reef fish the rules regarding retention of recreationally harvested fish on a commercial fishing vessel. Regulations for red grouper, gag, and black grouper specifically prohibit commercial reef fish vessels from possessing those species during the February 15 to March 15 closed season, but possession of recreational bag limits is allowed during a quota closure for those species, and for other reef fish during any commercial closure of that species. In addition, a gray area in the current regulations is the question of whether a vessel can possess both a trip limit of fish and in addition the recreational bag limit of fish that have both a trip and bag limit. This alternative resolves that ambiguity by explicitly prohibiting recreational bag limits while harvesting commercial quantities of fish. Dual permitted vessels while on a charter trip, and any vessel on a purely recreational trip, could continue to retain recreational bag limits. Species whose capture would be affected by this alternative under current regulations would be red snapper, greater amberjack, and both deep-water and shallow-water groupers.

Alternative 3 addresses the specific issue of a dual permitted vessel returning from a charter trip and then selling the recreational catch as if it had been on a commercial fishing trip. Once the charter customers have left, it is not possible to tell whether the catch retained on a dual

[1] Source: Southeastern Fisheries Association, July 2005 issue of Hotlines newsletter.

permitted vessel came from a charter or commercial fishing trip. This alternative would resolve that problem by only allowing a vessel to have either a commercial or charter permit (but not both) at any time. Vessels currently holding both types of permits would be required to surrender, transfer or make inactive one of the permits upon implementation of the provision (or within a reasonable time frame to be determined in the implementing regulations). Thereafter, in order to change between charter and commercial fishing, the existing permit would first need to be transferred, surrendered to NMFS, made inactive, or allowed to expire before an alternate permit is assigned or reactivated. Permits that are surrendered or allowed to expire would not be renewed.

Summary: Alternative 1, status quo, is the least restrictive of the alternatives in this section. It allows a vessel to continue to have both commercial and charter reef fish permits with no additional regulations on their use, and thus imposes no new economic burdens on the vessel owner. Because of the difficulty in determining whether a fish was caught on a charter or commercial trip once the boat has docked and any paying customers have left, this alternative does not improve enforceability of the prohibition on sale of recreationally caught reef fish, and relies primarily on voluntary compliance. It also does not standardize the regulations with respect to whether a recreational bag limit of reef fish may be retained on a vessel that is fishing commercially. For example, recreational bag limits of red snapper are allowed on a vessel that is fishing commercially for other reef fish during the commercial closed season for red snapper (although they cannot be sold), but no gag, black grouper or red grouper may be retained during the February 15 to March 15 commercial closed season on those species. Alternative 3 is the most restrictive alternative in that it allows a vessel to have only one type of permit, commercial or charter. By allowing only one type of permit, this alternative removes any ambiguity as to whether a vessel is fishing commercially or under charter. However, this alternative could have differential regional economic impacts. In areas where there is a year-round tourist industry such as the Florida Keys, charter vessels may be active year-round, thus there may be relatively few dual-permitted vessels that would be strongly impacted by this alternative. Elsewhere, in areas where the tourist industry is more seasonal, such as in the northern Gulf, dual permitted vessels may be more common as charter vessels may supplement their income by fishing commercially during the non-tourist season (personal communication, Virginia Fay, NMFS/SERO). Current data indicate that 237 vessels have both a commercial and charter vessel permit (RIR). Owners of these vessels would be required to either dispose on one of the permits (short-term gain from sale of permit, but long-term loss from less fishing flexibility) or transfer it to another vessel (short-term loss from having to purchase another vessel, but long-term gain from maintaining fishing flexibility). Alternative 3, as with Alternative 2, does not standardize the regulations with respect to whether a recreational bag limit of reef fish may be retained on a vessel that is fishing commercially. Alternative 3 (Preferred Alternative) allows dual-permitting of vessels to continue. It differs from Alternative 1 (status quo) in that it prohibits a vessel from retaining recreational bag limits of a species while commercial harvests of reef fish are aboard. In practice, this will only have an impact during periods when commercial fishing for a species is closed but recreational fishing is open, or if the minimum size limit for a recreationally caught fish is less than that of a commercially caught fish (e.g., gag). It does not resolve the problem of determining whether a fish was caught on a charter or commercial trip once the boat has docked,

but it does standardize the regulations prohibiting recreational bag limits of reef fish on a reef fish vessel that is fishing commercially, thereby simplifying and streamlining the regulations.

4.1.2 Maximum Crew Size on a Charter Vessel When Fishing Commercially

Alternative 1: No Action (status quo) - Maximum crew size to fish commercially remains at 3 for vessels with both a charter permit and a commercial reef fish permit.

Preferred=> **Alternative 2: A for-hire vessel with a USCG Certificate of Inspection (COI) which specifies minimum manning requirements may fish for reef fish under its commercial fishing license provided:**

a) When underway for more than 12 hours, that vessel meets, but does not exceed the minimum manning requirements outlined in its COI for vessels underway over 12 hours or,

b) When underway for not more than 12 hours, that vessel meets the minimum manning requirements outlined in its COI for vessels underway for not more than 12-hours (if any), and does not exceed the minimum manning requirements outlined in its COI for vessels that are underway for more than 12 hours.

Alternative 3: A for-hire vessel with a USCG Certificate of Inspection (COI), which is fishing by any lawful method other than exclusively by spearfishing, may fish for reef fish under its commercial fishing license provided:

a) That vessel meets, but does not exceed the minimum crewing requirements outlined in its COI when underway over 12-hours or,

b) That vessel does not exceed the minimum crewing requirements outlined in its COI for vessels that are underway more than 12 hours even when underway under 12-hours.

Alternative 4: Maximum crew size to fish commercially is increased to 4 for vessels with both a charter permit and a commercial reef fish permit.

Alternative 5: No maximum crew size when fishing commercially (same regulation as for a commercially permitted vessel that does not have a charter vessel permit).

Discussion: Note: If Alternative 3 in Section 4.1.1 is selected (a vessel may not have both a-commercial and charter/headboat reef fish permit), then the alternatives in this section become moot, since a permitted charter vessel would not be authorized to fish commercially.

The USCG regulations currently require a minimum of four persons (two captains and two crew) when a vessel with a certificate of inspection is out over 12 hours, while the fishing regulations currently limit the maximum number of persons to three when a vessel has both a commercial and charter vessel permit when it is fishing commercially. This limitation only applies to vessels with both commercial and charter permits. Vessels with only a commercial fishing permit have no maximum crew size regulations. Since charter vessels that carry more than six passengers must have a COI in order to carry passengers for hire, this creates a discrepancy in the regulations for dual-permitted vessels. In addition, the Council received a request from the operator of a dual-permitted vessel who spearfishes commercially to allow a crew size of four persons when commercially spearfishing. This action would increase diver safety because there would be two persons in the boat when two divers in the water.

Alternative 1, the no action (status quo) alternative, continues the limit of no more than three persons on a dual-permitted vessel when that vessel is fishing commercially. This rule was originally adopted in Amendment 1 in order to provide the same as the permitting requirements in Amendment 4 to the Coastal Migratory Pelagics (CMP) FMP and to prevent vessels from taking out a complement of paying customers while simultaneously fishing commercially. A minority report filed with Amendment 1 objected to the three-person limit and instead recommended that the limit be set at five persons, suggesting that up to five persons are needed to fish commercially for reef fish, especially when using bottom rigs. The NMFS response in the comments section of the Federal Register notice for the Amendment 1 final rule (FR1990, vol. 55, No. 14, pages 2078-2094) stated that the data available from NOAA surveys of charter vessels and headboats indicated that most such boats do not typically use over three persons on board to fish commercially for reef fish. Furthermore, NMFS felt that allowing five persons when fishing commercially might encourage boats under charter to harvest excess amounts of reef fish by claiming to be fishing commercially, thus creating enforcement difficulties.

Alternative 2 (Preferred Alternative) eliminates the 3 crew maximum on a dual-permitted vessel when that vessel is fishing commercially, and replaces it with minimum and maximum crew sizes based on the minimum manning requirements stated in the vessel's COI. 46 CFR Part 15 contains the protocols for determining minimum manning requirements and number of watches required on a vessel. Coast Guard regulations prohibit a crew member from working more than 12 hours (except under certain conditions), and this is taken into consideration when setting minimum manning requirements, along with a vessel's characteristics, route, or other operating conditions. For vessels underway for more than 12 hours, two (or more) watches may be required, which generally requires at least a crew of 4 (two captains and two mates), but may require more depending upon the vessel's characteristics. For vessels underway for 12 hours or

less, 1 watch may be required (generally a crew of two or more), or there may be no watch requirement specified. Under Alternative 2, when a vessel is underway for over 12 hours, the crew size is set at the exact level required by the COI for a trip of that length. When a vessel is underway for 12 hours or less, the crew size required by the COI when underway over 12 hours is retained as the maximum, but the vessel is allowed to have a smaller crew size, down to the minimum specified by the COI (if any) for trips of 12 hours or less. This alternative effectively raises the maximum crew size from 3 to 4 (or more) for all commercial fishing trips. Although this change is not required for vessels underway less than 12 hours to be in compliance with Coast Guard regulations, it allows a captain the flexibility to extend his trip to more than 12 hours without committing any minimum crew size violations, and allows a vessel that intended to be out over 12 hours to cut its trip short if necessary without being in violation. It also eases enforcement by not requiring a Coast Guard vessel to determine whether a vessel has been underway for more than 12 hours or for less if the vessel has its maximum crew size aboard. By raising the maximum crew size to 4 (or more), this alternative also addresses the spearfishing safety concerns discussed under Alternative 3.

Alternative 3 addresses a specific safety issue raised by a commercial spear fisherman. It allows a commercial spearfishing vessel to increase is crew size to four persons for safety reasons, even if the maximum for vessels using other fishing methods remains at three. By allowing only this specific exception to the three crew maximum on COI vessels, it streamlines and simplifies the administrative environment while considering safety considerations for those spearfishing under the crew size rule. The question here is how many crewmembers need to remain on the surface in order to respond to emergencies. With two divers, a three-person crew would have one person on the surface, whereas a four-person crew would have two on the surface. While a fourth crewmember could potentially provide an additional safety margin, it could also allow the two surface members to form a second dive team that could alternate with the first dive team, increasing fishing effort. This alternative does not address the discrepancy in USCG and fishing regulations for other dual-permitted vessels. However, Alternative 2 (Preferred Alternative) addresses both the crew size discrepancy and the spearfishing safety concern.

Alternative 4 simply increases the number of persons allowed on a dual-permitted vessel while fishing commercially from three to four. This would be easier for enforcement than Alternative 2 since it would apply the same maximum crew size to all dual-permitted vessels regardless of time at sea. However, for some vessels However, for some vessels, the COI may require a larger minimum crew size than for when the vessel is underway over 12 hours. For these vessels, the discrepancy between Coast Guard minimum crew size regulations and NMFS maximum crew size regulations would continue to exist.

Alternative 5 removes the restriction on maximum crew size for dual-permitted vessels. Vessels that only have a commercial permit are not subject to a maximum crew size, so this would allow dual-permitted vessels to fish under the same regulation. However, as with Alternative 4, this could allow an increase in effective fishing effort by allowing the vessel to fish with additional lines or bandit rigs. In addition, this might introduce the concerns expressed by NOAA in the Federal Register final rule notice for Amendment 1, which it might encourage boats under

charter to harvest reef fish in excess of recreational limits by claiming to be fishing commercially, thus creating enforcement difficulties.

Summary: Alternatives 1 and 4 are conceptually simple in that they set a single fixed maximum crew size (3 and 4 respectively) on vessels with a COI when fishing commercially. However USCG regulations are not as simple. Vessels with a COI that are out over 12 hours will always have a minimum manning under Coast Guard regulations of at least four, but depending upon the characteristics and capacity of the vessel, some vessels may require a crew of more than four. Thus, Alternative 1 (status quo) fails to fails completely to resolve the discrepancy between Coast Guard minimum manning regulations and NMFS maximum crew size, and Alternative 4 resolves the discrepancy for only some vessels. Alternative 3 addresses a specific safety issue on spearfishing vessels where a maximum crew size of three might not allow enough crew on the surface to effect an emergency rescue of divers. It allows spearfishing vessels that are out over 12 hours to match the USCG minimum crew size for each specific COI vessel (which will always be at least 4, but may be higher for some vessels). For spearfishing vessels that are out for not more than 12 hours, the vessel may still have up to the minimum required if it were out over 12 hours, but it may also have a smaller crew size. While this alternative addresses a safety-at-sea issue, it could create an unfair advantage for spearfishing vessels by allowing a larger crew size. In addition, it does not resolve the discrepancy between USCG and NMFS regulations for COI vessels other than spearfishing vessels. It is included in the range of alternatives so that the Council could consider the spearfishing safety-at-sea issue in the event that this issue was not addressed by another preferred alternative (However, Preferred Alternative 2 does address this issue.). Alternative 5 is the simplest of the five alternatives in that it simply repeals the maximum crew size regulation, streamlining the administrative environment, but not the regulatory environment. It reopens a regulatory problem in differentiating charter trips from commercial trips, and complicates the enforcement problem of sale of recreationally caught fish that is addressed in Section 4.1.1. Alternative 2 (Preferred Alternative) simplifies both the administrative and regulatory environments by setting the NMFS maximum crew size on vessels that are out over 12 hours to match the USCG minimum crew size for each specific COI vessel. For vessels that are out for not more than 12 hours, the vessel may still have up to the minimum required if it were out over 12 hours, but it may also have a smaller crew size if allowed by USCG manning requirements. This allows a vessel of having the flexibility to have a smaller crew size for short (12 hours or less) trips, or having a large enough crew to have the flexibility of lengthening a short trip into a trip that lasts over 12 hours. It also addresses the spearfishing safety-at-sea issue by allowing crew sizes that allow at least two crew members to remain on the vessels during diving operations.

4.1.3 Use of Reef Fish for Bait

Alternative 1: No action (status quo) - Reef fish minimum size limits apply to all vessels and gear types; whole reef fish that meet the minimum size limits or cut up reef fish that was purchased at shore for use as bait can be used as bait.

Preferred=> **Alternative 2: Prohibit the use of all species in the reef fish management unit or parts thereof, except sand perch and dwarf sand perch, with any gear for bait. This condition applies to:**

a. Commercial fishing

b. Recreational fishing

Pref. sub-option=> c. Both commercial and recreational fishing

Pref. sub-option=> d. Notwithstanding any other restrictions, reef fish parts and carcasses, as well as sand perch and dwarf sand perch, can be used for bait in the trap fisheries for blue crab, stone crab, deep-water crab, and spiny lobster, unless restricted by the FMPs or fishing regulations for those species.

Alternative 3: Prohibit the use with any gear of the following species or parts thereof for bait:

a. red grouper

b. red snapper

c. vermilion snapper

d. Other

This condition applies to:

e. Commercial fishing

f. Recreational fishing

g. Both commercial and recreational fishing

h. Notwithstanding any other restrictions, reef fish parts and carcasses of the species restricted under this alternative can be used for bait in the trap fisheries for blue crab, stone crab, deep-water crab, and spiny lobster, unless restricted by the FMPs or fishing regulations for those species.

Discussion: The purpose of this action is to improve the administrative environment by facilitating enforcement of bait regulations and prohibitions, while considering the historical use of reef fish bait in the crab trap fisheries. The species in the Reef Fish FMP are listed in Table 7.1 by common name and scientific name. This section is intended to improve enforceability of the rules prohibiting the cutting up of reef fish at sea, and to reduce the mortality of reef fishes that are not kept but are used whole for bait.

The regulation prohibiting finfish from being cut up at sea was created under Amendment 5 (implemented February 1994). The proposed alternative in Amendment 5 applied this restriction to all finfish except oceanic migratory species, with an exemption for bait. The definition of bait was contained in a footnote (page 22 of Amendment 5), which included a note that species normally utilized for reef fish bait include, but are not limited to, ladyfish (skipjack), Atlantic mackerel, blue runner, crevalle and other similar jacks, bonito (little tunny), bluefish, mullet, and other species that normally can be distinguished by their skin from regulated species.

The regulations implemented by NMFS to define bait omitted the list of typical bait species, and were implemented as 50 CFR 628.38(d) is as follows:

(d) In the Gulf EEZ:

(1) Bait is exempt from the requirement to be maintained with head and fins intact.

(i) For the purpose of this paragraph (d)(1), bait means—

(A) Packaged, headless fish fillets that have the skin attached and are frozen or refrigerated;

(B) Headless fish fillets that have the skin attached and are held in brine; or

(C) Small pieces no larger than 3 in^3 (7.6 cm^3) or strips no larger than 3 inches by 9 inches (7.6 cm by 22.9 cm) that have the skin attached and are frozen, refrigerated, or held in brine.

This definition of bait does not preclude the possibility of reef fish being legally cut up, particularly with respect to item (C), and therefore may negate the prohibition against cutting up reef fish at sea. The preferred alternatives in this section therefore explicitly prohibit reef fish from being used as bait except where specifically allowed.

Alternative 1 (Status quo) leaves the existing regulations in place. Under the "Landing Fish Intact" rule (50 CFR 622.38), it is illegal to cut up reef fish at sea for use as bait. However, it is not illegal to use cut up reef fish that were purchased on shore, nor is it illegal to use a whole reef fish provided it complies with applicable size and bag limits. This makes it impossible to enforce the rules prohibiting the cutting up of reef fish that are caught, since there is no way to differentiate fish parts purchased on shore from fish parts cut up from fish caught at sea. Anecdotal information suggests that this practice is occurring at times on longline vessels. The 1995 NMFS observer study reported that five percent of the fish used for bait were red grouper, which was overfished in 1999 and for which a rebuilding plan was implemented in 2004.

Public testimony to the Council indicates that vermilion snapper, and possibly other reef fish species, are frequently used as bait by recreational and commercial fishermen. Vermilion snapper are classified by NMFS as overfished, and Amendment 23 has been developed to end overfishing on vermilion snapper and rebuild the stock. Allowing vermilion snapper to be used for bait could hinder efforts to end overfishing of the stock.

Alternative 2 (Preferred Alternative) prohibits the use of all reef fish in the management unit for bait, except for sand perch and dwarf sand perch, which are typically used for that purpose. This would apply whether the fish or fish parts were captured at sea or purchased ashore, except under the exemption allowed by sub-option (d). This alternative provides the greatest protection for reef fish from "bait" mortality.

- Sub-option (a) would apply this restriction only to the commercial fishery. This would address anecdotal information that some commercial vessels are cutting up reef fish for bait, but would not provide the level of protection for the resource that would occur by applying the restriction to all fishing vessels.
- Sub-option (b) would apply this restriction only to the recreational fishery. This would provide protection to the resource from the sector with the greatest number of fishing

vessels, but would not address allegations that some commercial vessels are cutting up reef fish for bait.

- (Preferred Sub-option) Sub-option (c) applies this restriction to all fishing vessels, thereby simplifying the regulation and providing the greatest protection to the resource.
- (Preferred Sub-option) Sub-option (d) exempts crustacean trap fisheries from any restrictions, and allows them to continue their traditional practice of using reef fish for bait, unless restricted by their fishery-specific FMP. **The intent of this alternative is to allow the use of reef fish parts purchased from fish processors that would otherwise be discarded by the processors, not to allow the use of reef fish captured at sea.** This is a historical use of reef fish parts, except for deep-water crab fishing, and prohibiting their use in these fisheries could create a shortage of bait.

Alternative 3 would prohibit only the use of selected reef fish species for bait. This alternative would also apply whether the fish or fish parts were captured at sea or purchased ashore. The species listed are either overfished or approaching an overfished condition and the Council has received anecdotal information that these species are used for bait by recreational and/or commercial fishermen. If there is a question of what species was used for a particular cut-up bait, NMFS enforcement has methods available to identify tissue samples from cut up fish parts to species.

- Sub-options (a) through (d) would be used to select the species to which this restriction would apply. Red snapper, and vermilion snapper are classified as overfished and undergoing overfishing and are in need of actions to reduce fishing mortality as part of a rebuilding plan. Red grouper was in an overfished condition in 1997 (based on the 1999 stock assessment), and although the 1992 stock assessment found that the stock had rebounded and was back above the overfished threshold, the stock is under a rebuilding plan to recover it to the level capable of supporting MSY within 10 years.
- Sub-option (e) would apply this restriction only to the commercial fishery. This would address anecdotal information that some commercial vessels are cutting up reef fish for bait, but would not provide the level of protection for the resource that would occur by applying the restriction to all fishing vessels.
- Sub-option (f) would apply this restriction only to the recreational fishery. This would provide protection to the resource from the sector with the greatest number of fishing vessels, but would not address allegations that some commercial vessels are cutting up reef fish for bait.
- Sub-option (g) applies this restriction to all fishing vessels, thereby simplifying the regulation and providing the greatest protection to the resource.
- Sub-option (h) exempts crustacean trap fisheries from any restrictions, and allows them to continue their traditional practice of using the species restricted under this alternative for bait, unless restricted by their fishery-specific FMP. **The intent of this alternative is to allow the use of reef fish parts purchased from fish processors that would otherwise be discarded by the processors, not to allow the use of reef fish captured at sea.** This is a historical use of reef fish parts, except for deep-water crab fishing, and prohibiting their use in these fisheries could create a shortage of bait.

Summary: The alternatives in this section, other than Alternative 1 (status quo) strengthen the requirement implemented in Amendment 5 that reef fish be landed head and tails attached, and they reduce fishing pressure on reef fish by removing a specific use (bait) as a legal use for the resource. Alternative 3 applies the prohibition on use of reef fish as bait only to specific species that are deemed to be in need of additional protection. However, it complicates the administrative and regulatory environment by requiring fishermen and enforcement officers to differentiate between species subject to the rule and species that are not subject to the rule. In addition, if additional species were to be deemed in need of the added protection in the future, another plan amendment would be needed to add them to the list. Alternative 2 (Preferred Alternative) streamlines the administrative and regulatory environment by applying the bait restriction to all reef fish species except sand perch and dwarf sand perch, which have historically been used for bait. A sub-alternative applies the restriction to both recreational and commercial fishing, which further simplifies the rules by applying a single requirement across all fisheries. Both Alternative 2 and 3 provide an exemption for reef fish parts purchased from shore to be used in the crustacean trap fisheries. This purchase requirement could be enforced by requiring crustacean trap fishermen to have a receipt for any reef fish parts they are using for bait. The prohibition against use of reef fish for bait may, provided it is enforced, increase bait costs for fishermen who are illegally using cut up reef fish for bait, but will not impact fishermen who are using legal sources of bait other than those using whole reef fish. However, in many cases, a whole reef fish that is small enough to use as bait will be below the minimum size limit and therefore already illegal.

4.1.4 Vessel Monitoring System

This section can have more than one preferred alternative.

Alternative 1: No Action (status quo) - no requirement for reef fish vessels to be equipped with electronic vessel monitoring systems.

Preferred=> **Alternative 2: Require reef fish vessels engaged in the following fishing activities to be equipped with an electronic vessel monitoring system (VMS) that would be on seven days a week, 24 hours a day. The cost of the vessel equipment, installation, maintenance and, month-to-month communications to be paid or arranged by the owners as appropriate. NMFS will maintain and will publish in the Federal Register a list of type-approved units and communications protocols. VMS systems will be required for**:

a. Vessels in the longline fishery

Pref. sub-option=> **b. All gear-types of commercially permitted reef fish vessels, except fish trap vessels through February 7, 2007, including charter vessels with commercial reef fish permits.**

The geographic area where VMS would be required is Gulf-wide

Alternative 3: Require reef fish vessels engaged in the following fishing activities to be equipped with an electronic vessel monitoring

system (VMS) that would be on seven days a week, 24 hours a day. NMFS will pay the equipment costs associated with VMS units, to be implemented when funding is available from Congress, Department of Commerce, other federal agencies, or other sources. The cost of the installation, maintenance and, month-to-month communications will be paid or arranged by the owners as appropriate. NMFS will maintain and will publish in the Federal Register a list of type-approved units and communications protocols. VMS systems will be required for:

a. Vessels in the longline fishery

b. All gear-types of commercially permitted reef fish vessels, except fish trap vessels through February 7, 2007, including charter vessels with commercial reef fish permits.

The geographic area where VMS would be required is Gulf-wide

Discussion: The list of currently approved VMS devices and communications providers, along with associated costs, is in Appendix B. The NMFS Office of Law Enforcement draft protocol for VMS installation and operating requirements is in Appendix E.

This section addresses the issue of enforcement of offshore restricted fishing areas. All fishing gears are subject to some area fishing restrictions, but longlines and fish traps have more area restrictions than other gear types. Because of the sizes of these areas and the distances from shore, the effectiveness of enforcement through over flights and at-sea interception is limited. An electronic vessel monitoring system (VMS) allows a more effective means to monitor vessels for intrusions into restricted areas, and could be an important component of a possible future electronic logbook system.

Fish Trap Vessels Exempted Through February 7, 2007

It is the intent of this section that vessels fishing with fish traps under the fish trap phase-out program be exempted from a VMS requirement and that such vessels remain subject to mandatory trip origination and termination reporting requirements through February 7, 2007. Fish trap vessels are currently under mandatory trip initiation and termination reporting requirements. These requirements were implemented in Reef Fish Amendment 16A in 1998 in lieu of a VMS requirement while NMFS developed a system design, implementation schedule, and protocol to require implementation of VMS. Fish traps will become prohibited in the Gulf of Mexico (GOM) EEZ after February 7, 2007. This amendment is anticipated to be implemented in 2006. Consequently, fish trap vessels may not have time to recover the costs of VMS. Exempting these vessels through February 7 will allow these vessels to avoid incurring unrecoverable costs. Many of these vessels are expected to exit the reef fish fishery and concentrate on other trap fisheries (e.g., stone crab, blue crab, spiny lobster). However, if these vessel operators choose to remain in the reef fish fishery using other types of gear, or if the fish trap phase-out is extended beyond February 7, 2007, the exemption from VMS will expire and these vessels will then be required to comply with VMS requirements. These vessels will also be

subject to VMS requirements if they fish for reef fish using gear other than fish traps prior to February 7, 2007.

Protocol for Turning Off VMS Units

In all of the alternatives in this section (except the no action alternative), it is the intent that every vessel that is required to have a VMS unit must have that VMS unit turned on and properly functioning at all times, even when docked. Under some circumstances, such as when doing vessel repairs, it may not be possible to keep the VMS unit turned on.

NOAA Enforcement has established a protocol for VMS operating requirements, including exemptions from the requirement that the VMS unit be on continuously if it meets one or more of the following conditions and requirements:

> (A) The vessel will be continuously out of the water for more than 72 consecutive hours, the vessel signs out of the VMS program by obtaining a valid letter of exemption pursuant to paragraph (c)(2)(ii) of this section, and the vessel complies with all conditions and requirements of said letter;
>
> (B) For vessels fishing with a valid Reef Fish Commercial and/or Reef Fish Charter/Headboat permit, the vessel owner signs out of the VMS program for a minimum period of 1 calendar month by obtaining a valid letter of exemption pursuant to paragraph (c)(2)(ii) of this section, the vessel does not engage in any fisheries until the VMS unit is turned back on, and the vessel complies with all conditions and requirements of said letter.

The full text of the draft NOAA Enforcement Vessel Monitoring System Requirements is in Appendix E.

Buffer Zones

NMFS Enforcement will establish one nautical mile buffer zones will be established around areas with fishing restrictions after concurrence with the NMFS Southeast Regional Office, Office of Law Enforcement, and Office of General Counsel. Coordinates of the buffer zones will be published in the Federal Register. The VMS on vessels will normally report the vessel's position on an hourly basis, but if a vessel enters a buffer zone, the reporting frequency will increase to every fifteen minutes. If the vessel further enters the area with fishing restrictions the reporting frequency will increase to every ten minutes.

Other VMS Requirements in the Atlantic/Gulf Area

VMS is currently being used in other fisheries. NMFS has now established a VMS system design and protocol, in accordance with the HMS requirements (50 CFR 635.69(d)). HMS vessels in the pelagic longline fishery are required to have an approved VMS unit onboard

(effective September 1, 2003). In addition vessels in the South Atlantic rock shrimp fishery are required to have an approved VMS unit onboard (effective October 14, 2003).

Review of Alternatives

Alternative 1, the no action (status quo) alternative, would not require VMS to be onboard any permitted reef fish vessel. Therefore, enforcement activities would need to continue as currently structured. This entails using USCG over flights of areas under fishing restrictions as well as at-sea intercepts of fishing vessels by various marine enforcement agencies. Over flights alone cannot enforce the area restrictions due to the difficulty in viewing fishing activities from high altitudes. However, aerial assets can identify areas where vessels appear to be violating regulations and direct enforcement vessels to suspected violators.

Alternative 2 (Preferred Alternative) would require VMS on permitted reef fish vessels. VMS systems range from very simple systems that only provide location data to systems that can provide vessels with on-board e-mail capability and emergency signaling. Depending on which system chosen by a fisherman, VMS units cost between $1,200 and $2,500 with annual fees for service providers costing between $432 and $617. Alternative 2 offers sub-options to apply the VMS requirement to just longline vessels or to all of the commercially permitted reef fish vessels.

> Sub-option 2a would require reef fish vessels in the longline fishery to have VMS. Between 2000 and 2004, the average number of vessels landing at least 1 pound of reef fish using longline was 167 vessels (Andrew Strelcheck, personal communication). In 2004, the most recent year, there were 157 vessels. Longline fishing industry representatives are working to reduce the number of longline vessels further through a Congressionally implemented vessel buy-out program. Besides marine reserves (See Section 7.2.4), VMS for these vessels would ensure that the vessels comply with the Longline/Buoy Gear Area Closure. This permanent closure restricts longline gear to waters deep than 20 fathoms off the Florida shelf and 50 fathoms for the remainder of the Gulf. One problem with this alternative is unless there is some type of reporting system where a vessel operator informs enforcement that they're going on a longline trip, there would be no way to know what type of fishing was occurring on a multiple gear vessel.
>
> Sub-option 2b (Preferred Alternative) would apply to all commercially permitted reef fish vessels except for vessels fishing fish traps (see discussion above). For vessels with both a commercial and charter reef fish permit, the VMS would be required even when conducting charter fishing operations. The estimated number of commercial reef fish permits in 2004 is 1,129 (GMFMC 2004c), however, only 931 vessels reported landings of 1 pound or more of reef fish (Andrew Strelcheck, personal communication). This alternative would provide the greatest amount of protection to protected areas in the Gulf. However, as discussed above, this would create an economic burden for fish trap vessels if required, which may not be able to recoup the cost of the VMS before being phased out on February 7, 2007. For these vessels, the mandatory trip initiation and termination call-in reports that were implemented in Amendment 16A would continue as a substitute for

VMS until the final phase-out February 7, 2007. Thereafter, if the vessel remains in the reef fish fishery using other gear, it will become subject to the VMS requirements.

Alternative 3, if adopted in combination with Alternative 2, would implement the requirements of Alternative 2, but would modify the cost requirements to state that NMFS would pay for the costs of the VMS units. However, fishermen would still pay the ongoing communication costs. This alternative would delay implementation of a VMS requirement until funding for the VMS units was made available from Congress or other sources. If such funding does not become available, implementation of a VMS requirement would be delayed indefinitely.

As discussed in Appendix B and in the Regulatory Impact Review (Section 5.5.4), the costs of approved VMS units as of the time this amendment was prepared, including installation, ranged from $1,200 to $2,500 with approximately an additional $400 for installation. Under a combination of Alternative 3 and Alternative 2a, which would require VMS on up to 157 reef fish longline vessels, NMFS would need to pay between $188,400 and $392,000 for the VMS units, plus an additional $62,800 if NMFS pays the installation costs. Under a combination of Alternative 3 and Alternative 2b, which would require VMS on all commercial reef fish vessels, NMFS would need to pay for up to 1,121 vessels (an estimated additional 24 vessels in this category already have VMS units due to their participation in HMS fisheries), at a cost of $1,345,200 to $2,802,500 for the VMS units, plus an additional $448,400 if NMFS pays the installation costs.

In order to provide fishermen with a range of choices and price ranges for both the VMS hardware and the communications provider, NMFS has certified several vendors and transmitter models. The current list of approved systems is summarized in Appendix B. These devices are currently approved for HMS and/or South Atlantic rock shrimp vessels (fishermen will need to select a transceiver unit and a communications service provider).

Summary: The alternatives in this section are to either require VMS (Alternatives 2 and 3) or not require VMS (Alternative 1) on vessels with commercial reef fish permits. The purpose of VMS is to improve enforceability of offshore area fishing restrictions and to provide for future implementation of electronic logbook reporting. Alternatives 2 and 3 differ only in who would pay for the equipment costs, the vessel owner (Alternative 2. Preferred Alternative) or NMFS (Alternative 3). Since the installation, maintenance and communication costs would be paid by the vessel owner under both alternatives, costs would occur to the vessel owners in both cases, though more so under Alternative 2. Alternative 2 was selected over Alternative 3 as the Preferred Alternative because it avoids any delay in implementation due to lack of funding. Vessels that have both a commercial and charter/vessel reef fish permit would be required to have their VMS units be active even when operating as a charter vessel. This is necessary since there is no way to determine from shore whether a vessel is fishing commercially or recreationally once it has left the dock. The preferred sub-option of requiring VMS on all commercial reef fish vessels rather than just longline was selected because most of the area restrictions in the Gulf of Mexico, with the exception of the longline/buoy gear boundary and the stressed area boundary, apply to all gear types. However, an exception was made for vessels fishing exclusively with fish traps. Fish traps are under a closed entry system (no new fish trap

endorsements and transfer allowed only under limited conditions), and will be prohibited as an allowable gear in the Gulf of Mexico after February 7, 2007. Since these vessels would be unlikely to be able to recover the costs of installing a VMS before the phase-out is complete, and since they are fishing under an alternative trip initiation/termination reporting requirement, exempting these vessels for the short period of time until fish traps are prohibited was considered acceptable. This exemption applies only if the fish trap vessels fish exclusively with traps and no other gear. If any other gear is used, the vessels would be required to have VMS.

4.2 Modifications to the TAC Framework Procedure

Alternative 1: No Action (status quo) - Do not modify the framework procedure for setting TAC.

Preferred=> Alternative 2: Adopt the minor rewording changes and the changes to incorporate the SEDAR process into the framework procedure for setting TAC.

Below is the Framework Procedure for Specification of TAC, with suggested changes. Deletions are in strike-out, additions are in bold. Two issues are addressed in these changes:

- Throughout the framework, minor rewording brings the framework's terminology and description of the contents of a stock assessment in line with the current NMFS methodology. For example, the NMFS office formerly known as the Economics and Trade Division (ETD) is now called the Fisheries Economics Office (FEO). Red snapper no longer should be singled out in the procedure since there are several stock in need of periodic assessments. The use of SPR as a biomass proxy is no longer the only way, and if often not the preferred way, to express biomass levels. These minor rewording changes have no impact on the assessment procedure.

- The remaining changes incorporate the Southeast Data, Assessment and Review (SEDAR) process, and eliminate the Reef Fish Stock Assessment Panel, whose functions are absorbed into the SEDAR process. The SEDAR process is a method to assure the collection of available relevant scientific information before beginning the assessment, to involve stakeholders as well as scientists in the assessment process, to involve outside experts who can bring a fresh and unbiased perspective to the assessment, and to create a review panel that is separate from the assessment panel to provide an independent peer review of the assessment. The SEDAR process is felt to produce better scientific results that the previous method, and it makes the assessment process more open and transparent to the public.

Procedure for Specification of TAC:

1. Prior to October 1 each year, or such other time as agreed upon by the Council and RA, the NMFS Southeast Fisheries Science Center (SEFSC) and ~~Economics and Trade Division (ETD)~~ **Fisheries Economic Office (FEO)**, Southeast Regional Office (SERO) will: a) update or complete biological and economic assessments and analysis of the present and future condition of the stocks and fisheries for ~~red snapper and other~~ reef fish stocks or stock complexes; b) assess~~ to the extent possible the current SPR levels~~ **to the extent possible the current biomass, biomass proxy, or SPR levels** for each stock; c) estimate fishing mortality (F) in relation to F_{MSY} (MFMT) and F_{OY}; d) other population parameters deemed appropriate; e) summarize statistics on the fishery for each stock or stock complex; f) specify the geographical variations in stock abundance, mortality, recruitment, and age of entry into the fishery for each stock or stock complex; g) provide information for analyzing social and economic impacts of any specification demanding adjustments of allocations, quotas, bag limits or other fishing restrictions, and h) develop estimates of B_{MSY} and MSST.

2. **The SEFSC will utilize the SEDAR process to provide the biological analyses and data listed above in paragraph 1. The SEDAR process uses the following workshops to provide a peer-reviewed stock assessment: data workshop, assessment workshop, and review workshop.** ~~The Council will convene a Scientific Reef Fish Stock Assessment Panel (RFSAP), and a~~ **A** Socioeconomic Assessment Panel (SEP) appointed by the Council, ~~that~~ will, ~~as working groups~~, review the ~~SEFSC and ETD~~ **FEO** assessments, current harvest statistics, economic, social, and other relevant data. The ~~RFSAP~~ **SEDAR process** will prepare a written report to the Council specifying a range of **acceptable biological catch** (ABC) for each stock or stock complex that is in need of catch restrictions for attaining or maintaining OY. The ABCs are catch ranges that will be calculated for those species in the management unit that have been identified by the Council, NMFS, or the working panels as in need of catch restrictions for attaining or maintaining OY. For overfished stocks, the range of ABCs shall be calculated so as to achieve reef fish population levels at or above Fmsy at Bmsy within the rebuilding periods specified by the Council and approved by NMFS. The ~~RFSAP~~ **SEDAR report** will recommend rebuilding periods based on the provisions of the National Standard Guidelines, including generation times for the affected stocks. Generation times are to be specified by the stock assessment panel based on the biological characteristics of the individual stocks. The ~~RFSAP~~ **SEDAR report** recommendations for B_{MSY} and will recommend to the

Council a B_{MSY} level and minimum stock size threshold (MSST) from B_{MSY}. The ~~RFSAP~~ **SEDAR report** may also recommend a more appropriate estimate of F_{MSY} for any stock. The ~~RFSAP~~ **report** may also recommend more appropriate levels for the MSY proxy, OY, the overfishing threshold (MFMT), and overfished threshold (MSST). For stock or stock complexes where data ~~in the SEFSC reports~~ are inadequate to compute an ABC ~~based on the spawning stock biomass per recruit or SPR models~~, the ~~RFSAP~~ **SEDAR report** will use other available information as a guide in providing their best estimate of an ABC range that should result in achieving the MFMT. The ABC ranges will be established to prevent an overfished stock from further decline. To the extent possible, a risk analysis should be conducted indicating the probabilities of attaining or exceeding the MFMT and the annual transitional yields (i.e., catch streams) calculated for each level of fishing mortality within the ABC range. The SEP will examine the economic and social impacts associated with fishing restrictions required to attain those levels. The working groups reports may include recommendations on bag limits, size limits, specific gear limits, season closures, and other restrictions required to attain management goals, along with the economic and social impacts of such restrictions, and the research and data collection necessary to improve the assessments. The ~~RFSAP~~ **SEDAR report** may also recommend additional species for future analysis.

3. The Council will conduct a public hearing on the ~~RFSAP~~ **SEDAR** and SEP reports at, or prior, to the time it is considered by the Council for action. Other public hearings may be held also. The Council will request review of the reports by its Reef Fish Advisory Panel and Scientific and Statistical Committees and ~~may~~ convene these groups before taking action.

4. The Council in selecting a TAC level, and a stock restoration time period (target date), if necessary, for each stock or stock complex for which an ABC range has been identified will, in addition to taking into consideration the recommendations and information provided for in (1), (2), and (3), utilize the following criteria:

    a. Set TAC within or below the first ABC range or set a series of annual TACs to obtain the ABC level within the first three years or less.

    b. Subdivide the TACs into commercial and recreational allocations that maximize the net benefits of the fishery to the nation. The allocations will be based on historical percentages harvested by each user group during the base period of 1979 to 1987**, or by other criteria as specified**

by the Council through a plan amendment. If, for an overfished stock, the harvest in any year exceeds the TAC due to either the recreational or commercial user group exceeding its allocation, subsequent allocations pertaining to the respective user group will be adjusted to assure meeting the specified target date for achieving the MFMT.

5. The Council will provide its recommendations to the NMFS Regional Administrator for any specifications in TACs and stock restoration target dates for each stock or stock complex, estimates of B_{MSY} and MSST, estimates of MFMT, and the quotas, bag limits, trip limits, size limits, closed seasons, and gear restrictions necessary to attain the TAC, along with the reports, a regulatory impact review and environmental assessment of impacts, and the proposed regulations before October 15, or such other time as agreed upon by the Council and Regional Administrator. The Council may also recommend new levels or statements for MSY (or proxy) and OY.

6. Prior to each fishing year, or other such time as agreed upon by the NMFS Regional Administrator and Council, the Regional Administrator will review the Council's recommendations and supporting information; and, if he concurs that the recommendations are consistent with the objectives of the FMP, the Magnuson-Stevens Act National Standards, and other applicable law, he shall forward for publication notice of proposed rules for TACs and associated harvest restrictions by November 1, or such other time as agreed upon by the Council and Regional Administrator (providing up to 30 days for additional public comment). The Regional Administrator will take into consideration all public comment and information received and will forward for publication in the Federal Register the notice of final rule by December 1, or such other time as agreed upon by the Council and Regional Administrator.

7. The commercial allocations of reef fish TACs, and the recreational allocation of red snapper TAC, shall be considered to be quotas. Appropriate regulatory changes that may be implemented by proposed rule in the Federal Register include:

    a. The TACs for each stock or stock complex that are designed to achieve a specific level of ABC within the first year, or annual levels of TAC designed to achieve the ABC level within three years.

    b. Bag limits, size limits, vessel trip limits, closed seasons or areas, gear restrictions, and quotas designed to achieve the

TAC level.

c. The time period (target date) specified for rebuilding an overfished stock, estimates of B_{MSY} and MSST for overfished stocks and MFMT.

d. New levels or statements of MSY (or proxy) and OY for any stock.

8. The NMFS Regional Administrator is authorized, through notice action, to conduct the following activities:

a. Close the commercial fishery of a reef fish species or species group that has a commercial quota or sub-quota at such time as projected to be necessary to prevent the commercial sector from exceeding its allocation for the remainder of the fishing year or sub-quota season.

b. Close the recreational red snapper fishery in the EEZ, i.e., reduce the red snapper bag limit to zero, at such time as projected to be necessary to prevent the recreational sector from exceeding its allocation for the remainder of the fishing year.

c. Reopen a commercial or recreational season that had been prematurely closed if needed to assure that an allocation can be reached.

9. If the NMFS decides not to publish the proposed rule of the recommended management measures, or to otherwise hold the measures in abeyance, then the Regional Administrator must notify the Council of his intended action within 30 days of receipt of the Council's proposal and the reasons for NMFS concern along with suggested changes to the proposed management measures that would alleviate the concerns. Such notice shall specify: 1) the applicable law with which the amendment is inconsistent, 2) the nature of such inconsistencies, and 3) recommendations concerning the actions that could be taken by the Council to conform the amendment to the requirements of applicable law.

Discussion: Alternative 1, the no action (status quo) alternative, leaves the current wording of the framework procedure in place. The Council has begun using the SEDAR process in anticipation of it being incorporated into the framework procedure. This alternative would require that the

Council revert back to using its Reef Fish Stock Assessment Panel (RFSAP) to review stock assessments prepared by NMFS rather than the SEDAR process. In addition, the name used to refer to the Fisheries Economic Office will not reflect the current terminology.

Alternative 2 (preferred alternative) makes minor rewording changes to the framework procedure, and formally recognizes the SEDAR process. NMFS has expressed a strong preference to use the SEDAR process in order to standardize its assessment process for all Councils. The SEDAR process incorporates a Data Workshop to assimilate available information, a Stock Assessment Workshop to conduct the initial stock assessment and prepare a draft assessment report, and an Assessment Review Workshop to review the draft assessment, conduct additional analyses if needed, and prepare a final report along with ABC recommendations. The SEDAR process incorporates the functions that were previously performed by the RFSAP. The process the RFSAP would be disbanded as a discrete group. However, a pool of stock assessment experts would be maintained from which the scientific representatives to the SEDAR workshops could be selected. Although the previous RFSAP process allowed participation by fishermen, environmental representatives, outside scientists and other interested parties, the SEDAR process incorporates participation by those groups as an integral part of the process. The SEDAR process requires a greater number of meetings than the current process to produce a stock assessment, and will therefore entail greater administrative overhead (see accompanying figures). However, the Council will only be paying costs for participation by Council members and staff, with NMFS paying the rest, so the cost to the Council will likely be lower than the current process.

Discussion: The action alternative in this section is intended to streamline the administrative process by bringing the terminology in the TAC framework procedure up to date, and by incorporating the SEDAR stock assessment process into the framework procedure. Alternative 1 (status quo) would create some confusion about the proper procedure since some entities have been renamed (e.g., Economics and Trade Division renamed Fisheries Economic Office) or no longer exist (e.g., Reef Fish Stock Assessment Panel). It would still be possible to carry out stock assessments under the SEDAR process since it is not prohibited under status quo, but Alternative 2 (Preferred Alternative) clarifies the process by formerly making SEDAR a part of the framework procedure. The operations and responsibilities for the SEDAR process are kept fairly generalized in the framework procedure. A SEDAR steering committee has overview over the operation of the SEDAR process, and detailed terms of reference are established for each SEDAR workshop by the SEDAR Coordinator in consultation with NMFS and Council staff. Since the preferred alternative is administrative in nature, it will not result in any additional costs to fishermen. However, since the SEDAR process involves a greater number of workshops than the previous stock assessment panel method, additional costs will accrue to NMFS and the Council, and to stakeholders and other interested parties who choose to travel at their own expense to observe the meetings.

4.3 Sea Turtle and Smalltooth Sawfish Bycatch

The GOM reef fish fishery is known to encounter endangered and threatened sea turtles and less frequently, the endangered smalltooth sawfish. Sea turtles are highly migratory and travel widely throughout the GOM. Smalltooth sawfish also occur in the GOM, but mainly off of peninsula Florida. Adverse effects to these species stem from them sometimes being hooked on or entangled in bottom longline and vertical line gear targeting reef fish. Sea turtles can be injured or killed as a result of interacting with these gears. Smalltooth sawfish hooked or entangled on these gears are believed to experience only short-term injury.

A NMFS biological opinion prepared for Reef Fish Amendment 23 evaluated the effects of all fishing activity authorized under the FMP on threatened and endangered species, in accordance with section 7 of the Endangered Species Act (ESA) (NMFS 2005). The biological opinion was based on the best available commercial and scientific data on sea turtles and smalltooth sawfish, and on the effects of the proposed action. The biological opinion concluded that the continued operation of the GOM reef fish fishery is not likely to jeopardize the continued existence of green, hawksbill, Kemp's ridley, leatherback, or loggerhead sea turtles or smalltooth sawfish. An incidental take statement was issued specifying the amount and extent of anticipated take, along with reasonable and prudent measures deemed necessary and appropriate to minimize the impact of these takes. A summary of anticipated take every three years is presented in Table 4.1. The reasonable and prudent measures specified are as follows:

1 NMFS must ensure that any caught sea turtle or smalltooth sawfish is handled in such a way as to minimize stress to the animal and increase its survival rate.

2 NMFS must ensure that monitoring and reporting of any sea turtles or smalltooth sawfish encountered (1) detect any adverse effects resulting from the GOM reef fish fishery; (2) assess the actual level of incidental take in comparison with the anticipated incidental take documented in that opinion; (3) detect when the level of anticipated take is exceeded; and (4) collect improved data from individual encounters.

Reasonable and prudent measures describe in general terms the actions required to minimize take. Terms and conditions are also included in the biological opinion describing the specific methods required to accomplish each reasonable and prudent measure. The terms and conditions specified for the second reasonable and prudent measure listed above can be fulfilled by NMFS using existing monitoring and reporting regulations and programs without taking any additional regulatory action (Jennifer Lee, NMFS Office of Protected Resources, personal communication). Therefore, the alternatives in this section only address the terms and conditions specified for the first reasonable and prudent measure, as follows:

1. NMFS, in cooperation with the Council, must implement sea turtle bycatch release equipment requirements and sea turtle and smalltooth sawfish handling protocols and/or guidelines in the commercial and for-hire permitted GOM reef fish fishery. Use of the sea turtle release equipment requirements and sea turtle handling and release protocols recently implemented for HMS pelagic longline vessels must be considered (50 CFR 635.21(c)(5)(i) and (ii), Appendix C). At a minimum, regulations similar to those currently in place for Atlantic

HMS bottom longline vessels must be implemented to the maximum extent practicable (50 CFR 635.21(a)(3) and 635.21(d)(3), Appendix D). Implementation of these requirements and guidelines must occur as soon as operationally feasible as and no later than 2007.

2. NMFS, in cooperation with the Council, must develop and implement an outreach program to train commercial and recreational fishermen in the use of any sea turtle release equipment and/or sea turtle and smalltooth sawfish handling protocols and guidelines implemented. In developing and implementing this outreach program, the HMS pelagic longline educational outreach program should be used as a model. The outreach program must be implemented in conjunction with first term and condition.

On December 24, 2003, NMFS published a final rule (68 FR 74746) implementing the final regulations described in Amendment 1 to the Fishery Management Plan for Atlantic Tunas, Swordfish, and Sharks (HMS FMP). These regulations required bottom longline fishermen to carry and use linecutters and dipnets to release sea turtles, prohibited sharks, and smalltooth sawfish as of February 1, 2004. The use of a dehooking device meeting NMFS minimum design standards is also required under Amendment 1, but this requirement has not yet been implemented. NMFS also published a document titled "Careful Release Protocols for Sea Turtle Release With Minimal Injury" to guide fishermen on the proper use of sea turtle release gear (Appendix F).

On July 6, 2004 (69 FR 35599), NMFS published a final rule to reduce sea turtle bycatch and bycatch mortality in the Atlantic pelagic longline fishery. That rulemaking was based on the results of the 3-year Northeast Distant (NED) Closed Area research experiment involving interactions of Atlantic pelagic longline fishing gear and Atlantic sea turtles, other available studies, information on circle hook and bait treatments, and public comments. As part of that rulemaking, NMFS redefined the type of equipment and the handling guidelines that pelagic longline fishermen must carry and use to release sea turtles to address bycatch mortality. These new Atlantic pelagic longline requirements became effective on August 5, 2004.

The intent of the first term and condition was to minimize, to the extent practicable, the stress on and mortality of sea turtle and/or smalltooth sawfish captured incidental to the Gulf of Mexico reef fish fishery by requiring the use of release gear and handling protocols similar to those developed to address bycatch in HMS longline fisheries. Although the biological opinion estimates anticipated interactions in the Gulf of Mexico fishery are much less common than in the HMS fisheries, particularly the HMS pelagic longline fishery, the same techniques for handling and removing the gear from any hooked or entangled sea turtle are pertinent. The second term and condition was to ensure that the maximum benefit of any new requirements would be realized. Both terms and conditions were drafted to give some flexibility in implementing the specific dehooking devices, materials, protocols for the safe handling and release of turtles, and training/outreach program. The purpose was to provide those involved in its implementation an opportunity to review the latest release gear and methods and evaluate which of these would be practical for reef fish commercial and recreational for-hire vessels.

The following alternatives, ranging from no action to a requirement that permitted reef fish vessels possess and use a variety of bycatch release devices are intended to reduce the bycatch mortality of sea turtles and facilitate safe handling of smalltooth sawfish in the GOM reef fish fishery. These alternatives encompass the range of alternatives that are required to be considered under the biological opinion.

Table 4.1 Anticipated 3-Year Incidental Take in the Gulf of Mexico Reef Fish Fishery Beginning in August 2004 (source: Table 9.1 in the Section 7 Biological Opinion for Amendment 23)

Species	Amount of Take	Bottom Longline	Commercial Vertical Line	Recreational Vertical Line	Total
Green	Total take	16	9	16	51
	Lethal take	13	3	5	21
Hawksbill	Total take	0	13	31	44
	Lethal take	0	4	9	13
Kemp's ridley	Total take	2	0	1	3
	Lethal take	1	0	0	1
Leatherback	Total take	1	9	10	20
	Lethal take	1	4	4	9
Loggerhead	Total take	85	65	53	203
	Lethal take	42	20	16	78
Smalltooth sawfish	Total take	2	2	4	8
	Lethal take	0	0	0	0

4.3.1 Bycatch and Bycatch Mortality Mitigation Measures

This section can have more than one preferred alternative.

Alternative 1: No Action (status quo): Do not implement additional management measures to minimize stress on and/or increase survival of any sea turtles or smalltooth sawfish caught in the Gulf of Mexico reef fish fishery.

Alternative 2: Require vessels with commercial reef fish vessel permits to comply with the sea turtle release protocols required for the HMS bottom longline fishery specified in 50 CFR 635.21(a)(3) and 635.21(d)(3), i.e., must possess inside the wheelhouse, or within a waterproof case if no wheelhouse, a copy of the document provided by NMFS titled, "Careful Release Protocols for Sea Turtle Release With Minimal Injury", and must post inside the wheelhouse, or in an easily viewable area if no wheelhouse, the sea turtle handling and release guidelines provided by NMFS, and must possess and use line clippers, dip nets, corrodible hooks and a dehooking device which meet NMFS standards.

Alternative 3: Require vessels with commercial reef fish vessel permits to comply with the sea turtle release protocols required for the HMS pelagic longline fishery specified in 50 CFR 635.21(c)(5)(i) and (ii), i.e., must possess inside the wheelhouse, or within a waterproof case if no wheelhouse, a copy of the document provided by NMFS titled, "Careful Release Protocols for Sea Turtle Release With Minimal

Injury", and must post inside the wheelhouse, or in an easily viewable area if no wheelhouse, the sea turtle handling and release guidelines provided by NMFS, and must possess and use a long-handled line clipper or cutter, long-handled dehooker for ingested hooks, long-handled dehooker for external hooks, long-handled device to pull an "inverted V", dipnet, tire, shot-handled dehooker for ingested hooks, short-handled dehooker for external hooks, long-nose or needle-nose pliers, bolt cutters, monofilament line cutters, at least two types of mouth openers/mouth gags.

Alternative 4: Require vessels with recreational for-hire reef fish vessel permits to comply with the same sea turtle and smalltooth sawfish release protocols as selected above for commercial vessels.

Alternative 5: Require vessels with commercial reef fish permits and vessels with reef fish for hire permits to comply with the sea turtle release protocols in place for Atlantic HMS bottom longline vessels be implemented to the maximum extent practicable (50 CFR 635.21(a)(3) and 635.21(d)(3)).

Preferred => Alternative 6: Vessels with commercial and for hire reef fish vessel permits must possess inside the wheelhouse, or within a waterproof case if no wheelhouse, a copy of the document provided by NMFS titled, "Careful Release Protocols for Sea Turtle Release With Minimal Injury," and must post inside the wheelhouse, or in an easily viewable area if no wheelhouse, the sea turtle handling and release guidelines provided by NMFS. Those permitted vessels with a freeboard height of four feet or less must have on board a dipnet, shorthandled dehooker, long-nose or needle-nose pliers, bolt cutters, monofilament line cutters, and at least two types of mouth openers/mouth gags. This equipment must meet the specifications described in 50 CFR 635.21(c)(5)(i)(E-L) with the following modifications: the dipnet handle can be of variable length, only one NMFS approved short-handled dehooker is required (i.e., CFR 635.21(c)(5)(i)(G or H)); and life rings, seat cushions, life jackets, and life vests may be used as alternatives to tires for cushioned surfaces as specified in 50 CFR 635.21(c)(5)(i)(F). Those permitted vessels with a freeboard height of greater than four feet must have on board a dipnet, long-handled line clipper, a short handled and a long handled dehooker, long-nose or needle-nose pliers, bolt cutters, monofilament line cutters, and at least two types of mouth openers/mouth gags. This equipment must meet the specifications described in 50 CFR 635.21(c)(5)(i) (A-L) with the following modifications: only one NMFS approved long-handled dehooker (50 CFR 635.21(c)(5)(i)(B or C)) and one NMFS approved short-handled dehooker (50 CFR 635.21(c)(5)(i)(G or H)) are required; life rings, seat cushions, life jackets, and life vests as alternatives to tires for cushioned surfaces as specified in 50 CFR 635.21(c)(5)(i)(F).

Preferred => Alternative 7: Require vessels with commercial and/or recreational for-hire reef fish permits that incidentally catch a smalltooth sawfish to: (1) Keep sawfish in the water at all times, (2) If it can be done safely, untangle the line if it is wrapped around the saw, (3) Cut line as close to the hook as possible, and (4) Do not handle

the animal or attempt to remove any hooks on the saw, except for with a long-handled dehooker.

Discussion: The purpose of this action is to reduce to the extent practicable adverse effects on sea turtles and smalltooth sawfish captured incidental to the reef fish fishery. In order to reduce post-hooking mortality of sea turtles, NMFS has approved a suite of dehooking devices, materials, and protocols for the safe handling and release of turtles. Table 4.2 lists the gears required in the referenced federal regulations for HMS bottom longlines and for HMS pelagic longlines and indicates which gear would be required under each sea turtle alternative. Table 5.5.3 in the Regulatory Impact Review (RIR) section contains cost estimates for each gear type.

Alternative 1, the no action (status quo) alternative, would not implement any additional regulations to increase the survival of incidentally caught sea turtles or to facilitate safe handling of smalltooth sawfish. Vessels with reef fish permits would be allowed to continue to fish without any sea turtle release gear equipment or sea turtle and smalltooth sawfish release protocols. Currently, the only regulation in the Reef Fish FMP that specifically addresses bycatch of protected species is a prohibition on the use of entangling nets. This regulation was implemented under Amendment 1 (implemented in 1990) because of the potential for entangling nets to ghost fish and kill nontarget and protected species. This alternative does not comply with the minimum requirements of the biological opinion. It is included to provide a full range of alternatives and to establish a baseline for comparing the effects of the alternatives to the status quo.

Alternative 2 would require a moderate amount of release gear to be on board commercial reef fish vessels, along with written documentation of sea turtle handling and release guidelines. Required gear includes line clippers, dip nets and corrodible hooks. A dehooking device meeting NMFS minimum design standards would also be required, but minimum design standards for this fishery have to yet been published.

Some or all of the required gear may already be aboard many vessels because it is used in normal reef fishing activities or because the vessels also participate in the HMS bottom longline fishery. As of May 5, 2005, there were 104 reef fish vessels that also had shark (HMS bottom longline) permits.

This alternative does not incorporate the best available information on sea turtle release gear and handling protocols. The HMS bottom longline requirements were implemented prior to NMFS publication of the Careful Release Protocols for Sea Turtle Release with Minimum Injury (Epperly et. al 2004), which lists and describes the careful release protocols and required gear proven successful by the NED study at minimizing sea turtle mortality of hooked and/or entangled sea turtles. NMFS is developing a proposed rule updating the shark bottom longline fishery handling and dehooking equipment requirements.

Alternative 3 would require vessels with commercial reef fish permits to posses and use the same release gear and handling protocols currently required in the HMS pelagic longline fishery. In addition to posting inside the wheelhouse the sea turtle handling and release guidelines provided

by NMFS, vessels would also be required to possess inside the wheelhouse, or within a waterproof case if no wheelhouse, a copy of the document provided by NMFS entitled, "Careful Release Protocols for Sea Turtle Release With Minimal Injury." For release gear, commercial reef fish vessels would be required to possess and use line cutters and dipnets, as required under alternative 2, but meeting newly revised minimum design standards. Commercial reef fish vessels would also be required to possess, maintain, and use additional equipment to facilitate the removal of fishing gear from incidentally captured sea turtles. Detailed information on required gear meeting the minimum design standards is included in Epperly et al. 2004 (Appendix F).

This alternative would increase the burden to fishermen in terms of the amount of release gear that must be carried, but would increase the likelihood of successfully releasing sea turtles provided that the fishermen are proficient in the selection and use of the appropriate gear. The requirement that the "Careful Release Protocols…"document and the sea turtle handling and release guidelines be kept inside the wheelhouse of the vessel may be impracticable for some smaller vessels because they may not have a wheelhouse. Some gear may already be on board vessels because it is used in normal reef fish fishing activities or because vessels may already have this gear aboard and be trained in its use since some vessels have both reef fish and HMS permits. As of May 5, 2005, there were 24 reef fish vessels that also had swordfish (i.e., pelagic longline) permits (personal communication, NMFS Permits Office). If this alternative is selected, voluntary training workshops will be provided by NMFS to instruct fishers of the proper uses of required gear and careful release protocols.

Alternative 4 would apply the same release gear and handling requirements to both commercial and recreational for-hire vessels (charter and head boats) in the reef fish fishery. The biological opinion estimated that the take of sea turtles in the recreational reef fish fishery, would constitute approximately 35% of the total sea turtle take over a three-year period beginning in August 2004 (111 out of 321 sea turtles). Although this alternative only applies to the for-hire vessels and not to private recreational vessels, private recreational vessel operators would be encouraged to voluntarily comply with the same measures.

Alternative 5 is intended to describe which HMS measures are considered to be practicable to apply to reef fish fisheries. The only requirement thought impracticable for some vessels is that the sea turtle handling and release guidelines be kept inside the vessel wheelhouse of the vessel. Some smaller vessels may not have a wheelhouse. Alternative 5 is therefore essentially the same as selecting both Alternative 2 and 4 as preferred.

Alternative 6 would modify the sea turtle release gear requirements and posting requirements specified under Alternative 3 to reflect what is deemed practicable for commercial and recreational for-hire reef vessels. The requirements specified in this alternative incorporate the best available scientific information, while accounting for differences between HMS commercial longline vessels and reef fish vessels. Freeboard height (i.e., the working distance between the top rail of the gunwale to the water's surface) and available deck space if a turtle were to be boated to remove the hook were the two main factors believed to affect the way a captured turtle might be handled and what types of measures would be practical. Under this alternative, vessels with a freeboard height of four feet or less would be exempt from having the long-handled line

cutters or long-handled dehooking devices required under Alternative 3. Permitted vessels with a freeboard height exceeding four feet would still be required to have the same equipment as required under Alternative 3, except the minimum length of extended reach handles would be at least 6 feet or 150% of freeboard height, whichever is greater. This alternative also would include substitute items for the tire requirements to provide reef fish vessels some flexibility.

Alternative 6 would reduce some of the burden to fishermen in terms of the amount of release gear that must be carried, while still increasing the likelihood of successfully releasing sea turtles provided that the fishermen are proficient in the selection and use of the appropriate gear. Voluntary training workshops would be provided by NMFS to instruct fishers of the proper uses of required gear and careful release protocols.

Alternative 7 would require specific protocols to facilitate the safe handling of captured smalltooth sawfishes. No release gear equipment is required under this alternative.

Table 4.2. Comparison of turtle release gear requirements under alternatives 2-6. Gear descriptions based on 50 CFR 635.21(d)(2) and 50 CFR 635.21(c)(5). See Table 5.5.3 for cost estimates of each gear type. *Would require for-hire vessels to carry the same equipment as commercial vessels should Alternatives 2 or 3 be chosen.

Turtle Release Gear	**Alternatives 2, 4*, 5**	**Alternatives 3, 4***	**Alternative 6 < 4 feet freeboard**	**Alternative 6 >4 feet freeboard**
Long-handled line clippers	X[1]	X[2]		X[2]
Dipnet	X[1]	X[2]	X[3]	X[2]
Long-handled dehooker for ingested hooks	X[4]	X[2, 5]		
Long-handled dehooker for external hooks	X[4, 5, 6]	X[2, 5, 6]		
Long-handled dehooker				X[2]
Long-handled device to pull an inverted "V"		X[2]		X[2]
Tire (standard passenger sized)		X	X[7]	X[7]
Short-handled dehooker for ingested hooks	X[4, 8]	X[4, 8]	X[8]	X[8]
Short-handled dehooker for external hooks	X[4, 6, 8]	X[6, 8]	X[8]	X[8]
Short-handled dehooker			X[8]	X[8]
Long-nose or needle-nose pliers		X	X	X
Bolt cutters		X	X	X
Monofilament line cutters		X	X	X
Mouth openers/mouth gags		X	X	X

[1] handle at least 6 feet long.
[2] handle 6 feet or 150% of freeboard – whichever is greater.
[3] handle length optional.
[4] must meet minimum standards, not yet published.
[5] may substitute short-handle dehooker if used with appropriate length handle extender.
[6] may substitute ingested dehooker if the dehooker meets the criteria for an external dehooker.
[7] may use other cushioned surface.
[8] 16-24 inch handle.

5 REGULATORY IMPACT REVIEW

5.1 Introduction

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 the proposed regulations are a "significant regulatory action" under the criteria provided in Executive Order (E.O.) 12866 and provides some information that may be used in conducting an analysis of impacts on small business entities pursuant to the Regulatory Flexibility Act (RFA). This RIR analyzes the probable impacts that the alternatives in this plan amendment to the Reef Fish FMP would have on the commercial and for-hire reef fish industry.

5.2 Problems and Issues in the Fishery

The problems addressed by this Reef Fish FMP amendment are discussed in Section 2 of this document and are included here by reference. In general, problems and issues addressed in this amendment include the illegal sale of reef fish caught under a recreational bag limit, the inconsistency between USCG requirements and existing fishing regulations, the outdated TAC framework procedure, difficulties in enforcing fishing prohibitions in restricted federal waters, and the limited likelihood of survival of sea turtles and smalltooth sawfish.

5.3 Objectives

This amendment aims to improve the enforceability of the prohibition on the sale of recreationally caught reef fish, eliminate crew size-related discrepancies between USCG requirements and existing fishing regulations, and, increase the survival rate of incidentally caught sea turtles and smalltooth sawfish. In addition, this plan amendment intends to update the TAC framework procedure and improve the enforcement of season closures and off-shore restricted fishing areas.

5.4 Description of the Fishery

The individuals or groups affected by the preferred alternatives are the participants in the GOM reef fish fishery. This amendment would apply directly to the commercial and the charter/headboat sector of the reef fish fleet. Since several modifications to the Gulf Reef Fish FMP are proposed under this amendment, the various alternatives will impact individuals differently. Some of the alternatives affect all members of the commercial and charter fleet that hold a reef fish permit. Other regulations are aimed at specific groups within the sector. For example, some of the alternatives affect individuals who operate vessels that hold both charter

and commercial reef fish permits, while others affect individuals who use reef fish for bait. In some cases, everyone in the fleet is impacted by the preferred alternatives.

The preferred alternative that would prohibit the sale of reef fish for bait is the only alternative that would directly regulate the persons that sell reef fish from onshore facilities. All other regulations would directly regulate harvesters of reef fish.

5.4.1 Commercial Fishery

5.4.1.1 Permits and Landings

The Reef Fish FMP for the GOM was established in November 1984 to help rebuild declining reef fish stocks. In 1990, Amendment 1, to the Reef Fish FMP, established a commercial reef fish permit. Anyone wishing to harvest reef fish as part of the commercial fishery was required to hold a valid reef fish permit. Amendment 4 was implemented in 1992 and created a three-year moratorium on the issuance of new commercial reef fish permits. Amendment 9 extended the moratorium until December 31, 1995. Amendment 11 further extended the moratorium until December 31, 2000. Amendment 17 extended the commercial reef fish permit moratorium for another 5 years, through December 31, 2005 (GMFMC 2004c).

Reef fish permits are required to commercially harvest reef fish species. Reef fish that are harvested may only be sold to buyers holding a valid permit to purchase reef fish. The holders of the harvesting permits define the universe of vessels that may legally harvest reef fish to be sold commercially. The owners of the vessels assigned these permits will realize the direct economic impacts generated as a result of the preferred alternatives.

The number of commercial reef fish permits has declined from approximately 2,200 (GMFMC 2004c) in 1992 to approximately 1,145 as of July 2004. Permit data indicate that 908 of those permits were assigned to vessels that were only permitted to fish reef fish commercially. The remaining 237 permits were assigned to vessels that can fish reef fish as commercial vessels or as charter vessels or headboats.

For a person to renew a commercial reef fish permit, more than 50 percent of the applicant's earned income must have been generated from commercial or charter fishing in either of the 2 years preceding application for the permit (see 50 CFR §622.4(a)(2)(v)). Decreases in the number of reef fish permit holders reflect the number of persons who either did not meet the permit renewal criteria or if they did simply elect not to renew their permit.

The state of residence of each of the permit holders and the number of permits held are presented in Table 5.4-1. Information in that table shows that 933 of the permits owners (81.5 percent) list Florida as owner's address. Texas is listed as the owner's state on 80 permits (7 percent). Louisiana is listed as the owner's state on 61 (5.3 percent) permits, Alabama on 37 (3.2 percent) permits, Mississippi on 16 (1.4 percent) permits, and the other states account for the 18 (1.6 percent) remaining permits.

Table 5.4-1: Number of Commercial Reef Fish Permits for the Gulf of Mexico by Owner's State of Residence

Owners' State	Commercial Permit Only	Commercial and Charter/Headboat Permits	Total
FL	736	197	933
TX	57	23	80
LA	55	6	61
AL	29	8	37
MS	16		16
DE	1		1
GA	3	1	4
IN	1		1
MA	1		1
MD		1	1
MO	1		1
NJ	2		2
NY	3		3
OH	1		1
SC	1		1
TN	1	1	2
Total	**908**	**237**	**1,145**

Source: NMFS Reef Fish Permit Database, July 2004.

Commercial fishermen directly impacted by the preferred alternatives are those approximate 1,050[2] individuals that currently hold a commercial reef fish permit. Other fishermen could be indirectly impacted if reef fish fishermen change their seasonal fishing patterns and increase effort for other species.

Gulf-wide average commercial harvests and ex-vessel values by species group are presented in Table 5.4-2. Averages were computed for the 1995-2003 period. Landings are expressed in pounds whole weight. Data were obtained from the NMFS web site maintained by the Fisheries Statistics and Economics Division. Shallow water groupers and snappers constituted more than 85 percent of the commercial landings for the period considered. Total yearly reef fish ex-vessel values were, on average, in excess of 40 million dollars.

[2] The number of permit holders is lower than the total number of permits issued because some permit owners hold more than one permit. Also the current number of permits may underestimate the total number of vessels that could be permitted to harvest reef fish in the future. Permit holders are given one year to renew their permit after it expires. Some individuals may have allowed their reef fish permit to lapse, but will renew the permit within one year. Permits issued within this grace period represent the expansion in the number of permits that can occur.

Table 5.4-2: Gulf-wide Average Commercial Landings and Ex-Vessel Values by Species Group (1995-2003)

SPECIES GROUP	LANDINGS		VALUE	
	(lbs)	(%)	($)	(%)
Shallow Water Groupers	9,223,362	44.94	18,724,722	46.61
Snappers	8,694,078	42.36	17,088,708	42.54
Deep Water Groupers	1,401,087	6.83	3,103,882	7.73
Amberjack & Other Reef Fish	1,205,672	5.87	1,258,074	3.13
TOTAL	20,524,199	100.00	40,175,386	100.00

Source: NMFS Fishery Statistics (http://www.st.nmfs.gov/st1/index.html).

Data for the 9-year period discussed in this section indicated that, red, vermillion and yellowtail snappers, gag and red groupers and, greater amberjack accounted for most of the commercial reef fish landings. Together, these species represented 85 percent of total reef fish landings. Gulf-wide average commercial landings by reef fish species, ex-vessel values, nominal and real prices are presented in Table 5.4-3. Red grouper, the species with the largest average yearly landings, accounted for 30 percent of the Gulf reef fish landings. Red snapper and gag, which are second and third in poundage landed, accounted for 22 percent and 12 percent of the landings, respectively.

The vast majority of the harvest of several reef fish species was from the Florida west coast. For example, over 99 percent of the red grouper, 96 percent of the black grouper, and 80.5 percent of the scamp harvested were attributed to the Florida west coast according to data from the NOAA web site. On average, red snapper was the most expensive species in the snapper group. Nominal and real red snapper prices were $2.06 and $2.14 per pound, respectively. At $2.48 per pound, the highest reef fish average real price was for scamp. The average real price for red grouper, the species with the highest average harvest, was $1.93 per pound.

Table 5.4-3: Gulf-wide Average Commercial Landings, Values, and Ex-Vessel Prices by Species (1995-2003)

Snappers	Landings (lbs)	Nominal Value($)	Price ($/lb) Nominal	Price ($/lb) Real
Red Snapper	4,491,230	9,258,348	2.06	2.14
Vermilion Snapper	1,916,805	3,517,124	1.83	1.91
Yellowtail Snapper	1,458,229	2,880,761	1.98	2.05
Gray Snapper	364,122	617,822	1.70	1.76
Mutton Snapper	205,909	359,718	1.75	1.81
Silk Snapper	110,769	226,429	2.04	2.12
Other	147,013	228,505	1.55	1.61
Total	8,694,078	17,088,708	---	---
Deep Water Groupers				
Yellowedge Grouper	933,542	2,206,240	2.36	2.46
Snowy Grouper	195,850	392,642	2.00	2.08
Warsaw Grouper	139,754	248,610	1.78	1.85
Other	131,942	256,390	1.94	2.02
Total	1,401,087	3,103,882	---	---
Shallow Water Groupers				
Red Grouper	6,129,500	11,409,603	1.86	1.93
Gag	2,416,492	5,751,162	2.38	2.47
Black Grouper	359,879	814,534	2.26	2.35
Scamp	301,630	720,169	2.39	2.48
Other	15,861	29,254	1.84	1.92
Total	9,223,362	18,724,722	---	---
Other Reef Fish				
Greater Amberjack	1,025,994	1,037,913	1.01	1.05
Other	179,678	220,161	1.23	1.27
Total	1,205,672	1,258,074	---	---

5.4.1.2 Vessel Characteristics

Logbook and permit files were examined for vessels with logbook reported landings of Gulf reef fish from 2001-2003 (NMFS unpublished data, 2005). Results of this examination were provided in an earlier environmental assessment for the emergency rule to establish trip limits in the commercial grouper fishery (NMFS 2005). This section provides a summary of those results.

In terms of 2001-2003 annual averages for logbook-reported data, 1,050 vessels landed 19.2 mp gutted weight (GW) of Gulf reef fish with a real ex-vessel value of $44.6 million. Median reef fish landings were 5,705 pounds per vessel. The median vessel was 37 feet long, derived 98 percent of its gross revenues from reef fish harvests, had 275 to 300 horsepower engines, took 12 trips per year, and spent about 31 days at sea annually (Table 5.4.4).

Averages computed for vessels using longlines indicated that 166 longliners harvested 6.5 mp GW of reef fish and had gross revenues estimated at $15.5 million (Table 5.4.5). The median vessel length for this fleet was 43 to 45 feet, had 3-person crews (including the captain) and 228 to 240 horsepower engines, and spent between 113 to 121 days at sea annually. Median longline vessels took 14 trips per year. The annual gross revenue per vessel for all reef fish landed was between $96,000 and $102,000.

An average of 899 vessels using handlines took 15,613 trips a year and spent 43,463 days at sea annually (Table 5.4.6). The average annual reef fish harvest of the handline fleet was 11.6 mp GW. The median handline vessel was 35 to 36 feet long, had 280 to 300 horsepower engines, had 2 person crews, and spent 33 to 35 days away from port. Gross revenues were between $12,000 and $13,000 per vessel.

Waters (2002) provided participation rates by gear and state and reported that of the vessels with commercial reef fish permits, 782 vessels in Florida and 207 in other Gulf States indicated they landed reef fish using vertical lines in 2000. For the longline sector, 155 vessels in Florida and 33 in other Gulf States indicated landing reef fish using this gear in 2000. An additional 55 vessels, all of which are in Florida, reported landing reef fish using fish traps.

Waters (1996) reported results from a survey of the GOM commercial reef fish fishery that divided the vessels into high volume and low volume depending on whether or not they landed enough pounds to be in the top 75 percent of all vessels with a particular gear type in the fishery. The survey included vessels that reported using multiple types of gear. "Fishermen that primarily used fish traps for reef fishes tended to cite the use of fish traps, stone crab traps, rods and reels and gill nets, among others. Respondents with vertical hooks and lines in the eastern Gulf used bandit reels, electric reels and rods and reels. Respondents that primarily used bottom longlines for reef fishes also tended to cite experience with vertical hook and line gear" (Waters 1996). The survey asked vessel owners to report on their two most important kinds of trips for reef fish, even if a

Table 5.4.4 NMFS southeast coastal fisheries logbook-reported commercial fishing activity for vessels with landings of Gulf reef fish, 1993-2004 (1)

Year, with sums and averages for 2001-2003 only	Annual totals, vessels with landings of Gulf reef fish						Per-vessel medians (50th percentiles), vessels with landings of Gulf reef fish (2)							
	Vessels	Gulf reef fish landed, thousand pounds (gutted weight)	Est. gross revenue for Gulf reef fish landed, thousand 2001 $	Trips, all fish	Days away from port, all fish	Gross revenue, all fish, thousand 2001 $	Gulf reef fish, pounds landed per year (gutted weight)	Est. gross revenue, Gulf reef fish, 2001 $ per year	Est. gross rev, all fish, 2001 $ per year	% gross revenue from Gulf reef fish	Engine horse-power	Vessel length (feet)	Trips per year, all fish	Days away from port per year, all fish
1993	1,347	16,303	$34,137	19,483	64,148	$39,696	3,251	$6,817	$9,562	96%	165	36	10	28
1994	1,387	16,767	$36,921	20,363	68,794	$42,450	3,787	$7,952	$10,836	96%	200	36	11	31
1995	1,303	15,872	$33,711	18,850	62,637	$38,898	3,482	$7,227	$10,407	96%	210	36	11	27
1996	1,143	15,584	$33,779	17,580	58,731	$38,701	3,475	$7,632	$11,259	95%	210	37	12	31
1997	1,169	17,345	$37,521	18,363	61,010	$42,869	3,400	$7,872	$11,870	95%	225	37	12	30
1998	1,136	16,763	$40,262	17,750	56,762	$45,628	3,779	$8,895	$12,526	96%	240	37	12	30
1999	1,117	18,829	$44,166	19,836	63,178	$50,645	4,644	$11,291	$15,936	96%	250	37	14	35
2000	1,134	18,715	$44,013	19,059	60,486	$49,912	4,915	$11,929	$16,017	97%	253	36	13	31
2001	1,067	19,056	$44,541	17,901	57,869	$49,774	5,011	$11,450	$16,554	97%	280	36	13	34
2002	1,061	19,724	$45,814	17,758	57,096	$50,523	5,208	$12,594	$16,458	98%	275	36	13	34
2003	1,022	18,816	$43,537	17,508	56,950	$47,658	5,555	$13,344	$17,212	98%	300	36	14	37
2004	925	14,910	$33,373	13,303	42,432	$35,940	5,705	$12,363	$14,763	99%	300	37	11	31
Sum		57,595	$133,893	53,167	171,915	$147,955								
Avg	1,050	19,198	$44,631	17,722	57,305	$49,318								

(1) Data for 2004 is not complete. See footnote 1, Table 1.

(2) Frequency distributions were computed separately for each variable.

Source: NMFS Data; compiled by Tony Lamberte

Table 5.4.5 NMFS southeast coastal fisheries logbook-reported commercial fishing activity for vessels with landings of Gulf reef fish using **longlines**, 1993-2004 (1)

Year, with sums and averages for 2001-2003 only	Annual totals, vessels with landings of Gulf reef fish using longlines						Per-vessel medians (50th percentiles), vessels with landings of Gulf reef fish using longlines (2)							
	Vessels	Gulf reef fish landed, thousand pounds (gutted weight)	Est. gross revenue for Gulf reef fish landed, thousand 2001 $	Trips, all fish	Days away from port, all fish	Gross revenue, all fish, thousand 2001 $	Gulf reef fish, pounds landed per year (gutted weight)	Est. gross revenue, Gulf reef fish, 2001 $ per year	Est. gross rev, all fish, 2001 $ per year	% gross revenue from Gulf reef fish	Engine horse-power	Vessel length (feet)	Trips per year, all fish	Days away from port per year, all fish
1993	196	5,189	$11,192	2,618	19,519	$14,958	19,974	$41,664	$66,064	91%	101	42	12	99
1994	200	5,072	$11,710	2,869	20,757	$14,938	20,073	$44,492	$62,786	91%	160	42	14	106
1995	193	4,808	$10,420	2,686	19,440	$13,702	18,023	$38,853	$59,899	91%	180	43	13	104
1996	190	4,849	$11,183	2,955	20,092	$14,591	18,243	$44,143	$60,959	91%	180	43	15	106
1997	188	5,626	$12,827	2,786	19,739	$16,235	23,287	$53,387	$70,360	92%	210	43	14	105
1998	174	5,354	$12,910	2,567	17,849	$16,899	22,609	$52,579	$82,497	95%	213	44	13	106
1999	165	6,620	$16,095	2,702	18,604	$19,698	33,194	$80,235	$110,571	95%	220	43	14	125
2000	181	6,224	$15,123	3,063	20,489	$20,237	27,545	$70,191	$107,242	89%	223	44	16	124
2001	164	6,497	$15,611	2,778	18,488	$19,152	33,789	$76,852	$96,316	94%	228	43	15	121
2002	167	6,344	$14,863	2,878	18,051	$19,045	30,637	$69,866	$95,541	95%	233	43	15	113
2003	166	6,675	$16,057	2,680	18,094	$19,074	32,185	$77,063	$101,438	98%	240	44	14	115
2004	148	5,501	$12,594	2,031	13,011	$14,151	31,329	$71,130	$83,517	98%	250	45	12	98
Sum		19,516	$46,531	8,336	54,633	$57,271								
Avg	166	6,505	$15,510	2,779	18,211	$19,090								

(1) Longlines include longlines (L) and buoy lines (B). 2004 data are preliminary.

(2) Frequency distributions were computed separately for each variable.

Source: NMFS Data; compiled by Tony Lamberte

Table 5.4.6 NMFS southeast coastal fisheries logbook-reported commercial fishing activity for vessels with landings of Gulf reef fish using **handlines,** 1993-2004 (1)

Year, with sums and averages for 2001-2003 only	Annual totals, vessels with landings of Gulf reef fish using handlines						Per-vessel medians (50th percentiles), vessels with landings of Gulf reef fish using handlines (2)							
	Vessels	Gulf reef fish landed, thousand pounds (gutted weight)	Est. gross revenue for Gulf reef fish landed, thousand 2001 $	Trips, all fish	Days away from port, all fish	Gross revenue, all fish, thousand 2001 $	Gulf reef fish, pounds landed per year (gutted weight)	Est. gross revenue, Gulf reef fish, 2001 $ per year	Est. gross rev, all fish, 2001 $ per year	% gross revenue from Gulf reef fish	Engine horse-power	Vessel length (feet)	Trips per year, all fish	Days away from port per year, all fish
1993	1,157	9,720	20,225	17,311	50,550	$29,692	2,099	$4,452	$8,084	91%	170	36	11	26
1994	1,208	10,218	22,068	17,960	53,868	$31,560	2,314	$5,096	$9,546	91%	200	36	11	27
1995	1,100	9,601	20,331	16,364	46,336	$27,742	2,243	$4,710	$7,983	92%	215	35	11	24
1996	943	9,834	20,682	15,131	42,760	$27,571	2,088	$4,553	$8,887	91%	210	36	12	27
1997	986	10,686	22,505	16,211	45,546	$30,747	2,089	$4,743	$8,779	91%	230	36	12	27
1998	953	10,826	26,054	15,661	41,637	$32,616	2,500	$6,127	$10,219	92%	240	35	12	26
1999	957	11,115	25,655	17,700	47,601	$34,592	3,073	$7,390	$13,168	92%	250	35	14	31
2000	988	11,086	25,844	17,022	45,954	$36,038	3,220	$7,785	$12,977	94%	260	35	13	28
2001	918	11,458	26,593	15,798	44,248	$35,734	3,169	$7,236	$12,922	94%	300	36	14	29
2002	914	12,127	28,242	15,713	43,615	$37,612	3,206	$7,587	$13,004	96%	280	35	13	29
2003	865	11,210	25,404	15,327	42,525	$33,076	2,929	$7,192	$13,112	96%	300	35	14	30
2004	773	8,547	19,043	11,488	31,322	$23,910	3,369	$7,827	$12,047	98%	300	36	12	26
Sum		34,795	$80,239	46,838	130,388	$106,421								
Avg	899	11,598	$26,746	15,613	43,463	$35,474								

(1) Handlines include electric reels (E), hooks and lines (H) and trolling lines (TR). Data for 2004 is not complete. See footnote 1, Table 1.

(2) Frequency distributions were computed separately for each variable.

Source: NMFS Data; compiled by Tony Lamberte

non-reef fish alternative contributed more to the annual revenues of the boat. Comparisons were drawn between high volume and low volume boats within each category and between those in the northern Gulf and the eastern Gulf.

In the northern Gulf, catches differed by gear with vessels using vertical lines catching primarily snapper (red and vermilion) and vessels using bottom longlines catching primarily yellowedge grouper. Vessels in the eastern Gulf primarily caught groupers using bottom longlines, vertical lines, and fish traps. The vessels with vertical lines in the northern Gulf were longer on average (50 feet) than those in the eastern Gulf (38 feet). Longline vessels averaged about 42-44 feet in length and vessels using fish traps averaged about 38 feet. The average horsepower across all gear types was about 280 hp, the lowest with the longline vessels and the highest with vessels using fish traps. High volume longline vessels had the highest fuel capacity out of a range of 32-6,000 gallons. The average fuel capacity was 689 gallons.

Survey respondents reported having lived an average of 25 years in their current county or parish of residence; the overall average age of respondents was about 47 years with the mode at the 40-49 age group; 141 (72 percent) graduated from high school or had more than 12 years of formal education (Waters 1996). Household size ranged from 1-9 persons with an average of 3 persons. Household incomes ranged from less than $10,000 to more than $150,000 with approximately 50 percent of the respondents citing household incomes of $30,000 or less. Respondents averaged approximately 44 percent of household income from commercial fishing for reef fishes, 21 percent from other types of commercial fishing and 35 percent from all other sources including incomes earned in non-fishing jobs held by other household members, pensions, investments and other sources. The respondents had an average of 19 years experience at fishing, with 13.6 years of that experience in the positions they held at the time of the survey. Only 5 of the 196 respondents reported seasonal employment in other jobs. Typically, respondents from high volume vessels earned between 69-75 percent of household income from commercial fishing while respondents from low volume vessels earned 25-39 percent of household income from commercial fishing (except for bottom longlining vessels) (Waters 1996).

Waters (1996) also reported annual gross receipts per vessel in the reef fish fishery, as summarized by the following information:

High-volume vessels using vertical lines:	
Northern Gulf:	$110,070
Eastern Gulf:	$ 67,979
Low-volume vessels using vertical lines:	
Northern Gulf:	$ 24,095
Eastern Gulf:	$ 24,588
High-volume vessels using bottom longlines:	
Both areas:	$116,989
Low-volume vessels using bottom longlines:	
Both areas:	$ 87,635
High-volume vessels using fish traps:	$ 93,426
Low-volume vessels using fish traps:	$ 86,039

When combined with cost information, these figures translate into the following results for net income (defined as gross receipts less routine trip costs; the numbers in parenthesis represent the percent to gross receipts) (Waters 1996):

High-volume vessels using vertical lines:		
Northern Gulf:	$28,466	(26)
Eastern Gulf:	$23,822	(35)
Low-volume vessels using vertical lines:		
Northern Gulf:	$ 6,801	(28)
Eastern Gulf:	$ 4,479	(18)
High-volume vessels using bottom longlines:		
Both areas:	$25,452	(22)
Low-volume vessels using bottom longlines:		
Both areas:	$14,978	(17)
High-volume vessels using fish traps:	$19,409	(21)
Low-volume vessels using fish traps:	$21,025	(24)

5.4.2 Dealers

Approximately 227 dealers possess permits to buy and sell reef fish species (NMFS 2004). Based on mail address data, most of these were located in Florida (146), with 29 in Louisiana, 18 in Texas, 14 in Alabama, 5 in Mississippi and 15 out of the Gulf States region. More than half of all reef fish dealers are involved in buying and selling grouper. These dealers may hold multiple types of permits.

Average employment information per reef fish dealer is not known. Although dealers and processors are not synonymous entities, Keithly and Martin (1997) reported total employment for reef fish processors in the Southeast at approximately 700 individuals, both part and full time. It is assumed that all processors must be dealers, yet a dealer need not be a processor. Further, processing is a much more labor-intensive exercise than dealing. The profit profile for dealers or processors is not known.

Dokken et al. (1998) assessed several ports along the Texas coastline for economic development potential and employment generation. They estimated that over 250,000 persons were employed in all commercial fishery-related occupations (commercial fishing, processing, wholesaling and retailing) in the Gulf region.

5.4.3 Recreational Reef Fish Fishery

The charter/headboat industry is the only recreational sector directly impacted by this amendment. Thus, the discussion of the recreational sector presented here focuses on the charter and headboat sector. Information related to recreational private anglers is only presented indicatively.

50 CFR §622.4(a)(1) states that “For a person aboard a vessel that is operating as a charter vessel or headboat to fish for or possess, in or from the EEZ...a valid charter vessel/headboat permit for that species group must have been issued to that vessel and

must be onboard." Gulf reef fish are one of the species groups identified in this section. Amendment 20 implemented a moratorium on the issuance of new Charter Vessel/Headboat permits. That moratorium is set to expire on June 16, 2006 (see §622.4(r)).

Table 5.4.7: Number of Charter Vessel/Headboat Reef Fish Permits for the Gulf of Mexico by Owner's State of Residence

State	Charter/Headboat	Both Commercial and Charter/Headboat	Total
FL	770	197	967
TX	201	23	224
AL	127	8	135
LA	106	6	112
MS	81		81
GA	20	1	21
TN	4	1	5
IL	3		3
IN	3		3
NJ	3		3
NY	3		3
OH	3		3
KY	2		2
ME	2		2
MO	2		2
CA	1		1
DE	1		1
MA	1		1
MI	1		1
MN	1		1
NV	1		1
VA	1		1
MD		1	1
Total	1,337	237	1,574

Source: NMFS reef fish permit data base, July 2004.

NMFS permit data indicates that, as of July 2004, 1,574 permits that allow vessels to operate as charter vessels or headboats were issued. As stated earlier, 237 of those permits are assigned to vessels that are also permitted to commercially harvest reef fish. The state of residence of permit owners is shown in Table 5.4-3. About 60 percent of permit owners reside in the state of Florida

5.4.3.1 Charter and Headboat Fishery in Florida

Much of the following discussion is a summarization of information contained in Amendment 22 to the Gulf of Mexico Reef Fish FMP (GMFMC 2004b). Holland et al. (1999) estimated that 615 charter and 53 headboats were located along the Florida Gulf coast in 1997 (including the Keys). A total of 848,458 passengers were estimated to have been on board the approximate 180,523 charter vessels trips taken in 1997. Headboats

were estimated to have taken 1,137,362 passengers on 44,655 trips. Of the charter vessel operators sampled, 52.9 percent held a Gulf reef fish permit. Of the headboat operators sampled 76.5 percent held a Gulf reef fish permit. None of the headboats were permitted to fish reef fish commercially.

The average Florida charter vessel had an average length of 37 feet and carried a maximum of six passengers. Florida charter boat lengths were less on the Gulf Coast (34-foot mean length) than on the Atlantic coast (39-foot mean length). Florida headboats averaged 62 feet in length and carried a maximum of 61 passengers.

Florida charter boats tend to target a variety of species. About one-third of the charter boats target three species or less, two-thirds target five species for less, and 90 percent targeted nine species or less. The species targeted most often were king mackerel (46%), grouper (29%), snapper (27%), dolphin (26%), and billfish (23%). When only the Gulf coast is considered the species targeted most often are grouper, king mackerel, and snapper. About one-fourth of the headboats target three species or less and 80 percent targeted five species or less (Holland et al., 1999). About 35 percent of Florida headboats targeted snapper and other reef fish, 29 percent targeted red grouper, 23 percent targeted gag grouper, and 16 percent targeted black grouper. The species targeted most on the Gulf coast were snapper, gag grouper, and red grouper (Holland et al., 1999).

Destin, Ft Myers, Ft Myers Beach, Islamorada, Key West, Marathon, Naples, Panama City, Panama City Beach, and Pensacola were major activity centers for charter boats. As stated earlier the average charter vessel was 37 feet in length and carried six passengers. The majority of the vessels had fiberglass hulls (88%), and had single (41%) or dual (59%) engines that operated on diesel fuel (76%). Average boat fees were $348 for half-day trips (offered by 86% of those interviewed), $554 for whole-day trips (offered by 64% of those interviewed), and $1,349 for overnight trips (offered by 15% of those interviewed). Half-day trips accounted for 47 percent of the trips taken, all-day trips 50 percent, and 3 percent of the trips taken were overnight (Holland et al., 1999).

Clearwater, Destin, Ft Myers, Ft Myers Beach, Islamorada, Key West, Marathon, Panama City, and Panama City Beach were major activity centers for headboats. As stated earlier the average headboat was 62 feet in length and carried a maximum of 61 passengers. About 51 percent of these vessels had fiberglass hulls and operate on diesel fuel (97%) using single (8%) or dual (92%) engines. Most of the headboats offered half-day trips (86%) and full-day trips (64%). Only one headboat operation offered overnight trips. The average fee for a half-day trip was $29 and $45 for a full-day trip. Half-day trips accounted for 80 percent of the total headboat trips taken. Full-day trips accounted for 20 percent of the total. About two-thirds of these trips were taken in Federal waters offshore and 36 vessels took all their trips in Federal waters (Holland et al., 1999).

Florida charter boat operator's mean age was 46 years. About 82 percent of the operators were between the age of 31 and 60. About 63 percent were married and 15 percent were divorced. Vessel operators had an average of 13 year of formal education. Ninety-five percent of those surveyed had at least 12 years of education and 34 percent had 16 or more years. Ninety-eight percent of charter vessel operators were male. Most (90%) operated their charter vessel on a full-time basis and 61 percent reported that all of their

household income was from the charter business. Eighty percent of the charter operators have lived in their home port county for more than 10 years, and have operated their boat out of that county for an average of 15 years. About 34 percent of the charter operators belonged to their local charter boat association (Holland et al., 1999).

Florida headboat operator's mean age was 48 years. About 84 percent of the operators were between the age of 31 and 60. About 78 percent were married and 11 percent were divorced. Vessel operators had an average of 13 year of formal education. One hundred percent of those surveyed had at least 12 years of education and 22 percent had 16 or more years. Eighty-six percent of headboat operators were male. All operated their headboat on a full-time basis and 92 percent reported that all of their household income was from the charter business. Ninety-four percent of the headboat operators have lived in their home port county for more than 10 years, and have operated their boat out of that county for an average of 19 years. About 44 percent of the headboat operators belonged to their local headboat association (Holland et al., 1999).

5.4.3.2 Charter and Headboat Fishery in Alabama, Mississippi, Louisiana and Texas

Much of the following discussion is a summarization of information contained in Amendment 22 to the Gulf of Mexico Reef Fish FMP (GMFMC 2004b). Sutton et al. (1999) estimated that between 1987 and 1997 the number of charter boats more than doubled to 430 vessels in Alabama, Louisiana, Mississippi, and Texas, with the increases primarily occurring in Alabama, Mississippi, and Texas. The number of headboats operating in these states decreased to 23 (about a 12% decline). Of the charter boats sampled by Sutton et al. in 1998, 85.4 percent held Gulf reef fish charter permits, 83.3 percent held coastal migratory pelagic permits, 5.2 percent held South Atlantic snapper/grouper charter permits, 4.2 percent held swordfish permits, 6.3 percent held shark commercial permits, 6.3 percent held king and Spanish mackerel commercial permits, 2.1 percent held South Atlantic snapper and grouper commercial permits, 14.6 held red snapper commercial permits, and 11.5 percent held commercial Gulf reef fish permits. Of the headboats sampled, 100 percent held Gulf reef fish charter permits, 95.2 percent held coastal migratory pelagic fish charter permits, and 9.5 percent held Gulf reef fish commercial permits. These vessels did not hold any of the other permits held by charter vessels.

The average charter vessel was 39 feet in length and could carry 12 passengers. Alabama had the largest charter vessels on average (46 feet - carrying 15 passengers) and Texas had the smallest charter vessels on average (35 feet - carrying nine passengers). Most vessels had fiberglass hulls (81%) and had single (27%) or dual (73%) diesel engines (72%). Charter operations offered half-day trips (63% of the operations), full-day trips (98%), and overnight trips (48). Trip fees per vessel averaged $417 for half-day trips, $762 for full-day trips, and $1,993 for overnight trips. Over the four states, headboats/party boats averaged 72 feet in length and carried 60 passengers. Most boats had an aluminum hull (67%) and all boats used dual engines that operated on diesel fuel. All boats offered half-day trips, 81 percent offered full-day trips, and 57 percent offered overnight trips. Average headboat fees (per person) were $41 for a half-day trip, $64 for a full-day trip, and $200 for overnight trips. Of the trips taken 25 percent were half-day trips, 67 percent were full-day trips, and 8 percent were overnight trips.

Charter boats tended to target snapper (91% of vessels), king mackerel (89%), cobia (76%), tuna (55%), and amberjack. The most effort was for snapper (49% of trips), king mackerel (10%), red drum (6%), cobia (6%), tuna (5%), and speckled trout (5%). Headboats/party boat operators reported targeting snapper (100%), king mackerel (85%), shark (65%), tuna (55%), and amberjack (50%). Species receiving the most effort were snapper (70%), king mackerel (12%), amberjack (5%), and shark (5%).

Major activity centers for charter boats in the four-state area are: South Padre Island, Port Aransas, and Galveston/Freeport in Texas; Grand Isle-Empire-Venice in Louisiana; Gulfport-Biloxi in Mississippi; and Orange Beach-Gulf Shores in Alabama.

The four-state area charter boat operator's mean age was 47 years. About 86 percent of the operators were between the age of 31 and 60. About 82 percent were married and 8 percent were divorced. Vessel operators had an average of 14 year of formal education. Ninety-one percent of those surveyed had at least 12 years of education and 26 percent had 16 or more years. Most (91%) operated their charter vessel on a full-time basis and 50 percent reported that all of their household income was from the charter business. About 78 percent of the charter operators have lived near their homeport for 24 years, and have operated their boat out of their home county for an average of 14 years. About 60 percent of the charter operators belonged to their local charter boat association.

The four-state area headboat operator's mean age was 49 years. About 67 percent of the operators were between the age of 31 and 60. About 82 percent were married and none were divorced. Vessel operators had an average of 12 year of formal education. Eighty-one percent of those surveyed had at least 12 years of education and 10 percent had 16 or more years. All operated their vessel on a full-time basis and 78 percent reported that all of their household income was from the headboat business. About 91 percent of the charter operators have lived near their home port for 26 years, and have operated their boat out of their home county for an average of 13 years. About 81 percent of the headboat operators belonged to their local headboat association.

5.4.3.3 Reef Fish Landings in the For-Hire Sector

Average annual landings for the top ten reef fish species harvested by the for-hire sector are reported in Table 5.4.8. Averages were computed for the period 1990 to 2003. Landings are expressed in pounds of live weight.

For the data series considered, red snapper was the top reef fish species harvested by the for-hire sector. Average red snapper landings exceeded 2.48 mp. Greater amberjack with 1.32 mp and gag with 0.91 mp yielded the second and third largest for-hire average reef fish harvests, respectively. Reef fish species for which charter/headboat average annual harvests were between 300,000 and one mp included gag, gray triggerfish, vermillion

snapper, red grouper, and yellowtail snapper. Landings of black grouper, scamp, and yellowedge grouper averaged each less than 100,000 pounds annually.

Table 5.4.8: Gulf-wide Average Reef Fish Landings by Sector (1990-2003)

Species	Commercial	MRFSS[3]			Headboat	For-Hire Total
		Charter	Private	Shore		
Red Snapper	3,848,017	1,613,960	1,345,346	12,993	870,277	2,484,237
Greater Amberjack	1,619,264	1,177,539	370,385	26,089	142,562	1,320,101
Gag	2,287,308	768,474	1,981,225	64,605	143,960	912,434
Gray Triggerfish	315,170	652,535	282,925	23,478	128,864	781,399
Vermillion Snapper	2,057,792	330,722	109,858	9,296	262,978	593,700
Red Grouper	6,181,890	308,082	1,277,552	29,509	75,981	384,063
Yellowtail Snapper	1,615,337	164,529	357,938	15,227	156,108	320,637
Black Grouper	218,899	64,469	108,471	8,603	28,584	93,053
Scamp	309,455	38,541	5,686	0	7,388	45,929
Yellowedge Grouper	918,267	2,075	26	0	481	2,556

Source: NMFS data; compiled by Stu Kennedy

The comparison between commercial and for-hire harvests indicated that in all but one case, commercial landings constituted the largest proportion of the total harvest. Gray triggerfish for-hire harvests were more than twice as large as commercial landings. For the remaining reef fish species, the ratio of charter/headboat landings to commercial landings ranged from 0.82 for greater amberjack to 0.003 for yellowedge grouper.

5.4.3.4 Financial Characteristics of For-Hire Vessels

The following discussion is a summarization of the charter vessel and headboat financial information section created for Amendment 25 to the Gulf of Mexico Reef Fish FMP (GMFMC 2005). Financial information on the for-hire vessels in the Gulf is not routinely collected. The latest data available are from two MARFIN-funded studies. Results of these studies are reported in Holland et al. (1999) for Florida and Sutton et al. (1999) for the rest of the Gulf States. These studies did not solely focus on collecting vessel costs and returns but did also collect information on for-hire vessel structure and operations, and for-hire vessel captains' views on the industry and regulations affecting their industry. The two reports contain summaries of the financial conditions of for-hire vessels. Revenues and costs were estimated using direct responses to questions on gross revenues and various cost items. Partly in response to industry criticisms, Holland et al (1999) provided alternate revenue figures using information on fees, number of trips and passengers per trip. The other study did not provide any alternative approach to estimating gross revenues. Carter (2003) estimated revenues and profits of for-hire vessels using some of the results of these two studies. He used average fees, number of trips and passengers per trip to arrive at revenue figures. He subsequently subtracted average trip cost but not fixed costs to derive for-hire vessel profits.

[3] Texas does not participate in MRFSS. Thus, Texas data are not included in these landing estimates.

Revenues and trip costs presented in this section are estimated using vessel-level information available in the Holland et al. (1999) and Sutton et al. (1999) databases. Revenues, costs and profits estimates presented are based on a smaller number of vessels because not all vessels in the sample have the necessary information to estimate revenues and costs. Holland et al. (1999) sampled 303 charterboats and 37 headboats while Sutton et al. (1999) sampled 96 charterboats and 21 headboats. The current approach uses information from181 charterboats and 20 headboats from the Holland et al. (1999) study and 43 charterboats and 9 headboats from the Sutton et al. (1999) study. Although Holland et al. (1999) distinguished the Florida vessels by regions (Atlantic, Keys, Gulf), all Florida vessels which have the necessary information are used for the purpose of estimating revenues, costs and profits.

Basic economic characteristics of for-hire vessels are presented in the next several tables. In addition to revenues, costs and profits, information on other vessel characteristics is also presented. Revenues are calculated as follows:

Charterboat: $R = (Fh * Th) + (Ff * Tf) + (Fo * To)$
Headboat: $R = (Fh * Th * Ah) + (Ff * Tf * Af) + (Fo * To * Ao)$

where:
R = revenue
Fh= base fee for half-day trips
Th= number of half-day trips
Ff= base fee for full-day trips
Tf = number of full-day trips
Fo= base fee for overnight trips
To = number of overnight trips
Ah= average number of passengers for half-day trips
Af= average number of passengers for full-day trips
Ao= average number of passengers for overnight trips

Costs do not account for capital expenses, other fixed costs and returns to owners/operators. The following are the specific items included in the calculation of costs: bookkeeping services, advertising and promotion, fuel and oil, bait expenses, docking fees, food/drink for customers and crew, ice expenses, insurance expenses, maintenance expenses, permits and licenses, and wage/salary expenses. Final numbers for revenues and costs are adjusted to 2004 dollars using the producer price index for all commodities, with 1982 as the base year.

Table 5.4.9 was generated by pooling the Holland et al. (1999) and Sutton et al. (1999) data. As expected, headboats earn substantially higher revenues than charterboats. An average charterboat generates $76,960 in annual revenues and $36,758 in annual profits. An average headboat, on the other hand, generates $404,172 in annual revenues and $338,209 in profits. On average, both types of operations are profitable, with the headboat operation showing a relatively large profit figure. As mentioned above, the calculation of costs does not take into account fixed costs, which could be much larger for headboats. This partly explains the relatively high profitability of headboats relative to charterboats. For both charterboats and headboats, the number of passengers per trip is

about half of the maximum passenger capacity. On average, though, charterboats have 5 passengers per trip out of a maximum passenger capacity of 8 while headboats have 30 passengers per trip out of a maximum passenger capacity of 60. Thus, the for-hire vessel passenger capacity utilization is about half of maximum passenger capacity.

Table 5.4.9 Economic characteristics of Charter boats and Headboats

Characteristic	Charter boats	Headboats
Revenues ($)	76,960	404,172
Costs ($)	40,200	65,962
Profits ($)	36,758	338,209
Ave. passenger	5	30
Max. passenger	8	60
Length (feet)	37	65
Horsepower	493	786

Source of basic data: Databases from Holland et al. (1999) and Sutton et al. (1999).

A similar type of information is provided in Table 5.4.10 but this time information by geographical areas is shown. Apparent in Table 5.4.10 is the earnings difference between for-hire vessels in Florida and those of the rest of the Gulf. Earnings of Florida vessels are generally lower than those of the rest of the Gulf vessels. This difference may be due partly to the difference in the size of charterboat or headboat operation. On average, Florida vessels are smaller in size, have smaller horsepower, have lower maximum passenger capacity and take fewer passengers per trip. Another potential reason for the difference may be the presence of more intense competition among Florida vessels. As shown in Table 5.4.7, Florida is the homeport of most for-hire vessels so that the possibility of a stronger competition among vessel operations in Florida is very likely.

Table 5.4.10 Economic Characteristics of Charter boats and Headboats by Geographical Area

Characteristic	Charterboats		Headboats	
	Florida	Rest of Gulf	Florida	Rest of Gulf
Revenues ($)	68,233	106,118	318,512	630,046
Costs ($)	37,984	62,624	69,410	87,621
Profits ($)	30,249	43,494	249,103	542,425
Ave. passenger	4	8	25	41
Max. passenger	6	14	56	71
Length (feet)	35	41	60	74
Horsepower	465	615	795	732

Source of basic data: Databases from Holland et al. (1999) and Sutton et al. (1999).

5.4.3.4 Private Anglers

It is estimated that 2.7 million private anglers fish in the GOM. These anglers target red drum about 35 percent of the time and spotted sea trout 33 percent of the time. Red snapper is the most common reef fish targeted by 4.5 percent of private anglers that were intercepted (GMFMC 2004b).

Social and economic characteristics of private anglers are collected periodically by the Marine Recreational Economics Survey through an economic add-on survey. The following discussion relies heavily on the economic data add-on conducted during 1997-98 as summarized in Holiman (2000). The typical angler in the GOM is 44 years old, male (80%), white (90%), and employed full-time (92%). They have a mean income of $42,700, and have fished in the state for an average of 16 years. The average number of trips taken in the 12 months preceding the interview was about 38 and these were mostly (75%) one-day trips with average expenditure of less than $50. Seventy-five percent reported that they held salt-water licenses, and 59 percent of them owned boats used for recreational saltwater fishing.

5.4.4 Fishing Communities

A "fishing community" is defined in the MSFCMA, as amended in 1996, as "a community which is substantially dependent on or substantially engaged in the harvesting or processing of fishery resources to meet social and economic needs, and includes fishing vessel owners, operators, and crew and United States fish processors that are based in such community" (MSFCMA section 3(16)). In addition, the National Standard guidelines (May 1, 1998; 63FR24211) define a fishing community as a social or economic group whose members reside in a specific location and share a common dependency on commercial, recreational, or subsistence fishing or on directly related fisheries-dependent service and industries (for example, boatyards, ice suppliers, tackle shops).

Many studies have identified fishing communities and assessed various methods for identifying an area or city as a fishing community, although very little information is available for fishing communities in the GOM (Dyer and Griffith 1996; Griffith 1996; Wilson et al. 1998; Jacob et al. 2001). Social and cultural research suggests that assessments of regulatory impacts on fishing-dependent communities consider not only geographic definitions of communities and economic characteristics therein, but also the level of vulnerability or resilience, of fishing communities and operations (McCay 2000). That is, questions of fishing dependence and "sustained participation" in fisheries must consider how able participants in a given fishery can move among fishery sectors, and how able they are to move out of the fishery altogether into alternative employment opportunities. Studies must take into account not only the economic characteristics but also the demographic and social characteristics of the areas where fishing activity occurs and strategies for assessing and ranking these characteristics and variables must be developed and analyzed. Some factors that have been previously used to assess a community’s dependence on fishing include:

1) Economics, including percent employment in fishery-related industries, and unemployment levels, and income;
2) Fisheries characteristics, including landings by species by various sectors;
3) Fishing-related businesses, for example numbers of marinas, rentals, snorkel and dive shops, boat dockage and repair facilities, tackle and bait shops, fish houses, and lodgings related to recreational fisheries industry;

4) Fishing-related activities, such as seafood festivals;
5) Presence of organizations, such as commercial fishing associations
6) Numbers of dealers/ processors
7) Isolation or integration of the fishery into alternative economic sectors (Do the fishers represent a political-economic enclave or are they integrated into the community?);
8) Percent of population in fishery or fishery-related industry;
9) Percentage of income derived from fishing;
10) Time commitment (number of months per year, and number of years of experience, etc.);
11) Flexibility index (number of species able to fish, gears/vessels, etc.);
12) Number of different kinds of vessels;
13) Relationship to the seafood marketing/processing sector;
14) Vessel sizes and sizes of crew by port/ dockage site;
15) Diversity of species targeted, gear, type and size and vessel by port/ dockage site;

Although these factors do not represent a comprehensive list of all factors that could be considered when defining a fishing community, they provide a snapshot of factors that represent or can be used to assess a community's dependence on fishing. There is very little qualitative information on fishermen, fishing-dependent businesses, or communities that depend on the GOM reef fish fishery. Social science research is currently being conducted by NMFS in communities in the GOM. Until this research is completed, and in-depth community profiles are developed for some sample communities, it is not possible to fully understand the possible impacts of any change in federal fishing regulations in the reef fish fishery.

Current data describing GOM reef fish fishing communities are limited to information from fishery permits and reported landings (see Section 2.4.2). Additional research is needed to assess the overall dependence on fishing of each of the communities described below

There are numerous cities throughout the GOM where fishermen are concentrated. Fishermen operating bottom longline vessels are primarily clustered in Florida (Cortez, Madeira Beach, Miami, St. Petersburg, and Tampa). Fishermen operating vertical line vessels are clustered across a wider geographic range: Apalachicola, Carrabelle, Cedar Key, Clearwater, Crystal River, Destin, Ft. Myers, Indian Rocks, Madeira Beach, Marathon, New Orleans, Panacea, Panama City, Pensacola, Nokomis, St. Petersburg, Steinhatchee, Tampa, Tarpon Springs, and Yankeetown in Florida; Orange Beach, AL; Pascagoula, MS; and Houston, TX. Fish trappers are also clustered off Florida in Destin, Homosassa, Naples, Steinhatchee, and Tarpon Springs. Cities with more than three reef fish permitted dealers include: Cameron, LA; Galveston, TX; and Destin, Ft. Myers Beach, Key West, Madeira Beach, Marathon, Panama City, Pensacola, St. Petersburg, Tampa, and Tarpon Springs, FL.

In general, many areas with substantial involvement in fishing have small populations, many with less than 7,000 persons, for example Apalachicola, Carrabelle, Cedar Key, Cortez, Homosassa, Ft. Myers Beach, Everglades City, Madeira Beach, and Stock Island.

Several of these areas have an unusually high rate of people with less than a high school education, some as high as 50 percent. With exceptions (Carrabelle, 13.6 percent and Cedar Key, 12.2 percent), many of the areas have relatively low percentages, 2-3 percent, counted as employed in agriculture, forestry and fishing. In areas such as these, with lower population bases, less educated workforces, and fewer opportunities in similar professions, losing fishing opportunities will impact the area relatively more than in areas with a more diverse working conditions.

Fishing communities can be impacted in a variety of ways by regulations. Wilson et al. (1998) outlined three categories of impacts on fishing communities: 1) Those that "affect the volume of money that is going through the community; 2) those that "affect the flexibility of the fishing operations;" and 3) those that "impose direct costs on fishing operations."

The preferred alternatives herein will ultimately impose direct costs on fishing operations and losses in net revenue for some fishing communities or areas. The direct and indirect effects of these preferred alternatives are described in detail in Section 6.5.

5.5 Impacts of the Management Alternatives

This section presents a detailed analysis of economic impacts associated with management measures considered in this amendment. When possible, quantitative information is provided. If quantitative information is not available or cannot be derived using accepted economic techniques, a qualitative analysis will be provided.

5.5.1 Simultaneous Commercial and Recreational Harvest

Current regulations allow both a commercial and charter permit to be attached to the same vessel. These vessels can fish in either the commercial or charter fishery if the fisheries are open. Three alternatives are considered under this amendment.

Alternative 1 would continue the status quo. Vessels that hold both permits would be allowed to simultaneously participate in commercial and recreational fisheries, but would be required to abide by the regulations in place. In addition, persons aboard vessels operating under a commercial reef fish permit may also harvest reef fish under the recreational size and possession limits. Reef fish harvested under the recreational size and possession limits are prohibited from being sold. Enforcement of the prohibition on the sale of these harvests may be difficult. Enforcement officers are not able to determine at-sea whether the crew is going to sell reef fish caught under the recreational size and bag limits. At best, they note which vessels have both types of catch on board and more closely monitor their sales. In principle, harvests made under recreational size and bag limits are accounted for under the recreational portion of the reef fish TAC, but under the status quo alternative it may be difficult to do so. Persons aboard commercial vessels, even if they fish recreationally, are generally not sampled by MRFSS or Headboat survey. Continuing the status quo is not expected to change the operations of current participants in either fishery. Their revenues and costs would not change other than as part of the ordinary course of business.

Alternative 2 prohibits vessels from retaining reef fish caught under the recreational size and possession limits when commercial reef fish harvests are onboard the vessel. This alternative does not require vessel owners to divest of either their commercial or recreational reef fish permit. It simply prevents them from engaging in both commercial and charter activities at the same time. Captain and crew members aboard a commercial reef fish vessel would no longer be allowed to keep reef fish harvested under the recreational size and possession limits. The number of permits is not expected to change as a result of this alternative. Some vessel owners would be impacted because they would be required to change their fishing strategies and as a result their harvesting costs may rise slightly. However, the magnitude of the economic impacts on the fleet is expected to be negligible. For reef fish species with TACs and allocations, this measure may help in accurately assigning landings to either the commercial or recreational sector.

A benefit of implementing this alternative is that enforcement officials could clearly define whether a vessel is engaged in the commercial or charter harvest of reef fish. Enforcement officers then could determine whether the vessel is in compliance with the appropriate reef fish regulations. Removing the uncertainty regarding the fishery in which vessels are engaged in at a specific time, is expected to enable enforcement officials to more easily determine if a vessel is in compliance with the regulations.

Alternative 3 would prohibit vessels from having both a commercial and charter reef fish permit at the same time. Current permit data indicate that 237 vessels have both a commercial and charter/headboat reef fish permit. If this alternative were implemented, owners of vessels that are assigned both permits would be required to dispose of one of the permits.

Owners of vessels that must divest of one permit would likely give up the permit that generates the lower profit. If that permit is for the charter fishery, owners would keep their commercial permit; likewise, if the commercial permit is less profitable, they would keep their charter permit. Considering the moratorium in the reef fish charter fishery, owners who decided to focus on the commercial sector would attempt to sell their unused charter permit. Reef fish charter permits are currently sold between $7,000 and $10,000 (Myron Fischer, Personal Communication). Considering also the moratorium in the commercial reef fish fishery, permit holders who consider their commercial activities to be less profitable would sell their commercial permit. Current market prices for Gulf commercial reef fish permits vary from $5,000 to $8,000 per permit. A Red Snapper Class I license can fetch up to $50,000 (GMFMC 2005). Permit holders who dispose of either one of their permits to focus on the other activity are not expected to incur significant economic losses. Moreover, costs due to the reallocation of their inputs would be mitigated by proceeds from the sale of one of the permits.

Persons that must rely on both commercial and charter fisheries to maintain an economically viable operation may find that it is no longer sustainable to remain in the fishery. These persons could exit the fishery and sell both permits. Permit holders forced out of business would suffer some economic losses, even if they are successful in selling their permits. However, these individuals may remain active in the commercial and

charter sectors if they possessed other valid charter permits, such as the coastal migratory pelagic permits.

Anecdotal information has indicated charter vessels in the northern Gulf commercially fish during colder months. Prohibiting the simultaneous possession of charter and commercial permits could negatively impact those vessel owners, resulting in differential economic impacts by geographic area. Charter vessels in warmer, more southerly climates are able to operate on a year-round basis, but operators in colder, more northern latitudes are affected by seasonal changes in people vacationing, especially in Florida (Andy Strelcheck, personal communication).

Permit transfers or sale resulting from this alternative may lead to a sizeable effort increase in the fishery. A given number of part-time commercial and charter fishermen could be replaced by a larger number of full time participants in both sectors. For example, the level of effort would increase if an individual with a reef fish charter and commercial permits decides to transfer his commercial permit to another vessel and focus on his charter operation. Under this scenario, one part-time charter and commercial fisherman would be replaced by one full time charter operator and one full time commercial fisherman. If we further assumed that the individual initially possessed a class I (or class II) red snapper license, the effort in the red snapper fishery would also increase due to the transfer of that permit to another commercially permitted vessel. This effort expansion would be detrimental to the fishery. Permit holders who dispose of one of their permits would not suffer substantial economic losses. Permit holders who must rely on the commercial and charter sectors to maintain the viability of their business may face economic hardship. In the aggregate, this alternative is expected to result in negligible changes in net economic benefits.

Summary: None of the preferred alternatives are expected to substantially alter net benefits derived from the commercial or charter/headboat reef fish fishery. Alternatives 1 and 2 will not affect the present permit distribution. Alternative 2, which removes the uncertainty regarding the fishery in which vessels are engaged in at a specific time, is expected to enable enforcement officials to more easily ascertain if a vessel is in compliance with the regulations. Alternative 3 will redistribute the number of permits that are available. Persons that own a vessel that has both a charter and commercial reef fish permit would be required to take one of the permits off the vessel before they would be allowed to harvest reef fish. Changes in net benefits to the Nation will depend on how the permit is used after being removed from the original vessel and which vessels fill voids left if the permit is removed from the fishery. If the permit is used by a vessel that can generate greater producer surplus then overall net benefits to the Nation will increase. If the permits move to less efficient vessels then net benefits will decrease. It is anticipated that over time the permits will migrate to operations that are more efficient. Because the flow of these permits cannot be predicted, it is not possible to quantify the changes in net benefits. However, allowing transfers is expected increase net benefits by an unknown amount.

It is also impossible to estimate with any degree of certainty whether the overall change in net benefits that result from this suite of alternatives will be positive or negative. The commercial fleet will generate positive net benefits if the harvests are redistributed such

that more efficient vessels are harvesting the catch. It is unlikely that market prices will be altered as a result of the alternatives changing the supply of reef fish. Therefore, changing the costs of production would be expected to have the greatest impact on producer surplus. The costs of production will depend on where the permits are ultimately used. The permit redistribution may lead to an effort increase because several part time commercial and charter fishermen could be replaced by a greater number of full time participants in both sectors.

On the charter and headboat side of the equation, net benefits will depend both on a vessel's efficiency in providing clients the trip and changes in consumer surplus clients receive. For members of the fleet that were taking only charter trips the overall costs are not expected to change. It is also unlikely that charter/headboat client consumer surplus would be impacted by regulations that prohibit charter crew from selling catch on the commercial market.

5.5.2 Maximum Crew Size on a Charter Vessel When Fishing Commercially

The status quo (Alternative 1), retains the current restriction that limits the number of crew members to 3 on a vessel that has both a commercial and charter reef fish permit when fishing commercially. Four other alternatives would increase the crew size limits under specified conditions.

Alternative 1 would retain the status quo regulations. The maximum crew size for vessels with both a commercial reef fish permit and charter permit would remain at 3 persons when fishing commercially. Retaining this limit would perpetuate conflicting regulations regarding for-hire vessels that have a USCG certificate of inspection and are at-sea for 12 or more hours on a trip. Under those conditions the USCG requires that 4 crew members be onboard the vessel.

Part of the reason the limit of 3 crewmembers was implemented was to prevent vessels with both types of permits from increasing their fishing power when participating in the commercial fishery. When the regulation was implemented, NMFS stated that their surveys showed that vessels of this type typically carried only 3 crewmembers when fishing commercially. Allowing additional crew members to work onboard the vessel could increase the vessel's catch rates. This was not considered desirable given the concerns over the fish stocks.

To be in compliance with all of the current regulations, these vessels are precluded from taking a commercial reef fish trip that lasts for more than 12 hours. Based on surveys conducted in 1996 (Waters 1996), low-volume vessels[4] using vertical lines on commercial reef fish trips averaged 1.98 crew members per vessel and took trips that averaged 3.21 days. Vessels with both types of permits would be required to take commercial fishing trips that were 2.71 days shorter than the average trip, if they wanted to participate in the commercial fishery. When running time to and from the fishing grounds is considered, it may not make economic sense to take these trips. Waters' data indicated that, on average, less than two crewmembers are on a vessel. For vessels that were classified as high-

[4] Waters uses the 75th percentile of annual reef fish landings reported in logbooks to classify vessels as high-volume or low-volume vessels.

volume producers, the average number of crewmembers increased, but only to 2.27. Even when bottom longline vessels were considered, the average number of crewmembers was 3.0 for high-volume vessels and 2.43 for low-volume vessels. Based on those crew numbers, it does not appear that additional crewmembers are needed to operate vessels in the fishery. The length of time a vessel can be at-sea with three crewmembers, under USCG regulations, seems to be the most limiting factor.

Maintaining the status quo is not expected to change net National benefits. Vessels holding both permits would continue to be prohibited from taking trips of more than 12 hours. The benefits derived from fishing commercially are likely constrained as a result.

Alternative 2 would change a vessel's maximum crew size to the minimum manning requirements indicated on its USCG certificate of inspection (COI) when a vessel with both types of permits is taking a commercial reef fish trip that would last for more than 12 hours. For trips that are less than 12 hours, the number of crew members allowed onboard is at most equal to the minimum manning requirements indicated on the vessel's certificate of inspection. The provision applies to for-hire vessels and vessels using spearfish gear. This option would allow vessels to take trips of more than 12 hours. Given the average length of trips taken in the reef fish fishery, it appears that this alternative would allow vessels to take trips that are closer to an average trip, while still minimizing the number of crew members that can be onboard.

Allowing vessels to increase their crew size would potentially increase crew costs as well as other trip expenses. If those costs are offset by the additional revenues generated during the trip, the vessel operator may determine that adding a crewmember to increase the duration of the trip makes economic sense. When revenue increases do not offset the increased costs, the vessel operator would not be expected to increase the number of crewmembers.

In general, it is expected that providing the vessel operator the opportunity to increase the duration of the trip could increase net benefits. However, those changes are expected to be small given the number of vessels that would be utilizing this amendment in the future and the number of trips that would be impacted.

Alternative 3 considers the crew size adjustments discussed in Alternative 2 but limits their application to a smaller group of dually permitted vessels when taking commercial trips. In effect, this alternative explicitly excludes vessels using spearfish gear from the provision.

This option would allow commercial trips taken by for-hire vessels to last more than 12 hours. Changes in net benefit are expected to be small under this alternative. Only dually permitted vessels who do not use spearfish gear would benefit from the change.

Alternative 4 would increase the maximum crew size to 4 persons when a vessel is fishing commercially and holds both permit types. The impacts of this alternative are similar to those described under Alternative 2. The only difference is that trips that are less than 12 hours would be allowed to have 4 crewmembers. Since most of the trips are expected to be longer than 12 hours, based on the surveys conducted by Waters, the

economic impacts of this alternative and Alternative 2 are expected to generate about the same net benefit changes.

Alternative 5 would remove the crew size limitations from vessels that hold both permit types while fishing commercially. Removal of the crew limits would allow vessel operators to comply with USCG requirements. This alternative is expected to have similar economic impacts to Alternatives 2 and 4. Vessel operators will need to balance the costs associated with adding crewmembers with the additional revenues they will generate. Given the number of crewmembers historically used on commercial reef fish vessels, it does not appear that vessel operators will add substantial numbers of crewmembers. If the additional number of crew members is only enough to allow them to extend the fishing trip, this alternative will have the same result as Alternatives 2 and 4. If some vessels add more crewmembers, it is assumed that they are doing so because it increases their overall profitability.

Summary: If the third alternative in Action 1 were implemented, prohibiting a vessel from holding both a commercial reef fish permit and a charter permit at the same time, this suite of alternatives becomes moot. Because vessels would not be allowed to hold both permits, they would be required to operate as a commercial vessel when holding a commercial reef fish permit. Under current requirements the number of crewmembers would not be limited when a vessel only holds a commercial reef fish permit. Therefore, depending on the other alternatives selected from this amendment package, the net benefit impacts that would result from implementing these alternatives will be either zero or small. Changes in net benefit will be zero if vessels are not allowed to hold both a commercial reef fish permit and a charter permit or the crew size requirements are not changed (Alternative 1).

Net benefit changes are expected to be negligible if vessels are allowed to continue to hold both types of permits. Alternatives that would adjust upwards the maximum crew size would rectify the discrepancy between USCG requirements and existing fishing regulations. Alternative 3 is limited in scope because it would not correct the discrepancy for reef fish vessels using spearfish gear. Alternatives 2, 4, and 5 would eliminate the inconsistency between the regulations across the board.

5.5.3 Use of Reef Fish for Bait

Three alternatives were considered to prohibit or limit the use of reef fish for use as bait. These alternatives were developed in response to a potential problem in the wording for the definition of cut-up bait contained in 50 CFR 628.38(d), which conceivably makes it legal to use cut-up reef fish for bait. In addition, public testimony has suggested that some fishermen use whole live vermilion snapper as bait. NMFS has classified vermilion snapper as approaching an overfished condition. The use of this species as bait may hinder accurate gathering of harvest data and may not be an optimum use of the resource given its current state.

Alternative 1 allows persons to purchase reef fish on shore for use as cut-bait. It also allows whole reef fish to be used as bait if they were taken under the legal size and bag limits. Continuing the status quo will not change net benefits derived from the harvest

and sale of reef fish used for bait. Commercial and recreational fishermen will be able to purchase reef fish on shore for bait and use it as cut-bait. They will also be allowed to use whole reef fish for bait that they catch themselves, provided such fish are of the legal minimum size limit and that the fishing season is open (the use of undersized reef fish for bait is already illegal). Seafood processors will be allowed to sell reef fish as bait. The opportunity to sell reef fish as bait allows them to tap more markets. For example, some reef fish may not be in high demand for human consumption but can be sold and used as bait. It will also continue to allow seafood processors to sell carcasses after the fillets have been removed. Allowing seafood processors to sell into multiple markets may result in the firm generating more profits than if their customer base were limited. Maintaining the status quo is not expected to change net benefits.

Alternative 2 would prohibit reef fish species (except sand perch and dwarf sand perch) from being used as bait by any gear type in the commercial (sub-option a), recreational (sub-option b), or both commercial and recreational fisheries (sub-option c). The last sub-option considered under this alternative (sub-option d) grants an exemption from the ban to participants in the fish trap fishery. Fishermen would no longer be allowed to use whole reef fish as bait or purchase reef fish from shore based sellers to use as cut-bait. Persons that purchased reef fish (other than sand perch and dwarf sand perch) from shore based would be required to purchase other forms of bait. Sellers of reef fish for bait would need to find other markets for those fish or stop buying them from harvesters. Limiting reef fish bait markets may have a negative impact on individual operations, but net benefits overall are not expected to decline substantially. Harvesters (both commercial and recreational) will seek out the next best bait alternative. They may substitute other species they catch themselves or purchase other types of bait from the market. Substitutes will be selected based on their availability, cost, and effectiveness. Individuals that supply the bait that replaces reef fish will likely benefit from the preferred alternative. Those benefits will to some extent offset the losses that limiting reef fish as a source of bait had on other firms.

Sub-option d is specific to the trap fisheries for blue crab, stone crab, deep-water crab, and spiny lobster. Those fisheries would be allowed to continue to use reef fish as bait in their traps, unless other regulations, specific to those species, restricted reef fish use. Given the number of traps that are in use, a substantial amount of bait could be used each year in those pots. Data from Section 5.3.1 indicates that 1.5 million stone crab traps are in use. Waters (1996) reported that high-volume vessels averaged about 65 trips per year and low-volume boats averaged just over 33 trips per year. If the low-volume vessel's average of 33 trips pulled were used as a conservative average for all vessels, then the total number of traps baited in a year could be expected to approach 50 million. The blue crab fishery also averaged over 6.5 million traps pulled (personal communication - Roy Williams, FWCC). When the spiny lobster and deep-water crabs are included, the total number of pots pulled in a year could approach or exceed 60 million. However, because several sources of bait are used it is not possible to estimate the pounds or value of reef fish used as bait in these fisheries. If these vessel owners were required to stop using reef fish as bait, they would likely have higher bait costs. Higher costs are expected because the fishermen are assumed to behave in a rational economic manner, and in doing so they would purchase the best bait at the least cost. In the past they have used reef fish (parts and carcasses). Therefore, it is assumed that using that bait allows them to generate more

profits than if they had used an alternative bait source. The magnitude of the increase would depend on the total amount of reef fish they use as bait and the cost of substitute baits.

Alternative 3 would prohibit specific reef fish species from being used as bait (red grouper, red snapper, vermilion snapper, or other species) by commercial, recreational, or both commercial and recreational fishermen. It also considers exempting participants in the fish trap fishery from the ban. The economic impacts of this alternative are similar, but likely smaller, than those discussed under Alternative 2. Economic impacts would be expected to be smaller because fewer species would be included under the ban. Reef fish species that are excluded from the ban would still be available for purchase from shore facilities and fishermen could use whole fish they legally harvest themselves as bait.

Summary: Precluding fishermen from using reef fish as bait will tend to increase the cost of bait and perhaps reduce the quality of bait. Fishermen are assumed to have used reef fish as bait because it had a lower cost than other sources of bait, was of higher quality, or was readily available when the vessel was procuring supplies. Removing reef fish from the mix of types of bait available to vessel owners will force some operators to select a bait source that they consider inferior. If the substitute bait increases costs or reduces catch per unit of effort then costs will rise. Substitutes in the seafood markets and competition among suppliers of that species will likely prohibit price changes at the consumer level that would offset the cost increases.

Members of the reef fish fishery will benefit from any improvements in reef fish stocks that are realized by implementing this amendment. Benefits derived from the preferred alternatives will depend on how relative changes in fish stocks impact future TACs and catch per unit of fishing effort.

Sellers of reef fish for bait will need to make changes in their operations or they will be negatively impacted. At a minimum, these individuals must obtain substitute bait products. Seafood processors will need to find alternative uses for their reef fish carcasses or be forced to dispose of them. It is possible that they would be negatively impacted because the market for reef fish carcasses and heads, outside of the bait market, is probably limited. Developing markets to generate the revenue that was obtained from bait sales may be difficult. If they are forced to dispose of those carcasses, their costs associated with waste management may also increase.

Enforcement of the current reef fish bait regulations would be easier if Alternative 2 were implemented. Enforcement officers would only need to determine whether reef fish species being are used for bait. That is less problematic than determining whether the fish was purchased on shore. While the job of the enforcement personnel is expected to be more convenient, the overall costs of enforcement would remain about the same.

Net benefits to the nation are not expected to change substantially as a result of implementing any of these alternatives. Slight negative impacts are expected to be felt by seafood processors that sold reef fish carcasses and heads and whole reef fish for bait that could not be sold for human consumption (spoiled or mutilated fish). Negative impacts would be mitigated if sub-option d were selected in Alternatives 2 or 3. The crustacean

fisheries would likely provide a market for much of the reef fish carcasses and heads that are left over from the processing of fillets. Harvesters (both recreational and/or commercial) that had used reef fish as bait will be required to obtain other sources of bait. It is anticipated that other sources of bait can easily be obtained, but perhaps at a higher cost.

5.5.4 Vessel Monitoring System

Three alternatives are being considered regarding the implementation of a vessel monitoring system (VMS). These alternatives are being considered to improve enforcement of fishery regulations, specifically fishing area restrictions and season closures.

Alternative 1 would continue the status quo management that does not require reef fish vessels to have a working VMS onboard. Selecting this alternative does not change the economic impacts on individual firms or net benefits to the Nation.

Alternative 2 would require various subsets of the commercial reef fish fleet to be equipped with a functioning VMS. Subgroups being considered are vessels in the longline fishery and commercially permitted reef fish vessels, including charter vessels with commercial reef fish permits operating in the Gulf. This alternative further requires that VMS units should be on 24 hours a day, 7 days a week. The cost of the equipment as well as the installation, maintenance, and communication costs would be borne by vessel owners.

The list of approved VMS units and communication providers was published in the Federal Register (March 18, 2005). Technical specifications for the approved units and providers are described in Appendix B of this document. Including installation by a qualified marine electrician, equipment costs range from a minimum of $1,600 for the ST-2500 to a maximum of $2,900 for the TT-3022-D. Yearly communication costs, which are provided in Table 5.5-1, range from $432 to $617.

Table 5.5-1: Monthly and Yearly Communication Costs by Provider

Monthly Cost for Xantic**	Monthly Cost for Telenor**	Monthly Cost for Orbcomm ($149 Initial Activation Fee)
$50.40	$36.00	$38.99
Yearly Cost for Xantic	Yearly Cost for Telenor	Yearly Cost for Orbcomm and Activation
$604.80	$432.00	$616.88

Source: NOAA Southeast Enforcement; compiled by Beverly Lambert

Communication costs reported in Table 5.5-1 are based on hourly transmissions throughout the year. VMS operating requirements indicate that buffer zones of one nautical mile around areas with fishing restrictions will be implemented. NMFS will define buffer zones after concurrence with the Gulf of Mexico Fishery Management Council staff and Southeast Region fishery plan managers, Office for Law Enforcement, and Office of General Counsel. Once a vessel enters a defined buffer zone, the VMS unit reporting rate will be increased to every 15 minutes at the vessel owner's expense. Thus,

yearly communication costs need to be adjusted to reflect these operating requirements. VMS operating requirement also specify that if a vessel departs the buffer zone and enters a restricted area, the VMS unit reporting rate will be increased to every 10 minutes until it departs the restricted area and/or the buffer zone. This analysis assumes that vessel owners will not routinely violate existing regulations by entering restricted area. The analysis that follows is based on two scenarios. First, it is assumed that vessels may elect to conduct fishing operations away from buffer zones. Under this scenario, additional communication charges would not be incurred. Second, fishing vessels are assumed to conduct the entirety of their operations within defined buffer zones. Under this assumption, a vessel would be charged for 72 additional transmissions[5] . The average cost per transmission is estimated at $0.06. Thus, daily additional charges would equal $4.32. Since reef fish vessels spend on average 31 days at sea per annum, yearly additional communication charges are estimated at $134[6]. Overall, communications costs, including additional charges will range from $432 to $751.

The first-year total cost per vessel, derived by aggregating equipment, installation, and communication costs, ranges from a minimum of $2,032 to a maximum of $3,651. The minimum cost is calculated using the lowest cost equipment and the lowest cost per year to use the equipment. Maximum costs are calculated using the highest cost equipment and annual fees. Sub-options considered under this alternative apply the VMS requirement to different subgroups of the commercial reef fish fishery.

Sub-option-A would apply the VMS requirement to vessels participating in the longline commercial reef fish fishery. The distribution by gear of commercial reef fish vessels reporting one pound or more of reef fish landed is provided in Table 5.5-2. Figures indicated for 2004 are preliminary estimates. A total of 157 vessels with valid commercial reef fish permits were reported to have used longlines in 2004. Based on per vessel first-year costs derived above, the total first-year cost of requiring VMS units onboard longline vessels ranges from $319,024 to $573,207.

Sub-option-B would require VMS units onboard all commercially permitted reef fish vessels, including charter vessels with commercial reef fish permits operating in the GOM. As of July 2004, there were 1,145 valid commercial reef fish permits. It is estimated that 24 vessels included in this category already have a VMS unit onboard due to their participation in highly migratory species (HMS) fisheries. Fish trap vessels, which will be phased out in February 2007 are exempted from VMS requirements. In 2004, 42 vessels were reported to use fish traps in the reef fish fishery. Thus, a total of 1,079 vessels will be impacted under this sub-option. For these vessels, first-year costs would range from $2,192,528 to $ 3,939,429. Currently, HMS participants are not required to have their VMS units on at all time. Thus, yearly communication costs for the HMS participants are added to this range to obtain the total cost for the entire commercial reef fish fleet. Additional communication costs that will be incurred by HMS participants in

[5] A reporting interval of 15 minutes results is equivalent to 96 transmissions per day. (24*60/15). Hourly transmissions (24 per day) are already covered by the basic agreement and must be subtracted. Hence, charges will be incurred for 76 additional transmissions.

[6] It must be noted that longlines vessels would incur higher charges because they spend on average between 113 to a 121 days at sea per year.

the first year vary from $10,368 to $18,024. In the aggregate, first-year costs under this sub-option range from $2,202,896 to $3,957,453.

Table 5.5-2: Gulf of Mexico Commercial Reef Fish Vessels Reporting One Pound or More of Reef Fish by Gear (2000-2004).

Year	Number of Vessels			
	Longline	H & L	Trap	Other
2000	181	909	58	98
2001	164	854	53	82
2002	166	844	54	74
2003	166	811	44	65
2004*	157	755	42	56

Source: NOAA Permit Database; compiled by Andy Strelcheck

Alternative 3 would use Alternative 2 to determine the vessels required to installing a VMS unit, but the costs of the system would be paid for by the Federal Government. This would increase vessel owners' annual operating costs by the amount incurred for communications costs. Yearly communication costs range from $432.00 to $751 per vessel. Additional costs would be related to the time it takes to install and use the system. Implementing this alternative would not be expected to change the profitability of individual firms significantly. Net benefits to the Nation would not be expected to change substantially because taxes, in one form or another, would be used to pay for VMS units. Taxes are considered transfer payments and are not included in net National benefit calculations. Thus, in determining net National impacts under this alternative, only yearly communication costs are included. Aggregate adverse economic impacts would range from a minimum of $67,824 to a maximum of $828,353.

Summary: The first alternative does not result in changes in net National benefits. Under Alternative 1, i.e., the status quo, VMS are not installed and thus, no additional costs are incurred.

Under Alternative 2, VMS system costs incurred by the reef fish fleet would be expected to reduce net National benefits. Installing a VMS system is not expected to allow individual vessels to generate more income. Because revenues are not expected to increase to offset costs, producer surplus and net benefits will be reduced by approximately the amount of the program's costs. The size of the reduction is proportional to the number of vessels required to have a VMS unit onboard, to the cost of the system installed, and to yearly communication costs incurred. Aggregate first-year costs range from a minimum of $319,024 to a maximum of $3,957,453. Requiring all vessels harvesting reef fish commercially to have a VMS would be the most costly alternative to the fleet. Every vessel[7] in the fleet would incur costs of at least $2,032 the first year of the program. Marginal operations may not be able to absorb the additional costs and may leave the fishery. Additionally, persons holding on to commercial reef fish permits for speculative purposes may not want to incur the added expenses associated with VMS

[7] The 24 vessels participating in the HMS fishery have already installed a VMS unit and would only pay for year-round communication costs ranging from $432 to $751 per vessel. Fish Trap vessels are exempted from VMS requirements.

units and may elect to let their permits expire. The number of vessels that would exit the fishery cannot be estimated.

Alternative 3 considers the use of federal monies to pay for the required VMS units, with ongoing communication costs to be paid by the fishermen. Changes in net benefits to the Nation are not associated with federally funded programs. Hence, the reduction in National benefits associated with this alternative corresponds to aggregate communication costs borne by vessel owners. Depending on the subset of the commercial reef fish fleet considered, adverse economic impacts would vary from $67,824 to $828,353.

5.5.5 Modifications to the TAC Framework Procedure

Two alternatives are considered to update the TAC framework procedure. Specifically, the alternatives discussed in this section suggest rewording changes to the framework procedure and consider the incorporation of the SEDAR process into the TAC framework procedure.

Alternative 1 maintains the status quo. Under the status quo alternative, the Reef Fish Stock Assessment Panel will continue to be the reference in the existing framework for setting TAC. This alternative leaves the current wording of the framework procedure unchanged. No changes in economic benefits are expected from this alternative.

Alternative 2 In addition to minor rewording changes, this alternative implements the SEDAR process. The alternative replaces the Economics and Trade Division with its new designation, i.e., the Social Science Branch. In accordance with accepted stock assessment practices, this alternative replaces the phrase "current SPR levels" with "current biomass, biomass proxy, or SPR levels."

The SEDAR process includes functions that were previously performed by the RFSAP. The SEDAR process is expected to yield more precise stock assessments than the RFSAP but it requires more time to be completed. More accurate stock assessments may bring short and/or long term economic benefits. If better stock assessments resulted in TAC increases, short-term economic benefits would be derived from additional reef fish harvests. By contrast, if TAC decreases were recommended following the stock assessment under SEDAR, stocks would recover quicker. Hence, the commercial and recreational sectors would benefit from higher harvests in the medium to long term. Economic benefits under this alternative may be slightly limited by the added time necessary to complete the SEDAR process.

<u>Summary</u>: The magnitude of potential net benefits will depend on changes in the amount of time required for TAC adjustments and variations in the accuracy of the stock assessments. Under Alternative 1, neither the timeframe to making TAC adjustments nor the accuracy of underlying stock assessments would change. Thus, no changes in net economic benefits are expected. Under Alternative 2, which considers rewording changes and the incorporation of the SEDAR process, economic benefits will depend on the magnitude and direction of TAC adjustments resulting from the improved accuracy of stock assessments. For increases in TAC, short-term economic benefits will be derived

from greater reef fish harvests. Improved stock assessments resulting in decreases in TAC will bring longer-term benefits by allowing stocks to recover faster. Potential benefits are expected to be somewhat limited or at least delayed by the added time required for the completion of the SEDAR process. The alternatives in this section are not expected to have adverse economic impacts.

5.5.6 Bycatch and Bycatch Mortality Mitigation Measures

Alternative 1 maintains the status quo and does not implement management measures to minimize stress and increase the survival of incidentally caught sea turtles and smalltooth sawfish. Thus, no changes in economic benefits are expected.

Alternatives 2 to 6 require different sets of sea turtle and smalltooth sawfish release gear. Depending on the alternative considered, the commercial reef fish sector and/or the reef fish for-hire fleet are the subgroups impacted by the requirements. Sea turtle release gear requirements considered in this amendment include the highly migratory species (HMS) pelagic longline requirements, the HMS bottom longline requirements, and, a set of release gear suggested by NOAA's Office of Protected Resources (OPR). Table 5.5.3 provides a synopsis of these release gear requirements, per unit costs, and per vessel cost.

Alternative 2 requires vessels with commercial reef fish permits to comply with sea turtle release protocols required for the HMS bottom longline fishery specified in 50 CFR 635.21(a)(3) and 635.21(d)(3). This alternative requires the use of a limited amount of release gear to be on board, along with written documentation on the proper use of the gear. Release gear requirements include dipnets, line clippers, and a dehooking device, which meets NMFS standards. Benefits derived from this alternative are imputable to the expected increase in the survival rate of incidentally caught sea turtles and smalltooth sawfish. Negative economic impacts correspond to direct expenses incurred by fishermen to purchase the required release gear. Per vessel release gear costs are estimated between $202 and $380. Aggregate costs of compliance with sea turtle release protocols for the 1,145 vessels constituting the commercial reef fish fleet range from $231,290 to $435,100.

Alternative 3 requires vessels with commercial reef fish vessel permits to comply with the sea turtle release protocols required for the HMS pelagic longline fishery specified in 50 CFR 635.21(c)(5)(i) and (ii). Along with proper documentation, this alternative requires an extensive list of release gear including, a long-handled line clipper or cutter, a long-handled dehooker for ingested hooks, a long-handled dehooker for external hooks, a long-handled device to pull an "inverted V", dipnets, a tire, a short-handled dehooker for ingested hooks, a short-handled dehooker for external hooks, long-nose or needle-nose pliers, bolt cutters, monofilament line cutters, and, at least two types of mouth openers/mouth gags.

Under this alternative, benefits are derived from foreseeable increases in the survival rates of inadvertently caught sea turtles and smalltooth sawfish. Adverse economic impacts include fishermen's out-of-pocket expenses to purchase the required release gear and the additional burden resulting from storing it on board. Out-of-pocket expenses per vessel

vary from a minimum of $712 to a maximum of $1,282. For the commercial reef fish sector, the aggregate cost of the required release gear ranges from $815,240 to $1,467,890.

Table 5.5.3 Release Gear Requirements and Costs

	Per Unit Cost ($)		Release Gear Required		
	Low	High	HMS -Bottom Longline	HMS -Pelagic Longline	OPR Set
Line clippers/cutters	18.00	55.00	X		
Dehooking device meeting NMFS Standards	14.00	50.00	X		X
Long-handled line clipper or cutter	175.00	265.00		X	
Long-handled dehooker for ingested hooks	120.00	210.00		X	
Long-handled dehooker for external hooks	30.00	100.00		X	
Long-handled device to pull an inverted "V"	50.00	200.00		X	
Dipnet	170.00	275.00	X	X	X
Tire	20.00	20.00		X	
Short-handled dehooker for ingested hooks	50.00	50.00		X	
Short-handled dehooker for external hooks	14.00	28.00		X	
Long-nose or needle-nose pliers	20.00	20.00		X	X
Bolt cutters	40.00	40.00		X	X
Monofilament line cutters	21.00	21.00		X	X
Mouth openers/mouth gags	2.00	53.30		X	X
Cost Per Vessel (HIGH)			380.00	1282.30	459.30
Cost Per Vessel (LOW)			202.00	712.00	267.00

Source: Base data collected from: Reduction of Sea Turtle Bycatch-Supplemental EIS (NOAA 2004)

Alternative 4 requires vessels with recreational for hire reef fish permits to comply with the same sea turtle and smalltooth sawfish release protocols as selected for commercial reef fish vessels. Private recreational vessel operators would be encouraged to voluntarily comply with the release protocols.

If commercial reef fish vessels were required to comply with the release protocols in effect in the HMS bottom longline fishery, the compliance cost per vessel would be between $202 and $380. Thus, aggregate compliance costs for the 1,574 vessels in the for-hire fleet would range from $317,948 to $598,120. If commercial vessels were required to comply with the same sea turtle release protocols as the HMS pelagic longline fishery, equipment costs would range from $712 to $1,282 per vessel. Total out-of-pocket expenses would then be between $1,120,688 and $2,017,868.

Alternative 5 requires vessels with commercial reef fish permits and vessels with reef fish for-hire permits to comply with the sea turtle release protocols in place for Atlantic HMS bottom longline vessels be implemented to the maximum extent practicable (50 CFR 635.21(a)(3) and 635.21(d)(3)). The for-hire and commercial reef fish fleets comprise a total of 2,482 vessels. Assuming a compliance cost of $202 to $380 per vessel, the aggregate adverse economic impact under this alternative would be between $501,364 and $943,160.

Factors to be considered in determining the practicability of bycatch mitigation measures are listed in 50 CFR 600.350(d)(3). Under this alternative, the requirement that may raise practicability issues may be the mandatory posting inside the wheelhouse of the sea turtle handling and release guidelines. Many smaller vessels do not have a wheelhouse and would not be able to comply with this requirement. The addition of a provision accounting for space limitations onboard smaller vessels may be an approach to resolving this issue.

Alternative 6 requires vessels with commercial and for hire reef fish vessel permits must possess inside the wheelhouse, or within a waterproof case if no wheelhouse, a copy of the document provided by NMFS titled, "Careful Release Protocols for Sea Turtle Release With Minimal Injury," and must post inside the wheelhouse, or in an easily viewable area if no wheelhouse, the sea turtle handling and release guidelines provided by NMFS. Those permitted vessels with a freeboard height of four feet or less must have on board a dipnet, shorthandled dehooker, long-nose or needle-nose pliers, bolt cutters, monofilament line cutters, and at least two types of mouth openers/mouth gags. This equipment must meet the specifications described in 50 CFR 635.21(c)(5)(i)(E-L) with the following modifications: the dipnet handle can be of variable length, only one NMFS approved short-handled dehooker is required (i.e., CFR 635.21(c)(5)(i)(G or H)); and life rings, seat cushions, life jackets, and life vests may be used as alternatives to tires for cushioned surfaces as specified in 50 CFR 635.21(c)(5)(i)(F). Those permitted vessels with a freeboard height of greater than four feet must have on board a dipnet, long-handled line clipper, a short handled and a long handled dehooker, long-nose or needle-nose pliers, bolt cutters, monofilament line cutters, and at least two types of mouth openers/mouth gags. This equipment must meet the specifications described in 50 CFR 635.21(c)(5)(i)(A-L) with the following modifications: only one NMFS approved long-handled dehooker (50 CFR 635.21(c)(5)(i)(B or C)) and one NMFS approved short-handled dehooker (50 CFR 635.21(c)(5)(i)(G or H)) are required; life rings, seat cushions, life jackets, and life vests as alternatives to tires for cushioned surfaces as specified in 50 CFR 635.21(c)(5)(i)(F). Per vessel release gear costs are estimated between $267 and $459. Thus, aggregate adverse economic impacts under this alternative range from $662,694 to $1,139,238.

Alternative 7 requires vessels with commercial reef fish permits and vessels with reef fish for-hire permits to keep sawfish in the water at all times. This alternative prohibits the careless handling of the animal and provides directions to untangle and cut lines, and to remove hooks on sawfish. If it were implemented this alternative is not expected to result in any economic impact.

Summary: The status quo alternative, which would not be satisfactory under the biological opinion, does not involve changes in net benefits. The compliance with sea turtle and

smalltooth sawfish release protocols involves varying levels of expenditures depending on the regulation and fleet selected. Alternative 2 constitutes the least onerous option. It applies to commercial reef fish vessels the release protocols in effect in the HMS bottom longline fishery. Compliance costs range from $231,290 to $435,100. Alternative 3 requires the commercial reef fish fleet to comply with the more stringent requirement in place in the HMS pelagic longline fishery. Adverse economic impacts range from $815,240 to $1,467,890. The fourth alternative requires the reef fish for hire sector to either comply with sea turtle release protocols in effect in the HMS bottom longline fishery or to implement release protocols in application in the HMS pelagic longline fishery. Negative economic impacts associated with the former option are between $317,948 and $598,120. For the latter option, these impacts range from $1,120,688 to $2,017,868. Alternative 5 applies, to the maximum extent practicable, release protocols in effect in the HMS bottom longline fishery to all commercially permitted reef fish vessels. The compliance with this requirement is expected to result in negative economic impacts ranging from $501,364 to $943,160. The addition of a provision dealing with space limitations on smaller vessels may address practicability issues that may arise. Alternative 6 applies a release gear requirement recently developed by the OPR to commercial and for-hire reef fish vessels operating in the Gulf. Adverse economic impacts associated with the sixth alternative are estimated between $662,694 and $1,139,238. The last alternative in this suite provides guidelines for proper care for incidentally caught sawfish. As such, it does not generate changes in economic impacts.

5.6 Private and Public Costs

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

Council costs of document preparation, meetings, Public hearings and information dissemination	$190,000
NMFS administrative costs of document preparation, Meetings and review	$120,000
Industry cost of VMS	$2,202,896 to $3,957,453
Industry cost of Sea turtle Release Gear	$662,694 to $1,139,238
Law enforcement costs	$0
TOTAL	$3,175,590 to $5,406,691

The Council and NMFS costs of document preparation are based on staff time, travel, printing, and any other relevant items where funds would be expended directly for this specific action. Enforcement costs are expected to be $0 because none of the actions in this amendment are expected to change fishing activities.

5.7 Determination of a Significant Regulatory Action

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

Measures considered in this amendment aim to improve the enforceability of the prohibition on the sale of recreationally caught reef fish, eliminate crew size-related discrepancies between USCG requirements and existing fishing regulations, and, increase the survival rate of incidentally caught sea turtles and smalltooth sawfish. This plan amendment also intends to update the TAC framework procedure and improve the enforcement of season closures and off-shore restricted fishing areas by requiring participants in the commercial reef fish fishery to install an approved VMS unit.

Analyses within the RIR estimate the cumulative impact of the VMS requirements and bycatch mortality reduction measures between $2,865,590 and $5,096,691. Qualitative analyses of the economic impact of the other measures considered in this amendment concluded that the implementation of these measures would result in limited economic impact. Moreover, the $100 million threshold is clearly not expected to be met given that the total annual ex-vessel value of commercial harvests of Gulf reef fish is less than $50 million. Therefore, the action would not be expected to substantially impact the economy, a sector of the economy, productivity, competition or jobs.

Additionally, measures in this action do not adversely affect the environment, public health or safety, or state, local, or tribal governments or communities, nor do they interfere or create inconsistencies with any action of another agency, including state fishing agencies. In terms of safety, the present amendment contributes to the improvement of safety at sea due to the VMS requirements it includes. This amendment also contributes to eliminating an existing discrepancy between USCG and fishing regulations. The preferred alternative selected under Action 2, which addresses crew size requirements on a charter vessel when fishing commercially, removes fishing-related crew size restrictions that would interfere with USCG requirements listed on the vessel's certificate of inspection.

No effects on the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof have been identified. Measures in the proposed Amendment represent normal management options or practices and, therefore, do not raise novel legal or policy issues.

Since the proposed rule will not meet any of the conditions listed above, it is determined that the proposed rule, if implemented, would not constitute a "significant regulatory action."

6 INITIAL REGULATORY FLEXIBILITY ANALYSIS

6.1 Introduction

The purpose of the Regulatory Flexibility Act (RFA) is to establish a principle of regulatory issuance that agencies shall endeavor, consistent with the objectives of the rule and of applicable statutes, to fit regulatory and informational requirements to the scale of businesses, organizations, and governmental jurisdictions subject to regulation. To achieve this principle, agencies are required to solicit and consider flexible regulatory proposals and to explain the rationale for their actions to assure that such proposals are given serious consideration. The RFA does not contain any decision criteria; instead the purpose of the RFA is to inform the agency, as well as the public, of the expected economic impacts of various alternatives contained in the FMP or amendment (including framework management measures and other regulatory actions) and to ensure that the agency considers alternatives that minimize the expected impacts while meeting the goals and objectives of the FMP and applicable statutes.

With certain exceptions, the RFA requires agencies to conduct an Initial Regulatory Flexibility Analysis (IRFA) for each proposed rule. The IRFA is designed to assess the impacts various regulatory alternatives would have on small entities, including small businesses, and to determine ways to minimize those impacts. An IRFA is conducted to primarily determine whether the preferred alternative would have a "significant economic impact on a substantial number of small entities." In addition to analyses conducted for the RIR, the IRFA provides: (1) a description of the reasons why action by the agency is being considered; (2) a succinct statement of the objectives of, and legal basis for, the preferred alternative; (3) a description and, where feasible, an estimate of the number of small entities to which the preferred alternative will apply; (4) a description of the projected reporting, record-keeping, and other compliance requirements of the preferred alternative, including an estimate of the classes of small entities which will be subject to the requirements of the report or record; and (5) an identification, to the extent practicable, of all relevant Federal rules, which may duplicate, overlap, or conflict with the preferred alternative.

6.2 Description of the reasons why action by the agency is being considered

Issues addressed in this amendment include the illegal sale of reef fish caught under a recreational bag limit, the inconsistency between USCG requirements and existing fishing regulations, the limited likelihood of survival of sea turtles and smalltooth sawfish, the outdated TAC framework procedure, and, difficulties in enforcing fishing prohibitions in federal waters.

6.3 Statement of the objectives of, and legal basis for, the preferred alternatives

The specific objectives of the preferred alternatives are enumerated in Section 2 of the Amendment document. This section is incorporated herein by reference. As amended, the M-SFCMA provides the legal basis for the preferred alternatives.

6.4 Description and estimate of the number of small entities to which the preferred alternatives will apply

The SBA has established size criteria for all major industry sectors in the U.S. including fish harvesting entities, for-hire entities, fish processing businesses, and fish dealers. A business involved in fish harvesting is a small business if it is independently owned and operated and not dominant in its field of operation (including its affiliates) and if it has combined annual receipts not in excess of $3.5 million for all its affiliated operations worldwide. For-hire vessels are considered small entities if they have annual receipts not in excess of $6 million. A seafood processor is a small business if it is independently owned and operated, not dominant in its field of operation, and employs 500 or fewer persons on a full-time, part-time, temporary, or other basis, at all its affiliated operations worldwide. Finally, a wholesale business servicing the fishing industry (fish dealer) is a small business if it employs 100 or fewer persons on a full-time, part-time, temporary, or other basis, at all its affiliated operations worldwide.

Before implementing regulations proposed under Amendment 18A to the GOM Reef Fish FMP, a total of 1,145 vessels were permitted to fish in the commercial reef fish fishery. Of the 1,145 vessels, 237 are also are permitted to fish as charter vessels or headboats. Permit transfers can alter the number of vessels that have both a commercial reef fish permit and charter/headboat permit.

Only vessels that are affiliated through a single owner could be expected to reach an aggregate income level where they could be considered a large entity. Since little is known about the actual ownership structure of the vessels in the fleet, permit data was used to determine whether individuals owned multiple commercial reef fish vessel permits and charter/headboat vessel permits. From permit data it is estimated that two persons held 6 commercial reef fish permits, one person held 4 permits, 8 persons held 3 permits, 62 people held 2 permits, and 916 people held one commercial reef fish permit.

Information obtained from a 1993 survey of the reef fish fleet (Waters 1996) provides estimates of gross and net annual income for commercial vessels operating in the GOM. A summary of his report is provided below:

	Gross Income	Net Income
High-volume vessels, vertical line gear:		
Northern Gulf:	$110,070	$28,466
Eastern Gulf:	$ 67,979	$23,822
Low-volume vessels: vertical line gear:		
Northern Gulf:	$ 24,095	$ 6,801
Eastern Gulf:	$ 24,588	$ 4,479
High-volume vessels, bottom longline gear:		
Both areas	$116,989	$25,452
Low-volume vessels, bottom longline gear:		
Both areas	$ 87,635	$14,978
High-volume vessels, fish traps:	$ 93,426	$19,409
Low-volume vessels, fish traps:	$ 86,039	$21,025

A definitive calculation of which vessels would be considered large entities and small entities cannot be made using average income information. However, based on those data and the permit data showing the number of permits each person owns, it appears that all or almost all of the commercial reef fish fleet would be considered small entities. The maximum number of permits reported to be owned by the same person was 6, additional permits (and revenues associated with those permits) may be linked through affiliation rules. Affiliation links cannot be made using permit data. But, if one entity held 6 permits and was a high-volume bottom longline gear vessel, they would be estimated to generate about $700,000 in annual revenue. That estimate is well below the $3.5 million threshold set by the SBA for defining a large entity.

A total of 1,574 vessels are permitted to fish reef fish species as for-hire vessels. Recall that 237 of those vessels are also currently permitted to fish reef fish commercially. Some entities/individuals were reported to own multiple charter/headboat vessel permits. One entity/individual was reported to hold 12 permits, 1 entity/individual held 6 permits, 3 entities/individuals held 4 permits, 7 entities/individuals held 3 permits, 77 entities/individuals held 2 permits, and 1,018 entities/individuals held only one permit.

For-hire vessel costs and revenues are not routinely collected in the Gulf. For the current purpose, data from two previous studies (Holland et al., 1999; Sutton et al., 1999) were pooled to generate some information regarding the financial performance of for-hire vessels. These two studies classify the for-hire vessels into charterboats and headboats depending on how a base fee is charged. Charterboats charge their fees on a group basis while headboats do it on a per person (head) basis. On average, a charterboat generates $76,960 in annual revenues and $36,758 in annual operating profits. An average headboat, on the other hand, generates $404,172 in annual revenues and $338,209 in annual operating profits. Both types of for-hire operations are profitable, although it should be noted that the calculation of costs does not include fixed and other non-operating expenses. These items generally tend to be higher for headboats. On average, both charterboats and headboats operate at about 50 percent of their passenger capacity per trip.

The determination of the exact number of charter or headboat operations that would be classified as small and large entities cannot be made based on average revenue estimates. However, inferences can be made by combining average estimates with permit data showing the number of permits owned by each entity/individual. Average annual revenues for charter boats and headboats are $76,960 and $404,172, respectively. The maximum number of permits reported to be owned by one entity/individual was 12, additional permits (and revenues associated with those permits) may be linked through affiliation rules. Affiliation links cannot be made using permit data. If one entity possessed 12 permits, its average annual revenues would range from $923,520 to $4,850,064. The upper limit of the estimated range falls below the $6 million threshold set by the SBA for defining a large entity. Thus, it appears that almost all of the for-hire reef fish fleet would be considered small entities.

A permit is currently required for a fish dealer to purchase reef fish from commercial vessels. Permit data indicates that there are 227 dealers that hold permits to buy and sell reef fish species. Mailing addresses indicate that they are from Florida (146 reef fish

dealers), Louisiana (29), Texas (18), Alabama (14), Mississippi (5), and other states (15). Information is not available on the number of employees that work for these permit holders. So, it is not possible to determine if they would be considered small entities.

Fish processors are considered as a subset of the fish buyers, since purchasing fish from harvesters requires a fish dealer permit. It is not known how many of the persons that hold a permit to buy reef fish from harvesters also process reef fish, but it is unlikely that any would be considered large entities as a result of employing 500 persons. Keithly and Martin (1997) reported that the total seafood processing employment (both part-time and full-time employment) in the Southeast was approximately 700 individuals. Given that level of employment in the entire industry, it is unlikely that any one firm would employ 500 individuals.

6.5 Description of the projected reporting, record-keeping and other compliance requirements of the preferred alternatives, including an estimate of the classes of small entities which will be subject to the requirement and the type of professional skills necessary for the preparation of the report or records

The implementation of a vessel monitoring system (VMS) requirement would change the overall reporting structure of vessels in the reef fish fishery. Adding a VMS would require all or a subset of vessels holding a commercial reef fish permit to install and operate an approved unit. Including installation by a qualified marine electrician, equipment costs range from a minimum of $1,600 for the ST-2500 to a maximum of $2,900 for the TT-3022-D. Yearly communication costs, including additional charges incurred when traveling or fishing in buffer zones, range from $432 to $751. The first-year total cost per vessel, derived by aggregating equipment, installation, and communication costs, ranges from a minimum of $2,032 to a maximum of $3,651. The minimum cost is calculated using the lowest cost equipment and the lowest cost per year to use the equipment. Maximum costs are calculated using the highest cost equipment and annual fees. If Alternative 2 were selected by the Council, all or part of the commercial reef fish fleet would incur additional reporting costs to comply with the VMS requirement. Under Alternative 3, smaller reporting costs would be incurred because federal funds would be used to purchase VMS units. Annual communication costs ranging from $432 to $751 per vessel would constitute the only addition to current reporting costs.

The compliance with sea turtle and smalltooth sawfish release protocols may involve varying levels of expenditures depending on the alternative selected. Alternative 2 applies to commercial reef fish vessels the release protocols in effect in the HMS bottom longline fishery. Compliance costs range from $202 to $380 per vessel. Alternative 3 requires the commercial reef fish fleet to comply with the more stringent requirement in place in the HMS pelagic longline fishery. Under this alternative, compliance costs vary from $712 to $1,282 per vessel. The fourth alternative requires the reef fish for hire sector to either comply with sea turtle release protocols in effect in the HMS bottom longline fishery or to implement release protocols in application in the HMS pelagic longline fishery. Alternative 5 applies, to the maximum extent practicable, release protocols in effect in the HMS bottom longline fishery to all commercially permitted reef fish vessels. The addition to this alternative of a provision dealing with space limitations on smaller vessels may

address practicability issues that may arise. Alternative 6 requires vessels with commercial or for-hire reef fish permits to possess a set of release gear suggested by the Office of Protected Resources. Compliance costs per vessel range from $267 to $459. Based on revenue estimates provided in the IRFA, all entities operating in the commercial reef fish fleet are considered as small entities.

6.6 Identification of all relevant federal rules, which may duplicate, overlap or conflict with the preferred alternatives

Changing the number of crew members that are allowed on vessels that hold a commercial reef fish permit and a charter/headboat permit and take commercial reef fish trips over 12 hours in length will remove a conflict between NMFS regulations and U.S. Coast Guard regulations. Current regulations approved by NMFS restrict the number of crewmembers on these vessels to 3 persons when fishing commercially. USCG regulations require for-hire vessels with a USCG Certificate of Inspection to have 4 crewmembers when at-sea for more than 12 hours. Proposed changes would allow vessels with both a commercial reef fish permit and a charter/headboat permit to take commercial trips of more than 12 hours. This analysis did not uncover any other existing Federal rules that duplicate, overlap, or conflict with any of the preferred alternatives in this amendment.

6.7 Significance of Economic Impacts on Small Entities

Substantial Number of Small Entities Criterion

The measures considered in this amendment are expected to affect 2,482 charter/headboats and/or commercial vessels. The reef fish fleet includes 908 vessels with commercial permits, 1,337 with charter/headboat permits, and, 237 dually permitted vessels. Revenue estimates presented in Section 7.4 indicate that almost all entities operating in the reef fish fishery are small entities according to SBA standards. It thus follows that this amendment would impact a substantial number of small entities. Based on currently available information, it is not possible to determine whether dealers and processors that may be affected by this amendment qualify as small entities.

Significant Economic Impact Criterion

The outcome of "significant economic impact" can be ascertained by examining two issues: disproportionality and profitability.

Disproportionality: Do the regulations place a substantial number of small entities at a significant competitive disadvantage to large entities?

Almost all individuals and entities affected by the preferred alternatives are small entities. Hence, the issue of disproportionality does not apply in this case.

Profitability: Do the regulations significantly reduce profit for a substantial number of small entities?

The preferred alternatives may affect the profitability of small entities in several ways. If vessels were precluded from simultaneously holding a reef fish commercial and charter permits, they may incur adverse economic impacts if they decide to leave the fishery or reallocate their inputs to focus on one sector. These negative impacts would be mitigated by proceeds collected from permit sales.

If implemented, the prohibition on the use of reef fish for bait may increase the cost of bait purchased by vessel owners. Seafood processors may also be negatively impacted because the market for reef fish heads and carcasses, outside the bait market, is probably limited.

Reductions in profits may result from the VMS requirements if vessel owners have to bear the VMS installation and operation costs. The estimated first year cost of VMS systems ranges from $2,032 to $3,651 per vessel.

Compliance costs associated with bycatch mortality mitigation measures included in this amendment are expected to reduce vessel owners' profits. Compliance costs per vessel are estimated between $202 and $1,282, depending on the alternative considered.

Revenue profiles presented in Section 6.4 indicated that average net income generated by commercial reef fish vessels vary from a minimum of $4,479 to a maximum of $28,466. Requiring commercial vessels to comply with all measures contained in this amendment would substantially affect the profitability of smaller vessels and marginal operations. Due to the relatively higher level of profit generated by charter and headboat operations, the adverse impact on the profitability of the charter/headboat sector is expected to be relatively small. On average, a charterboat generates $36,758 in annual operating profits. An average headboat, on the other hand, generates $338,209 in annual operating profits.

6.8 Description of significant alternatives to the preferred alternatives and discussion of how the alternatives attempt to minimize economic impacts on small entities

Under Action 1, the preferred alternative selected by the Council (Alternative 2) would improve the effectiveness of enforcement without significantly impacting fishermen. By contrast, Alternative 3, which prohibits vessels from having both a commercial and a charter permit at the same time, would have substantially affected fishery participants impacted by this measure. It would have adversely impacted fishing activities of owners of dually permitted vessels by forcing them to divest of one permit. Persons that must rely on both commercial and charter fisheries to maintain an economically viable operation may not be able to stay in business.

Alternative 2, the preferred alternative selected under Action 2, intends to correct inconsistencies existing between USCG manning requirements and fishing regulations for

dually permitted reef fish vessels. Without adversely impacting vessel owners, the preferred alternative corrects the discrepancy and affords vessel owners/operators the flexibility to adjust upwards their crew size depending on the expected duration and nature of the fishing trip planned. In addition, the alternative selected allows vessels using spearfish gear to increase their crew size, thereby improving the safety at sea of the crew.

Preferred Alternative 2 (sub-options c and d) under Action 3 is expected to improve the enforcement of the ban on using reef fish for bait without substantially affecting fishery participants. Alternative 3, which would require enforcement officials to identify the reef fish species used for bait before assess any potential violation, would be less effective.

Preferred Alternative 2 (sub-option b) under Action 4 applies VMS requirements to all commercially permitted reef fish vessels operating in the Gulf of Mexico. Vessel owners are expected to bear equipment and communication costs. First-year compliance costs range from a minimum of $2,032 to a maximum of $3,651 per vessel. This action is expected to improve the efficacy of enforcement efforts and the effectiveness and timeliness of at-sea rescue efforts. Marginal fishing operations may be impacted because they may not have the resources to comply with these requirements. Alternative 3, which considers using federal resources to pay for VMS units, would have been less onerous for fishery participants. Under Alternative 3, vessel owners would only be responsible for yearly communication costs, which are estimated between

Under Action 5, Preferred Alternative 2 adopts minor rewording changes to the TAC framework procedure and incorporates the SEDAR process into the framework procedure. The alternative selected by the Council, as well as other alternatives considered under this action, are essentially an administrative measures and are not expected to have any noticeable incidence on fishing activities or on participants in the reef fish fishery.

Finally, Alternative 6 under Action 6 would require commercial and for-hire reef fishery participants to comply with sea turtle and smalltooth sawfish release protocols, possess a set of release gear required by the NMFS Office of Protected Resources, and adopt specific guidelines for the proper care for incidentally caught sawfish. Apart from expenses incurred to purchase mandated release gear, this action is not expected to impact fishing operations. Per vessel, out-of-pocket expenses are estimated between $267 and $459. If Alternative 3 were selected, fishery participants would have to face higher out-of-pocket expenses to comply with the requirements. Alternative 3 requires an extensive set of release gear that could cost up to $1,282 per vessel.

7 AFFECTED ENVIRONMENT

7.1 Physical environment

The physical environment of reef fish has been described in detail in the EIS for the Generic Essential Fish Habitat amendment and is incorporated here by reference (GMFMC 2004a). The GOM has a total area of 564,000 km^2 (218,000 sq. mi.). It is a semi-enclosed, oceanic basin connected to the Atlantic Ocean by the Straits of Florida and to the Caribbean Sea by the Yucatan Channel. Oceanic conditions are primarily affected

by the Loop Current, the discharge of freshwater in to Northern Gulf, and a semi-permanent, anticyclonic gyre in the western Gulf. Water temperatures range from 12º C to 29º C (54º F to 84º F) depending on time of year and depth of water.

7.2 Biological environment

The biological environment is described in detail in the final EIS for the Generic Essential Fish Habitat amendment and is incorporated here by reference (GMFMC 2004a).

The Reef Fish FMP currently encompasses 42 species (Table 8.1). Stock assessments (and most recent assessment) have been conducted on 11 species: gray triggerfish (Valle et al. 2001), greater amberjack (Turner et al. 2000), hogfish (Ault et al. 2003), red snapper (Schirripa and Legault 1999), vermilion snapper (Porch and Cass-Calay 2001), yellowtail snapper (Muller et al. 2003), red grouper (NMFS 2002), gag (Turner et al. 2001), yellowedge grouper (Cass-Calay and Bahnick 2002), and goliath grouper (Porch et al. 2003). A review of the Nassau grouper's stock status was conducted by Eklund (1994), and updated estimates of generation times were developed by Legault and Eklund (1998). A new red snapper stock assessment is being conducted in 2004/2005, and stock assessments for greater amberjack and scamp are planned for later in 2005.

Of the 11 species for which stock assessments have been conducted, the 2003 Report to Congress on the Status of the U.S. Fisheries (NMFS 2004) classifies 5 as overfished (greater amberjack, red snapper, vermilion snapper, goliath grouper, and Nassau grouper), and 3 as undergoing overfishing (red snapper, vermilion snapper, red grouper. Many of the stock assessments and stock assessment reviews can be found on the Council's webpage (www.gulfcouncil.org).

Table 7.1 Species of the Reef Fish fishery management unit. Species in bold have had stock assessments. *Deep-water groupers (Note: if the shallow-water grouper quota is filled, then scamp are considered a deep-water grouper) **Protected groupers

Common Name	Scientific Name	Stock Status
	Balistidae--Triggerfishes	
Gray triggerfish	***Balistes capriscus***	**Unknown**
	Carangidae--Jacks	
Greater amberjack	***Seriola dumerili***	**Overfished, overfishing**
Lesser amberjack	*Seriola fasciata*	Unknown
Almaco jack	*Seriola rivoliana*	Unknown
Banded rudderfish	*Seriola zonata*	Unknown
	Labridae--Wrasses	
Hogfish	***Lachnolaimus maximus***	**Unknown**
	Lutjanidae--Snappers	
Queen snapper	*Etelis oculatus*	Unknown
Mutton snapper	*Lutjanus analis*	Unknown
Schoolmaster	*Lutjanus apodus*	Unknown
Blackfin snapper	*Lutjanus buccanella*	Unknown
Red snapper	***Lutjanus campechanus***	**Overfished, overfishing**
Cubera snapper	*Lutjanus cyanopterus*	Unknown
Gray (mangrove) snapper	*Lutjanus griseus*	Unknown
Dog snapper	*Lutjanus jocu*	Unknown
Mahogany snapper	*Lutjanus mahogoni*	Unknown
Lane snapper	*Lutjanus synagris*	Unknown
Silk snapper	*Lutjanus vivanus*	Unknown
Yellowtail snapper	***Ocyurus chrysurus***	**Not overfishing, not overfished**
Wenchman	*Pristipomoides aquilonaris*	Unknown
Vermilion snapper	***Rhomboplites aurorubens***	**Overfished, overfishing**
	Malacanthidae--Tilefishes	
Goldface tilefish	*Caulolatilus chrysops*	Unknown
Blackline tilefish	*Caulolatilus cyanops*	Unknown
Anchor tilefish	*Caulolatilus intermedius*	Unknown
Blueline tilefish	*Caulolatilus microps*	Unknown
(Golden) Tilefish	*Lopholatilus chamaeleonticeps*	Unknown
	Serranidae--Groupers	
Dwarf sand perch	*Diplectrum bivittatum*	Unknown
Sand perch	*Diplectrum formosum*	Unknown
Rock hind	*Epinephelus adscensionis*	Unknown
Yellowfin grouper	*Mycteroperca venenosa*	Unknown
Scamp	*Mycteroperca phenax*	Unknown
Red hind	*Epinephelus guttatus*	Unknown
****Goliath grouper**	***Epinephelus itajara***	**Overfished, not overfishing**
****Nassau grouper**	***Epinephelus striatus***	**Overfished, not overfishing**
Red grouper	***Epinephelus morio***	**Not overfished, overfishing**
Gag	***Mycteroperca microlepis***	**Not overfished, not overfishing**
Yellowmouth grouper	*Mycteroperca interstitialis*	Unknown
Black grouper	*Mycteroperca bonaci*	Unknown
***Yellowedge grouper**	***Epinephelus flavolimbatus***	**Unknown**
*Snowy grouper	*Epinephelus niveatus*	Unknown
*Warsaw grouper	*Epinephelus nigritus*	Unknown
*Misty grouper	*Epinephelus mystacinus*	Unknown
*Speckled hind	*Epinephelus drummondhayi*	Unknown

7.2.3 General Information on Reef Fish Species

The National Ocean Service (NOS) of NOAA collaborated with NMFS and the Council to develop distributions of reef fish (and other species) in the GOM (SEA 1998). NOS obtained fishery-independent data sets for the GOM, including SEAMAP, state trawl surveys, and GUS trawl surveys. Data from the Estuarine Living Marine Resources (ELMR) Program contain information on the relative abundance of specific species (highly abundant, abundant, common, rare, not found, and no data) for a series of estuaries, by five life stages (adult, spawning, egg, larva, and juvenile) and month for five seasonal salinity zones (0-0.5, 0.5-5, 5-15, 15-25, and >25). NOS staff analyzed the data to determine relative abundance of the mapped species by estuary, salinity zone, and month. For some species not in the ELMR database, distribution was classified as only observed or not observed for adult, juvenile, and spawning stages.

In general, reef fish are widely distributed in the GOM, occupying both pelagic and benthic habitats during their life cycle. Habitat types and species' life history stages are summarized in Table 8.2 and can be found in more detail in GMFMC (2004a). In general, both eggs and larval stages are planktonic. Larvae feed on zooplankton and phytoplankton. Exceptions to these generalizations include the gray triggerfish that lay their eggs in depressions in the sandy bottom, and gray snapper whose larvae are found around submerged aquatic vegetation (SAV). Juvenile and adult reef fish are typically demersal, and are usually associated with bottom topographies on the continental shelf (<100 m) which have high relief, i.e., coral reefs, artificial reefs, rocky hard-bottom substrates, ledges and caves, sloping soft-bottom areas, and limestone outcroppings. However, several species are found over sand and soft-bottom substrates. For example, juvenile red snapper are common on mud bottoms in the northern Gulf, particularly off Texas through Alabama. Also, some juvenile snappers (e.g. mutton, gray, red, dog, lane, and yellowtail snappers) and groupers (e.g. goliath grouper, red, gag, and yellowfin groupers) have been documented in inshore seagrass beds, mangrove estuaries, lagoons, and larger bay systems (GMFMC 1981). More detail on hard bottom substrate and coral can be found in the FMP for Corals and Coral Reefs (GMFMC and SAFMC 1982). Figures 8.2.1, 8.2.2, and 8.2.3 provide information on habitat use.

Table 7.2. Summary of habitat utilization by life history stage for species most species in the Reef Fish FMP. This table is adapted from Table 3.2.7 in the final draft of the EIS from the Council's EFH generic amendment (GMFMC 2004a).

Scientific name	Eggs	Larvae	Post-larvae	Early Juveniles	Late juveniles	Adults	Spawning adults
Gray triggerfish	Reefs	Drift algae	Drift algae	Drift algae, Mangroves	Drift algae, Mangroves, Reefs	Reefs, Sand/ shell bottoms	Reefs, Sand/ shell bottoms
Greater amberjack	Pelagic	Pelagic	Pelagic	Drift algae	Drift algae	Pelagic, Reefs	Pelagic
Lesser amberjack				Drift algae	Drift algae	Hard bottoms	Hard bottoms
Almaco jack	Pelagic			Drift algae	Drift algae	Pelagic	Pelagic
Banded rudderfish		Pelagic		Drift algae	Drift algae	Pelagic	Pelagic
Hogfish				SAV	SAV	Hard bottoms, Reefs	Reefs
Queen snapper	Pelagic	Pelagic				Hard bottoms	
Mutton snapper	Reefs	Reefs	Reefs	Mangroves, Reefs, SAV, Emergent	Mangroves, Reefs, SAV, Emergent marshes	Reefs, SAV	Shoals/ Banks, Shelf edge/slope
Schoolmaster	Pelagic	Pelagic		Mangroves, SAV	Hard bottoms, Mangroves, Reefs, SAV, Emergent marshes	Hard bottoms, Reefs, SAV	Reefs
Blackfin snapper	Pelagic			Hard bottoms	Hard bottoms	Hard bottoms, Shelf edge/slope	Hard bottoms, Shelf edge/slope
Red snapper	Pelagic	Pelagic		Hard bottoms, Sand/ shell bottoms, Soft bottoms	Hard bottoms, Sand/ shell bottoms, Soft bottoms	Hard bottoms, Reefs	Sand/ shell bottoms

Scientific name	Eggs	Larvae	Post-larvae	Early Juveniles	Late juveniles	Adults	Spawning adults
Cubera snapper	Pelagic			Mangroves, Emergent marshes, SAV	Mangroves, Emergent marshes, SAV	Mangroves, Reefs	Reefs
Gray (mangrove) snapper	Pelagic, Reefs	Pelagic, Reefs	SAV	Mangroves, Emergent marshes, Seagrasses	Mangroves, Emergent marshes, SAV	Emergent marshes, Hard bottoms, Reefs, Sand/ shell bottoms, Soft bottoms	
Dog snapper	Pelagic	Pelagic		SAV	Mangroves, SAV	Reefs, SAV	Reefs
Mahogany snapper	Pelagic	Pelagic		Reefs, Sand/ shell bottoms	Reefs, Sand/ shell bottoms	Hard bottoms, Reefs, Sand/ shell bottoms, SAV	
Lane snapper	Pelagic		Reefs, SAV	Mangroves, Reefs, Sand/ shell bottoms, SAV, Soft bottoms	Mangroves, Reefs, Sand/ shell bottoms, SAV, Soft bottoms	Reefs, Sand/ shell bottoms, Shoals/ Banks	Shelf edge/slope
Silk snapper						Shelf edge	
Yellowtail snapper	Pelagic			Mangroves, SAV, Soft bottoms	Reefs	Hard bottoms, Reefs, Shoals/ Banks	
Wenchman	Pelagic	Pelagic				Hard bottoms, Shelf edge/slope	Shelf edge/slope
Vermilion snapper	Pelagic			Hard bottoms, Reefs	Hard bottoms, Reefs	Hard bottoms, Reefs	
Blueline tilefish	Pelagic	Pelagic				Hard bottoms, Sand/ shell bottoms, Shelf	

Scientific name	Eggs	Larvae	Post-larvae	Early Juveniles	Late juveniles	Adults	Spawning adults
Tilefish	Pelagic, Shelf edge/ slope	Pelagic		Hard bottoms, Shelf edge/slope, Soft	Hard bottoms, Shelf edge/slope, Soft bottoms	Hard bottoms, Shelf edge/slope, Soft bottoms	
Dwarf sand perch					Hard bottoms	Hard bottoms, Soft bottoms	
Sand perch						Reefs, SAV, Shoals/ Banks, Soft bottoms	
Rock hind	Pelagic	Pelagic				Hard bottoms, Reefs	Hard bottoms, Reefs
Speckled hind	Pelagic	Pelagic				Hard bottoms, Reefs	Shelf edge/slope
Yellowedge grouper	Pelagic	Pelagic			Hard bottoms	Hard bottoms	
Red hind	Pelagic	Pelagic		Reefs	Reefs	Hard bottoms, Reefs, Sand/ shell bottoms	Hard bottoms
Goliath grouper	Pelagic	Pelagic	Man-groves	Mangroves, Reefs, SAV	Hard bottoms, Mangroves, Reefs, SAV	Hard bottoms, Shoals/ Banks, Reefs	Reefs, Hard bottoms
Red grouper	Pelagic	Pelagic		Hard bottoms, Reefs, SAV	Hard bottoms, Reefs	Hard bottoms, Reefs	
Misty grouper	Pelagic	Pelagic				Hard bottoms, Shelf edge/slope	Hard bottoms
Warsaw grouper	Pelagic	Pelagic			Reefs	Hard bottoms, Shelf	
Snowy grouper	Pelagic	Pelagic		Reefs	Reefs	Hard bottoms, Reefs, Shelf edge/slope	

Scientific name	Eggs	Larvae	Post-larvae	Early Juveniles	Late juveniles	Adults	Spawning adults
Nassau grouper		Pelagic		Reefs, SAV		Hard bottoms, Reefs, Sand/ shell bottoms	Hard bottoms, Reefs, Sand/ shell bottoms
Black grouper	Pelagic	Pelagic		SAV	Hard bottoms, Reefs	Hard bottoms, Mangroves, Reefs	
Yellowmouth grouper	Pelagic	Pelagic		Mangroves	Mangroves, Reefs	Hard bottoms, Reefs	
Gag	Pelagic	Pelagic		SAV	Hard bottoms, Reefs, SAV	Hard bottoms, Reefs	
Scamp	Pelagic	Pelagic		Hard bottoms, Mangroves, Reefs	Hard bottoms, Mangroves, Reefs	Hard bottoms, Reefs	Reefs, Shelf edge/slope
Yellowfin grouper				SAV	Hard bottoms, SAV	Hard bottoms, Reefs	Hard bottoms

7.2.4 Environmental Sites of Special Interest

7.2.4.1 Gulf of Mexico Marine Protected Areas Established by the Council

Tortugas Shrimp Sanctuary - A shrimp nursery ground in the Florida Keys permanently closed to the use of trawls and harvest or possession of shrimp. This results in shrimp growing to about a 47 count/pound before harvest (3,652 square nautical miles).

Cooperative Texas Shrimp Closure - A shrimp nursery ground off Texas cooperatively closed by the Council and the state of Texas for 45 to 60 days out to either 15 or 200 miles. This closure results in shrimp growing to about 39 count/pound (5,475 square nautical miles).

Southwest Florida Seasonal Closure (Shrimp/Stone Crab) - Closure of federal and state waters to shrimping from November 1 through May 20 inshore of the line to protect juvenile stone crab and prevent loss of stone crab traps in trawls (4,051 square nautical miles).

Central Florida Shrimp/Stone Crab Separation Zones - Closure of state and federal waters to either shrimping or crabbing from October 5 to May 20. Crab or shrimp fishing alternate in zones IV and V. (174 square nautical miles).

Longline/Buoy Gear Area Closure - Permanent closure to use of these gears for reef fish harvest inshore of 20 fathoms off the Florida shelf and inshore of 50 fathoms for the remainder of the Gulf (72,300 square nautical miles).

Florida Middle Grounds HAPC - Pristine coral area protected from use of any fishing gear interfacing with bottom (348 square nautical miles).

Madison/Swanson and Steamboat Lumps Marine Reserves - No-take marine reserves sited on gag spawning aggregation areas where all fishing except for surface trolling during May through October is prohibited (219 square nautical miles).

Stressed Area - Permanent closure Gulf-wide of the near shore waters to use of fish traps, power heads, and roller trawls (i.e., “rock hopper trawls”) (48,400 square nautical miles).

Flower Garden Banks HAPC - Pristine coral area protected by preventing use of any gear that interacts with the bottom. Subsequently, this area was made a marine sanctuary by NOS (41 square nautical miles).

Tortugas North and South Marine Reserves - No-take marine reserves cooperatively implemented by the state of Florida, NOS, the Council, and the National Park Service (see jurisdiction on chart) (185 square nautical miles).

7.2.5 Marine Mammals and Protected Species

There are 28 cetacean, one sirenian, and one non-native pinneped (California sea lion) species that have confirmed occurrences in the GOM (Davis and Fargion 1996). Of these, six marine mammal species are listed as endangered species. Additionally, all five of the sea turtles found in the GOM (Kemp's ridley, loggerhead, green, leatherback, and hawksbill) are protected under the Endangered Species Act. Fish species listed under the ESA in the GOM include the threatened Gulf sturgeon and the endangered smalltooth sawfish. Thirteen species of fish in the GOM are currently on the candidate list, three of which are reef fish. The following is a brief overview of these species. For more complete descriptions, refer to the draft final EIS to the Council's Generic EFH amendment (GMFMC 2004a) of NMFS recently completed a Biological Opinion for sperm whales, sea turtles, and Gulf sturgeon on the GOM Outer Continental Shelf Oil and Gas Lease Sales 189 and 197. These reports contain the most updated information on GOM protected species at this time.

7.2.5.2 Sea Turtles

Poffenberger reviewed supplementary discard data from reef fish fishery for two survey years (1/8/2001-7/31/2002 and 1/8/2002 - 7/31/2003) and found 16 reported interactions with turtles. These interactions were reported for 14 trips. Five of the trips were with bottom longline gear and nine of them were with handline (vertical) gear. All but three of the turtles were not identified by species (i.e., reported as unknown or unclassified). The reported species were two loggerhead turtles and one green turtle.

The green sea turtle was listed under the ESA on July 28, 1978. Green turtles are distributed circumglobally, mainly in waters between the northern and southern 20o C isotherms (Hirth 1971). Green turtles were traditionally prized for their flesh, fat, eggs, and shell. Fisheries in the United States and the Caribbean are largely to blame for the decline of the species.

In the continental United States, green turtle nesting occurs on the Atlantic coast of Florida. Occasional nesting has been documented along the Gulf coast of Florida, at Southwest Florida beaches, as well as on the beaches of the Florida Panhandle (Meylan et al. 1995). Green turtles are herbivores and appear to prefer marine grasses and algae in shallow bays, lagoons, and reefs (Rebel 1974). Some of the principal feeding pastures in the GOM include inshore south Texas waters, the upper west coast of Florida and the northwestern coast of the Yucatan Peninsula. The probable food sources in these areas are Cymodocea, Thalassia, Zostera, Sagittaria, and Vallisneria (Babcock 1937; Underwood 1951; Carr 1952; 1954).

Loggerhead sea turtles occur throughout the temperate and tropical regions of the Atlantic, Pacific, and Indian Oceans and are the most abundant species of sea turtle occurring in US waters (NMFS 2001a). The threatened loggerhead is the most abundant species of sea turtle occurring in US waters. The near shore waters of the GOM are believed to provide important developmental habitat for juvenile loggerheads. Studies conducted on loggerheads stranded on the lower Texas coast (south of Matagorda Island) have indicated that stranded individuals were feeding in near shore waters shortly before

their death (Plotkin et al. 1993). In August 2004, Hurricane Charley came ashore on southwest Florida as a category 4 hurricane during the loggerhead's nesting season, resulting on thousands of deaths to unhatched eggs and baby turtles.

The Turtle Expert Working Group (TEWG) report, compiled by a team of population biologists, sea turtle scientists, and managers established by NMFS to conduct a status assessment of sea turtle populations (NMFS 1998), made a number of conclusions regarding the loggerhead population. The recovery goal of "measurable increases" for the south Florida subpopulation (south of Canaveral and including southwest Florida) appears to have been met, and this population appears to be stable or increasing. However, index nesting surveys have been done for too short a time; therefore, it is difficult to evaluate trends throughout the region. Recovery rates for the entire subpopulation cannot be determined with certainty at this time.

Hawksbill turtles feed primarily on a wide variety of sponges but also consume bryozoans, coelenterates, and mollusks. Nesting areas in the western North Atlantic include Puerto Rico and the Virgin Islands. In the Western Atlantic, the largest hawksbill nesting population occurs in the Yucatán Peninsula of Mexico, where several thousand nests are recorded annually in the states of Campeche, Yucatán, and Quintana Roo (NMFS 2001a). In the northern GOM, a number of small hawksbills have been encountered in Florida and Texas. Most of the Texas records are probably in the 1-2 year class range. Many of the individuals captured or stranded are unhealthy or injured (Hildebrand 1983). Pinellas County, Florida, including Tampa Bay, has the largest share of west coast hawksbill strandings. It is likely that immature hawksbills utilize the various hard-bottom habitats off the west coast as developmental habitat (NMFS 2001a). The lack of sponge-covered reefs and the cold winters in the northern GOM probably prevent hawksbills from establishing a strong presence in that area.

The Kemp's ridley sea turtle has declined to the lowest population level (NMFS 2001a). Nesting data indicated that the number of adults declined from a population that produced 6,000 nests in 1966 to a population that produced 924 nests in 1978 and a low of 702 nests in 1985 (NMFS 2000). In recent years, unprecedented numbers of Kemp's ridley carcasses have been reported from Texas and Louisiana beaches during periods of high levels of shrimping effort (NMFS 2000). Analyses conducted by TEWG have indicated that the Kemp's ridley population is in the early stages of recovery (NMFS 1998).

The Recovery Plan for the Kemp's Ridley Sea Turtle (USFWS and NMFS 1992) contains a description of the natural history, taxonomy, and distribution of the Kemp's ridley turtle. Kemp's ridleys nest in daytime aggregations known as arribadas, primarily at Rancho Nuevo, a stretch of beach in Mexico, where most of the adult females nest (Pritchard 1969). When nesting aggregations at Rancho Nuevo were discovered in 1947, adult female populations were estimated to be in excess of 40,000 individuals (Hildebrand 1982). Recent observations of increased nesting suggest that the decline in the ridley population has stopped, and there is cautious optimism that the population is now increasing.

The Recovery Plan for leatherback sea turtles contains a description of the natural history and taxonomy of this species (NMFS and USFWS 1992). This species is widely

distributed throughout the oceans of the world, and are found throughout waters of the Atlantic, Pacific, Caribbean, and the GOM (Ernst and Barbour 1972). Leatherbacks are predominantly pelagic and feed primarily on jellyfish such as Stomolophus, Chryaora, and Aurelia (Rebel 1974). They may come into shallow waters if there is an abundance of jellyfish near shore.

The status of the leatherback population is difficult to assess, since major nesting beaches occur over broad areas within tropical waters outside the United States (NMFS 2000). The primary leatherback nesting beaches occur in French Guiana and Suriname in the western Atlantic and in Mexico in the eastern Pacific. Although increased observer effort on nesting beaches has resulted in increased reports of leatherback nesting, declines in nest abundance have been reported from the beaches of greatest nesting densities. Some nesting occurs on Florida's east coast.

7.2.5.3 Fish

7.2.5.3.1 Endangered Species

NMFS and US Fish and Wildlife Service (USFWS) listed the Gulf sturgeon as a threatened species on September 30, 1991. Habitat destruction and degradation, exacerbated by potential over-exploitation of the species, are primarily responsible for the sturgeon's decline. Dams have prevented access to historic sturgeon migration routes and spawning areas (Wooley and Crateau 1985). Dredging and other navigation maintenance, possibly including lowering of river elevations and elimination of deep holes and altered rock substrates, may have adversely affected Gulf sturgeon habitats (Wooley and Crateau 1985). A decrease in groundwater flows has reduced cool water habitats, which are thought to be warm water refugia for sturgeon (S. Carr, personal communication in GMFMC 2004a); recent droughts in the Apalachicola River system have accelerated the loss of cool water refugia. Increased groundwater withdrawal for irrigation in southwest Georgia may result in a 30 percent reduction of discharge to streams (Hayes et al. 1983).

NMFS listed as endangered the US population of smalltooth sawfish that once ranged in shallow waters off the GOM and Eastern Seaboard on April 1, 2003. An extensive status review concluded that the US population of smalltooth sawfish, currently found only off south Florida, is in danger of extinction (NMFS 2001b). Sawfish are actually modified rays with a shark-like body and gill slits on their ventral side. This species is one of two species of sawfish that inhabit US waters (NMFS 2001b). Smalltooth sawfish commonly reach 18 ft (5.5 m) in length, and may grow to 25 ft (7 m). Little is known about the life history of these animals. They are thought to live up to 25-30 years and mature after about 10 years. Like many elasmobranchs, smalltooth sawfish are ovoviviparous, meaning the mother holds the eggs inside of her until the young are ready to be born, usually in litters of 15 to 20 pups.

Smalltooth sawfish has been reported in both the Pacific and Atlantic Oceans, but the US population is found only in the Atlantic (NMFS 2001b). Historically, the US population was common throughout the GOM from Texas to Florida, and along the east coast from Florida to Cape Hatteras. The current range of this species has contracted to peninsular Florida, and smalltooth sawfish are relatively common only in the Everglades region at

the southern tip of the state. No accurate estimates of abundance trends over time are available for this species. However, available records, including museum records and anecdotal fisher observations, indicate that this species was once common throughout its historic range and that smalltooth sawfish have declined dramatically in US waters over the last century.

Sawfish are extremely vulnerable to overexploitation because of their propensity for entanglement in nets, their restricted habitat, and low rate of population growth (NMFS 2001b). The decline in smalltooth sawfish abundance has likely been caused primarily by bycatch in various fisheries, compounded by habitat degradation. In order to protect this species, the states of Florida and Louisiana have prohibited the take of smalltooth sawfish. Three National Wildlife Refuges in Florida also protect their habitat.

7.2.5.4 Seabirds

Seabirds are a diverse group that spend much of their lives on or over saltwater. Some can live far from land for long extended periods of time, coming back to coastal areas to breed and nest. Seabirds fish in the sea for prey by dipping, plunging, surface seizing, as well as the behaviors of piracy and scavenging. Species of seabirds and other coastal species that inhabit or frequent the northern GOM recognized by the US Fish and Wildlife Service as either endangered or threatened include the piping plover, least tern, roseate tern, bald eagle, and brown pelican (the brown pelican is endangered in Mississippi and Louisiana and was de-listed in Florida and Alabama). The southeastern snowy plover is a species of concern to the state of Florida.

Primary factors affecting the eastern subspecies include human disturbance of nesting colonies and, mortality when birds are caught on fishhooks and subsequently entangled in monofilament line. Oil or chemical spills, erosion, plant succession, hurricanes, storms, heavy tick infestations, and unpredictable food availability are other threats.

7.3 Social and Economic Environment

Section 5.4 provides a detailed description of the social and economic environment potentially affected by measures in this amendment, and is incorporated herein by reference. In summary, the reef fish fishery is composed of commercial and recreational sectors. Within the commercial sector are fishing vessels, dealers, support industries, and fishing communities. Recreational anglers participate in the reef fish fishery through several fishing modes, such as shore, private/rental, charter boats, and headboats. Charter boats and headboats comprise the for-hire fishery. In addition, there are also areas that may be considered as fishing communities that may either provide place of residence, business or employment associated with the recreational pursuit of the reef fish. Some of these areas similarly provide residence or business opportunities for the commercial fishing sector.

Commercial vessels that participate in the reef fish fishery harvest species, such as red snapper, grouper, and amberjack. Although some particular reef fish species, such as red snapper and grouper, are targeted by for-hire vessels, these vessels generally target a variety of species, including species outside the reef fish fishery management unit such as

mackerel. Many of the preferred alternatives in this amendment package directly impact commercial and recreational grouper fishermen.

7.4 Administrative Environment

7.4.1 Federal Fishery Management

Federal fishery management is conducted under the authority of the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) (16 U.S.C. 1801 et seq.), originally enacted in 1976 as the Fishery Conservation and Management Act. The MSFCMA claims sovereign rights and exclusive fishery management authority over most fishery resources within the EEZ, an area extending 200 nautical miles from the seaward boundary of each of the coastal states, and authority over US anadromous species and continental shelf resources that occur beyond the EEZ.

Responsibility for federal fishery management decision-making is divided between the US Secretary of Commerce and eight regional fishery management councils that represent the expertise and interests of constituent states. Regional councils are responsible for preparing, monitoring, and revising management plans for fisheries needing management within their jurisdiction. The Secretary of Commerce (Secretary) is responsible for promulgating regulations to implement proposed plans and amendments after ensuring that management measures are consistent with the MSFCMA, and with other applicable laws summarized in Section 9. In most cases, the Secretary has delegated this authority to NMFS.

The Council is responsible for fishery resources in federal waters of the GOM. These waters extend to 200 nautical miles offshore from the nine-mile seaward boundary of the states of Florida and Texas, and the three-mile seaward boundary of the states of Alabama, Mississippi, and Louisiana. The length of the GOM coastline is approximately 1,631 miles. Florida has the longest coastline of 770 miles along its Gulf coast, followed by Louisiana (397 miles), Texas (361 miles), Alabama (53 miles), and Mississippi (44 miles).

The Council consists of seventeen voting members: 11 public members appointed by the Secretary; one each from the fishery agencies of Texas, Louisiana, Mississippi, Alabama, and Florida; and one from NMFS. The public is also involved in the fishery management process through participation on advisory panels and through council meetings that, with few exceptions for discussing personnel matters, are open to the public. The regulatory process is also in accordance with the Administrative Procedures Act, in the form of "notice and comment" rulemaking, which provides extensive opportunity for public scrutiny and comment, and requires consideration of and response to those comments.

Regulations contained within FMPs are enforced through actions of the NOAA's Office of Law Enforcement, the USCG, and various state authorities. To better coordinate enforcement activities, federal and state enforcement agencies have developed cooperative agreements that ??? together to enforce the MSFCMA. These activities are being coordinated by the Council's Law Enforcement Advisory Panel and the Gulf States

Marine Fisheries Commission's (GSMFC) Law Enforcement Committee have developed a 5-year "GOM Cooperative Law Enforcement Strategic Plan - 2001-2006."

7.4.2 State Fishery Management

The purpose of state representation at the council level is to ensure state participation in federal fishery management decision-making and to promote the development of compatible regulations in state and federal waters. The state governments of Texas, Louisiana, Mississippi, Alabama, and Florida have the authority to manage their respective state fisheries. Each of the five Gulf states exercises legislative and regulatory authority over their states' natural resources through discrete administrative units. Although each agency is the primary administrative body with respect to the states natural resources, all states cooperate with numerous state and federal regulatory agencies when managing marine resources. A more detailed description of each states primary regulatory agency for marine resources is provided in Amendment 22 (GMFMC 2004b).

8 ENVIRONMENTAL CONSEQUENCES

8.1 Simultaneous Commercial and Recreational Harvest on a Vessel

8.1.1 Direct and indirect effects on physical and biological/ecological environment and their significance

Fishery management actions or inactions that affect the physical environment mostly relate to the interactions of fishing with bottom habitat, either through gear impacts to bottom habitat or through the incidental harvest of bottom habitat. The degree that a habitat is affected by fishing gear depends largely on the vulnerability of the affected habitat to disturbance, and on the rate that the habitat can recover from disturbance (Barnette 2001). For example, the complex structure and vertical growth pattern of coral reef species makes reef habitat more vulnerable to adverse impacts from fishing gear and divers who may inadvertently come in contact with the bottom, and are slower to recover from such impacts than is sand and mud bottom habitat (Barnette 2001). For a description of reef fish habitat, see Section 8.2 and GMFMC 2003.

Most reef fish are caught using vertical lines and bottom longlines. Vertical lines include handlines, rod-and-reels, and small vertical multi-hook lines known as bandit gear. Vertical-line gear is less likely to contact the bottom than longlines, but still has the potential to snag and entangle bottom structures and cause tear-offs or abrasions (Barnette 2001). Additionally, if vertical-line gear is lost or improperly disposed of it can entangle marine life (Hamilton 2000; Barnette 2001). Entangled gear often becomes fouled with algal growth. If this gear becomes entangled on corals, the algae can eventually overgrow and kill the coral.

Anchor damage by vertical-line fishing vessels, particularly by the recreational fishery, is also potentially damaging. Bohnsack 2000 (in Hamilton 2000) points out that “favorite” fishing areas such as reefs are targeted and revisited multiple times, particularly with the advent of global positioning technology. The cumulative effects of repeated anchoring could damage the hard bottom areas where fishing for vermilion snapper occurs.

Longline gear is deployed over hard bottom habitats using weights to keep the gear on the bottom. This gear, upon retrieval, can abrade, snag and dislodge smaller rocks, corals, and sessile invertebrates (Bohnsack 2000 in Hamilton 2000; Barnette 2001). The damage that this gear inflicts to the bottom can be increased, and depends on currents and the amount of line sweep caused by hooked fish (Barnette 2001).

Other gears that catch reef fish include traps, trawls, gill and trammel nets, and spear fishing. Barnette (2001) has summarized the effects of these gears on benthic habitats in detail. Traps are often set on live substrate and can cause damage to corals, gorgonians, sponges, and submerged aquatic vegetation. Trawls and seines cause a variety of negative affects including scraping, ploughing, sediment resuspension, physical habitat destruction, and removal or scattering of not-target benthos. Gillnets and trammel nets generally do not effect the bottom; however, if set near coral and other hard bottom habitats, the gear can snare and break off benthic structures. Spear fishing has minimal effects on the bottom. Additionally, many of these gears are regulated by the Council to minimize their

effects. For example, fish traps are currently being phased out and their use will end in 2007 (see Section 2). Roller trawls, a type of trawl that can be fished over hard bottom, are excluded from fishing in stressed areas as defined by the Council.

For the biological/ecological environment, fishery management actions or inactions mostly relate to the impacts of fishing on a species' population size, life history, and the role of the species within its habitat. Removal of fish from the population through fishing reduces the overall population size. This can have implications in terms of how rapidly a stock can be rebuilt and the role a species has in marine communities. Fishing pressure can also affect various aspects of a species' life history. For example, fishing has been shown for many species to shift the size distribution of reef fish species to smaller sizes in the GOM (. The size and age at which reef fish species become mature may also be depressed by increased fishing pressure. Trippel (1995) suggested that changes in age at maturity of fishes are a stress indicator for fisheries. For example, Hood and Johnson (1999) reported this trend for vermilion snapper.

Alternative 1 (status quo) which would allow vessels to have dual reef fish permits (commercial and for hire), would not change fishing practices and so would not have further effects on the physical or biological/ecological environment. Alternative 2, like Alternative 1 would allow vessels to have dual reef fish permits. However, this alternative would not allow commercial fishermen to keep a recreational size and bag limit while fishing. Because the number of commercial trips is a fraction of the total number of recreational trips (see Section 6), this alternative would not decrease fishing effort much, and therefore, not have a significant effect on the physical or biological/ecological environments.

Alternative 3 would require vessels to only have one or the other type of permit. Because these permits are transferable, vessel owners would likely transfer the permit to another vessel they own, or sell the permit. This could cause an increase in the number of vessels participating in the fishery, possibly increasing in overall fishing effort as well as pollutants from those vessels. As mentioned above, increases in effort would lead to more interactions between fishing gear and the physical environment. Also, increases in effort can lead to the depletion of species causing changes in the biological/ecological environment. However, it should be noted that there are other measures in place for the reef fish fishery to control fishing effort. Many of the major species (shallow-water grouper, deep-water grouper, tilefish, and red snapper) are managed using hard quotas. Once the quotas are reached, those species are not allowed to be harvested. Additionally, there are seasonal and area restrictions, bag limits, and size limits on most reef fish species designed to control effort.

8.1.2. Direct and indirect effects on social, economic, and administrative environments and their significance

The for-hire and commercial reef fish fleets comprise a total of 2,482 vessels. These entities may be directly impacted by proposed measures. Indirectly, these measures may also affect all entities participating in the reef fish fishery. The proposed alternatives are

expected to result in minor direct or indirect impacts on vessels' revenues and operating costs, and not provide any highly uncertain, unknown, or unique risks to the fishery. None of these alternatives are precedent setting because the prohibition of bag limits on commercial vessels and limitations on permits occur within the reef fish and other fisheries managed by the Council.

Alternatives 1 and 2 will not affect the present permit distribution. Under Alternative 1, i.e., the status quo, the enforcement of the prohibition on the sale of recreationally caught reef fish may be burdensome. Alternative 2, which removes the uncertainty regarding the fishery in which vessels are engaged in at a specific time, is expected to enable enforcement officials to more easily ascertain if a vessel is in compliance with the regulations.

Alternative 3 would prohibit vessels from having both a commercial and charter reef fish permit at the same time. If this alternative were implemented, owners of vessels that are assigned both permits would be required to dispose of one of the permits. Owners of vessels that must divest of one permit would likely give up the permit that generates the lower profit. If that permit is for the charter fishery, owners would keep their commercial permit; likewise, if the commercial permit is less profitable, they would keep their for-hire permit. Considering the moratorium in the reef fish charter fishery, owners who decided to focus on the commercial sector would attempt to sell their unused charter permit. Reef fish charter permits are currently sold between $7,000 and $10,000 (Myron Fischer, Personal Communication). Considering also the moratorium in the commercial reef fish fishery, permit holders who consider their commercial activities to be less profitable would sell their commercial permit. Current market prices for Gulf commercial reef fish permits vary from $5,000 to $8,000 per permit. A Red Snapper Class I license can fetch up to $50,000 (GMFMC 2005). Permit holders who dispose of either one of their permits to focus on the other activity are not expected to incur significant economic losses. Moreover, costs due to the reallocation of their inputs would be mitigated by proceeds from the sale of one of the permits.

Persons that must rely on both commercial and charter reef fish sectors to maintain an economically viable operation may find that it is no longer sustainable to remain in the fishery. As shown in Table 5.4.7, there are 237 vessels that have both commercial and charter reef fish permits. The proportion of reef fish charter vessels that also have commercial reef fish permits varies by state. In Florida, 20 percent (197 out of 967 charter vessels) have both permits. In Texas the proportion is 10 percent (23 out of 224). The remaining Gulf States have 6 percent or less of reef fish vessel with both permits (Mississippi has none). These persons could exit the fishery and sell both permits. Permit holders forced out of business would suffer limited economic losses, even if they were successful in selling their permits. However, these individuals may remain active in the commercial and charter sectors if they possessed other valid charter permits, such as the coastal migratory pelagic permits.

In the short run, this alternative would also create an administrative burden on NMFS. The increased transfer of permits as fishermen divest themselves of whichever permit they determine is less valuable will demand increased time of SERO's Permits Branch.

However, once the transfers of the initial 237 vessels that have both permits are completed, the time burden this office should return to previous levels.

Permit transfers or sale resulting from this alternative may lead to a sizeable effort increase in the fishery, resulting in quotas being filled faster. A given number of part-time commercial and charter fishermen could be replaced by a larger number of full time participants in both sectors. For example, the level of effort would increase if an individual with a reef fish charter and commercial permits decides to transfer his commercial permit to another vessel and focus on his charter operation. Under this scenario, one part-time charter and commercial fisherman would be replaced by one full time charter operator and one full time commercial fisherman. If we further assumed that the individual initially possessed a class I (or class II) red snapper permit, the effort in the red snapper fishery would also increase due to the transfer of that permit to another commercially permitted vessel. Even though both the commercial and recreational red snapper fishery is controlled by a quota, this effort expansion would be detrimental to the fishery due to the destabilizing effect it would create from faster harvest rates. Permit holders who hold but do not use both permits, and dispose of one of their permits, would not suffer substantial economic losses. Permit holders who must rely on the commercial and charter sectors to maintain the viability of their business may face economic losses. These losses will be reduced by proceeds collected from permit sales. In the aggregate, this alternative is expected to result in negligible direct and indirect net economic impacts.

Net economic impacts will depend on how permit are used after being removed from the original vessels and which vessels fill voids left if permits are removed from the fishery. If a permit is used by a vessel that can generate greater producer surplus then economic benefits will increase. If the permits move to less efficient vessels then net benefits will decrease. It is anticipated that over time the permits will migrate to operations that are more efficient. Because the flow of these permits cannot be predicted, it is not possible to quantify the changes in net benefits. However, allowing transfers is expected increase net benefits by an unknown amount.

It is unlikely that market prices will be altered as a result of the alternatives changing the supply of reef fish. Therefore, changing the costs of production would be expected to have the greatest impact on producer surplus. The costs of production will depend on where the permits are ultimately used. The permit redistribution may lead to an effort increase because several part time commercial and charter fishermen could be replaced by a greater number of full time participants in both sectors.

On the charter and headboat side of the equation, net benefits will depend both on a vessel's efficiency in providing clients the trip and changes in consumer surplus clients receive. For members of the fleet that were taking only charter trips the overall costs are not expected to change. It is also unlikely that charter/headboat client consumer surplus would be impacted by regulations that prohibit charter crew from selling catch on the commercial market.

8.2 Maximum Crew Size on a Charter Vessel when Fishing Commercially

8.2.1 Direct and indirect effects on physical and biological/ecological environment and their significance

The degree that the alternatives affect the physical and biological/ecological environments can be related to fishing effort as summarized in Section 9.1.1. For this action, Alternative 1 (status quo) would maintain the current three-person crew size for dual permitted vessels fishing commercially. This alternative would not change fishing effort and therefore should have no additional effect on the physical or biological/ecological environment.

Alternatives 2-5 would allow for an increase of crew size on dual permitted vessels. Increasing the number of crew on a vessel could increase the vessel's efficiency, and thus overall fishing effort. Alternative 3 would have the least effect on effort because it only allows a crew size increase for spear fishing commercial vessels. Of the gears discussed in Section 9.1.1, this gear is considered to have the least affect on the physical environment. Alternative 5 could have the greatest effect on effort because it does not limit the crew size on a dual permitted vessel. Larger crew sizes could increase vessel efficiency, and thus increase effort. The effects of Alternatives 2 and 4, which would only allow the crew size to increase to 4 persons, would be intermediate to Alternatives 3 and 5.

8.2.2 Direct and indirect effects on social, economic, and administrative environments and their significance

These alternatives would have direct and indirect impacts on those 237 vessels that hold both a commercial reef fish permit and a charter vessel permit to harvest reef fish. The other 1,337 vessels that only hold a charter/headboat permit to harvest reef fish and the 908 vessels that only hold a commercial reef fish permit would be indirectly affected. The impacts on trip costs of vessel owners and on the profitability of other support industries are expected to be relatively minor. Because these alternatives are primarily designed to bring fishing regulations in compliance with USCG regulations, none of these alternatives are precedent setting or provide any highly uncertain, unknown, or unique risks to the fishery.

If the second alternative in Action 1 were implemented, prohibiting a vessel from holding both a commercial reef fish permit and a charter permit at the same time, this suite of alternatives becomes moot. Because vessels would not be allowed to hold both permits, they would be required to operate as a commercial vessel when holding a commercial reef fish permit. Under current requirements the number of crewmembers would not be limited when a vessel only holds a commercial reef fish permit. Therefore, depending on the other alternatives selected from this amendment package, the net benefit impacts that would result from implementing these alternatives will be either zero or small. Economic impacts will be nil if vessels are not allowed to hold both a commercial reef fish permit and a charter permit or the crew size requirements are not changed (Alternative 1).

To be in compliance with all current regulations, dually permitted vessels are precluded from taking commercial reef fish trips that last for more than 12 hours. Based on surveys conducted in 1996 (Waters 1996), low-volume vessels[8] using vertical lines on commercial reef fish trips averaged 1.98 crew members per vessel and took trips that averaged 3.21 days. Under Alternative 1, vessels with both types of permits would thus be required to take commercial fishing trips that were 2.71 days shorter than the average trip, if they wanted to participate in the commercial fishery. When running time to and from the fishing grounds is considered, it may not make economic sense to take these trips. Waters' data indicated that, on average, less than two crewmembers are on a vessel. For vessels that were classified as high-volume producers, the average number of crewmembers increased, but only to 2.27. Even when bottom longline vessels were considered, the average number of crewmembers was 3.0 for high-volume vessels and 2.43 for low-volume vessels. Reported crew sizes do not suggest that additional crewmembers are needed to operate vessels in the fishery. Alternatives 2 to 5 are simply aiming to rectify the existing discrepancy between fishing regulations and USCG manning requirements.

Direct and indirect economic and administrative impacts are expected to be negligible if vessels are allowed to continue to hold both types of permits. Alternatives 2 to 5 would adjust upwards the maximum crew size and would rectify the discrepancy between USCG requirements and existing fishing regulations. Alternative 3 is limited in scope and would not correct the discrepancy for dually permitted reef fish vessels using spearfish gear. Alternatives 2, 4, and 5 would eliminate the inconsistency between the regulations across the board.

Allowing the vessels to increase their crew size will potentially increase crew costs as well as other trip expenses. If those costs are offset by the additional revenues generated during the trip, the vessel operator may determine that adding a crewmember to increase the duration of the trip makes economic sense. When revenue increases do not offset the increased costs, the vessel operator would not be expected to increase the number of crewmembers. In general, it is expected that providing vessel operators the opportunity to increase the duration of the trip could result in positive economic impacts. However, those benefits are expected to be small given the number of vessels that would be utilizing this provision in the future and the number of trips that would be impacted. Hence, aggregate direct and indirect economic impacts of these measures are expected to be small.

8.3 Use of Reef Fish as Bait

8.3.1 Direct and indirect effects on physical and biological/ecological environment and their significance

The degree that the alternatives affect the physical and biological/ecological environments can be related to fishing effort as summarized in Section 9.1.1. This action is primarily administrative and clarifies existing rules. Therefore, none of the alternatives for this action should affect effort, and hence cause an increase or decrease in the number of

[8] Waters uses the 75th percentile of annual reef fish landings reported in logbooks to classify vessels as high-volume or low-volume vessels.

interactions between gear and the physical environment. However, for the biological/ecological environment, if reef fish are allowed to be used for bait, some fishermen may retain a fish for bait whether it's alive or dead. As a result, there will be increased mortality of fish, some of which might otherwise have been released alive. If the assumption that some of the fish used for bait would have survived had they been released is valid, then Alternatives 2 and 3 will reduce mortality of fish used for bait since these fish will now have to be released or retained and subsequently counted as part of the vessels landed catch. This would be particularly beneficial if those fish were undersized. If it is assumed that only fish that are brought up dead are used for bait, and the live fish are released or retained as part of the landed catch, then the alternatives will have no impact on reducing fishing mortality or increasing the accounting for all fish that are caught. However, reef fish are excellent bait for catching reef fish, and this second assumption is therefore less likely to be valid, except for vessels fishing in deep waters were release mortality is very high. Impacts of Alternatives 2 and 3 are likely to be greatest on fish that are undersized or for which the season is closed, since presumably, a fisherman would keep any legal catch. This could have a negative impact on MRFSS estimates of type B1 recreational catch (fish used for bait, filleted, or discarded dead), since fishermen who continue to illegally use prohibited species as bait will be unlikely to admit such to dockside surveyors in the MRFSS surveys.

Alternative 4 allows the continued use of reef fish as bait in crustacean trap fisheries. There are approximately 1.5 million stone crab traps in use, and 530,000 spiny lobster traps (personal communication - Roy Williams, FWCC). The number of blue crab traps is not available. However, off the Florida Gulf coast, blue crab trap effort has averaged 6.5 million traps pulled each year since 1993 (personal communication - Roy Williams, FWCC). Blue crab traps are prohibited in the EEZ, but traps fished in state waters could still use EEZ caught reef fish for bait. The number of deep-water crab traps is not known, but this is a smaller fishery than the other crustacean fisheries, and likely uses only a small number of traps relative to the other fisheries. Lobster traps usually bait with undersized lobsters or cowhide and don't normally use fish for bait. All of the other traps use reef fish heads and/or racks when available but may also use mullet, ladyfish, herring, pigs feet, chicken parts, or other materials depending on price (personal communication, Phil Steele, NMFS/SERO). If the use of reef fish for bait is prohibited for these fisheries, alternative sources of bait are available, but the increased demand for those alternatives may increase costs to the fishermen.

8.3.2 Direct and indirect effects on social, economic, and administrative environments and their significance

It is currently legal to use reef fish as cut bait if it is purchased on shore. Whole reef fish may be used as bait if they are legally harvested, and those harvests comply with applicable size and bag limits. Enforcement of these regulations is problematic. It is difficult for enforcement personnel to determine is reef fish being used as cut bait was purchased on shore or was caught by the fishing vessel. Given concerns over the status of some reef fish stocks (e.g., vermilion snapper), improving the enforcement officer’s ability to determine whether a vessel is complying with regulations regarding bait use could improve accounting for total removals of these species.

The proposed regulations would directly impact individuals and firms that use reef fish as bait and the businesses that sell reef fish as bait. Entities and individuals that may be indirectly affected include suppliers of other bait species, persons that harvest reef fish species without using reef fish as bait, and buyers of reef fish species not used as bait. Because these alternatives are primarily designed to assist law enforcement agents enforce current fishing regulations, none of these alternatives are precedent setting or provide any highly uncertain, unknown, or unique risks to the fishery.

Alternative 1 would continue the status quo. Individuals would be allowed to use reef fish as cut bait if it was purchased on shore or whole reef fish that was not purchased on shore. Continuing to allow reef fish to be used as bait could result in the over harvest of vermilion snapper, a species that is currently classified as approaching an overfished condition. If uncounted bait removals are contributing to the condition of this species, continuing the status quo will have negative long-term impacts on the reef fish fleet.

Precluding fishermen from using all reef fish species (Alternative 2) as bait will tend to increase the cost of bait and perhaps reduce the quality of bait. Fishermen are assumed to have used reef fish as bait because it had a lower cost than other sources of bait, was of higher quality, or was readily available when the vessel was procuring supplies. Removing reef fish from the mix of types of bait available to vessel owners will force some operators to select a bait source that they consider inferior. If the substitute bait increases costs or reduces catch per unit of effort then costs will rise. Substitutes in the seafood markets and competition among suppliers of that species will likely prohibit price changes at the consumer level.

Members of the reef fish fishery will benefit from any improvements in reef fish stocks that are realized by implementing this amendment. Benefits derived from the proposed amendment will depend on how relative changes in fish stocks impact future TACs and catch per unit of fishing effort.

Sellers of reef fish for bait will need to make changes in their operations or they will be negatively impacted. At a minimum, these individuals must obtain substitute bait products. Seafood processors will need to find alternative uses for their reef fish carcasses or be forced to dispose of them. It is possible that they would be negatively impacted because the market for reef fish carcasses and heads, outside of the bait market, is probably limited. Developing markets to generate the revenue that was obtained from bait sales may be difficult. If they are forced to dispose of those carcasses, their costs associated with waste management may also increase. Alternative 3, which prohibits a narrower subset of reef fish species, would result in smaller adverse economic impacts.

Enforcement of the current reef fish bait regulations would be easier if Alternatives 2 or 3 were implemented. Moreover, the wider the group of reef fish species prohibited from being used as bait, the easier the enforcement. Thus, Alternative 2 is expected to be easier to enforce than Alternative 3. Under Alternatives 2 or 3, enforcement officers would only need to determine the species being used for bait. That is less problematic than determining whether the fish was purchased on shore or captured at sea. While the job of the enforcement personnel is expected to be made easier, the overall costs of enforcement would remain about the same.

Substantial direct or indirect impacts are not expected as a result of implementing any of these alternatives. Slight negative impacts are expected to be felt by seafood processors that sold reef fish carcasses and heads and whole reef fish for bait that could not be sold for human consumption (spoiled or mutilated fish). Negative impacts would be mitigated if Alternative 4 were selected along with Alternatives 2 or 3. The crustacean fisheries would likely provide a market for much of the reef fish carcasses and heads that are left over from the processing of fillets. Harvesters (both recreational and/or commercial) that had used reef fish as bait will be required to obtain other sources of bait. It is anticipated that other sources of bait can easily be obtained, but perhaps at a slightly higher cost.

8.4 Vessel Monitoring System

8.4.1 Direct and indirect effects on physical and biological/ecological environment and their significance

The degree that the alternatives affect the physical and biological/ecological environments can be related to fishing effort as summarized in Section 9.1.1. For this action, Alternative 1 (status quo) would not require VMS on commercially permitted reef fish vessels and so would not change fishing behavior. To the extent that illegal fishing in restricted areas is currently occurring, it would continue, resulting in detrimental impacts to the fishery resource and habitat.

Because VMS tracks where fishermen deploy their gear, VMS would cause a decrease in effort by prohibited gear types within marine reserve areas (See Section 7.2.4.1 for a list of areas). While most fishermen respect these marine reserve areas, some fishermen do not. Keeping prohibited gears out should decrease the number of interactions between gear and the physical environment of these areas. Also, this action would protect species that reside in these marine reserves, particularly those where all fishing gear is prohibited. Several of these sites were created specifically for protecting specific species. For example, the Madison-Swanson and Steamboat Lump marine reserves were established to protect gag spawning aggregations and male gag.

Alternatives 2 and 3 differ in who pays for the VMS system. Should Alternative 2 be selected as the preferred alternative, fishermen would be required to pay for these systems. This could cause permit holders who are not actively using their permit for reef fishing to reconsider whether to continue holding the permit. If they decide to get rid of the permit, they would turn it into NMFS, not renew it, or transfer it to another vessel. If most permits are transferred, it is likely that those new vessels would become active in the fishery, causing an increase in effort, and consequently, greater impacts on the physical and biological/ecological environments. However, as mentioned in Section 9.1.1, there are many regulations in place designed to control effort. Thus, the impacts from these new vessels would be limited. The sub-option of whether to limit VMS to only longline vessels or require them on all commercial reef fish vessels (except fish trap vessels) has impacts on cost, enforceability and complexity of the regulations. Requiring VMS only on longline vessels would reduce cost and concentrate VMS on vessels that have the greatest amount of area restrictions. These vessels generally have larger catches per trip

than other gear types (although they also make longer trips). This, VMS on these vessels would have a greater impact than on other vessels. However, many area restrictions apply to all reef fish vessels, so this would leave an enforcement gap in VMS coverage. Also, some vessels are capable of switching gear depending on the season and fishery. Would a vessel that removes its longline continue to be required to have VMS in a longline-only VMS system? Would that vessel then have to re-install VMS if it re-installed the longline gear? A longline-only VMS system would create these types of enforcement and administrative complexities. A VMS requirement on all Commercial reef fish vessels eliminates these complexities and provides the greatest benefits to enforcement and to the resource. Although fish trap vessels would ideally be included, it is expected that this amendment will be implemented only months before the February 2007 phase out of fish traps is complete. Requiring fish trap vessels to install VMS would create an economic burden that they would not have time to recover from. These vessels are currently required to submit trip initiation and termination reports which serve as a substitute for VMS. As of 2004, only 42 vessels were still reporting catches from fish traps (from Table 5.5-2). An unknown number of these may be using other gear in combination, such as hook and line, which would result in their being subject to the VMS requirement. Due to the relatively small number of fish trap only vessels combined with the upcoming phase-out and the substitute reporting requirements, an exemption of these vessels from the VMS requirement is expected to have little negative impact on the resource. After February 7, 2007, fish traps will be prohibited in the Gulf of Mexico and the VMS requirement will apply to all remaining commercial reef fish vessels.

Alternative 3 would effectively put the decision on whether to implement a VMS system in the hands of federal agencies that would provide the funding. At the very least, this alternative would delay implementation and benefits to the physical and biological /ecological environments until such funding is available.

8.4.2 Direct and indirect effects on social, economic, and administrative environments and their significance

Under the status quo alternative, i.e., Alternative 1, VMS units are not required and thus, economic impacts are not expected. Maintaining the status quo would not contribute to facilitating the monitoring of illegal fishing activities. Thus, Alternative 1 does not mitigate the adverse economic impacts of prohibited fishing activities.

Implementing a VMS will have a direct economic impact on those vessel owners that are required to install and use the equipment. Including installation by a qualified marine electrician, equipment costs range from a minimum of $1,600 to a maximum of $2,900 per vessel. Yearly communication costs via satellite ranged from $432 to $751 per vessel. If VMS were required, equipment costs would either be borne by the vessel owners or supported by Federal agencies. The suppliers of VMS units and communication time would benefit from this action through increased sales.

The long term reduction of illegal fishing activities constitutes a notable benefit resulting from the installation of VMS units. In addition, VMS units on reef fish vessels would enhance safety for fishermen. These systems identify where fishermen are at sea, and if they should encounter problems, cruise paths could be used by USCG personnel to aid in

vessel location. Additionally, some systems have "panic buttons" alerting rescue assets that a vessel is undergoing problems. Some VMS also allow fishermen access to the internet. This would improve communications and allow them access to better weather information (e.g., satellite and radar images).

Enforcement costs may increase to some extent due to the need to maintain VMS receiving ground stations and personnel to man them. However, remote monitoring of vessels will allow for more efficient use of at-sea enforcement resources (patrol vessels and airplanes) and should improve enforcement for much less cost that the cost of building and manning additional patrol vessels.

Under Alternative 2, VMS system costs incurred by the reef fish fleet would be expected to negatively impact the fleet by reducing its profitability. Installing a VMS system is not expected to allow individual vessels to generate more income. Because revenues are not expected to increase to offset costs, producer surplus and net benefits will be reduced by approximately the amount of program's costs. The size of the reduction is proportional to the number of vessels required to have a VMS unit onboard, to the cost of the system installed, and to yearly communication costs incurred. Requiring all vessels harvesting reef fish commercially to have a VMS would be the most costly alternative to the fleet. Every vessel in the fleet would incur costs of at least $2,032 the first year of the program. Marginal operations may not be able to absorb the additional costs and may leave the fishery. Additionally, persons holding on to commercial reef fish permits for speculative purposes may not want to incur the added expenses associated with VMS units and may elect to let their permits expire. The number of vessels that would exit the fishery cannot be estimated. After the first year, VMS costs would only include annual usage fees, repair, and maintenance. After the first year, per vessel costs would be expected to be between $432 and $751 per year, before maintenance and replacement costs are included. Alternative 3 would have similar impacts but considers the use of federal monies to pay for the purchase, installation and operation of required VMS units.

8.5 Modifications to the TAC Framework Procedure

8.5.1 Direct and indirect effects on physical and biological/ecological environment and their significance

Under the no action alternative (Alternative 1), the stock assessment process would revert back to the method of using a fixed reef fish stock assessment panel which would review a NMFS analyses and assessment, and would make stock status and ABC recommendations. Most of the NMFS analyses would be completed prior to the Stock Assessment Panel meeting and the meeting itself would last typically three to five days. This process allows assessments to be completed more quickly, and thus allows more stock assessments to be completed in a year. However, much of the analyses decision making is done in the background, out of public view. Any errors or omissions would be less likely to be caught since the assessment is not opened to public scrutiny until late in the process. Under Alternative 2, the major change is the incorporation of the SEDAR process into the TAC framework procedure. This allows a more comprehensive data review and incorporates participants from outside the process who may be able to provide a different point of view or expertise. This can lead to better stock assessments and

better-informed management decisions. The drawback is that the additional time involved under the SEDAR process means that fewer stock assessments can be conducted each year, and the status of stocks results may be more outdated than under the current process, but only by a few months.

8.5.2 Direct and indirect effects on social, economic, and administrative environments and their significance

Under Alternative 1, neither the timeframe to making TAC adjustments nor the accuracy of underlying stock assessments would change. Thus, no changes in net economic benefits are expected. Alternative 2 makes several minor editorial changes in the TAC framework procedure that do not functionally change the procedure, but bring the terminology up to date with currently used terms and agency names. Under Alternative 2 also incorporates the SEDAR process into the framework procedure, which expands the stock assessment process from one meeting to a minimum of three meetings, and includes the participation of independent experts from around the world. The additional meetings and personnel involved increase the time and cost of stock assessments, but also provide for a more open and public process, leading to a greater public understanding and acceptance of the assessment and assessment results. Economic benefits to stakeholders may, in the short term, be either positive or negative, depending on the direction of TAC adjustments. For fishermen who target stocks that are not scheduled for SEDAR assessments due to the limited number of assessments that can be conducted, negative benefits may accrue if stocks decline due to a lack of an assessment. However, improved accuracy of stock assessments should lead to greater long-term stability of the resource and long-term benefits to fishermen who target stocks that are subject to assessments.

8.6 Sea Turtle and Smalltooth Sawfish Bycatch

8.6.1 Direct and indirect effects on physical and biological/ecological environment and their significance

The degree that the alternatives for this action affect the physical and biological/ecological environments can be related to fishing effort as summarized in Section 9.1.1. For this action, a range of sea turtle release gear and sea turtle and smalltooth sawfish release documentation would be required onboard permitted reef fish vessels. These alternatives would not change fishing effort and thus, not have additional effect on the physical environment or adverse effects on the biological environment.

Alternative 1 (status quo) would not require turtle release gear or release documentation, so selection of this alternative would not provide increased protection for sea turtles or smalltooth sawfish. Although the continued operation of the GOM reef fish fishery is not likely to jeopardize the continued existence of endangered sea turtles and the smalltooth sawfish, incidental take of these species in this fishery are known to occur. Alternative 3 would increase the likelihood of successfully releasing incidentally caught sea turtles provided that the fishermen are proficient in the selection and use of the appropriate gear. The likelihood of sea turtles surviving is dependent upon the type of reaction (i.e., hook location; entangled or not) and the amount of gear left following the release (i.e., hook

remaining, amount of line remaining, entangled or not). In most cases removal of some or all of the gear (except deeply-ingested hooks) is likely to improve the probability of survival, and thus help to increase sea turtle populations.

Alternative 2 would require release gear meeting minimum design standards for the HMS bottom longline fishery. While increasing the likelihood of turtle survival over status quo, the ability of fishermen to manage captured sea turtles is limited because the gear requirements are not as extensive as the gear required for Alternative 3. Alternative 4 would add to the universe of vessels identified in Alternatives 2 and 3 by adding the permitted for-hire vessels, thus further increasing the likelihood of turtle survival. Alternative 5 would have the same effects as selecting both Alternative 2 and 4 as preferred alternatives.

Release gear requirements listed in Alternative 6 take into account differences in vessel size. Many vessels in the reef fish fishery are smaller than those used in the HMS pelagic longline fishery, thus the use of some gear, particularly those with handle extensions, would not necessarily be needed to achieve similar survival rates as achieved by using the gear required in Alternative 3 (based on the HMS pelagic longline fishery).

Gear required in Alternatives 2-6 could benefit species besides turtles. Turtle dehooking devices are based on fish dehooking designs and, if used on other bycatch species (e.g., non-targeted fish and birds), could enhance their chance for survival. This in turn would enhance the populations of these species.

Alternative 7, if implemented, would benefit smalltooth sawfish populations because it would provide guidelines to the fishery for the proper release protocols for this species. If followed, the chance of injury for this species would be reduced.

8.6.2 Direct and indirect effects on social, economic, and administrative environments and their significance

The status quo alternative, which would not be satisfactory under the biological opinion, does not involve changes in economic impacts. For the remaining alternatives, the compliance with sea turtle and smalltooth sawfish release protocols involves varying levels of expenditures depending on the regulation and fleet selected. Compliance costs associated with bycatch mortality mitigation measures included in this amendment are expected to slightly reduce vessel owners' profits.

Alternative 2 applies to commercial reef fish vessels the release protocols in effect in the HMS bottom longline fishery. Direct economic impacts resulting from compliance costs range from $202 to $380 per vessel. Alternative 3 requires the commercial reef fish fleet to comply with the more stringent requirement in place in the HMS pelagic longline fishery. Adverse economic impacts range from $712 to $1,282 per vessel. The fourth alternative requires the reef fish for hire sector to either comply with sea turtle release protocols in effect in the HMS bottom longline fishery or to implement release protocols in application in the HMS pelagic longline fishery. Alternative 5 also applies, to the maximum extent practicable, release protocols in effect in the HMS bottom longline fishery to all commercially permitted reef fish vessels. Alternative 6 requires commercial

reef fish vessels and vessels with reef fish for-hire permits to purchase and use a set of release gear recommended by the Office of Protected Resources. Compliance costs under this alternative range from $267 to $459 per vessel. Alternatives requiring the purchase of release gear would have a positive impact due to benefits derived from foreseeable increases in the survival rates of inadvertently caught sea turtles and smalltooth sawfish. These alternatives are also expected to have positive indirect impacts. Indirect benefits would result from the increased revenues collected by release gear manufacturers and retailers. The last alternative in this suite provides guidelines for proper care for incidentally caught sawfish. As such, it generates neither direct nor indirect economic impacts.

8.7 Mitigation Measures

No significant adverse effects are anticipated from any of the alternatives being considered. Therefore, no mitigation measures are proposed for any of these alternatives.

8.8 Cumulative effects

The proposed alternatives in this amendment, in combination with past and reasonably foreseeable future actions, will have beneficial cumulative impacts on the directed reef fish fishery and on other resources affected by the reef fish fishery by improving enforceability, improving data collection, streamlining the administrative process, and reducing bycatch mortality. Alternatives that require additional gear (VMS requirement and sea turtle bycatch mortality reduction) will, as discussed in the RIR, incur costs to the fishermen, but these costs are expected to be either one-time costs for equipment or relatively low ongoing costs for ongoing VMS communications. Further discussion on each of the sections continues below.

Simultaneous Commercial and Recreational Harvest on a Vessel

The proposed alternative addresses enforcement issues and continues the effort to separate commercial and recreational fishing and to prohibit sale of recreationally caught fish. It also standardizes and simplifies the regulations governing recreational catches on vessels that are fishing commercially. This effort began with Amendment 1 in 1990, which established a commercial reef fish permit and prohibited sale of reef fish caught under recreational bag limits. Amendment 12 (1997) strengthened the prohibition by creating a 20-fish aggregate bag limit for all reef fish not otherwise having a bag limit. This insured that all reef fish had a bag limit and were therefore subject to the prohibition. However, the rules governing the allowance for recreationally caught reef fish on a commercially fishing vessel become inconsistent in 2000 when a regulatory amendment that was implemented to address overfishing of gag and protection of gag spawning aggregations created a fixed closed season of February 15 to March 15, during which all possession (including recreational harvest) of gag, black grouper and red grouper was prohibited on vessels with a commercial reef fish permit (except for dual-permitted vessels when operating under charter). The proposed alternative prohibits simultaneous possession of commercial catches and recreational bag limit catches on a vessel, thereby reducing the opportunity and likelihood for a recreational catch to be sold. This still leaves open the potential for a dual-permitted vessel to falsely claim that fish caught on a charter trip were

commercially caught and can therefore be sold. However this problem may be resolved by the VMS requirement in Section 4.1.4. The draft protocol for implementing VMS (Appendix E) requires that, prior to departure for each trip, the vessel owner or operator must declare their fishing activity and gear onboard. This combination of requiring a declaration of fishing activity before a trip and prohibiting simultaneous possession of commercially and recreationally caught fish, should greatly enhance the enforceability of regulations governing the harvest and sale of fish.

Maximum Crew Size on a Charter Vessel When Fishing Commercially

The proposed alternative resolves a conflict between NMFS maximum crew size requirements for vessels with both a charter and commercial reef fish permit when fishing commercially and USCG minimum manning requirements for vessels with a certificate of inspection. This conflict was created in Amendment 1 (1990), which required that vessels that vessels used to fish both under for-hire and commercial fisheries be limited to a maximum crew of three when fishing commercially. The purpose of the restriction was to prevent a vessel from double-dipping by taking out by taking out passengers and selling catch that may have been recreationally caught on the same trip. It is not known if the USCG minimum manning requirements existed at that time, but they were brought to the Councils attention in 2004 by the Coast Guard representatives on the Council. The proposed alternative streamlines and simplifies the crew size regulations by matching NMFS maximum size regulations to USCG minimum manning size regulations. It also addresses a potential safety-at-sea issue on vessels that commercially spearfish by allowing more than one crew member to be on the surface to address potential emergencies while a diving pair is in the water. Allowing a larger crew size when fishing commercially could potentially increase the fishing power of a vessel and increase the need for future regulations to control commercial fishing effort.

Use of Reef Fish for Bait

This proposed alternative is a follow-up to management measures implemented through Amendment 5 (1987) that prohibited the cutting up of reef fish at sea by requiring that reef fish be landed head and tails attached (except for small amounts for personal consumption). Amendment 5 also created a definition of bait that was exempt from the head and tails attached rule. However, the wording of the bait rule could potentially allow reef fish to be cut up for bait. Such fish would then not be identifiable by enforcement agents trying to enforce size limit, bag limit and closed season regulations. In addition, under the status quo whole reef fish can be used for bait provided they meet size limit and bag limit regulations. Since these fish are not returned to shore, they are not counted in the commercial fishery, and may not be counted in the recreational fishery other than based on an interviewed fisherman's recollection of what fish he may have caught and used for bait. This proposed alternative clarifies that reef fish cannot be used for bait, except for sand perch and dwarf sand perch, and in the case of fish parts that are purchased ashore and used in the crustacean trap fisheries. The cumulative impacts of this measure along with previous related measures are to reduce unreported fishing mortality on reef fish, improve enforceability, and improve data collection of reef fish harvest.

Vessel Monitoring System

The proposed alternative continues the process of establishing VMS in the reef fish fishery that began in 1997 when the Council received a presentation from NOAA Enforcement of a VMS system in use off Hawaii to monitor the tuna and swordfish longline fishery, which are prohibited from fishing within 100 miles of the major Hawaiian islands[9]. A VMS system for the fish trap fishery in the Gulf of Mexico was considered in Amendment 16A in 1998, but because NMFS was still evaluating different systems, the amendment instead established a system of mandatory trip initiation and trip termination reports for fish trap vessels, and directed NMFS to establish a system design, implementation schedule, and protocol for VMS. The resulting protocol is established and implemented through this amendment (Appendix E). It is applied to all commercial reef fish vessels, except fish trap vessels, because many area fishing restrictions have been implemented that apply to all reef fish vessels, e.g., Florida Middle Grounds Habitat Area of Particular Concern (HAPC) and West and East Flower Garden Banks HAPC (Corals and Coral Reefs FMP in 1984), Tortugas South and Tortugas North Ecological Reserves (Reef Fish Amendment 19, also known as the Generic Amendment Addressing the Establishment of the Tortugas Marine Reserves, in 2001), and Madison-Swanson and Steamboat Lumps marine reserves (regulatory amendment in 2000, extended by Amendment 21 in 2004). This is in addition to the stressed area boundary (implemented in the original Reef Fish FMP in 1984 and expanded under Amendment 1 in 1990), and the longline/buoy gear boundary (Amendment 1). Generic Amendment 1 for Addressing Essential Fish Habitat (EFH) Requirements (submitted in 1998 and partially approved in 1999), the EFH Environmental Impact Statement (submitted in 2004) and EFH Generic Amendment 3 (submitted in 2005), further defined areas of EFH and HAPC, and proposed additional area fishing restrictions on several areas including McGrail Bank, Pulley Ridge, and Stetson Bank. Fish trap vessels were excluded from the VMS requirement because they will be phased out shortly after this VMS program is implemented, and are currently under the alternative trip initiation and termination reporting requirements.

The cumulative effects of the VMS requirement along with previously implemented fish trap vessel reporting requirements, and the area restrictions described above, are to improve the ability of NOAA enforcement to enforce offshore area restrictions, although at increased costs to vessel owners for the purchase, installation and operation of the VMS units. In addition, the VMS protocol contains a requirement that vessels declare their fishing activity and gear type. For dual-permitted vessels (those with both a commercial and charter/headboat reef fish permit), this declaration will make it easier to determine whether a vessel is operating as a commercial or charter vessel for purposes of enforcing restrictions on sale of recreationally caught fish.

The VMS requirement creates a number of reasonably foreseeable future impacts.

- The EFH amendments and the Fishery Ecosystem Plan (currently under development) may lead to recommendations for additional area fishing restrictions in the future. Since VMS improves the enforceability of area restrictions, these additional areas become more likely to be established.

[9] Gulf Fishery News, Vol. 15, No. 5, September-October 1997

- A VMS is considered a basic part of establishing an electronic logbook reporting system. It is reasonable to expect that electronic logbooks will eventually be implemented on vessels equipped with VMS. Electronic logbooks will improve data collection, which will improve the accuracy of stock assessments and lead to better management of fishery resources.
- Dual-permitted vessels operating under charter will be at an economic disadvantage to vessels that have only a charter/headboat permit since they will incur the additional costs of VMS. In addition, many of the area restrictions are applicable to recreational fishing as well as commercial fishing. Therefore, it is reasonable to foresee that VMS requirements will be extended to all vessels with reef fish charter/headboat permits in order to further improve enforcement of area restrictions and to establish equitable treatment of all charter vessels.

Modifications to the TAC Framework Procedure

The original TAC framework procedure was established in Amendment 1 (1990). A single editorial changed was included in the version of the framework procedure included in Amendment 3 (1991) by replacing SSBR with SPR. The framework procedure was subsequently updated in Amendments 4, 11, 14.

Amendment 4 (1992) changed the date for receipt of stock assessments from April to August, and established a procedure for the NMFS Regional Administrator to follow when deciding not to publish proposed rules.

Amendment 11 (1996) made several minor editorial revisions to the procedure to update it to current terminology.

Amendment 14 (1997) added a provision to allow the NMFS Regional Administrator, through notice action, to reopen a commercial or recreational season that had been prematurely closed.

This amendment makes additional minor editorial revisions and replaces the former stock assessment process that used the Reef Fish Stock Assessment Panel with the SEDAR process.

The cumulative impacts of these changes is to create an administrative environment that allows for the most accurate and timely preparation of stock assessments possible. Future changes to the detailed functioning of the SEDAR process will be handled through a SEDAR Steering Committee and will not require changes to the TAC framework procedure. However, it is reasonably foreseeable that minor changes will be periodically needed again in the future to keep the terminology and processes up to date as the administrative environment evolves.

Bycatch and Bycatch Mortality Mitigation Measures (for sea turtles and smalltooth sawfish)

The proposed alternatives implement the requirements of the NMFS biological opinion prepared under Section 7 of the Endangered Species Act for Amendment 23 on the effects

of reef fishing activity on endangered and threatened species. The proposed alternatives complement rules implemented by the NMFS HMS Division in 2003 and 2004 to reduce sea turtle bycatch and bycatch mortality in the HMS bottom longline and Atlantic pelagic longline fisheries, and together are expected to reduce mortality of endangered marine species. The requirements to have certain types of release gear on board will incur additional costs to vessel owners, as discussed in the RIR. However, some of the release gear consists of common tools that may already be on board vessels, reducing costs. In addition, the distinction between vessels with a freeboard height of greater than 4 feet vs. 4 feet or less allows vessels with decks closer to the waterline to carry fewer devices, again lowering costs. The alternative dealing with release of smalltooth sawfish has no gear requirements, only a safe release protocol to be followed, and therefore incurs no cost to the fishermen.

The alternatives in this section only address bycatch and bycatch mortality of endangered species. Bycatch and bycatch mortality on reef fish resources is addressed in other amendments. Amendment 18B (under development) addresses bycatch and bycatch reduction in the directed reef fish fishery. Amendment 22 (implemented in August 2005) establishes bycatch reporting methodologies for the reef fish fishery. Amendment 26 (under development) will establish a red snapper IFQ system that is expected to have beneficial impacts on reducing bycatch and bycatch mortality in the directed red snapper fishery by eliminating the "derby" effect and allowing fishermen to fish in a manner that allows increased survival of released fish and better avoidance of undersized red snapper. Combined Reef Fish Amendment 27/Shrimp Amendment 14 (under development) will address finfish bycatch (particularly of red snapper) in the shrimp trawl fishery.

The cumulative effect of the proposed alternatives in this Reef Fish amendment along with the recently implemented protocols for the HMS fisheries is to reduce release mortality of endangered species and to help ensure their continued existence and recovery. No future actions are needed in the Reef Fish FMP to comply with the Amendment 23 biological opinion. However, a Section 7 consultation is routinely requested by the Council when submitting plan amendments. If a future biological opinion finds that the reef fish fishery is still having unacceptable impacts on endangered species, further actions may be needed at that time to reduce bycatch and bycatch mortality. This amendment in combination with the other bycatch related actions recently implemented (Amendment 22) or under development Amendments 18A, 26, and Reef Fish 27/Shrimp 14) will help to provide an overall reduction in bycatch and bycatch mortality, providing increased survival of endangered species, reduced mortality on exploited species, and increased efficiency in utilization of the reef fish resources.

8.9 Unavoidable Adverse Effects

Requiring reef fish fishermen to have VMS and sea turtle release gear onboard their vessels has costs associated with them. This is an unavoidable adverse effect of these measures, but such effects are expected to be offset by the long-term socioeconomic and biological benefits associated with better enforcement and increased turtle populations, respectively.

Relationship between Short-Term Uses and Long-Term Productivity

While the short-term costs for these fisheries may be affected by costs associated with VMS and turtle release gear, long-term productivity should benefit. Better enforcement of existing closed areas is an integral part of the overall management strategy to achieve OY and thus maximize the overall benefits to the Nation of the reef fish resources.

8.10 Irreversible and Irretrievable Commitments of Resources

There would be irreversible and irretrievable commitments of resources due to the vessel monitoring system and turtle release gear requirements considered in this amendment. With respect to the VMS requirements, equipment and communication costs borne by reef fish vessel owners would be irreversible once the equipment has been purchased and installed. The first-year total cost per vessel ranges from $2,032 to $3,651. In subsequent years, each vessel owner would incur communication costs ranging from $432 to $751. The compliance with sea turtle and smalltooth sawfish release gear requirements would result in additional irretrievable resource commitments ranging from $267 to $459 per vessel. There are no irreversible commitments of resources associated with the other provisions considered in this amendment.

8.11 Any Other Disclosures

No additional disclosures are known to be needed or discussed.

9 FINDING OF NO SIGNIFICANT ENVIRONMENTAL IMPACT

The Gulf of Mexico Fishery Management Council (Council) is submitting the attached Amendment 18-A to the Fishery Management Plan for the Reef Fish Fishery of the Gulf of Mexico, U.S. Waters for Secretarial review under procedures of the M-SFCMA. Amendment 18-A was developed as an integrated document that includes an EA, RIR, and RFA. Copies of the Amendment are available from the Council at the following address:

Gulf of Mexico Fishery Management Council
Airport Executive Center
2203 North Lois Avenue
Suite 1100
Tampa, Florida 33607-2370

Through this amendment, the Council proposes to:

improve the enforceability of the prohibition on the sale of recreationally caught reef fish, eliminate crew size-related discrepancies between USCG requirements and existing fishing regulations, and, increase the survival rate of incidentally caught sea turtles and smalltooth sawfish, update the TAC framework procedure and improve the enforcement of season closures and off-shore restricted fishing areas.

Summary of Effects

Simultaneous Commercial and Recreational Harvest on a Vessel:

Action 1 prohibits vessels from retaining reef fish caught under the recreational size and possession limits when commercial reef fish harvests are onboard the vessel. This measure does not require vessel owners to divest of either their commercial or recreational reef fish permit. As discussed in Sections 4.0, 5.5 and 8.0, a limited number of vessel owners would be impacted because they would be required to adjust their fishing strategies and, as a result, their harvesting costs may rise slightly. However, the magnitude of the economic impacts on the fleet is expected to be negligible. For reef fish species with TACs and allocations, this measure may help in accurately assigning landings to either the commercial or recreational sector. This measure removes the uncertainty regarding the reef fish sector in which vessels are engaged in at a specific time. As such, it is expected to enable enforcement officials to more easily determine if a vessel is in compliance with the regulations.

Maximum Crew Size on a Charter Vessel When Fishing Commercially:

Action 2 adjusts the number of crew members allowed onboard when a dually permitted vessel is taking a commercial reef fish trip. The adjustment, which is based on the vessel's trip length and on minimum manning requirements indicated on its USCG Certificate of Inspection (COI), eliminates inconsistencies between USCG and fishing regulations. The USCG regulations currently require a minimum of four persons (two captains and two

crew) when a vessel with a COI is out over 12 hours, while the fishing regulations currently limit the maximum number of persons to three when a vessel has both a commercial and charter vessel permit when it is fishing commercially. This limitation only applies to vessels with both commercial and charter permits. Since charter vessels that carry more than six passengers must have a COI in order to carry passengers for hire, this creates a discrepancy in the regulations for dual-permitted vessels. This action eliminates the inconsistency between existing USCG and fishing regulations. As discussed in Sections 4.0, 5.5 and 8.0., aside from the inherent benefits of consistent regulation across entities/agencies, this action is expected to have a very limited overall impact. Given the average length of trips taken in the commercial reef fish fishery, it appears that it would allow dually permitted vessels to take commercial trips that are closer to an average trip. Allowing the vessels to increase their crew size will likely increase crew costs as well as other trip expenses. If those costs are offset by additional revenues generated during the trip, the vessel operator may determine that adding a crewmember to increase the duration of the trip makes economic sense. Overall, impacts are expected to be small given the number of vessels that would be utilizing this amendment in the future and the number of trips that would be impacted.

Use of Reef Fish for Bait:

Action 3 prohibits reef fish species (except sand perch and dwarf sand perch) from being used as bait by any gear type in the commercial and recreational fisheries. Participants in the fish trap fishery, which will be phased out by February 7, 2007, constitute the only subgroup exempted from this ban. Fishermen would no longer be allowed to use whole reef fish as bait or purchase reef fish from shore based sellers to use as cut-bait. Persons that purchased reef fish (other than sand perch and dwarf sand perch) from shore based would be required to purchase other forms of bait. Sellers of reef fish for bait would need to find other markets for those fish or stop buying them from harvesters. Seafood processors will need to find alternative uses for their reef fish carcasses or be forced to dispose of them. It is possible that they would be negatively impacted because the market for reef fish carcasses and heads, outside of the bait market, is probably limited. Developing markets to generate the revenue that was obtained from bait sales may be difficult. If they are forced to dispose of those carcasses, their costs associated with waste management may also increase. As discussed in Sections 4.0, 5.5 and 8.0, limiting reef fish bait markets is expected to have a negative impact on individual operations, but overall impacts are not expected to be substantial because both commercial and recreational harvesters will seek out the next best bait alternative. They may substitute other species they catch themselves or purchase other types of bait from the market. Substitutes will be selected based on their availability, cost, and effectiveness. Individuals that supply the bait that replaces reef fish will likely benefit from this action. Those benefits will to some extent offset the losses that limiting reef fish as a source of bait had on other firms.

Vessel Monitoring System:

Action 4 requires VMS units onboard all commercially permitted reef fish vessels, including charter vessels with commercial reef fish permits operating in the Gulf of Mexico. In 2004, there were 1,145 valid commercial reef fish permits. It is estimated that

24 vessels included in this category already have a VMS unit onboard due to their participation in highly migratory species (HMS) fisheries. Fish trap vessels, which will be phased out in February 2007 are exempted from VMS requirements. In 2004, 42 vessels were reported to use fish traps in the reef fish fishery. Thus, a total of 1,079 vessels will be impacted by this action. For these vessels, first-year costs would range from $2,192,528 to $3,939,429. Currently, HMS participants are not required to have their VMS units on at all time. Thus, yearly communication costs for the HMS participants are added to this range to obtain the total cost for the entire commercial reef fish fleet. Additional communication costs that will be incurred by HMS participants in the first year vary from $10,368 to $18,024. In the aggregate, first-year costs under this action range from $2,202,896 to $3,957,453. Installing a VMS system is not expected to allow individual vessels to generate more income. Because revenues are not expected to increase to offset costs, producer surplus and net benefits will be reduced by approximately the amount of the program's costs. Marginal operations may not be able to absorb the additional costs and may leave the fishery. Additionally, persons holding on to commercial reef fish permits for speculative purposes may not want to incur the added expenses associated with VMS units and may elect to let their permits expire.

Modifications to the TAC Framework Procedure

Action 5 adopts rewording changes to the framework procedure and incorporates the SEDAR process into the TAC framework procedure. As discussed in Sections 4.0, 5.5 and 8.0, this action is not expected to have adverse economic impacts. Benefits will depend on the magnitude and direction of TAC adjustments resulting from the improved accuracy of stock assessments. For increases in TAC, short-term economic benefits will be derived from greater reef fish harvests. Improved stock assessments resulting in decreases in TAC will bring longer-term benefits by allowing stocks to recover faster. Potential benefits are expected to be delayed by the added time required for the completion of the SEDAR process.

Bycatch Mortality Mitigation Measures

Action 6 requires vessels with commercial or for-hire reef fish vessel permits to comply with sea turtle and smalltooth sawfish release protocols and possess a specific set of release gear. Release gear and sea turtle and smalltooth sawfish release documentation required onboard permitted reef fish vessels are discussed in Sections 4.0, 5.5 and 8.0. The action also provides guidelines for the proper care for incidentally caught sawfish. Although the continued operation of the Gulf of Mexico reef fish fishery is not likely to jeopardize the continued existence of endangered sea turtles and the smalltooth sawfish, incidental take of these species in this fishery are known to occur. This action would increase the likelihood of successfully releasing incidentally caught sea turtles and smalltooth sawfish. Per vessel release gear costs are estimated between $267 and $459. Thus, aggregate adverse economic impacts of this measure range from $662,694 to $1,139,238. Requiring the purchase of release gear would have a positive impact due to benefits derived from foreseeable increases in the survival rate of inadvertently caught sea turtles and smalltooth sawfish. This action is also expected to have positive indirect impacts. Indirect benefits would result from the increased revenues collected by release gear manufacturers and retailers.

Conclusion

The Council on Environmental Quality regulations implementing the NEPA and NOAA's Administrative Order (NAO) 216-6 require that decision makers take into account both context and intensity when evaluating the significance of impacts resulting from a major Federal action (40 CFR 1508.27; NAO 216-6, Section 6.01(b)). Evaluating significance with respect to context requires consideration of the local, regional, national, and/or global impacts of the action. Intensity refers to the severity of the impact, and is to be evaluated using specific criteria outlined at 40 CFR 1508.27(b) and at NAO 216-6, Sections 6.01(b) and 6.02. The key findings of the Council related to the significance of the impacts associated with the proposed actions follow. The findings are organized under the intensity criteria and include a consideration of the context in which the impacts occur. A more thorough review of any impacts that would include these significance factors are discussed under the alternatives for each action in Sections 4.0 and 5.0 herein.

(1) Beneficial and Adverse Impacts: Potential beneficial and adverse impacts of the proposed action are detailed in Section Sections 4.0, 5.0, and 8.0. These impacts are not expected to be significant. Action 1, which removes the uncertainty regarding the fishery in which vessels are engaged in at a specific time, is expected to have beneficial impacts on enforcement by enabling officials to more easily ascertain if a vessel is in compliance with the regulations. A limited number of dually permitted vessel owners would be impacted because they would be required to change their fishing strategies and, as a result their harvesting costs may rise slightly. However, the magnitude of the economic impacts on the fleet is expected to be negligible.

The principal benefit from Action 2 is to eliminate the discrepancy between USCG and fishing regulations. In addition, this action affords dually permitted vessels the flexibility to adjust their crew size depending on the nature (commercial or charter) and expected duration of the trip they intend to take. Action 2 is not expected to result in adverse impacts.

Action 3 bans the use of reef fish species, except sand perch and dwarf sand perch, from being used as bait. Participants in the fish trap fishery are exempted from this ban. This action is expected to have a positive impact on reef fish stocks because it is expected to limit the targeting of small reef fish. This action is also expected to positively impact enforcement by making it easier for officials because they would no longer have to determine whether the reef fish used as bait was purchased onshore or caught at sea. Fish trap fishers, the only group exempted from the prohibition, are expected to benefit from the price decrease that would result from an excess supply of reef fish carcasses and heads due to the ban. Suppliers of substitute baits are also expected to benefit from the ban. This action is also expected to adversely impact sellers of reef fish for bait. They would have to adjust their operations by either finding other markets or stopping the purchase of reef fish for bait. Processors would also be negatively impacted if they can not market reef fish heads and carcasses generated by their operations.

Requesting VMS units onboard all commercially permitted reef fish vessels in the Gulf of Mexico (Action 4) would result in out-of pocket expenses of $2,032 to $3,651 per vessel. Vessels participating in HMS fisheries already have VMS units. Thus, communication

costs, which range from $432 to $751 per vessel, would constitute their only additional expenditures. In the aggregate, first-year costs under this action range from $2,202,896 to $3,957,453.

The modification of the TAC framework procedure considered in Action 5 is expected to have positive impacts on reef fish stocks due to the foreseeable improvement in stock assessment quality that would result from incorporating the SEDAR process. These benefits would be enjoyed by all participants in the reef fish fishery. Framework adjustments considered in this amendment are not expected to have any adverse impacts.

Action 6 implements sea turtle and smalltooth sawfish release protocols. Along with NMFS-supplied documentation on the proper use of release gear, this action requires participants in the reef fish fishery to possess a set of release gear, including, dipnets, dehookers, mouth gags, and line cutters. Compliance cost estimates range from $267 to $459 per vessel. For the 2,482 vessels affected by this action, aggregate costs vary from $662,694 to $1,139,238. Benefits of this action are due to the increase in the survival rate of incidentally caught sea turtles and smalltooth sawfish. Apart from the compliance costs borne by participants in the reef fish fishery, this action is not associated with adverse

(2) Public Safety: None of the measures proposed in this amendment is expected to adversely affect public safety. Furthermore, none of the actions considered in this amendment would adversely impact public health. In fact, Actions 2 and 4 are expected to improve crew members' safety at sea. Actions 2 and 4 allow to increase the number of crew members onboard dually permitted reef fish vessels taking commercial trips of more than 12 hours and require vessel monitoring units, respectively. The ability to increase crew size provides valuable additional assistance in case of emergency. VMS monitoring has a positive impact on the effectiveness and timeliness of at-sea rescue operations.

(3) Damage to ocean and coastal habitats or EFH and consideration of unique geographic areas: Proposed actions in this amendment would not significantly impact the physical environment because neither one would affect the way the fishery is currently conducted. The Council and NOAA Fisheries have determined that proposed actions are consistent with the enforceable provisions of the Coastal Zone Management programs of the affected states. There would be no effect on park lands, prime farmlands, wetlands, or wild and scenic rivers because those resources are onshore or near shore, not in the EEZ. Reef fish fishing does occur in or adjacent to sensitive areas such as HAPCs, marine sanctuaries, and marine reserves. However, most reef fish are caught with hook-and-line gear, and longline gear. Longlines and buoy gear are prohibited in these areas and in near shore habitats (inside of 50 fathoms west of Cape San Blas, Florida, and inside of 20 fathoms east of Cape San Blas, Florida). Hook-and-line gear could become entangled within those structures; however, such impacts to hard-bottom habitat are expected to be minimal.

The area affected by the proposed action includes areas that have been identified as EFH for several other managed species. However, the proposed action in the context of the fishery as a whole is not anticipated to have a significant adverse impact on EFH because it would not alter the conduct of the fishery.

(4) Highly Controversial effects on Human Environment: The proposed actions are not considered to be highly controversial. Public comment received during the scoping process has been in support of the proposed actions. The Council has provided for input by the public through public hearings, committee and Council meetings that are open to the public, and through meetings with the Reef Fish Advisory Panel.

(5) Uncertain, Unknown, or Unique Risks: There are no highly uncertain, unique or unknown risks associated with the actions proposed in this amendment.

(6) *Precedence*: Prohibiting vessels from retaining reef fish caught under the recreational size and possession limits when commercial reef fish harvests are onboard the vessel (Action 1) constitutes a precedence setting measure. Such a prohibition does not exit in any other fishery managed by the Council.

None of the remaining actions considered in this amendment would establish new precedence that would represent a decision in principle about a future consideration. Adjustments in the number of crew members allowed onboard when a dually permitted vessel is taking a commercial reef fish trip proposed in Action 2 constitute an administrative measure aimed at harmonizing USCG and fishing regulations. Usage restrictions relative to a specific species or group of species such as the ban on reef fish species proposed in Action 3 are common practice in fishery management. VMS units (Action 4) and sea turtle and smalltooth sawfish release protocols (Action 6) are already required in other fisheries such as the highly migratory species (HMS) fisheries of the Gulf of Mexico. Modifications to the TAC framework procedure proposed in Action 5 do not constitute the first changes to the framework.

(7) Jeopardy to the sustainability of target and non-target species, including endangered species: The proposed measures are not expected to jeopardize the sustainability of target or non-target species. Harvests of target species are primarily controlled by hard quotas, minimum size limits, bag limits, and trip limits, and it is unlikely that additional targeting of other species can be accomplished economically. Given that 70% of the harvest is composed of fish stocks that are managed under hard TACs, there would probably not be an expansion of effort that would increase the opportunity for additional fishing mortality on target or non-target species. Additionally, incidental take is usually made up of managed and non-managed species that are not known to be in jeopardy from fishing, e.g., grunts and porgies. Action 6, which requires participants in the reef fish fishery to comply with sea turtle and smalltooth sawfish release protocols, is expected to increase the survival rate of incidentally sea turtles and smalltooth sawfish. A formal Section 7 consultation for the reef fish fishery in the Gulf is currently under development. The Sustainable Fisheries Division of the Southeast Regional Office of the NMFS will confer with the Protected Resource Division to determine if a re-initiation of consultation is necessary for this amendment. The reef fish fishery and proposed actions in this amendment are not expected to jeopardize the continued existence of any endangered or threatened species that may be encountered in this fishery.

(8) Impacts on biodiversity and ecosystem function: Recent advances in ecosystem modeling may provide better insight into the potential impacts of management regulations on biodiversity and ecosystem functions in the future. At present, however, there is

insufficient data to render decisions regarding such impacts to reef fish, the species to which they interact, or their ecosystems in the Gulf. Biodiversity and the functional aspects of ecosystems on which reef fish rely change constantly by area and time, with or without the influences of fishing. On the other hand, fishing and actions to regulate fishing may or may not cause impacts to biodiversity and the function of ecosystems. The proposed actions would not cause changes to current fishing effort, methods, gear, etc. Consequently, no impacts to biodiversity or the function of ecosystems are expected to occur.

(9) Cumulative impacts to target and non-target species and the environment: The potential impacts of the proposed action are discussed in Section 7.2, and are expected to be positive, but not significant either individually or when combined with past or reasonably foreseeable future actions. The cumulative impacts of this action and previous actions to manage reef fish stocks have shown positive impacts as evidenced by improved stock conditions for red grouper, gag, greater amberjack, red snapper, and other species.

(*10) Historical/Cultural Impacts:* No known sites included in the National Register of Historic Places have been identified in the action area. The proposed actions will not result in any significant impacts on scientific, cultural, or historical resources such as the Monitor National Marine Sanctuary etc. (see Damage to ocean and coastal habitats or EFH and consideration of unique geographic areas [#3]).

(11) Endangered Resources: A formal Section 7 consultation for the reef fish fishery in the Gulf is currently under development. The Sustainable Fisheries Division of the Southeast Regional Office of the NMFS will confer with the Protected Resource Division to determine of a re-initiation of consultation is necessary for this amendment. However, the reef fish fishery and proposed actions in this amendment are not expected to jeopardize the continued existence of any endangered or threatened species that may be encountered in this fishery.

(12) Interaction with Existing Laws for Protection of the Environment: The proposed actions will not threaten or violate federal, state, or local laws or regulations imposed for the protection of the environment. These include the ESA, CZMA, and other applicable laws described in Section 10.0.

> Based on the analyses and discussions in this document, including its EA, and in the other referenced documents and sections herein, I have determined that the proposed actions as described for the commercial shrimp fishery in the Gulf of Mexico would not significantly affect the quality of the human environment. Accordingly, preparation of a supplemental environmental impact statement is not required by Section 102(2)(c) of NEPA, by the CEQ regulations implementing NEPA, or by NAO 216-6.

Approved: _____ _____

Assistant Administrator for Fisheries Date

10 OTHER APPLICABLE LAW

The MSFCMA (16 U.S.C. 1801 et seq.) provides the authority for U.S. fishery management. However, fishery management decision-making is also affected by a number of other federal statutes designed to protect the biological and human components of U.S. fisheries, as well as the ecosystems within which those fisheries are conducted. Amendment 17/25 is an integrated document that combines analyses necessary for the National Environmental Policy Act (NEPA), the Regulatory Flexibility Act (RFA), and Executive Order 12866: Regulatory Planning and Review.

NEPA requires all federal actions such as the formulation of fishery management plans to be evaluated for potential environmental and human environment impacts, and for these impacts to be assessed and reported to the public. For this amendment, the Council conducted an Environmental Assessment (see Section 9), which is a concise statement that determines whether this amendment will have a significant impact on the environment. Because the Council found that there was no potential significant impact, a "Finding of No Significant Impact," or FONSI, will be issued.

The RFA requires federal agencies to assess the impacts of regulatory actions implemented through notice and comment rulemaking procedures on small businesses, small organizations, and small governmental entities, with the goal of minimizing adverse impacts of burdensome regulations and record-keeping requirements on those entities. These analyses, which describe the type and number of small businesses affected, are provided in Section 7 and will be published in the *Federal Register* in full or in summary for public comment and submitted to the chief counsel for advocacy of the Small Business Administration.

To comply with E.O. 12866, NMFS prepares a Regulatory Impact Review (RIR) for all fishery regulatory actions that either implement a new fishery management plan or significantly amend an existing plan. RIRs provide a comprehensive analysis of the costs and benefits to society associated with preferred alternatives, the problems and policy objectives prompting the regulatory proposals, and the major alternatives that could be used to solve the problems. These analyses can be found in Section 6 of this amendment.

Other major laws affecting federal fishery management decision making are summarized below.

10.1 Administrative Procedures Act

All federal rulemaking is governed under the provisions of the Administrative Procedure Act (APA) (5 U.S.C. Subchapter II), which establishes a "notice and comment" procedure to enable public participation in the rulemaking process. Under the APA, NMFS is required to publish notification of proposed rules in the *Federal Register* and to solicit, consider, and respond to public comment on those rules before they are finalized. The APA also establishes a 30-day wait period from the time a final rule is published until it takes effect.

10.2 Coastal Zone Management Act

Section 307©)(1) of the Federal Coastal Zone Management Act of 1972 encourages state and federal cooperation in the development of plans that manage the use of natural coastal habitats, as well as the fish and wildlife those habitats support. When proposing an action determined to directly affect coastal resources managed under an approved coastal zone management program, NMFS is required to provide the relevant state agency with a determination that the proposed action is consistent with the enforceable policies of the approved program to the maximum extent practicable at least 90 days before taking final action.

The preferred alternatives governing simultaneous commercial and recreational harvest on a vessel, maximum crew size on a charter vessel when fishing commercially, use of reef fish for bait, vessel monitoring systems, modifications to the TAC framework procedure, and sea turtle/smalltooth sawfish bycatch mortality reduction will make no changes in federal regulations that are inconsistent with the objectives of either existing or proposed state regulations. While it is the goal of the Council to have complementary management measures with those of the states, federal and state administrative procedures vary, and regulatory changes are unlikely to be fully instituted at the same time.

This plan amendment is consistent with the Coastal Zone Management programs of the states of Alabama, Florida, Louisiana, Mississippi, and Texas to the maximum extent possible. This determination has been submitted to the responsible state agencies under Section 307 of the Coastal Zone Management Act administering approved Coastal Zone Management programs in the states of Alabama, Florida, Mississippi, Louisiana, and Texas.

10.3 Data Quality Act

The Data Quality Act (DQA) (Public Law 106-443), which took effect October 1, 2002, requires the government for the first time to set standards for the quality of scientific information and statistics used and disseminated by federal agencies. Information includes any communication or representation of knowledge such as facts or data, in any medium or form, including textual, numerical, cartographic, narrative, or audiovisual forms (includes web dissemination, but not hyperlinks to information that others disseminate; does not include clearly stated opinions).

Specifically, the Act directs the Office of Management and Budget (OMB) to issue government wide guidelines that "provide policy and procedural guidance to federal agencies for ensuring and maximizing the quality, objectivity, utility, and integrity of information disseminated by federal agencies." Such guidelines have been issued, directing all federal agencies to create and issue agency-specific standards to 1) ensure Information Quality and develop a pre-dissemination review process; 2) establish administrative mechanisms allowing affected persons to seek and obtain correction of information; and 3) report periodically to OMB on the number and nature of complaints received.

Scientific information and data are key components of FMPs and amendments and the use of best available information is the second national standard under the MSFCMA. To be consistent with the Act, FMPs and amendments must be based on the best information available, properly reference all supporting materials and data, and should be reviewed by technically competent individuals. With respect to original data generated for FMPs and amendments, it is important to ensure that the data are collected according to documented procedures or in a manner that reflects standard practices accepted by the relevant scientific and technical communities. Data should also undergo quality control prior to being used by the agency and a pre-dissemination review performed. Note that the pre-dissemination review was preformed, is on the record, and available from the agency.

10.4 Endangered Species Act

The Endangered Species Act (ESA) of 1973 (16 U.S.C. Section 1531 et seq.) requires that federal agencies use their authorities to conserve endangered and threatened species and that they ensure actions they authorize, fund, or carry out are not likely to harm the continued existence of those species or the habitat designated to be critical to their survival and recovery. The ESA requires NMFS, when proposing a fishery action that "may affect" critical habitat or endangered or threatened species, to consult with the appropriate administrative agency (itself for most marine species, the U.S. Fish and Wildlife Service for all remaining species) to determine the potential impacts of the preferred alternatives. Consultations are concluded informally when proposed actions may affect but are not likely to adversely affect" endangered or threatened species or designated critical habitat. Formal consultations, including a biological opinion, are required when proposed actions may affect and are "likely to adversely affect" endangered or threatened species or adversely modify designated critical habitat. If jeopardy or adverse modification is found, the consulting agency is required to suggest reasonable and prudent alternatives.

For the Reef Fish FMP, a February 15, 2005, biological opinion was conducted for proposed Amendment 23. It evaluated the effects of reef fish fishing activities in the Gulf of Mexico EEZ and found that were not likely to jeopardize the continued existence of threatened or endangered species. The opinion identified two reasonable and prudent measures:

1) NMFS must ensure that any caught sea turtle or small tooth sawfish is handled in such a way as to minimize stress to the animal and increase its survival rate.
2) NMFS must ensure that monitoring and reporting of any sea turtles or smalltooth sawfish encountered: a) detects any adverse effects resulting from the GOM reef fish fishery; b) assesses the actual level of incidental take in comparison with the anticipated incidental take documented in that opinion; c) detects when the level of anticipated take is exceeded; and d) collects improved data from individual encounters.

This amendment includes alternatives to minimize any stress to endangered species incidentally caught in the fishery by requiring that vessels possess certain types of bycatch release gear along with written documentation on how to release endangered species.

NMFS continues to improve data collection procedures needed for monitoring and reporting any taking of endangered species.

Informal Section 7 consultations have been conducted on the original Reef Fish FMP and for Amendments 1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 13, 14, 15, 16A, 16B, 17, 19, 20, 21, and 24. They have also been conducted for the FMP's various regulatory amendments, including 21 regulatory amendments submitted from 1990 to 2001, and one Secretarial plan amendment. These consultations all concluded that the fishery management actions were either not likely to adversely affect any threatened or endangered species under NMFS jurisdiction or had no effect. They also determined that FMP or amendment actions were not expected to change the prosecution of this fishery in a manner that will significantly alter the potential impacts to endangered and threatened species and their habitats previously considered. Amendments 10, 18, and 22 are not included in the preceding list. A Section 7 consultation was initiated for Amendment 10, but that Amendment was not submitted to NMFS.

Reinitiation of formal consultation is required when discretionary involvement or control over the action has been retained (or is authorized by law) and: (1) the amount or extent of the incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not previously considered; or (4) if a new species is listed or critical habitat designated that may be affected by the identified action. Reinitation of section 7 consultation on Amendment 18a is not anticipated.

10.5 Executive Orders

9.5.1 E.O. 13132: Federalism

The Executive Order on Federalism requires agencies in formulating and implementing policies that have federalism implications, to be guided by the fundamental Federalism principles. The Order serves to guarantee the division of governmental responsibilities between the national government and the States that was intended by the framers of the Constitution. Federalism is rooted in the belief that issues that are not national in scope or significance are most appropriately addressed by the level of government closest to the people. This Order is relevant to FMPs and amendment given the overlapping authorities of NMFS, the States, and local authorities in managing coastal resources, including fisheries, an the need for a clear definition of responsibilities. It is important to recognize those components of the ecosystem over which fishery managers have no direct control and to develop strategies to address them in conjunction with appropriate State, Tribes, local entities, and international treaties.

No Federalism issues have been identified relative to the preferred alternatives in this amendment. Therefore, preparation of a Federalism assessment under Executive Order 13132 is not necessary.

9.5.2 E.O. 12630: Takings

The Executive Order on Government Actions and Interference with Constitutionally Protected Property Rights, which became effective March 18, 1988, requires that each federal agency prepare a Takings Implication Assessment for any of its administrative, regulatory, and legislative policies and actions that affect, or may affect, the use of any real or personal property. Clearance of a regulatory action must include a takings statement and, if appropriate, a Takings Implication Assessment. Management measures limiting fishing seasons, areas, quotas, fish size limits, and bag limits do not appear to have any taking implications. There is a takings implication if a fishing gear is prohibited, because fishermen who desire to leave a fishery might be unable to sell their investment, or if a fisherman is prohibited by federal action from exercising property rights granted by a state.

10.6 Marine Mammal Protection Act

The MMPA established a moratorium, with certain exceptions, on the taking of marine mammals in U.S. waters and by U.S. citizens on the high seas, and on the importing of marine mammals and marine mammal products into the United States. Under the MMPA; the Secretary of Commerce (authority delegated to NMFS) is responsible for the conservation and management of cetaceans and pinnipeds (other than walruses). The Secretary of the Interior is responsible for walruses, sea and marine otters, polar bears, manatees, and dugongs.

Part of the responsibility that NMFS has under the MMPA involves monitoring populations of marine mammals to make sure that they stay at optimum levels. If a population falls below its optimum level, it is designated as “depleted,” and a conservation plan is developed to guide research and management actions to restore the population to healthy levels.

In 1994, Congress amended the MMPA, to govern the taking of marine mammals incidental to commercial fishing operations. This amendment required the preparation of stock assessments for all marine mammal stocks in waters under U.S. jurisdiction, development and implementation of take-reduction plans for stocks that may be reduced or are being maintained below their optimum sustainable population levels due to interactions with commercial fisheries, and studies of pinniped-fishery interactions.

The MMPA requires commercial fisheries to be placed in one of three categories, based on the relative frequency of incidental serious injuries and mortalities of marine mammals in each fishery. Category I designates fisheries with frequent serious injuries and mortalities incidental to commercial fishing; Category II designates fisheries with occasional serious injuries and mortalities; Category III designates fisheries with a remote likelihood or no known serious injuries or mortalities. The GOM reef fish fishery (all gear types) is listed in Category III as there have been no documented interactions between this fishery and marine mammals (68 FR 41725). Because this amendment does not change current fishing practices, the preferred alternatives should have no effect on marine mammal populations.

10.7 Paperwork Reduction Act

The Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.) regulates the collection of public information by federal agencies to ensure that the public is not overburdened with information requests, that the federal government's information collection procedures are efficient, and that federal agencies adhere to appropriate rules governing the confidentiality of such information. The PRA requires NMFS to obtain approval from the Office of Management and Budget before requesting most types of fishery information from the public.

The VMS requirements in this amendment establish an electronic data collection system. Additional data collection requirements will be associated with registering the VMS unit with NMFS and/or arranging installation of a VMS unit on a vessel. If data collections are proposed in Amendment 18A, NMFS will submit a request for approval of the data collection to the Office of Management and Budget for review under the Paperwork Reduction Act.

10.8 Small Business Act

The Small Business Act of 1953, as amended, Section 8(a), 15 U.S.C. 634(b)(6), 636(j), 637(a) and (d); Public Laws 95-507 and 99-661, Section 1207; Public Laws 100-656 and 101-37 is administered by the Small Business Administration. The objectives of the act are to foster business ownership by individuals who are both socially and economically disadvantaged; and to promote the competitive viability of such firms by providing business development assistance including, but not limited to, management and technical assistance, access to capital and other forms of financial assistance, business training and counseling, and access to sole source and limited competition federal contract opportunities, to help the firms to achieve competitive viability. Because most businesses associated with fishing are considered small businesses, NMFS, in implementing regulations, must make an assessment of how those regulations will affect small businesses.

10.9 Essential Fish Habitat

The amended MSFCMA included new EFH requirements, and as such, each existing, and any new, FMPs must describe and identify EFH for the fishery, minimize to the extent practicable adverse effects on that EFH caused by fishing, and identify other actions to encourage the conservation and enhancement of that EFH. In 1999, a coalition of several environmental groups brought suit challenging the agency's approval of the EFH FMP amendments prepared by the Gulf of Mexico, Caribbean, New England, North Pacific, and Pacific Fishery Management Councils (American Oceans Campaign et al. v. Daley et al., Civil Action No. 99-982(GK)(D.D.C. September 14, 2000). The court found that the agency's decisions on the EFH amendments were in accordance with the MSFCMA, but held that the EAs on the amendments were in violation of the NEPA and ordered NMFS to complete new, more thorough NEPA analyses for each EFH amendment in question.

Consequently, NMFS entered into a Joint Stipulation with the plaintiff environmental organizations that called for each affected Council to complete EISs rather than EAs for the action of minimizing adverse effects of fishing to the extent practicable on EFH. See AOC v. Evans/Daley et al., Civil No. 99-982 (GK)(D.D.C. December 5, 2001). However, because the court did not limit its criticism of the EAs to only efforts to minimize adverse fishing effects on EFH, it was decided that the scope of these EISs should address all required EFH components as described in section 303 (a)(7) of the MSFCMA.

To address these requirements the Council has, under separate action, drafted an EIS to analyze within each fishery a range of potential alternatives to: (1) describe and identify Essential Fish Habitat (EFH) for the fishery; (2) identify other actions to encourage the conservation and enhancement of such EFH; and (3) identify measures to minimize to the extent practicable the adverse effects of fishing on such EFH. Depending on the preferred alternatives identified in this EIS the Gulf Council FMPs may require amendments to comply with the guidelines articulated in the EFH Final Rule to implement the EFH provisions of the MSFCMA (See 50 CFR Part 600, Subpart J). NMFS published the Draft EIS on August 29, 2003 and a Record of Decision is expected by the end of July 2004.

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13 ISSUES AND ALTERNATIVES CONSIDERED BUT REJECTED

13.3.1 Current and Former Issues in Amendment 18

Reef Fish Amendment 18 has been presented to the Council in various forms of a scoping document, options paper, or draft amendment at the following Council meetings: March 2000, May 2000, January 2001, March 2001, May 2001, July 2001, September 2001, December 2001, September 2002, January 2003, and the current draft (September 2003). During its development, several issues have been added, removed, and in some cases re-added to the amendment.. In May 2004 the amendment was split into two amendments. Below is the list of issues that have appeared in Amendment 18. The "added" dates are the first dates when an issue appeared in the amendment, and the "removed" dates are when an issue subsequently did not appear in the amendment. The issues in italics are those that are not in either the current draft of Amendment 18A or 18B.

Issues Currently in Amendment 18A

Simultaneous Commercial and Recreational Harvest on a Vessel
- added March 2001
- removed May 2001
- added January 2003

Use of Reef Fish in or From EEZ for Bait
- added January 2001

Vessel Monitoring System
- added for longline vessels only - May 2000
- fish trap, all reef fish vessels, and regional options added – January 2001 (fish trap vessel and regional options removed, May 2005)

Maximum Crew Size on a Charter Vessel When Fishing Commercially
- added March 2004

Modifications to the TAC Framework Procedure
- moved from Amendment 18B to 18A – January 2005

Sea Turtle Bycatch Reduction
- added January 2005

Issues Removed From Amendment 18

Longline/Buoy Gear Endorsement
- *in original scoping document - March 2000*
- *removed May 2000*
- *added January 2001*
- *moved to limited access amendment - January 2003*
- *moved back to Amendment 18 - September 2003*

- *removed October 2004*

Shallow-water Grouper Endorsement
- *added December 2001*
- *moved to limited access amendment - January 2003*
- *moved back to Amendment 18 - September 2003*
- *removed October 2004*

Dormant Reef Fish Permits
- *added January 2001*
- *removed September 2001*
- *added back - September 2002 at request of NMFS*
- *removed October 2004*

Longline/Buoy Gear Boundary
- *in original scoping document - March 2000*
- *moved to Secretarial Amendment 1 - January 2002*

Bandit Gear Limit Number of Hooks
- *in original scoping document - March 2000*
- *removed May 2000*

Use of Spears and Powerheads
- *in original scoping document - March 2000*
- *removed September 2001*

Groundfish Trawl Fishery Impacts on Reef Fish and EFH
- *in original scoping document - March 2000*
- *removed May 2000*

Operator Permits
- *in original scoping document - March 2000*
- *removed March 2001*

Reconsideration of Basic Grouper Management Strategy (single vs. multi species approaches)
- *in original scoping document - March 2000*
- *removed May 2000*

Goliath Grouper Harvest Allowance
- *in original scoping document - March 2000*
- *removed May 2000*

Amberjack Minimum Size Limits
- *in original scoping document - March 2000*
- *removed May 2000*

All Regulatory Changes to Take Effect on January 1 or July 1

- *in original scoping document - March 2000*
- *removed May 2000*

Reef Fish License Limitation/IFQ System
- *in original scoping document - March 2000*
- *removed May 2000*

Import of Undersized Red Snapper/Red Grouper
- *added January 2001*
- *removed May 2001*

Tilefish Quotas
- *added January 2001*
- *moved to Secretarial Amendment 1 - January 2002*

Red Grouper Rebuilding Plan (includes SFA parameters, rebuilding strategy, shallow-water grouper quota, closed seasons, trip limits, bag limits, and fishing year)
- *added March 2001*
- *moved to Secretarial Amendment 1 - January 2002*

Power Reel Prohibition
- *added May 2001*
- *removed May 2001*

Tilefish and Deep-water Grouper Closed Seasons
- *added July 2001*
- *removed January 2003*

Vertical Hook and Line Gear Boundary
- *added July 2001*
- *removed January 2003*

Grouper Allocations
- *added July 2001*
- *removed January 2003*

Commercial Shallow-water Grouper Quota Gear Allocations
- *added September 2001*
- *removed January 2003*

Alternating months for bandit and longline/buoy gear
- *added September 2001*
- *moved to Secretarial Amendment 1 - January 2002*
- *moved back to Amendment 18 - September 2002*
- *removed January 2003*

Drift and Bottom Style Buoy Gear

- *added September 2001*
- *January 2003 - Bottom style buoy gear removed and remaining alternatives merged into Longline/Buoy Gear Phase Out*

Longline/Buoy Gear Phase Out
- *in original scoping document - March 2000*
- *removed October 2004*

Reef Fish Recreational Harvest on Commercial Vessels
- *added September 2001*
- *moved to Secretarial Amendment 1 - January 2002*
- *moved back to Amendment 18 - September 2002*
- *merged into Simultaneous Commercial and Recreational Harvest - January 2003*

Bycatch Reporting
- *added January 2003*
- *moved to Amendment 22 - September 2003*

Electronic Logbooks
- *added July 2003*
- *moved to Amendment 22 - September 2003*

EFH Alternatives
- *added July 2001*
- *Removed September 2003 for consideration in EFH SEIS*

Closed Areas
- *added March 2001*
- *moved to Secretarial Amendment 1 - January 2002*
- *moved back to Amendment 18 - September 2002*
- *removed and replaced with Seasonal (Time/Area) Closed Areas - September 2003*

Seasonal (Time/Area) Closed Areas
- *added September 2003*
- *removed November 2004*

Vessel Monitoring System – gear type and regional options
- *fish trap, all reef fish vessels, and regional options added – January 2001*
- *Fish trap vessel and regional options removed - May 2005*

13.3.2 Alternatives Considered but Rejected in Current Issues

This appendix contains information regarding issues that were included in an earlier public hearing draft of Amendment 18 during public hearings in June 2001, and would

have been part of Amendment 18A if they had not been removed. The Council does not intend to give any further consideration to the issues in these sections. They are retained as an appendix to the amendment for purposes of maintaining an administrative record and to show that they were under consideration at the time that the first round of public hearings was held.

Effort Capacity Control - Endorsements

The June 2001 public hearing draft contained an entire section dealing with the establishment of endorsements to the commercial reef fish vessel permit to deal with the issues of a possible license limitation on shallow-water grouper fishing and/or reef fish fishing using longlines. Prior to 2004, there was little consideration given to limiting effort in the deep-water grouper fishery since that fishery had never had a quota closure. However, in 2004, both shallow-water grouper and deep-water grouper quotas were reduced, and the deep-water grouper fishery had its first quota closure on July 15, 2004. As a result, the Council was now faced with the need to develop effort capacity controls for the deep-water grouper fishery as well as the shallow-water grouper fishery and longline gear. Given the additional complexity of a potential endorsement system and the likelihood that endorsements would be only an intermediate step towards an IFQ system, the Council in October 2004 voted to remove all effort capacity control issues dealing with endorsements from Amendment 18A, and to begin a new amendment to the Reef Fish Fishery Management Plan to look at alternatives of using an IFQ in the commercial grouper fishery. The sections removed from Amendment 18A were as follows (section numbers are the original section numbers from the June 2001 public hearing draft):

4.1 Effort Capacity Control - Endorsements (entire section removed)

- **4.1.1 Shallow-Water Grouper Endorsements**
- **4.1.2 Endorsement for Use of Longline/Drift Buoy Gear**
- **4.1.3 Transfer of Eligibility Criteria**
- **4.1.4 Transferability of Endorsements**
- **4.1.5 Appeals Process for initial Issuance of Endorsements**

In addition, Section 4.2.1 - Dormant Commercial and Charter Vessel Reef Fish Permits was removed from Section 5.2 because the Council felt that, under an IFQ system, dormant permits would not have the landings needed to qualify for initial allocations, thereby making it unnecessary to eliminate them through regulatory action. Section 5.4.1 - Longline and Buoy Gear Phase-out, was removed from Section 5.4 (Fishing Mortality and Ecosystem Issues) because the Council felt that with implementation of a grouper IFQ, phasing out of longlines was no longer necessary to consider for controlling effort in the grouper fishery.

The specific alternatives removed are as follows:

4.1 Effort Capacity Control - Endorsements

4.1.1 Shallow-Water Grouper Endorsement

Alternative 1: Status Quo - do not establish a shallow-water grouper vessel endorsement.

Alternative 2: Establish a non-longline shallow-water grouper vessel endorsement for the commercial harvest of shallow-water grouper using gear other than longlines. Using 2000-2002 as the base years, the initial endorsements will be issued to currently permitted (at the time that this rule is implemented) reef fish vessels with a minimum amount of shallow-water grouper logbook landings from the Gulf of Mexico using gear other than longlines as follows:

a. 1 lb. in 3 of 3 years (1244 vessels, 0% harvest reduction)
b. 1500 lb. in 1 of 3 years (627 vessels, 3% harvest reduction)
c. 1500 lb. in 2 of 3 years (387 vessels, 11% harvest reduction)1500 lb. in 3 of 3 years (243 vessels, 26% harvest reduction)
d. 4000 lb. in 1 of 3 years (390 vessels, 9% harvest reduction)
e. 4000 lb. in 2 of 3 years (248 vessels, 19% harvest reduction)
f. 4000 lb. in 3 of 3 years (149 vessels, 36% harvest reduction)
g. 9000 lb. in 1 of 3 years (229 vessels, 21% harvest reduction)
h. 9000 lb. in 2 of 3 years (145 vessels, 33% harvest reduction)
i. 9000 lb. in 3 of 3 years (90 vessels, 49% harvest reduction)
j. Other criteria from Poffenberger (2003), Table 10

Alternative 3: Establish a longline shallow-water grouper vessel endorsement for the commercial harvest of shallow-water grouper using longlines. Using 2000-2002 as the base years, the initial endorsements will be issued to currently permitted (at the time that this rule is implemented) reef fish vessels with a minimum amount of shallow-water grouper logbook landings from the Gulf of Mexico using longlines as follows:

a. 1 lb. in 3 of 3 years (214 vessels, 0% harvest reduction)
b. 1,500 lb. in 1 of 3 years (178 vessels, 0.2% harvest reduction)
c. 1,500 lb. in 2 of 3 years (128 vessels, 4% harvest reduction)
d. 1,500 lb. in 3 of 3 years (96 vessels, 12% harvest reduction)
e. 8,500 lb. in 1 of 3 years (132 vessels, 2% harvest reduction)
f. 8,500 lb. in 2 of 3 years (102 vessels, 8% harvest reduction)
g. 8,500 lb. in 3 of 3 years (74 vessels, 23% harvest reduction)
h. 21,000 lb. in 1 of 3 years (102 vessels, 7% harvest reduction)
i. 21,000 lb. in 2 of 3 years (77 vessels, 17% harvest reduction)
j. 21,000 lb. in 3 of 3 years (51 vessels, 40% harvest reduction)
k. Other criteria from Poffenberger (2003), Table 11

4.1.2 Endorsement for Use of Longline/Drift Buoy Gear

Alternative 1: Status Quo - do not establish a vessel gear endorsement for use of longlines and buoy gear.

Alternative 2: Establish a vessel gear endorsement for the use of longlines and buoy gear. The initial endorsements will be issued to reef fish vessels with a minimum amount of logbook landings from the Gulf of Mexico using longlines or buoy gear during:

- **a. 2 of the 3 calendar years (2000 to 2002)**
- **b. 2 of the 5 calendar years (1998 to 2002)**
- **c. 2 of the 7 calendar years (1996 to 2002)**

provided that such vessels have current applicable permits. The minimum qualifying annual landings (gutted weight) using longlines or buoy gear, for all reef fish species combined, is:

- **d. 1 pound of reef fish landings from the U.S. Gulf of Mexico**
- **e. 1 pound of reef fish landings from the U.S. Gulf of Mexico**
- **f. 5,000 pounds of reef fish from the U.S. Gulf of Mexico**
- **g. 30,000 pounds of reef fish from the U.S. Gulf of Mexico**
- **h. Other (see Poffenberger (2003), Table 13 for analyses to 50,000 lbs.)**

Alternative 3: Establish a vessel gear endorsement for the use of longlines and buoy gear. The initial endorsements will be issued to permitted reef fish vessels which can establish, through logbook records, any landings of reef fish using longlines or buoy gear on or before the gear control date of June 12, 2000, and which submit an application for an endorsement to the NMFS Permits Branch within a time frame specified by NMFS.

(Under this alternative, as of 8/20/2003, there were 254 unique vessel i.d. numbers with a currently active permit had longline catches on or before 6/12/2000, and 34 unique vessel i.d. numbers with a currently active permit had longline catches after 6/12/2000 but no catches prior to the control date - personal communication John Poffenberger)

4.1.3 Transfer of Eligibility Criteria

Alternative 1: The catch history of a vessel remains with that vessel in the event that ownership of the vessel is transferred, unless specified otherwise in writing.

Alternative 2: The catch history of a vessel remains with the owner of the vessel in the event that ownership of the vessel is transferred, unless specified otherwise in writing.

Alternative 3: If the vessel operator is the income qualifier, the catch history of the vessel remains with the vessel operator in the event that the operator changes vessels.

5.1.4 Transferability of Endorsements

Alternative 1: The endorsements issued under this amendment will be transferable:

- **a. to other vessels regardless of ownership**
- **b. between vessels owned by the same person**
- **c. to other vessels in the case of death or disability of the permit holder.**
- **d. to other vessels owned by immediate family members**
- **e. other**

Alternative 2: The endorsements issued under this amendment will not be transferable.

4.1.5 Appeals Process for Initial Issuance of Endorsements

Alternative 1: Do not have an appeals process.

Alternative 2: Create an appeals board to resolve issues related to the NMFS permits office records that pertain to eligibility to obtain a reef fish longline endorsement.

Alternative 3: An appeals process will be developed to accommodate both hardships and data and/or record disputes between vessel owners and NMFS. The data and/or record disputes will be limited to resolving disputes over missing or inaccurate logbook records. A person with a dispute related to data and/or records has 60 days to file an appeal with NMFS after being notified by NMFS that their records or data are insufficient for eligibility for an endorsement. A person with a hardship must file an appeal within 60 days of implementation of the final rule of this amendment.

Alternative 4: Individuals or Corporations can appeal to the NMFS Regional Administrator to resolve issues related to the NMFS permit office records that pertain to initial eligibility.

<u>Endorsement Exemptions</u> (these alternatives were previously removed from Section 5.1)

Alternative 1: The following categories of reef fish permitted vessels are exempt from requiring a non-longline shallow-water-grouper endorsement:

- **a. Vessels fishing for spiny lobsters or stone crabs**
- **b. Vessels with fish trap endorsements**
- **c. Vessels fishing with handlines or rod-and-reel (not bandit rigs)**

Alternative 2: The following categories of reef fish permitted vessels do not have to meet the landings criteria and will qualify for a non-longline shallow-water-grouper endorsement provided they have any

logbook records of shallow-water grouper landings during the qualifying period:

- **a. Vessels fishing for spiny lobsters or stone crabs**
- **b. Vessels with fish trap endorsements**
- **c. Vessels fishing with handlines or rod-and-reel (not bandit rigs)**

Alternative 3: Reef fish permitted vessels without a basic-shallow-water-grouper endorsement or a longline-shallow-water-grouper endorsement will be allowed an incidental harvest allowance of 200 (or some other amount) pounds per trip of shallow-water grouper harvest.

Alternative 4: No exemptions. Vessels without a basic-shallow-water-grouper endorsement or longline-shallow-water-grouper endorsement will be limited to the recreational bag limit of shallow-water grouper, which cannot be sold.

4.4.1 Longline and Buoy Gear Phase-out

Alternative 1: Status Quo - longline and buoy gear remain as reef fish allowable gear, subject to the longline/buoy gear boundary restrictions.

Alternative 2: Prohibit the use of longlines and buoy gear to harvest reef fish in the Gulf of Mexico EEZ:

- **a. Upon implementation of this amendment**
- **b. One year after implementation of this amendment**
- **c. Five years after implementation of this amendment**
- **d. Ten years after implementation of this amendment**

Alternative 3: Prohibit the use of longlines (but continue to allow buoy gear) to harvest reef fish in the Gulf of Mexico EEZ:

- **a. Upon implementation of this amendment**
- **b. One year after implementation of this amendment**
- **c. Five years after implementation of this amendment**
- **d. Ten years after implementation of this amendment**

Alternative 4: Do not allow buoy gear in the Gulf of Mexico EEZ, and remove the gear from the list of allowable reef fish gear.

Bottom style Buoy Gear

Recently, a gear type referred to by fishermen as buoy gear was reported to be used off of south Florida to target grouper. This gear differed from the buoy gear previously used in the north-central Gulf in that is did not drift freely, but rather, sat on the bottom with a line affixed to a buoy rising to the surface to mark its location. After investigating the gear, NMFS Enforcement determined that it does not meet the legal description of buoy gear or of any other type of allowable gear for the reef fish fishery of the Gulf of Mexico, as provided in 50 CFR 600.725 (v), and it is therefore prohibited. An earlier draft of this

amendment contained alternatives on whether to allow or prohibit this new style of buoy gear. However, since the Council has not received a petition to allow the gear, as required in the allowable gear provisions, the Council decided that it was inappropriate to consider authorizing the gear under Amendment 18.

The specific alternatives removed from consideration were as follows:

Alternative BBG-1: Do not allow new-style (bottom) buoy gear in the Gulf of Mexico EEZ.

Alternative BBG-2: Do not allow either traditional (drift) or new-style (bottom-fishing) buoy gear in the Gulf of Mexico.

Alternative BBG-3: Add new-style (bottom-fishing) buoy gear to the list of allowable reef fish gear, with the condition that the gear may not be used in areas that have restrictions on the use of bottom type gears, i.e., Florida Middle Grounds HAPC, West and East Flower Garden Banks HAPCs.

- **a. The gear may not be used inside the longline/buoy gear boundary**
- **b. The gear may not be used inside the stressed area boundary**
- **c. The gear may not be used inside the vertical hook and line gear boundary (if established)**
- **d. Do not adopt any of the additional option boundary restrictions**

Alternative BBG-4: Status quo - Traditional (drift) buoy gear is allowed and subject to the longline boundary area restrictions. New style (bottom-fishing) buoy gear is not allowed under the current allowable gear list, however, a person may petition the Gulf Council to have the gear added to the allowable gear list in accordance with the procedure described in 50 CFR 600.725(v)[10].

Bandit and Vertical Hook and Line Gear Boundary

Alternatives to create a boundary line outside of which commercial hook and line gear in the reef fish fishery were considered in an earlier draft of this amendment. The purpose for considering these alternatives was to reduce fishing mortality on reef fish, prolong commercial fishing seasons that are subject to quota closures, reduce bycatch of undersized reef fish, reduce user conflicts between the commercial and recreational sectors, and increase the equity of area restrictions among commercial gear types. At the September 2002 Council meeting, the Council concluded that the proposals contained in the red grouper rebuilding plan (Secretarial Amendment 1) were sufficient to rebuild the red grouper stock, and would address any gear conflict issues. Therefore, this section and the alternatives contained in it were considered to be unnecessary and were removed from further consideration.

[10] An individual fisherman may notify the appropriate Council, or the Director, in the case of Atlantic highly migratory species, of the intent to use a gear or participate in a fishery not already on the list. Ninety days after such notification, the individual may use the gear or participate in the fishery unless regulatory action is taken to prohibit the use of the gear or participate in the fishery (e.g., through emergency or interim regulations).

The specific alternatives removed from consideration were as follows:

Alternative BVHLG-1: Commercial bandit gear must fish outside of the 20-fathom contour east of Cape San Blas, Florida.

Alternative BVHLG-2: All commercial vertical hook and line gear must fish outside of the 20-fathom contour east of Cape San Blas, Florida.

Alternative BVHLG-3: Status quo - bandit gear and vertical hook and line gear (other than buoy gear) are not restricted by a depth boundary.

Alternating Longline/Buoy Gear and Bandit/Vertical Hook and Line Gear Fishing Months

Alternatives to alternate the months in which longline/buoy gear and vertical hook and line gear could fish commercially in the reef fish fishery were considered in an earlier draft of this amendment. The purpose of this alternative was to reduce fishing mortality on the overfished red grouper stock while maintaining a year-round supply of red grouper to the market. At the September 2002 Council meeting, the Council concluded that the proposals contained in the red grouper rebuilding plan (Secretarial Amendment 1) were sufficient to rebuild the red grouper stock. Therefore, this section and the alternatives contained in it were considered to be unnecessary and were removed from further consideration.

The specific alternatives removed from consideration were as follows:

Alternative ALBBVH-1: East of Cape San Blas, Florida, reef fish permitted vessels can fish commercial longline/buoy gear and vertical hook and line gear (other than buoy in alternate months as follows:

a. Longline/buoy: even months (Jan., Mar., May, Jul., Sep., Nov.); Vertical gear: odd months (Feb., Apr., Jun., Aug., Oct., Dec.)

b. Longline/buoy: odd months (Feb., Apr., Jun., Aug., Oct., Dec.); Vertical gear: even months (Jan., Mar., May, Jul., Sep., Nov.)

Alternative ALBBVH-2: Same as Alternative 1, but applies only to harvest of shallow-water grouper. Vessels can harvest other reef fish species with any allowable gear any time that the commercial season is open.

Alternative ALBBVH-3: Reef fish permitted vessels must indicate to NMFS prior to the start of the grouper fishing year whether they will fish using longline/ buoy gear or vertical hook and line (other than buoy) gear, and they may not change their gear designation during the fishing year.

Alternative ALBBVH-4: Status quo - longline/buoy gear and bandit gear can be fished all months of the year on species for which the season is open.

Use of Powerheads for Spearfishing

At the July 2001 Council meeting, the Council decided not to take any action concerning the use of powerheads when spearfishing. There was insufficient information to suggest that powerheads were detrimental to the resource or the habitat or that they created conflicts among user groups. The proposal to require a permit for powerhead users was deemed to be an unnecessary paperwork burden at this time on both the fishermen who would be required to obtain a permit, and on the NMFS Permits Branch. Members of the Council's Scientific and Statistical Committee felt that there was no scientific benefit to be gained from requiring a permit.

Although the Council voted to remove this section from Amendment 18, it was deemed advisable for purposes of maintaining an administrative record to retain the section in an appendix to the amendment for issues and alternatives removed from consideration.

Alternative P-1: Require a permit for the use of powerheads when reef fish fishing (both commercially and recreational), and eliminate the regulatory exemption that allows the use of powerheads in the stressed area for harvest of sand perch, dwarf sand perch, and hogfish.

Alternative P-2: Prohibit the use of powerheads to harvest reef fish Gulf-wide. This is not intended to prohibit the possession and use of powerheads for self-defense.

Alternative P-3: Prohibit the use of powerheads to harvest the following reef fish species in the Gulf:

a. Greater amberjack
b. Red grouper
c. Other

Alternative P-4: Status Quo -the use of powerheads to harvest reef fish is prohibited only within the stressed area, and no permit is required to use powerheads when reef fish fishing.

Dormant Commercial and Charter Vessel Reef Fish Permits

In October 2004, the Council voted to remove all effort capacity control issues dealing with endorsements from Amendment 18A, and to begin a new amendment to the Reef Fish Fishery Management Plan to look at alternatives of using an IFQ in the commercial grouper fishery. The Council also voted to remove this section dealing with dormant reef fish permits because dormant permits would not have landings to qualify for an initial allocation of IFQ shares, and it was therefore unnecessary to take action to remove the permits. The alternatives that were in this section were:

Alternative 1: Status Quo -Take no action to eliminate dormant reef fish permits.

Alternative 2: A commercial reef fish vessel permit will not be

- **a. renewed**
- **b. transferable**

if the vessel operating under the permit did not catch at least a qualifying amount of reef fish each year in two of the last

- **c. 3**
- **d. 5**
- **e. 7**

years. The minimum qualifying annual catch is:

- **f. Any landings of reef fish**
- **g. 1000 pounds**
- **h. 5000 pounds**
- **I. other**

This action is:

- **j. a one-time action. The qualifying years will be through the last full calendar year prior to date of implementation of the final rule.**
- **k. a one-time action. The qualifying years will be the calendar years as specified by the Council.**
- **l. an on-going action. The qualifying years will be the full calendar years prior to the renewal date, and the criteria will need to be met each time the permit is renewed.**

Alternative 3: A commercial reef fish vessel permit will not be renewed if the vessel owner operating under the permit did not have at least 50 percent of his or her earned income from commercial fishing or from charter vessel or headboat fishing in two of the last

- **a. 3**
- **b. 5**
- **c. 7**

years. This action is:

- **d. a one-time action. The qualifying years will be through the date of implementation of the final rule.**
- **e. an ongoing action. The qualifying years will be through the renewal date, and the criteria will need to be met each time the permit is renewed.**

Alternative 4: A reef fish charter vessel permit will not be

- **a. renewed**
- **b. transferable**

if the vessel operating under the permit did not make at least a qualifying number of charter trips each year in two of the last

- **c. 3**
- **d. 5**

e. 7

years. The minimum qualifying number of trips is:

f. [low number]

g. [medium number]

h. [high number]

I. other

This action is:

j. a one-time action. The qualifying years will be through the date of implementation of the final rule.

k. a one-time action. The qualifying years will be the calendar years as specified by the Council.

l. an on-going action. The qualifying years will be through the renewal date, and the criteria will need to be met each time the permit is renewed.

In order to validate the number of charter vessel trips made if the action is ongoing, each charter vessel operator would be required to maintain and submit logbook reports to NMFS which contain, at a minimum, the dates of each charter trip and the number of paying customers. Copies of receipts for trips made in years prior to the logbook requirement may be used to document qualifying trips made in years prior to the logbook requirement, and may be selectively requested by NMFS to validate the accuracy of logbook records in years when logbook records are required.

Alternative 5: Technical appeals: Individuals or Corporations can appeal to the NMFS Regional Administrator to resolve issues related to the NMFS permit office records that pertain to eligibility for permit renewal/transferability. A person with a dispute related to data and/or records has 30 days to file a written appeal with the Regional Administrator after being notified by NMFS that their records or data are insufficient for eligibility for renewal/transferability.

Alternative 6: Hardship appeals: An appeals process will be developed to accommodate hardships. A person with a hardship must file a written appeal within 30 days of notification that the permit is ineligible for renewal/transfer.

Alternative 7: Transfer of a commercial reef fish vessel permit from one vessel owner to another vessel owner must be on a two-for-one basis, i.e., the new owner must turn into NMFS two valid reef fish permits in order to receive one valid permit. (For purposes of this alternative, if a permit is owned by a corporation, a change in majority ownership of the corporation constitutes a transfer of the permit. If an individual who owns a permitted vessel incorporates, transfer of the permit from the individual to the corporation will not constitute a transfer under this alternative and will not trigger the 2-for-1 requirement provided that the individual remains majority owner of the corporation.) Exceptions to the 2-for-1 requirement are:

a. **Both vessels are owned by the same individual or corporation.**

b. Both vessels are owned by members of the immediate family.

The following alternatives were felt to be unnecessary and were removed from this section at an earlier time.

Alternative: A commercial reef fish vessel permit will not be renewed if the vessel owner operating under the permit did not have greater than 50 percent of his or her earned income from commercial fishing only (not from charter vessel or headboat fishing) during either of the 2 calendar years preceding the application.

Alternative : A reef fish charter vessel permit will not be renewed if the vessel owner operating under the permit did not have greater than 50 percent of his or her earned income from charter vessel or headboat fishing only (not from commercial fishing) during either of the 2 calendar years preceding the application.

Simultaneous Commercial and Recreational Harvest on a Vessel

The following alternative was felt to be unnecessary and was removed from this section.

Alternative: A vessel may simultaneously have both a commercial and charter vessel permit assigned to it, but only one permit may be active at a given time. In order to change the active permit, the currently active permit must first be turned in to NMFS and reclassified as inactive, and a certificate activating the other permit will then be provided by NMFS.

Closed Areas

The closed area section originally included discussion of marine reserves as ecosystem management tools. In September 2003, the Council voted to restrict consideration of closed areas to seasonally closed areas for the protection of spawning groupers. The Council felt that implementation of reserves as ecological reserves was beyond the scope of this amendment and should be considered in a separate amendment. The resulting alternatives in the revised closed area section retain all of the original alternatives except for the Florida Middle Grounds sub options in the alternative below, and the vague "other area" sub-option:

Alternative: Close the following areas:

- **a. Florida Middle Grounds**
  - **i. Entire area**
  - **ii. Northern half (north of 28 deg 26.6 min N)**
  - **iii. Northern third (north of 28 deg 32 min N)**
- **b. The Elbow**
- **c. Christmas Ridge**
- **d. other area**

to fishing for:

e. All reef fish
f. All species under Council jurisdiction
g. All fishing methods except surface trolling
h. All species under Council jurisdiction, and request NOAA Fisheries HMS Division to implement compatible regulations and the closed area will be in place:
i. for 4 years to evaluate its effectiveness
j. for 8 years to evaluate its effectiveness
k. Sunset on the same date as the Madison-Swanson and Steamboat Lumps Reserves
l. indefinitely, until repealed by a subsequent plan amendment

The Florida Middle Grounds sun-options were originally included because this is an important fishing area to many fishermen, and it was felt that, for a year-round closure, closing a portion of the Middles Grounds would be more acceptable to fishermen than closing the entire area. In addition, it was felt that the area of the Florida Middle Grounds left open would benefit from enhanced fishing due to an edge effect, as larger and more abundant fish from the closed area moved across the boundary. With the intent in the revised section to make area closures seasonal rather than year-round, closure of the entire Middle Grounds may be more acceptable to fishermen and would be more enforceable. In addition, an edge effect is unlikely to occur with only seasonal closure.

Since the Council rejected the original discussion that included ecosystem considerations rather than the alternatives themselves, that discussion is included below as considered but rejected.

Discussion: Partially closed areas were established by regulatory amendment at Madison-Swanson and Steamboat Lumps for a 4-year period (June 2000 - June 2004). A 6-year extension (to June 2010) has been proposed in Amendment 21. The purpose of the Madison-Swanson and Steamboat Lumps marine reserves was to provide protection for gag stocks and to allow research into the effectiveness of marine reserves as management tool. There are a number of reasons why additional closed areas may be considered. These include:

A. Provide additional protection for gag stocks;
B. Protect other reef fish species;
C. Protect a portion of the habitat and/or ecosystem in which reef fish are found;
D. Allow “fished-out” areas to re-establish reef fish populations;
E. Provide enhanced fishing opportunities in the waters surrounding reserves (or within the reserves by allowing only limited fishing);
F. Provide additional research opportunities.

A discussion of the benefits and costs of marine reserves is contained in Amendment 21. Below is a table summarizing those impacts.

BENEFITS	COSTS
● Enhance commercial and recreational fishing – Build and maintain healthy fisheries – Provide insurance against uncertainty – Minimize regulations on fishing grounds – Improve traditional management ● Simplify enforcement – Violations easily detected – Easier for the public to understand ● Improve fairness and equity ● Preserve biodiversity through habitat protection ● Reduce direct and indirect fishing mortality ● Maintain wilderness areas for viewing natural ecosystems ● Enhance opportunities for the dive industry and tourism ● Provide educational opportunities ● Provide scientific research opportunities	● Foregone fishing opportunities ● Potential for higher costs ● Fishing-related benefits difficult to predict – Lag time before benefits achieved – Increased pressure on fishing grounds – Not appropriate for all fisheries – Difficult to site – Difficult to design – Cannot provide foolproof protection – Benefits may not accumulate ● Will not eliminate other fishery regulations ● Uncertainty of outcome ● Increased enforcement complexities – Direct enforcement necessary – Incentive for poaching created – Complexities may be created

source: GMFMC 1999

Proponents of no-take areas have divided the benefits into three categories; benefits within the reserve boundaries, benefits outside the reserve boundaries, and benefits from establishing a network of reserves. Among the benefits claimed are:

Benefits Within Reserve Boundaries:

- Increases the abundance, diversity and productivity of marine organisms;
- Eliminates bycatch mortality;
- Provides proactive management of species whose status is unknown;
- Protects genetic diversity;
- Protects spawning aggregations;
- Protects habitat;

Benefits Outside Reserve Boundaries:

- Spillover effects - the size and abundance of exploited species can increase in areas adjacent to no-take areas;
- Can replenish populations regionally via larval export;

Benefits of Reserve Networks:

- Can provide significantly greater protection for marine communities than a single no-take areas;
- A network that spans large geographic distances can protect against catastrophes and provide a stable platform for the long-term persistence of marine communities.

Arguments against no-take areas include:

– Takes away the public's access to the water;
– Less “draconian” measures can accomplish similar goals while still allowing the public to enjoy the resource;
– Studies purporting to show benefits of no-take areas are confounded by other factors;
– Protects only a portion of the resource within a limited geographic area, whereas traditional management measures protect the resource throughout its range;
– For stocks with moderate to high migration rates a no-take area of moderate size will have only a small conservation effect;
– Places an unfair and disproportionate burden on fishermen in the affected areas;
– Restricts access to healthy fisheries as well as overfished resources;
– Merely shifts fishing effort to non closed areas;
– May force fishermen in the affected areas to make longer trips, increasing fishing costs and impacting safety at sea

Enforceability has been cited as both a benefit and a drawback to no-take areas. Proponents argue that no-take areas are more enforceable than traditional management regulations because a no-take area does not require an enforcement officer to identify, count, weigh, or measure the catch. Simply fishing within a no-take area is sufficient to make a case, and such activity can be detected through vessel intercepts at sea, airplane over flights, or electronic vessel monitoring systems. Opponents argue that no-take areas are less enforceable because they require at-sea enforcement and that violators be caught in the act, unlike size limits, bag limits, trip limits, and closed seasons, where a vessel's catch can be inspected upon return to the dock.

Because of their function as a multi-species ecosystem based management tool, no-take zones differ from traditional fishery management measures, which are usually geared toward single-species management and immediate impacts. For this reason, it is worth reviewing the potential use of no-take zones from the standpoint of if and how they adhere to the National Standards of the Magnuson-Stevens Act.

> National Standard 2 (Based on the best available scientific information) - The areas presented as alternatives for no-take areas were selected based on recommendations of biologists who are knowledgeable about the reef fish species inhabiting these areas, and have extensively studied the areas, including interviews with fishermen, at-sea sampling, and in some cases, direct observations using submersibles.
>
> National Standard 3 (Manage interrelated stocks of fish as a unit or in close coordination) - A no-take area, by its very nature, is an ecosystem approach to management that applies to all organisms within the area. By virtue of the fact that they share a habitat and interact in predator-prey and other relationships, the resources within the area are all interrelated.
>
> National Standard 4 (Fair and equitable allocation) - A no-take area does not discriminate between residents of different states. Although it does not explicitly assign fishing privileges among various fishermen, if implemented in an area that is predominately utilized by one user sector (commercial or recreational), there could be some reallocation away from the sector that made the greatest use of the area. However, unless the no-take areas encompass such a large proportion of the fishing grounds that it becomes difficult for fishermen to locate alternative open areas, any such reallocation effect is likely to be small, and may be negated through other traditional management measures implemented in conjunction with the no-take area, or through implementation of multiple areas that have a net neutral allocation effect. Furthermore, if the spillover effect occurs, any negative reallocation effect will be short-term. Over the longer term, as the size and abundance of exploited species within the no-take area increases, adjacent areas can benefit from the migration of fish out of the no-take area.

National Standard 5 (Efficiency in use of the resource) - Unlike traditional management measures, which reduce fishing efficiency by restricting the gear or the amount or species of fish that can be taken, no-take areas place no restrictions on the gear or the amount or species of fish that can be taken on a trip. They simply set aside an area where fishing cannot occur. Some inefficiency could be introduced if affected fishermen are forced to travel to more distant fishing grounds. However, since fishermen generally have several fishing areas that they can utilize, often on the same trip, displacement effects are likely to be small.

National Standard 6 (Allow for variations and contingencies) - No-take zones provide insurance against long-term declines in stocks and destruction of habitat by providing protection for a portion of the populations of all stocks that utilize the area. In this respect, they provide a buffer against unforeseen increased in fishing effort or reductions in stock size outside of the reserves.

National Standard 7 (Minimize costs and avoid unnecessary duplication) - For fishermen who are displaced by no-take zones, there could be increased fuel costs if they are forced to travel to more distant fishing grounds. However, for most fishermen there will be no costs associated with the no-take zones, and for the fishery as a whole, the proactive protection of stocks that are not currently overfished or whose status is unknown can help to prevent the need for future costly management measures by helping to prevent overfishing from occurring in the first place. For currently overfished stocks and stocks that are undergoing overfishing, the protection afforded to a portion of the stocks by no-take zones can help to promote the success of traditional management measures in stopping overfishing and achieving rebuilding plans.

National Standard 8 (Consider importance of fishery resources to fishing communities) - All of the areas under consideration are, or have been in the past, important fishing grounds for commercial and long-distance recreational fishermen along the central Florida Gulf Coast. However, they comprise only a portion of the total fishing area available. Since these areas are interspersed with other fishable areas, they will not prevent any fishing communities from having access to the resource. One possible exception is the Florida Middle Grounds, which have a unique coral habitat. For the Middle Grounds, sub-options are presented that would set aside only a portion of the area, leaving access open to the remaining part of the area.

National Standard 9 (Minimize bycatch and the mortality from such bycatch) - Traditional management measures (size limits, bag limits, trip limits, and closed seasons) create bycatch in the form of regulatory discards, along with increased bycatch mortality, particularly in deeper waters. Since there is no catch to begin with in a no-take area, there is zero resulting bycatch mortality

National Standard 10 (Promote safety of human life at sea) - Some displaced fishermen could be forced to travel to more distant fishing grounds. However, since fishermen generally have several fishing areas that they can utilize, often on the same trip, displacement effects are likely to be small.

In addition to adherence to the National Standards, the Magnuson-Stevens Act requires that management measures minimize adverse effects on essential fish habitat (EFH) caused by fishing (Magnuson-Stevens Act, Section 303(a)(7)) - The Magnuson-Stevens Act defines EFH as "those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity." Impacts of hook and line fishing on bottom habitat have been documented in other areas that have been established as reserves, such as the Oculina Banks and Madison-Swanson.

In the Oculina Banks, Dr. Chris Koenig (Koenig 2001) reported, “It is not certain whether hook and line fishing has continued within the EORR but clear evidence of it was reported to the SAFMC in 1997 (Koenig, unpublished data), three years after the area was closed to bottom fishing.”; “ ... some (coral) fragments were apparently stripped off by fishing activities, because in those cases the reef blocks were entangled with fishing line.” In Madison-Swanson, Dr. Andy David stated that during his research he has seen a lot of fishing line on the bottom in the Madison-Swanson and Steamboat Lumps Reserves. Since monofilament has a long lifetime, he did not know how long the line had been there. However, the presence of a large amount of fishing line demonstrates the popularity of these sites for bottom fishing, and the likelihood that such fishing will continue if enforcement is hindered by unworkable regulations.

Gear restrictions, such as those implemented in the Florida Middle Grounds and the Flower Gardens HAPCs, can protect bottom habitat from the normal use of bottom fishing gear, but do not protect the surrounding waters or ecosystem. No-take areas can provide additional protection against the impacts of lost or improperly used pelagic fishing gear, and can protect the local habitat and ecosystem from imbalances created by the attraction of predators into the area as a result of fishing activities (such as chumming).

Time/Area Closures

This section replaced the section on year-round closed areas in Amendment 18 in September 2003. It's purpose was to establish seasonal area closures to protect spawning grouper. The alternatives were divided into three sections; Selection of Areas, Time Period for Closed Season, and Fishing Restrictions During the Seasonal Closure. By November 2004, Amendment 18 had been split into several smaller amendments, and the current amendment (Amendment 18A) now contained issues that primarily addressed enforcement concerns. For this reason, and because closed areas impact the ecosystem and stocks other than groupers, the Council felt that Amendment 18A was no longer the appropriate place to address this issue, and the section was moved to Considered but Rejected. The sections and alternatives in the section were as follows:

Selection of Areas

Alternative 1: Status quo - no seasonally closed areas

Alternative 2: Establish seasonal closed areas for the following (select options):

Option a. Florida Middle Grounds (area 7) - 340 square nautical miles

Option b. 40 Fathom Contour West of the Middle Grounds - denoted as The Edges by Moe (1963) (Area 8 - several sites within the same area) - total area = 436 sq. naut. mi.

- Area A (61 sq. naut. mi),
- Area B (67 sq. naut. mi),
- Area C (57 sq. naut. mi),
- Area D (143 sq. naut. mi),
- Area E (108 sq. naut. mi)

Alternative 3: Establish a seasonal closed season in the Gulf of Mexico EEZ outside of the:

a. 15 fathom contour east of Cape San Blas, Florida
b. 15 fathom contour Gulf-wide
c. Longline boundary east of Cape San Blas, Florida
d. Longline boundary Gulf-wide

Time Period for Closed Season

Alternative 4. Area closed season in effect February through May

Alternative 5. Area closed season in effect January through June

Alternative 6. Area closed season in effect December through July

Fishing Restrictions During the Seasonal Closure

Alternative 7. Prohibit fishing or possession (except for transiting) of grouper within the closed areas during the closed season.

Alternative 8. Prohibit fishing or possession (except for transiting) of all reef fish within the closed areas during the closed season.

Alternative 9. Prohibit fishing or possession (except for transiting) of all fish within the closed areas during the closed season, except for coastal pelagic and HMS species, which may be fished only by surface trolling. Request that the NMFS HMS Division implement compatible regulations.

Alternative 10. Prohibit fishing or possession (except for transiting) of all fish under the Council's jurisdiction within the closed areas during the closed season. Request that the NMFS HMS Division implement compatible regulations.

Tilefish and Deep-water Grouper Closed Seasons

In September 2002, the Council felt that the deep-water grouper and tilefish quotas set in Secretarial Amendment1 provided sufficient conservation benefits to these species, and voted to remove this section from consideration in Amendment 18.

Alternative 1: Establish a July 1 through August 31 closed season on
- **a. Deep-water grouper**
- **b. Tilefish**
- **c. Both deep-water grouper and tilefish**

with the closed season applied to
- **d. Commercial fishing**
- **e. Recreational fishing**
- **f. Both commercial and recreational fishing**

Alternative 2: Whenever there is a closed season on any shallow-water grouper species, fishing for deep-water grouper and tilefish will also be closed. This alternative applies to:
- **a. Commercial fishing**
- **b. Recreational fishing**
- **c. Both commercial and recreational fishing**

Alternative 3: Status quo - do not establish a fixed closed season for deep-water grouper or tilefish.

14 FIGURES

Shallow-water grouper spawning seasons:

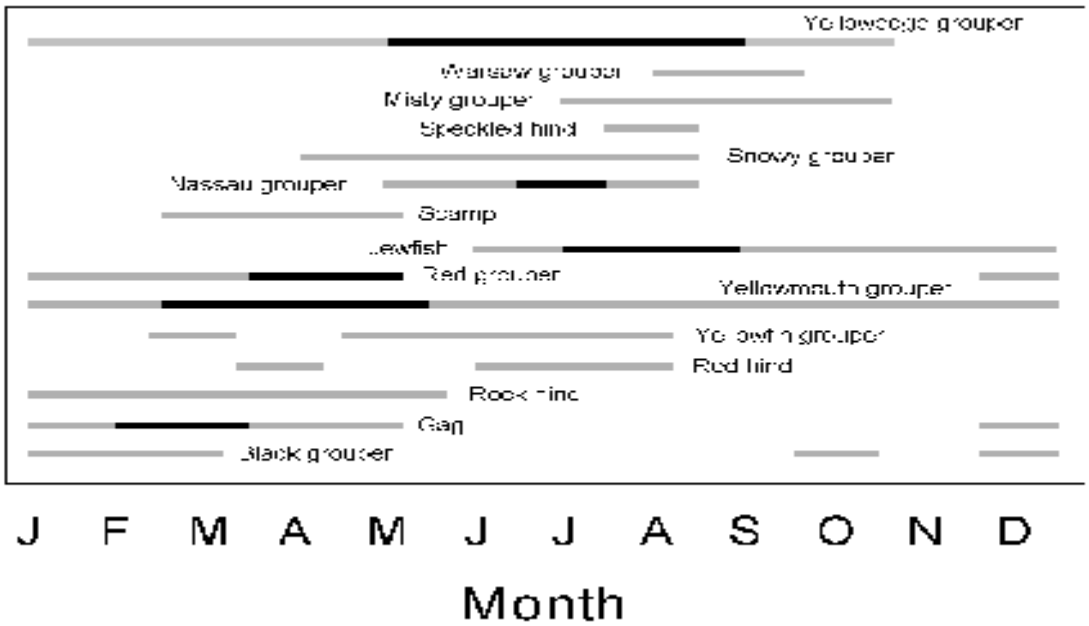
Species	Peak season	Total season
Red grouper	April-May	December-July
Gag	February-March	December-May
Black grouper	unknown*	October, December-March
Yellowmouth grouper	March-May	January-December
Yellowfin grouper	unknown*	March, May-August
Scamp	unknown*	March-May
Red hind	unknown*	April, June-August
Rock hind	unknown*	January-June

Deep-water grouper spawning seasons:

Species	Peak season	Total season
Yellowedge grouper	May-September	January-October
Warsaw grouper	unknown*	August-September
Snowy grouper	unknown*	April-August
Misty grouper	unknown*	July-November
Speckled hind	unknown*	August

* Little information is available on spawning seasons with an asterisk. The seasons given are best estimates from limited data, peak season is unknown.

Figure 4.4.2-1. Spawning seasons of grouper species caught in the Gulf of Mexico. Gray



lines represent when spawning is occurring and black lines represent peak spawning.

Appendix A – History of Management

A.1.1 Management Activities Other Than Regulatory Amendments

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

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

Amendment 1 ,including environmental assessment (EA), regulatory impact review (RIR), and regulatory flexibility analyses (RFA), to the Reef Fish Fishery Management Plan, implemented in 1990, was a major revision of the original FMP. It set as a primary objective of the FMP the stabilization of long-term population levels of all reef fish species by establishing a survival rate of biomass into the stock of spawning age to achieve at least 20 percent spawning stock biomass per recruit (SSBR), relative to the SSBR that would occur with no fishing. The target date for achieving the 20 percent SSBR goal was set at January 1, 2000. Among the management measures implemented were:

- Set a red snapper 13-inch total length minimum size limit, 7-fish recreational bag limit and 3.1 million-pound commercial quota that together were to reduce fishing mortality by 20 percent and begin a rebuilding program for that stock;
- Prohibit the sale of undersized red snapper and delete the allowance to keep 5 undersized red snapper;
- Set a 20-inch total length minimum size limit on red Nassau, yellowfin, black, and gag groupers;
- Set a 50-inch total length minimum size limit on goliath grouper (jewfish);
- Set a 5-grouper recreational bag limit;
- Allow a 2-day possession limit for charter vessels and head boats on trips that extend beyond 24 hours, provided the vessel has two licensed operators aboard as required by the U.S. Coast Guard, and each passenger can provide a receipt to verify the length of the trip;
- All other fishermen fishing under a bag limit are limited to a single day possession limit;
- Set an 11.0 million-pound commercial quota for groupers, with the commercial quota divided into a 9.2 million pound shallow-water grouper quota and a 1.8 million-pound deepwater grouper quota. Shallow-water grouper were defined as black grouper, gag, red grouper, Nassau grouper, yellowfin grouper, yellowmouth

grouper, rock hind, red hind, speckled hind, and scamp (until the shallow-water grouper quota is filled). Deep-water grouper were defined as misty grouper, snowy grouper, yellowedge grouper, Warsaw grouper, and scamp once the shallow-water grouper quota is filled. Goliath grouper (jewfish) are not included in the quotas;

- Set a 12-inch total length minimum size limit on gray, mutton, and yellowtail snappers;
- Set an 8-inch total length minimum size limit on lane and vermilion snappers;
- Set a 10-snapper recreational bag limit on snappers in aggregate, excluding red, lane, and vermilion snapper;
- Set an 8-inch total length minimum size limit for black sea bass;
- Set a 28-inch fork length minimum size limit and 3 fish per person per day bag limit for recreational harvest of greater amberjack, and a 36-inch fork length minimum size limit of greater amberjack for commercial harvest;
- Establish a framework procedure for specification of TAC to allow for annual management changes;
- Establish a longline and buoy gear boundary at approximately the 50 fathom depth contour west of Cape San Blas, Florida and the 20 fathom depth contour east of Cape San Blas, inshore of which the directed harvest of reef fish with longlines and buoy gear was prohibited and the retention of reef fish captured incidentally in other longline operations (e.g., sharks) was limited to the recreational bag limit. Subsequent changes to the longline/buoy boundary could be made through the framework procedure for specification of TAC;
- Limit trawl vessels (other than vessels operating in the unsorted groundfish fishery) to the recreational size and bag limits of reef fish;
- Establish fish trap permits, allowing up to a maximum of 100 fish traps per permit holder;
- Prohibit the use of entangling nets for directed harvest of reef fish. Retention of reef fish caught in entangling nets for other fisheries is limited to the recreational bag limit;
- Establish the fishing year to be January 1 through December 31;
- Extend the stressed area to the entire Gulf coast;
- Establish a commercial reef fish vessel permit.

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

On November 7, 1989, NMFS announced that anyone entering the commercial reef fish fishery in the Gulf of Mexico and South Atlantic after a control date of November 1, 1989 may not be assured of future access to the reef fish fishery if a management regime is developed and implemented that limits the number of participants in the fishery. The purpose of this announcement was to establish a public awareness of potential eligibility criteria for future access to the reef fish resource, and does not prevent any other date for eligibility or other method for controlling fishing effort from being proposed and implemented.

Amendment 3, including EA and RIR, implemented in July 1991, provided additional flexibility in the annual framework procedure for specifying TAC by allowing the target date for rebuilding an overfished stock to be changed depending on changes in scientific advice, except that the rebuilding period cannot exceed 1.5 times the generation time of the species under consideration. It revised the FMP's primary objective, definitions of optimum yield and overfishing and framework procedure for TAC by replacing the 20 percent SSBR target with 20 percent spawning potential ratio (SPR). The amendment also transferred speckled hind from the shallow-water grouper quota category to the deepwater grouper quota category.

Amendment 4, including EA, RIR and initial RFA (IRFA), implemented in May 1992, established a moratorium on the issuance of new reef fish permits for a maximum period of three years. The moratorium was created to moderate short term future increases in fishing effort and to attempt to stabilize fishing mortality while the Council considers a more comprehensive effort limitation program. It allows the transfer of permits between vessels owned by the permittee or between individuals when the permitted vessel is transferred. Amendment 4 also changed the time of the year that TAC is specified from April to August and included additional species in the reef fish management unit.

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

Amendment 6, including EA, RIR and RFA, implemented in June 1993, extended the provisions of an emergency rule for red snapper endorsements for the remainder of 1993 and 1994, and it allowed the red snapper trip limits for qualifying and non-qualifying permitted vessels to be changed under the framework procedure for specification of TAC.

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

Amendment 8, including EA, RIR and IRFA, proposed establishment of a red snapper Individual Transferable Quota (ITQ) system. It was approved by NMFS and final rules were published in the Federal Register on November 29, 1995. However, concerns

about Congressional funding of the ITQ system made it inadvisable for the ITQ system to become operational, pending Congressional action. In October 1996, Congress, through reauthorization of the Magnuson-Stevens Act, repealed the red snapper ITQ system and prohibited Councils from submitting, or NMFS from approving and implementing, any new individual fishing quota program before October 1, 2000.

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

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

Amendment 11, including EA, RIR and IRFA, was partially approved by NMFS and implemented in January 1996. The six approved provisions are: (1) limit sale of Gulf reef fish by permitted vessels to permitted reef fish dealers; (2) require that permitted reef fish dealers purchase reef fish caught in Gulf federal waters only from permitted vessels; (3) allow transfer of reef fish permits and fish trap endorsements in the event of death or disability; (4) implement a new reef fish permit moratorium for no more than five years or until December 31, 2000, while the Council considers limited access for the reef fish fishery; (5) allow permit transfers to other persons with vessels by vessel owners (not operators) who qualified for their reef fish permit; and, (6) allow a one time transfer of existing fish trap endorsements to permitted reef fish vessels whose owners have landed reef fish from fish traps in federal waters, as reported on logbooks received by the Science and Research Director of NMFS from November 20, 1992 through February 6, 1994. NMFS disapproved a proposal to redefine Optimum Yield from 20 percent SPR (the same level as overfishing) to an SPR corresponding to a fishing mortality rate of F0.1 until an alternative operational definition that optimizes ecological, economic, and social benefits

to the Nation could be developed. In April 1997, the Council resubmitted the Optimum Yield definition with a new proposal to redefine Optimum Yield as 30 percent SPR. The resubmission document was disapproved by NMFS.

Amendment 12, including EA, RIR and IRFA, implemented in January 1997, reduced the greater amberjack bag limit from three fish to one fish per person, and created an aggregate bag limit of 20 reef fish for all reef fish species not having a bag limit.

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

Amendment 14, including EA, RIR and IRFA, implemented in March and April 1997, provided for a ten-year phase-out for the fish trap fishery; allowed transfer of fish trap endorsements for the first two years and thereafter only upon death or disability of the endorsement holder, to another vessel owned by the same entity, or to any of the 56 individuals who were fishing traps after November 19, 1992 and were excluded by the moratorium; and prohibited the use of fish traps west of Cape San Blas, Florida. The amendment also provided the Regional Administrator (RA) of NMFS with authority to reopen a fishery prematurely closed before the allocation was reached, and modified the provisions for transfer of commercial reef fish vessel permits. In addition, the amendment prohibited the harvest or possession of Nassau grouper in the Gulf EEZ, consistent with similar prohibitions in Florida state waters, the south Atlantic EEZ, and the Caribbean EEZ.

Amendment 15, including EA, RIR and IRFA, implemented in January 1998, prohibited harvest of reef fish from traps other than permitted reef fish traps, stone crab traps, or spiny lobster traps.

Amendment 16A, including EA, RIR and IRFA, submitted to NMFS in June 1998, was partially approved and implemented on January 10, 2000. The approved measures provided: (1) that the possession of reef fish exhibiting the condition of trap rash on board any vessel with a reef fish permit that is fishing spiny lobster or stone crab traps is prima facie evidence of illegal trap use and is prohibited except for vessels possessing a valid fish trap endorsement; (2) that NMFS establish a system design, implementation schedule, and protocol to require implementation of a vessel monitoring system (VMS) for vessels engaged in the fish trap fishery, with the cost of the vessel equipment, installation, and maintenance to be paid or arranged by the owners as appropriate; and, (3) that fish trap vessels submit trip initiation and trip termination reports. Prior to implementing this additional reporting requirement, there will be a one-month fish trap inspection/compliance/education period, at a time determined by the NMFS Regional Administrator and published in the Federal Register. During this window of opportunity, fish trap fishermen will be required to have an appointment with NMFS enforcement for the purpose of having their trap gear, permits, and vessels available for inspection. The disapproved measure was a proposal to prohibit fish traps south of 25.05 degrees north

latitude beginning February 7, 2001. The status quo 10-year phase-out of fish traps in areas in the Gulf EEZ is therefore maintained.

Amendment 16B, including EA, RIR and IRFA, was submitted to NMFS in January 1999, and was implemented by NMFS on November 24, 1999. This amendment set a recreational bag limit of one speckled hind and one Warsaw grouper per vessel, with the prohibition on the sale of these species when caught under the bag limit.

Amendment 17, including EA, RIR and IRFA, was submitted to NMFS in September 1999, and was implemented by NMFS on August 10, 2000. This amendment extended the commercial reef fish permit moratorium for another five years, from its previous expiration date of December 31, 2000 to December 31, 2005, unless replaced sooner by a comprehensive controlled access system. The purpose of the moratorium is to provide a stable environment in the fishery necessary for evaluation and development of a more comprehensive controlled access system for the entire commercial reef fish fishery.

Amendment 19, including a final SEIS, RIR and IRFA, also known as the Generic Amendment Addressing the Establishment of the Tortugas Marine Reserves, was submitted to NMFS in March 2001, and was implemented on August 19, 2002. This amendment, affecting all FMPs for the Gulf fisheries (Amendment 19 to the Reef Fish FMP), establishes two marine reserve areas off the Tortugas area and prohibits fishing for any species and anchoring by fishing vessels inside the two marine reserves.

Amendment 20, including EA, RIR and IRFA, also known as the Corrected Charter/Headboat Moratorium Amendment, affects the Reef Fish FMP (Amendment 20), the Coastal Pelagic FMP (Amendment 14) and, if implemented, a Dolphin/Wahoo FMP, was submitted to NMFS in October 2001. This amendment establishes a 3-year moratorium on the issuance of new charter and headboat vessel permits in the recreational for hire fisheries in the Gulf EEZ. The amendment was approved by NMFS and the provisions to determine eligibility and distribute moratorium permits was implemented on July 29, 2002, with the moratorium originally scheduled to become effective on December 26, 2002. However, on December 17, 2002, NMFS published an emergency action that deferred the date when "moratorium" charterboat permits are required from December 26, 2002 until June 16, 2003. This action was required because the final rule implementing the for-hire permit moratorium contained an error regarding eligibility that needed to be resolved before the moratorium could take effect. The purpose of this moratorium is to limit future expansion in the recreational for-hire fishery while the Council monitors the impact of the moratorium and considers the need for a more comprehensive effort management system in the for-hire recreational fishery. The Council set a qualifying cutoff date of March 29, 2001 in order to include all currently permitted vessels and vessels which have applied for a permit as of that date. The qualifying provisions also included persons who had a recreational for-hire vessel under construction prior to March 29, 2001 and who could show expenditures of at least five thousand dollars. In addition, persons who met the eligibility requirements to qualify as a historical captain (USCG licensed and operating as a captain of a for-hire vessel prior to March 29, 2001, will qualify for a permit within 90 days of the final rule, and at least 25 percent of earned income was from recreational for-hire fishing in one of the last four

years ending March 29, 2001) were issued a letter of eligibility, which can be replaced by a permit/endorsement valid only on the vessel that is operated by the historical captain.

Amendment 21, including SEIS, RIR and IRFA, implemented in July 2004, continues the Madison-Swanson and Steamboat Lumps marine reserves for an additional 6 years, until July 2010, and modifies the fishing restrictions within the reserves to allow surface trolling on a seasonal basis.

Amendment 22, including SEIS, RIR and IRFA, was submitted to NMFS in June 2004. It contains a red snapper rebuilding plan, sets the SFA parameters for red snapper, and provides bycatch reporting methodologies for the reef fish fishery.

Amendment 23, including SEIS, RIR and IRFA, was submitted to NMFS in October 2004. It contains a vermilion snapper rebuilding plan, provides harvest reduction measures for the recreational and commercial fisheries, and sets the SFA parameters for vermillion snapper.

Amendment 24, including EA, RIR and IRFA, was submitted to NMFS in January 2005. It contains a proposal to replace the commercial reef fish permit moratorium that expires after December 31, 2005 with a permanent limited access system. All vessels with valid permits on the date that this amendment is approved will be issued a commercial reef fish permit, which will be renewable and transferable.

A.1.2 Secretarial Amendments

Secretarial Amendment 1, including an EA, RIR and IRFA, was implemented in July 2004. It created a rebuilding plan for red grouper based on three-year intervals. It specified maximum sustainable yield (MSY), optimum yield (OY), maximum fishing mortality threshold (MFMT), and minimum stock size threshold (MSST) levels that comply with the Sustainable Fisheries Act. It also implemented preventative quotas for deep-water groupers (1.02 million pounds gutted weight) and tilefish (0.44 million pounds gutted weight) to avoid effort shifting to those species. Under the rebuilding strategy to set TAC every three years, approximately a 10% reduction in fishing mortality relative to fishing mortality during 1999-2001 was required for the first three years of the rebuilding plan. To accomplish this, Secretarial Amendment 1 includes a reduction in the shallow-water grouper quota from 9.35 million pounds gutted weight (9.8 million pounds whole weight) to 8.80 million pounds gutted weight, and creation of a 5.31 million pound gutted weight red grouper quota (which is included in the overall shallow-water grouper quota). The commercial shallow-water grouper fishery is to close when either the shallow-water grouper or red grouper quota is reached, whichever comes first. The Secretarial Amendment also sets a recreational bag limit of two red grouper out of the five aggregate grouper bag limit per person, with a double bag limit allowed for persons on qualified for-hire boats that are out over 24 hours.

Secretarial Amendment 2, including EA, RIR and RFA, was submitted to NMFS in November 2002, and was approved on June 17, 2003. It proposed the specification of MSY, OY, MFMT, and MSST levels for greater amberjack that are in compliance with the Sustainable Fisheries Act, and it established a rebuilding plan for greater amberjack

based on three-year intervals. No specific management measures were proposed in this amendment, since the greater amberjack harvest is currently within the TAC specified for the first three-year interval.

A.1.3 Regulatory Amendments

A July 1991 regulatory amendment, including EA and RIR, implemented November 12, 1991, provided a one-time increase in the 1991 quota for shallow-water groupers from 9.2 million pounds to 9.9 million pounds. This action was taken to provide the commercial fishery an opportunity to harvest 0.7 million pounds that went unharvested in 1990 due to an early closure of the fishery in 1990. NMFS had projected the 9.2 million-pound quota to be reached on November 7, 1990, but subsequent data showed that the actual harvest was 8.5 million pounds.

A November 1991 regulatory amendment, including EA RIR and IRFA, implemented June 22, 1992, raised the 1992 commercial quota for shallow-water groupers to 9.8 million pounds (using the corrected gutted-to-whole weight conversion factor of 1.05, see footnote 1), after a red grouper stock assessment indicated that the red grouper SPR was substantially above the Council's minimum target of 20 percent, and the Council concluded that the increased quota would not materially impinge on the long-term viability of at least the red grouper stock.

A September 1993 regulatory amendment, including EA RIR and IRFA, was prepared that would have moved the longline and buoy gear restricted area boundary off central and south-central Florida inshore from the 20 fathom isobath to the 15 fathom isobath for a one-year period beginning January 1, 1994. However, longline industry representatives requested that the amendment not be submitted due to concerns that it would lead to a quota closure. In addition, the NMFS Southeast Fisheries Science Center expressed concern that there were inadequate experimental controls to properly evaluate the impact of the action. Consequently, this amendment was not submitted.

An October 1993 regulatory amendment, including EA RIR and RFA, implemented January 1, 1994, set the opening date of the 1994 commercial red snapper fishery as February 10, 1994, and restricted commercial vessels to landing no more than one trip limit per day. The shallow-water grouper regulations were also evaluated but no change was made. The shallow-water grouper TAC, which previously had only been specified as a commercial quota, was specified as a total harvest of 15.1 million pounds (with 9.8 million pounds allocated to the commercial quota) and 20-inch TL size limit for gag, red, Nassau, yellowfin and black grouper.

A rejected December 1994 regulatory amendment, including EA RIR and IRFA, would have reduced the minimum size limit for red grouper from 20 inches to 18 inches in response to complaints from the commercial sector that regulations were too restrictive to allow them to harvest their quota of shallow water grouper. NMFS rejected the proposed action because of concern that it would result in the recreational sector exceeding its allocation. In March 1995 a revised regulatory amendment was submitted to NMFS that would reduce the red grouper size limit to 18 inches for only the commercial sector. That regulatory amendment was rejected by NMFS because newly discovered

biases in the growth rate data collected in recent years resulted in uncertainty about the current status of the red grouper stock. Further analysis by NMFS biologists and the RFSAP reduced that uncertainty to the point where the status of red grouper stocks was determined to be most likely at or above 27 percent SPR, well above the overfishing threshold.

In September 1995 a second revised regulatory amendment, including EA RIR and IRFA, was submitted to NMFS to reduce the commercial red grouper size limit to 18 inches. This second revision was rejected by NMFS because they felt it would create user conflicts, produce long term economic losses to commercial fishermen, allow the harvest of juvenile fish, and potentially lead to the commercial quota being filled early and create a derby fishery.

An August 1999 regulatory amendment, including EA RIR and IRFA, implemented June 19, 2000, increased the commercial size limit for gag from 20 to 24 inches TL, increased the recreational size limit for gag from 20 to 22 inches TL, prohibited commercial sale of gag, black, and red grouper each year from February 15 to March 15 (during the peak of gag spawning season), and established two marine reserves on areas suitable for gag and other reef fish spawning aggregations sites that are closed year-round to fishing for all species under the Council's jurisdiction. The two sites cover 219 square nautical miles near the 40-fathom contour, off west central Florida. An additional proposal to continue increasing the recreational minimum size limit for gag and black grouper by one inch per year until it reached 24 inches TL was rejected by NMFS because it was felt that it would have a disproportionate impact on the recreational fishery vs. the commercial fishery.

A.1.4 Control Date Notices

Control date notices are used to inform fishermen that a license limitation system or other method of limiting access to a particular fishery or fishing method is under consideration. If a program to limit access is established, anyone not participating in the fishery or using the fishing method by the published control date may be ineligible for initial access to participate in the fishery or to use that fishing method. However, a person who does not receive an initial eligibility may be able to enter the fishery or fishing method after the limited access system is established by transfer of the eligibility from a current participant, provided the limited access system allows such transfer. Publication of a control date does not obligate the Council to use that date as an initial eligibility criteria. A different date could be used, and additional qualification criteria could be established. The announcement of a control date is primarily intended to discourage entry into the fishery or use of the gear based on economic speculation during the Council's deliberation on the issues. The following summarizes control dates that have been established for the Reef Fish FMP. A reference to the full Federal Register notice is included with each summary.

November 1, 1989 - Anyone entering the commercial reef fish fishery in the Gulf of Mexico and South Atlantic after November 1, 1989 may not be assured of future access

to the reef fish resource if a management regime is developed and implemented that limits the number of participants in the fishery. [54 FR 46755]

November 18, 1998 - The Gulf of Mexico Fishery Management Council (Council) is considering whether there is a need to impose additional management measures limiting entry into the recreational-for-hire (i.e., charter vessel and headboat) fisheries for reef fish and coastal migratory pelagic fish in the EEZ of the Gulf of Mexico and, if there is a need, what management measures should be imposed. Possible measures include the establishment of a limited entry program to control participation or effort in the recreational-for-hire for reef fish and coastal migratory pelagics. [63 FR 64031] (In the Charter/Headboat Moratorium Amendment, approved by the Council for submission to NMFS in March 2001, a qualifying date of March 29, 2001 was adopted.)

July 12, 2000 - The Gulf of Mexico Fishery Management Council (Council) is considering whether there is a need to limit participation by gear type in the commercial reef fish fisheries in the exclusive economic zone (EEZ) of the Gulf of Mexico and, if there is a need, what management measures should be imposed to accomplish this. Possible measures include modifications to the existing limited entry program to control fishery participation, or effort, based on gear type, such as a requirement for a gear endorsement on the commercial reef fish vessel permit for the appropriate gear. Gear types which may be included are longlines, buoy gear, handlines, rod-and-reel, bandit gear, spearfishing gear, and powerheads used with spears. [65 FR 42978]

October 15, 2004 - The Gulf of Mexico Fishery Management Council (GMFMC) is considering the establishment of an individual fishing quota (IFQ) to control participation or effort in the commercial grouper fishery of the Gulf of Mexico. If an IFQ is established, the GMFMC is considering October 15, 2004, as a possible control date regarding the eligibility of catch histories in the commercial grouper fishery. [69 FR 67106]

A.1.5 History of Amendment 18

Amendment 18 has gone through a very long and convoluted development. In the process, numerous issues have been added, removed, and in some cased added back to the amendment. The timeline below shows the timeline of Amendment 18's development, including past activities and the projected timeline to completion. For a history of when issues were added to or removed from the amendment, see Section 6 - Issues Considered But Rejected.

Past Activities

July 1999	Council meeting (Key West) - Council directs staff to begin immediate preparation of a full plan amendment to address management of all groupers.
March 2000	Council meeting (San Antonio) - A preliminary scoping document is presented to the Council by staff.

May 2000	Council meeting (New Orleans) - An issues and options paper for Amendment 18 is presented to the Council.
January 2001	Council meeting (Galveston) - A second draft issues and options paper for Amendment 18 is presented to the Council. Council votes to add the red grouper rebuilding plan to Amendment 18.
March 2001	Council meeting (Mobile) - A third draft issues and options paper for Amendment 18 is presented to the Council.
May 2001	Council meeting (Panama City Beach) - A pre-public hearing draft of Amendment 18 is presented to the Council, plus a draft SEIS. Public hearing dates and locations for June 2001 are approved.
June 2001	Public Hearings Held
July 2001	Council meeting (Duck Key) - Draft Amendment 18 is presented to the Council for final action, along with public hearing summaries, letters received, AP/SSC recommendations and federal comments. However, the Council is informed by staff of the need for re-analyses of some of the management options due to the mixing if gutted and whole weights in some of the previous analyses, and the need to update the ABC projections to reflect a red grouper rebuilding starting date in 2002 rather than 2000.
September 2001	Council meeting (New Orleans) - NMFS/SEFSC presented the updated analyses. Council staff and MRAG present updated draft Amendment 18 and SEIS. Council meeting is interrupted due to terrorist attacks of September 11, 2001.
December 2001	Council meeting (Biloxi) - The consolidated Amendment 18 with DSEIS prepared by MRAG Americas, Inc. is presented to the Council, along with Law Enforcement AP recommendations. At the Council meeting, NMFS notifies Council that yet more analyses is needed in the draft SEIS. The Council votes to remove the red grouper rebuilding plan and issues and alternatives related to the rebuilding plan from Amendment 18 and proceed with them as a separate regulatory amendment.
January 2002	Council meeting (Brownsville) - An options paper for the Red Grouper Regulatory Amendment is presented to the Council.
Jan. – Sept. 2002	Work proceeds on completing the red grouper rebuilding amendment, which is reclassified as Secretarial Amendment 1.
September 2002	An options paper for the revision of draft Amendment 18 (with issues in the Secretarial Red Grouper Amendment removed) is reviewed by the Council.

January 2003	A revised Amendment 18 options paper is reviewed by the Council.
July 2003	The Council reviews the list of issues to be included in Amendment 18.
September 2003	A partially rewritten Amendment 18 options paper is reviewed by the Council.
November 2003	Portions of the Amendment 18 options paper are reviewed by the Council.
March 2004	A new section on maximum crew size on vessels holding both commercial and charter permits is added by the Council.
May 2004	Amendment 18 is split into two amendments, 18A and 18B. <u>Amendment 18A contains</u>: Effort Capacity Control - Endorsements Shallow-water grouper endorsement, Endorsement for the use of longline/drift buoy gear, Transfer of eligibility criteria, Transferability of endorsements, Appeals process for initial issuance of endorsements. Effort Capacity Control - Other Dormant commercial and charter vessel reef fish permits, Simultaneous commercial and recreational harvest on a vessel, Maximum crew size on a charter vessel when fishing commercially. Enforcement and Monitoring Issues Use of Reef Fish for Bait, Vessel Monitoring System. Fishing Mortality and Ecosystem Issues Longline and Buoy Gear Phase-out Seasonal Closed areas <u>Amendment 18B contains:</u> Administrative and Procedural Issues Changes to the Reef Fish Management Unit, Modifications to the TAC Framework Procedure. Sustainable Fisheries Act Issues Status Determination Criteria for Groupers and Amberjacks, Goliath Grouper Rebuilding Plan, Nassau Grouper Rebuilding Plan, Reduce Bycatch and Bycatch Mortality
October 2004	The Council decides to move all issues dealing with effort capacity control - endorsements, plus longline/buoy gear phase-out and dormant commercial and charter vessel reef fish permits, to the

	Considered but Rejected section, and instead to begin a new amendment to the Reef Fish Fishery Management Plan to look at alternatives of using an IFQ in the commercial grouper fishery. Amendment 18A moves forward in development with the remaining issues.
November 2004	The Council decides to move the issue of time/area closures to the Considered but Rejected section. The issues remaining in Amendment 18A deal primarily with enforcement and are simultaneous commercial and recreational harvest on a vessel, maximum crew size on a charter vessel when fishing commercially, use of reef fish for bait, and vessel monitoring system.
January 2005	The Council adds a new section to Amendment 18A dealing with bycatch mortality of protected species (e.g., sea turtles) in the reef fish fishery.
March 2005	The Council reviews the revised Amendment 18A and adds an additional alternative to the section on bycatch mortality of protected species.
May 2005	The Council makes final changes to the lists of alternatives, selects preferred alternatives, and approves the amendment for public hearings.
	Future Activities (dates tentative)
June 2005	Public hearings are held in New Orleans, LA; Biloxi, MS; Orange Beach, AL; Destin, FL; Galveston, TX; Port Aransas, TX; Port Isabel, TX; Key West, FL; Naples, FL; and Madeira Beach, FL
July 2005	The Council takes final action on Proposed Alternatives.
October 2005	The Council reviews and approves the final version of Amendment 18A for submission to the Secretary of Commerce.

Appendix B – Approved VMS Devices and Communications Providers

In order to provide fishermen with a range of choices and price ranges for both the VMS hardware and the communications provider, NMFS has certified several vendors and transmitter models. The current list of approved systems is summarized below. These devices are currently approved for HMS and/or South Atlantic rock shrimp vessels (fishermen will need to select a transceiver unit and a communications service provider).

Approved VMS Mobile Transceiver Units: (as of June 2004)
Note: Costs shown are for the units only, and do not include installation costs of approximately $400.

Thrane & Thrane Fishery "Capsat" (Part number TT-3022D-NMFS) ($2,500 as of 5/2003)

- Factory configured for NMFS VMS Operation
- Option to send position reports to a private address, such as company headquarters
- Option to add two-way e-mail capability with addition of a laptop or personal computer at additional cost
- Contains distress push-buttons to request assistance from U.S. search and rescue authorities (two-way communication possible with additional optional equipment)

Thrane & Thrane Fishery "Mini-C" (part number TT-3026-NMFS) ($1,600 with 10m cable as of 6/2004)

- Factory configured for NMFS VMS Operation
- Configured to automatically send position reports to private email address
- No distress button
- Option to add two-way e-mail capability with addition of a laptop or personal computer at additional cost

Thrane & Thrane Fishery "Mini-C" (part number TT-3026S-NMFS) ($1,700 [with 10m cable] as of 6/2004)

- Factory configured for NMFS VMS operation
- Configured to automatically send position reports to private e-mail address
- No distress button
- Option to add two-way e-mail capability with addition of a laptop or personal computer at additional cost
- Configured to receive safety net & weather information by EGC message

Orbcomm Steller ST 2500G (part number ST2500G-NMFS) ($1,200 as of 6/2004)

- Factory configured for automatic reduced GPS positioning when vessel is stationary
- Normal position transmissions start when vessel goes to sea
- Factory configured for NMFS OLE specifications for fishery
- Two-way e-mail capability with addition of a laptop or personal computer; automated e-mail delivery system alerts when new e-mail arrives via indicator light
- Capable of sending automated position reports to any e-mail list at scheduled intervals
- Able to receive weather reports, forecasts, 5-day projections
- Reserve battery

Approved Communications Service Providers: (as of June 2004)

Orbcomm

- A store and forward data messaging service
- Critical safety messages may be free of charge as part of USCG Automated Mutual - Assistance Vessel Rescue System
- Two-way service at higher cost
- Platinum Plan (50,000 characters/month) is $69.99 plus $99 one time fee for activation; $1.40 per 1000 additional characters
- Gold Plan (20,000 characters/month) is $34.99 plus $99 one time fee for activation; $1.70 per 1000 additional characters
- Silver Plan (8,000 characters/month) is $15.99 plus $99 one time fee for activation; $1.40 per 1000 additional characters
- Drydock Plan (when not in use $4.99/month) to maintain account and continue email

Inmarsat - C Communication Providers

- VMS units must be installed in accordance with instructions (preferably by a certified marine electrician)
- A signed and completed Installation and Activation Certification forwarded to NMFS SE Enforcement
- Receipt of position reports verified with NMFS SE Enforcement prior to first departure
- Units powered on two hours prior to each trip departure at a minimum (preferable to have 24 x 7 reporting)

Telenor Satellite Services/Inmarsat-C

- $0.05 per single packet position report
- up to $1.20 per day
- $0.37 per report for polling (personal tracking position reports)
- Internet-C e-mail or Inmarsat-C messaging (per 256 bits) $0.24

- No monthly subscription fee
- Can provide internet e-mail, position and weather reporting, a free daily news service, and remote equipment monitoring and control. Can send critical safety at sea messages as part of the U.S. Coast Guard's Automated Mutual-Assistance Vessel Rescue system and of the NOAA Shipboard Environmental Acquisition System programs using the TT3022D.

Xantic

- $0.07 per report
- up to $1.68 per day
- $0.36 per report for polling (personal tracking position reports)
- Inmarsat-C messaging (per 256 bits) $0.21
- Internet-C e-mail (per 256 bits) $0.20
- No monthly subscription fee
- Password authentication to prevent unauthorized changes or inquiries
- Separation of private messages from VMS-related messages (NOAA Office of Law Enforcement receives VMS position reports only)

Stratos

- Provides services globally
- Provides email with billing to user (e.g. craw-member)

Appendix C – Text of 50 CFR 635.21(c)(5)

50 CFR 635.21(c)(5) The operator of a vessel required to be permitted under this part and that has pelagic longline gear on board must undertake the following sea turtle bycatch mitigation measures:

(i) Possession and use of required mitigation gear. Required sea turtle bycatch mitigation gear, which NMFS has approved under paragraph (c)(5)(iv) of this section as meeting the minimum design standards specified in paragraphs (c)(5)(i)(A) through (c)(5)(i)(L) of this section, must be carried on board, and must be used to disengage any hooked or entangled sea turtles in accordance with the handling requirements specified in paragraph (c)(5)(ii) of this section.

(A) Long-handled line clipper or cutter. Line cutters are intended to cut high test monofilament line as close as possible to the hook, and assist in removing line from entangled sea turtles to minimize any remaining gear upon release. NMFS has established minimum design standards for the line cutters. The LaForce line cutter and the Arceneaux line clipper are models that meet these minimum design standards, and may be purchased or fabricated from readily available and low-cost materials. One long-handled line clipper or cutter and a set of replacement blades are required to be onboard. The minimum design standards for line cutters are as follows:

(1) A protected and secured cutting blade. The cutting blade(s) must be capable of cutting 2.0-2.1 mm (0.078 in. - 0.083 in.) monofilament line (400-lb test) or polypropylene multistrand material, known as braided or tarred mainline, and must be maintained in working order. The cutting blade must be curved, recessed, contained in a holder, or otherwise designed to facilitate its safe use so that direct contact between the cutting surface and the sea turtle or the user is prevented. The cutting instrument must be securely attached to an extended reach handle and be easily replaceable. One extra set of replacement blades meeting these standards must also be carried on board to replace all cutting surfaces on the line cutter or clipper.

(2) An extended reach handle. The line cutter blade must be securely fastened to an extended reach handle or pole with a minimum length equal to, or greater than, 150 percent of the freeboard, or a minimum of 6 feet (1.83 m), whichever is greater. It is recommended, but not required, that the handle break down into sections. There is no restriction on the type of material used to construct this handle as long as it is sturdy and facilitates the secure attachment of the cutting blade.

(B) Long-handled dehooker for ingested hooks. A long-handled dehooking device is intended to remove ingested hooks from sea turtles that cannot be boated. It should also be used to engage a loose hook when a turtle is entangled but not hooked, and line is being removed. The design must shield the barb of the hook and prevent it from re-engaging during the removal process. One long-handled device to remove ingested hooks is required onboard. The minimum design standards are as follows:

(1) Hook removal device. The hook removal device must be constructed of 5/16-inch (7.94 mm) 316 L stainless steel and have a dehooking end no larger than 1 7/8-inches (4.76 cm) outside diameter. The device must securely engage and control the leader while shielding the barb to prevent the hook from re-engaging during removal. It may not have any unprotected terminal points (including blunt ones), as these could cause injury to the esophagus during hook removal. The device must be of a size appropriate to secure the range of hook sizes and styles used in the pelagic longline fishery targeting swordfish and tuna.

(2) Extended reach handle. The dehooking end must be securely fastened to an extended reach handle or pole with a minimum length equal to or greater than 150 percent of the freeboard, or a minimum of 6 ft (1.83 m), whichever is greater. It is recommended, but not required, that the handle break down into sections. The handle must be sturdy and strong enough to facilitate the secure attachment of the hook removal device.

(C) Long-handled dehooker for external hooks. A long-handled dehooker is required for use on externally-hooked sea turtles that cannot be boated. The long-handled dehooker for ingested hooks described in paragraph (c)(5)(i)(B) of this section would meet this requirement. The minimum design standards are as follows:

(1) Construction. A long-handled dehooker must be constructed of 5/16-inch (7.94 mm) 316 L stainless steel rod. A 5-inch (12.7-cm) tube T-handle of 1-inch (2.54 cm) outside diameter is recommended, but not required. The design should be such that a fish hook can be rotated out, without pulling it out at an angle. The dehooking end must be blunt with all edges rounded. The device must be of a size appropriate to secure the range of hook sizes and styles used in the pelagic longline fishery targeting swordfish and tuna.

(2) Extended reach handle. The handle must be a minimum length equal to the freeboard of the vessel or 6 ft (1.83 m), whichever is greater.

(D) Long-handled device to pull an ``inverted V''. This tool is used to pull a ``V'' in the fishing line when implementing the ``inverted V'' dehooking technique, as described in the document entitled ``Careful Release Protocols for Sea Turtle Release With Minimal Injury,'' required under paragraph (a)(3) of this section, for disentangling and dehooking entangled sea turtles. One long-handled device to pull an ``inverted V'' is required onboard. If a 6-ft (1.83 m) J-style dehooker is used to comply with paragraph (c)(5)(i)(C) of this section, it will also satisfy this requirement. Minimum design standards are as follows:

(1) Hook end. This device, such as a standard boat hook or gaff, must be constructed of stainless steel or aluminum. A sharp point, such as on a gaff hook, is to be used only for holding the monofilament fishing line and should never contact the sea turtle.

(2) Extended reach handle. The handle must have a minimum length equal to the freeboard of the vessel, or 6 ft (1.83 m), whichever is greater. The handle must be sturdy and strong enough to facilitate the secure attachment of the gaff hook.

(E) Dipnet. One dipnet is required onboard. Dipnets are to be used to facilitate safe handling of sea turtles by allowing them to be brought onboard for fishing gear removal, without causing further injury to the animal. Turtles must not be brought onboard without the use of a dipnet. The minimum design standards for dipnets are as follows:

(1) Size of dipnet. The dipnet must have a sturdy net hoop of at least 31 inches (78.74 cm) inside diameter and a bag depth of at least 38 inches (96.52 cm) to accommodate turtles below 3 ft (0.914 m)carapace length. The bag mesh openings may not exceed 3 inches (7.62 cm) 3 inches (7.62 cm). There must be no sharp edges or burrs on the hoop, or where it is attached to the handle.

(2) Extended reach handle. The dipnet hoop must be securely fastened to an extended reach handle or pole with a minimum length equal to, or greater than, 150 percent of the freeboard, or at least 6 ft (1.83 m), whichever is greater. The handle must made of a rigid material strong enough to facilitate the sturdy attachment of the net hoop and able to support a minimum of 100 lbs (34.1 kg) without breaking or significant bending or distortion. It is recommended, but not required, that the extended reach handle break down into sections.

(F) Tire. A minimum of one tire is required for supporting a turtle in an upright orientation while it is onboard, although an assortment of sizes is recommended to accommodate a range of turtle sizes. The required tire must be a standard passenger vehicle tire, and must be free of exposed steel belts.

(G) Short-handled dehooker for ingested hooks. One short-handled device for removing ingested hooks is required onboard. This dehooker is designed to remove ingested hooks from boated sea turtles. It can also be used on external hooks or hooks in the front of the mouth. Minimum design standards are as follows:

(1) Hook removal device. The hook removal device must be constructed of 1/4-inch (6.35 mm) 316 L stainless steel, and must allow the hook to be secured and the barb shielded without re-engaging during the removal process. It must be no larger than 1 5/16 inch (3.33 cm) outside diameter. It may not have any unprotected terminal points (including blunt ones), as this could cause injury to the esophagus during hook removal. A sliding PVC bite block must be used to protect the beak and facilitate hook removal if the turtle bites down on the dehooking device. The bite block should be constructed of a 3/4 -inch (1.91 cm) inside diameter high impact plastic cylinder (e.g., Schedule 80 PVC) that is 10 inches (25.4 cm) long to allow for 5 inches (12.7 cm) of slide along the shaft.

The device must be of a size appropriate to secure the range of hook sizes and styles used in the pelagic longline fishery targeting swordfish and tuna.

(2) Handle length. The handle should be approximately 16 - 24 inches (40.64 cm - 60.69 cm) in length, with approximately a 5-inch (12.7 cm) long tube T-handle of approximately 1 inch (2.54 cm) in diameter.

(H) Short-handled dehooker for external hooks. One short-handled dehooker for external hooks is required onboard. The short-handled dehooker for ingested hooks required to comply with paragraph (c)(5)(i)(G) of this section will also satisfy this requirement. Minimum design standards are as follows:

(1) Hook removal device. The dehooker must be constructed of 5/16-inch (7.94 cm) 316 L stainless steel, and the design must be such that a hook can be rotated out without pulling it out at an angle. The dehooking end must be blunt, and all edges rounded. The device must be of a size appropriate to secure the range of hook sizes and styles used in the pelagic longline fishery targeting swordfish and tuna.

(2) Handle length. The handle should be approximately 16 - 24 inches (40.64 cm - 60.69 cm) long with approximately a 5-inch (12.7 cm) long tube T-handle of approximately 1 inch (2.54 cm) in diameter.

(I) Long-nose or needle-nose pliers. One pair of long-nose or needle-nose pliers is required on board. Required long-nose or needle-nose pliers can be used to remove deeply embedded hooks from the turtle's flesh that must be twisted during removal. They can also hold PVC splice couplings, when used as mouth openers, in place. Minimum design standards are as follows:

(1) General. They must be approximately 12 inches (30.48 cm) in length, and should be constructed of stainless steel material.

(2) [Reserved]

(J) Bolt cutters. One pair of bolt cutters is required on board. Required bolt cutters may be used to cut hooks to facilitate their removal. They should be used to cut off the eye or barb of a hook, so that it can safely be pushed through a sea turtle without causing further injury. They should also be used to cut off as much of the hook as possible, when the remainder of the hook cannot be removed. Minimum design standards are as follows:

(1) General. They must be approximately 17 inches (43.18 cm) in total length, with 4-inch (10.16 cm) long blades that are 2 1/4 inches (5.72 cm) wide, when closed, and with 13-inch (33.02 cm) long handles. Required bolt cutters must be able to cut hard metals, such as stainless or carbon steel hooks, up to 1/4-inch (6.35 mm) diameter.

(2) [Reserved]

(K) Monofilament line cutters. One pair of monofilament line cutters is required on board. Required monofilament line cutters must be used to remove fishing line as close to the eye of the hook as possible, if the hook is swallowed or cannot be removed. Minimum design standards are as follows:

(1) General. Monofilament line cutters must be approximately 7 1/2 inches (19.05 cm) in length. The blades must be 1 in (4.45 cm) in length and 5/8 in (1.59 cm) wide, when closed, and are recommended to be coated with Teflon (a trademark owned by E.I. DuPont de Nemours and Company Corp.).

(2) [Reserved]

(L) Mouth openers/mouth gags. Required mouth openers and mouth gags are used to open sea turtle mouths, and to keep them open when removing ingested hooks from boated turtles. They must allow access to the hook or line without causing further injury to the turtle. Design standards are included in the item descriptions. At least two of the seven different types of mouth openers/gags described below are required:

(1) A block of hard wood. Placed in the corner of the jaw, a block of hard wood may be used to gag open a turtle's mouth. A smooth block of hard wood of a type that does not splinter (e.g. maple) with rounded edges should be sanded smooth, if necessary, and soaked in water to soften the wood. The dimensions should be approximately 11 inches (27.94 cm) 1 inch (2.54 cm) 1 inch (2.54 cm). A long-handled, wire shoe brush with a wooden handle, and with the wires removed, is

an inexpensive, effective and practical mouth-opening device that meets these requirements.

(2) A set of three canine mouth gags. Canine mouth gags are highly recommended to hold a turtle's mouth open, because the gag locks into an open position to allow for hands-free operation after it is in place. A set of canine mouth gags must include one of each of the following sizes: small (5 inches)(12.7 cm), medium (6 inches) (15.24 cm), and large (7 inches)(17.78 cm). They must be constructed of stainless steel. A 1 -inch (4.45 cm) piece of vinyl tubing (3/4-inch (1.91 cm) outside diameter and 5/8-inch (1.59 cm) inside diameter) must be placed over the ends to protect the turtle's beak.

(3) A set of two sturdy dog chew bones. Placed in the corner of a turtle's jaw, canine chew bones are used to gag open a sea turtle's mouth. Required canine chews must be constructed of durable nylon, zylene resin, or thermoplastic polymer, and strong enough to withstand biting without splintering. To accommodate a variety of turtle beak sizes, a set must include one large (5 1/2 - 8 inches(13.97 cm - 20.32 cm) in length), and one small (3 1/2 - 4 1/2 inches (8.89 cm - 11.43 cm) in length) canine chew bones.

(4) A set of two rope loops covered with hose. A set of two rope loops covered with a piece of hose can be used as a mouth opener, and to keep a turtle's mouth open during hook and/or line removal. A required set consists of two 3-foot (0.91 m) lengths of poly braid rope (3/8-inch (9.52 mm) diameter suggested), each covered with an 8-inch (20.32 cm) section of 1/2 inch (1.27 cm) or 3/4 inch (1.91 cm) light-duty garden hose, and each tied into a loop. The upper loop of rope covered with hose is secured on the upper beak to give control with one hand, and the second piece of rope covered with hose is secured on the lower beak to give control with the user's foot.

(5) A hank of rope. Placed in the corner of a turtle's jaw, a hank of rope can be used to gag open a sea turtle's mouth. A 6-foot (1.83 m) lanyard of approximately 3/16-inch (4.76 mm) braided nylon rope may be folded to create a hank, or looped bundle, of rope. Any size soft-braided nylon rope is allowed, however it must create a hank of approximately 2 - 4 inches (5.08 cm - 10.16 cm) in thickness.

(6) A set of four PVC splice couplings. PVC splice couplings can be positioned inside a turtle's mouth to allow access to the back of the mouth for hook and line removal. They are to be held in place with the needle-nose pliers. To ensure proper fit and access, a required set must consist of the following Schedule 40 PVC splice coupling sizes: 1 inch (2.54 cm), 1 1/4 inch (3.18 cm), 1 1/2 inch (3.81 cm), and 2 inches (5.08 cm).

(7) A large avian oral speculum. A large avian oral speculum provides the ability to hold a turtle's mouth open and to control the head with one hand, while removing a hook with the other hand. The avian oral speculum must be 9-inches (22.86 cm) long, and constructed of 3/16-inch (4.76 mm) wire diameter surgical stainless steel (Type 304). It must be covered with 8 inches (20.32 cm) of clear vinyl tubing (5/16-inch (7.9 mm) outside diameter, 3/16-inch (4.76 mm) inside diameter).

(ii) Handling and release requirements.

(A) Sea turtle bycatch mitigation gear, as required by paragraphs (c)(5)(i)(A)-(D) of this section, must be used to disengage any hooked or entangled sea turtles that cannot be brought on board. Sea turtle bycatch mitigation gear, as required by paragraphs (c)(5)(i)(E)-(L) of this section, must be used to facilitate access, safe handling, disentanglement, and hook removal or hook cutting of sea turtles that can be brought on board, where feasible. Sea turtles must be handled, and bycatch mitigation gear must be used, in accordance with the careful release protocols and handling/release guidelines specified in paragraph (a)(3) of this section, and in accordance with the onboard handling and resuscitation requirements specified in Sec. 223.206(d)(1)of this title.

(B) Boated turtles. When practicable, active and comatose sea turtles must be brought on board, with a minimum of injury, using a dipnet as required by paragraph (c)(5)(i)(E) of

this section. All turtles less than 3 ft (.91 m) carapace length should be boated, if sea conditions permit.

(1) A boated turtle should be placed on a standard automobile tire, or cushioned surface, in an upright orientation to immobilize it and facilitate gear removal. Then, it should be determined if the hook can be removed without causing further injury. All externally embedded hooks should be removed, unless hook removal would result in further injury to the turtle. No attempt to remove a hook should be made if it has been swallowed and the insertion point is not visible, or if it is determined that removal would result in further injury. If a hook cannot be removed, as much line as possible should be removed from the turtle using monofilament cutters as required by paragraph (c)(5)(i) of this section, and the hook should be cut as close as possible to the insertion point before releasing the turtle, using bolt cutters as required by paragraph (c)(5)(i) of this section. If a hook can be removed, an effective technique may be to cut off either the barb, or the eye, of the hook using bolt cutters, and then to slide the hook out. When the hook is visible in the front of the mouth, a mouth-opener, as required by paragraph (c)(5)(i) of this section, may facilitate opening the turtle's mouth and a gag may facilitate keeping the mouth open. Short-handled dehookers for ingested hooks, long-nose pliers, or needle-nose pliers, as required by paragraph (c)(5)(i) of this section, should be used to remove visible hooks from the mouth that have not been swallowed on boated turtles, as appropriate. As much gear as possible must be removed from the turtle without causing further injury prior to its release. Refer to the careful release protocols and handling/release guidelines required in paragraph (a)(3) of this section, and the handling and resuscitation requirements specified in Sec. 223.206(d)(1) of this title, for additional information.

(2) [Reserved]

(C) Non-boated turtles. If a sea turtle is too large, or hooked in a manner that precludes safe boating without causing further damage or injury to the turtle, sea turtle bycatch mitigation gear required by paragraphs (c)(5)(i)(A)-(D) of this section must be used to disentangle sea turtles from fishing gear and disengage any hooks, or to clip the line and remove as much line as possible from a hook that cannot be removed, prior to releasing the turtle, in accordance with the protocols specified in paragraph (a)(3) of this section.

(1) Non-boated turtles should be brought close to the boat and provided with time to calm down. Then, it must be determined whether or not the hook can be removed without causing further injury. All externally embedded hooks must be removed, unless hook removal would result in further injury to the turtle. No attempt should be made to remove a hook if it has been swallowed, or if it is determined that removal would result in further injury. If the hook cannot be removed and/or if the animal is entangled, as much line as possible must be removed prior to release, using a line cutter as required by paragraph (c)(5)(i) of this section. If the hook can be removed, it must be removed using a long-handled dehooker as required by paragraph (c)(5)(i) of this section. Without causing further injury, as much gear as possible must be removed from the turtle prior to its release. Refer to the careful release protocols and handling/release guidelines required in paragraph (a)(3) of this section, and the handling and resuscitation requirements specified in Sec. 223.206(d)(1) for additional information.

(2) [Reserved]

Appendix D – Text of 50 CFR 635.21(a)(3) and 50 CFR 635.21(d)(3)

50 CFR 635.21(a)(3) All vessels that have pelagic longline gear on board and that have been issued, or are required to have, a limited access swordfish, shark, or tuna longline category permit for use in the Atlantic Ocean including the Caribbean Sea and the Gulf of Mexico must possess inside the wheelhouse the document provided by NMFS entitled, ``Careful Release Protocols for Sea Turtle Release with Minimal Injury," and all vessels with pelagic or bottom longline gear on board must post inside the wheelhouse the sea turtle handling and release guidelines provided by NMFS.

50 CFR 635.21(d)(3) Bottom longlines. The operator of a vessel required to be permitted under this part and that has bottom longline gear on board must undertake the following bycatch mitigation measures to release sea turtles, prohibited sharks, or smalltooth sawfish, as appropriate.

(i) Possession and use of required mitigation gear. Line clippers meeting minimum design specifications as specified in paragraph (d)(3)(i)(A) of this section and dipnets meeting minimum standards prescribed in paragraph (d)(3)(i)(B) of this section must be carried on board and must be used to disengage any hooked or entangled sea turtles, prohibited sharks, or smalltooth sawfish, in accordance with the requirements specified in paragraph (d)(3)(ii) of this section.

(A) Line clippers. Line clippers are intended to cut fishing line as close as possible to hooked or entangled sea turtles, prohibited sharks, or smalltooth sawfish. NMFS has established minimum design standards for line clippers. The Arceneaux line clipper is a model that meets these minimum design standards and may be fabricated from readily available and low-cost materials (65 FR 16347, March 28, 2000). The minimum design standards for line clippers are as follows:

(1) A protected cutting blade. The cutting blade must be curved, recessed, contained in a holder, or otherwise designed to minimize direct contact of the cutting surface with sea turtles, prohibited sharks, smalltooth sawfish, or users of the cutting blade.

(2) Cutting blade edge. The blade must be able to cut 2.0-2.1 mm monofilament line and nylon or polypropylene multistrand material commonly known as braided mainline or tarred mainline.

(3) An extended reach holder for the cutting blade. The line clipper must have an extended reach handle or pole of at least 6 ft (1.82 m).

(4) Secure fastener. The cutting blade must be securely fastened to the extended reach handle or pole to ensure effective deployment and use.

(B) Dipnets. Dipnets are intended to facilitate safe handling of sea turtles and access to sea turtles for purposes of cutting lines in a manner that prevents injury and trauma to sea turtles. The minimum design standards for dipnets are as follows:

(1) Extended reach handle. The dipnet must have an extended reach handle of at least 6 ft (1.82 m) of wood or other rigid material able to support a minimum of 100 lb (34.1 kg) without breaking or significant bending or distortion.

(2) Size of dipnet. The dipnet must have a net hoop of at least 31 inches (78.74 cm) inside diameter and a bag depth of at least 38 inches (96.52 cm). The bag mesh openings may not exceed 3 inches x 3 inches (7.62 cm x 7.62 cm).

(ii) Handling requirements.

(A) The dipnets required by this paragraph should be used to facilitate access and safe handling of sea turtles where feasible. The line clippers must be used to disentangle sea turtles, prohibited sharks, or smalltooth sawfish from fishing gear or to cut fishing line as close as possible to a hook that cannot be removed without causing further injury.

(B) When practicable, active and comatose sea turtles must be brought on board immediately, with a minimum of injury, and handled in accordance with the procedures specified in Sec. 223.206(d)(1) of this title.

(C) If a sea turtle is too large or hooked in a manner that precludes safe boarding without causing further damage or injury to the turtle, line clippers described in paragraph (c)(5)(i)(A) of this section must be used to clip the line and remove as much line as possible prior to releasing the turtle.

(D) If a smalltooth sawfish is caught, the fish should be kept in the water while maintaining water flow over the gills and examined for research tags and the line should be cut as close to the hook as possible.

(iii) Corrodible hooks. Vessels that have bottom longline gear on board and that have been issued, or required to have, a limited access shark permit for use in the Atlantic Ocean, including the Caribbean Sea and the Gulf of Mexico, must only have corrodible hooks on board.

(iv) Possess and use a dehooking device that meets the minimum design standards. The dehooking device must be carried on board and must be used to remove the hook from any hooked sea turtle, prohibited shark, or other animal, as appropriate. The dehooking device should not be used to release smalltooth sawfish. NMFS will file with the Office of the Federal Register for publication the minimum design standards for approved dehooking devices. NMFS may also file with the Office of the Federal Register for publication any additions and/or amendments to the minimum design standards.

Appendix E – NOAA Enforcement Draft Vessel Monitoring System Requirements

(a) *Approval*. The NMFS Office for Law Enforcement will annually approve Vessel Monitoring Systems (VMS) that meet the minimum performance criteria specified in paragraph (b) of this section. Any changes to the performance criteria will be published annually in the Federal Register and a list of approved VMS units and communication providers will be published in the Federal Register upon addition or deletion of a VMS from the list. In the event that a VMS unit is removed from the approved list by NMFS, vessel owners that purchased and installed a VMS unit that was previously published as an approved unit, will be considered to be in compliance with the requirement to have an approved unit, unless otherwise notified by the NMFS Office for Law Enforcement.

(b) *Minimum VMS performance criteria.* The basic required features of the VMS are as follows:

(1) The VMS shall be tamper proof, i.e., shall not permit the input of false positions; furthermore, if a system uses satellites to determine position, satellite selection should be automatic to provide an optimal fix and should not be capable of being manually overridden by any person aboard a fishing vessel or by the vessel owner.

(2) The VMS shall be fully automatic and operational at all times, regardless of weather and environmental conditions, unless exempted under paragraph (c)(2) of this section.

(3) The VMS shall be capable of tracking vessels in the Atlantic (including the Gulf of Mexico) and shall provide position accuracy to within 100 m (300 ft).

(4) The VMS shall be capable of transmitting and storing information including vessel identification, date, time, latitude/longitude, course and speed.

(5) The VMS shall provide accurate hourly position transmissions every day of the year unless otherwise required under paragraph (c)(1)(ii) of this section, or unless exempted under paragraph (c)(2) of this section. In addition, the VMS shall allow polling of individual vessels or any set of vessels at any time, and receive position reports in real time. For the purposes of this specification, “real time” shall constitute data that reflect a delay of 15 minutes or less between the displayed information and the vessel's actual position.

(6) The VMS shall be required to provide two-way message communications between the vessel and shore. The VMS shall be required to allow NMFS to initiate communications or data transfer at any time. The VMS shall be required to forward trip declarations for fishing activity and gear onboard the vessel to comply with requirements specified in section (g) of this document.

(7) The VMS vendor shall be capable of transmitting position data to a NMFS-designated computer system via email, TCP/IP or FTP connections. Transmission shall be in a file format acceptable to NMFS.

(8) The VMS shall be capable of providing vessel position relative to international boundaries and fishery management areas.

(9) The billing and email records for individual VMS units shall be made available by each approved vendor to NMFS upon request by each vendor approved.

(c) *Operating requirements for all vessels.*

(1) Except as provided in paragraph §622.9(a) and 635.69(a), and paragraph (c)(2) of this section, or unless otherwise required by §622.9(a) and 635.69(a), or paragraphs (c)(1)(ii) or (c)(1)(iii) of this section, all required VMS units must transmit a signal indicating the vessel's accurate position, as specified under paragraph (c)(1)(i) of this section.

(i) At least once an hour, 24 hours a day, seven days a week, throughout the year.

(ii) NMFS defined buffer zones of one nautical mile around areas with fishing restrictions will be implemented after concurrence with Gulf of Mexico Fishery Management Council staff and Southeast Region fishery plan managers, Office for Law Enforcement, and Office of General Counsel. Once a vessel enters a defined buffer zone, the VMS unit reporting rate will be increased to every 15 minutes at the vessel owner's expense. If the vessel then departs the buffer zone and enters the restricted area, the VMS unit reporting rate will be increased to every 10 minutes until it departs the restricted area and/or the buffer zone. Once the vessel departs that buffer zone and or restricted area, the VMS unit reporting rate will then resume hourly reporting. Additional area restrictions may be implemented in the future, and any future areas may also have buffer zones at which time the coordinates for the defined buffer zones will be made available for publication in the Federal Register.

(iii) NMFS may initiate at its discretion and expense, the transmission of a signal indicating the vessel's accurate position, at least six times per hour, 24 hours a day, for all vessels that elect to fish or that are required to have a VMS as specified in 50 C.F.R. §622.9 or §635.69 or other federal regulations that require VMS.

(2) *Power down exemption.*

(i) Any vessel required to transmit the vessel's location at all times, as required in paragraph (c)(1) of this section, is exempt from this requirement if it meets one or more of the following conditions and requirements:

(A) The vessel will be continuously out of the water for more than 72 consecutive hours, the vessel signs out of the VMS program by obtaining a valid letter of exemption pursuant to paragraph (c)(2)(ii) of this section, and the vessel complies with all conditions and requirements of said letter;

(B) For vessels fishing with a valid Reef Fish Commercial and/or Reef Fish Charter/Headboat permit, the vessel owner signs out of the VMS program for a minimum period of 1 calendar month by obtaining a valid letter of exemption pursuant to paragraph (c)(2)(ii) of this section, the vessel does not embark on any trip until the VMS unit is

turned back on and that consistent position reports are verified by NMFS VMS personnel, and the vessel complies with all conditions and requirements of said letter.

(ii) *Letter of exemption*—

(A) *Application.* A vessel owner may apply for a letter of exemption from the VMS transmitting requirements specified in paragraph (c)(1) of this section for his/her vessel by sending a written request to the NMFS Office for Law Enforcement and providing the following: (1) The location of the vessel during the time an exemption is sought; (2) the exact time period for which an exemption is needed (*i.e.*, the time the VMS signal will be turned off and turned on again); and, (3) in the case of a vessel meeting the conditions of paragraph (c)(2)(i)(A) of this section, documentation from independent sources (such as estimated storage at drydock, or estimates for repair by marine vendors) in support of the written request for the vessel to be out of the water for more than 72 continuous hours. The letter of exemption must be on board the vessel at all times, and the vessel may not turn off the VMS signal until the letter of exemption has been received.

(B) *Issuance.* Upon receipt of an application, the NMFS Office for Law Enforcement may issue a letter of exemption to the vessel if it is determined that the vessel owner provided sufficient supporting documentation as required under paragraph (c)(2) of this section. Upon written request, the NMFS Office for Law Enforcement may change the time period for which the exemption is granted.

(C) *Presumption.* If a VMS unit fails to transmit a report of a vessel's position once every hour, the vessel shall be deemed to have reporting deficiencies for as long as the unit fails to transmit a report, unless a preponderance of evidence shows that the failure to transmit was due to an unavoidable malfunction or disruption of the transmission (i.e., Antenna Blockage while in port) that occurred while the vessel was not at sea.

(D) *Replacement.* Should a VMS unit require replacement, a vessel owner must submit documentation to the NMFS Office for Law Enforcement prior to the vessel’s next trip, within 3 days of installation and by verifying with NMFS VMS personnel that the new VMS unit is an operational, approved system as described under paragraph (a) of this section.

(E) *Repair or Inspection for Deficient Reporting.* Should a VMS unit require repair due to reporting deficiencies identified verbally or in writing by NMFS Office for Law Enforcement VMS program personnel, a vessel owner must submit a copy of the vendor’s documentation to the NMFS Office for Law Enforcement. Prior to the vessel’s next trip, within 3 days of repair by the authorized vendor, or after inspection of the power source by a qualified marine electrician, verification that the VMS unit was inspected or repaired and that the power source was inspected or repaired must be provided to NMFS VMS program personnel to confirm that the unit is an operational, approved system as described under paragraph (a) of this section.

(F) *Access.* As a condition for obtaining a permit for the Reef Fish Fishery of the Gulf of Mexico, or prior to obtaining a renewal for a Reef Fish Commercial and/or Charter/Headboat permit, a vessel owner or operator subject to the requirements for a

VMS in this section must allow NMFS, the USCG, and their authorized officers and designees, access to position data obtained from the vessel's VMS unit.

(G) *Tampering.* Tampering with a VMS, a VMS unit, or a VMS signal, is prohibited. Tampering includes any activity that is likely to affect the unit's ability to operate properly, signal, or accuracy of computing the vessel's position fix.

(d) *Installing and activating the VMS.* Only a VMS that has been approved by NMFS for use in the Reef Fish Fishery of the Gulf of Mexico may be used, and it must be installed by a qualified marine electrician. When installing and activating the NMFS approved VMS, or when reinstalling and reactivating such VMS, the vessel owner or operator must:

(1) Follow procedures indicated on an installation and activation checklist, which is available from NMFS, Office for Law Enforcement, Southeast Region, St. Petersburg, FL; phone: 727–824–5347; and

(2) Submit to NMFS, Office for Law Enforcement, Southeast Region, St. Petersburg, FL, a statement certifying compliance with the checklist, as prescribed on the checklist.

(3) Submit to NMFS, Office for Law Enforcement, Southeast Region, St. Petersburg, FL, a vendor-completed installation certification checklist, which is available from NMFS, Office for Law Enforcement, Southeast Region, St. Petersburg, FL; phone: 727-824-5347.

(e) *Transferring a VMS.* Only a VMS that has been approved by NMFS for use in the Reef Fish Fishery of the Gulf of Mexico may be used, and it must be properly registered and activated with an approved communications provider for the new vessel. Additionally, it must be installed by a qualified marine electrician. When reinstalling and reactivating the NMFS approved VMS, the new vessel owner or operator must:

(1) Follow procedures indicated on an installation and activation checklist, which is available from NMFS, Office for Law Enforcement, Southeast Region, St. Petersburg, FL; phone: 727–824–5347; and

(2) Submit to NMFS, Office for Law Enforcement, Southeast Region, St. Petersburg, FL, a statement certifying compliance with the checklist, as prescribed on the checklist.

(3) Submit to NMFS, Office for Law Enforcement, Southeast Region, St. Petersburg, FL, a vendor-completed installation certification checklist, which is available from NMFS, Office for Law Enforcement, Southeast Region, St. Petersburg, FL; phone: 727-824-5347.

(f) *Permit Issuance on VMS Required Vessels.* In order to be considered a complete application for issuance of a permit or for renewal of a permit, proof of VMS purchase, installation, and activation must be provided, along with verification of the unit's operational status from NMFS VMS personnel.

(g) *Declaration of Fishing Activity and Gear Type*. Prior to departure for each trip, each vessel owner or operator must report their fishing activity (including but not limited to Reef Fish, Shark, Swordfish, Tuna, etc.), and the gear onboard the vessel (including but not limited to Pelagic longline, bottom longline, gillnet, etc.). These NMFS-defined codes for the declaration can be sent via an attached VMS terminal, via a NMFS website, through a NMFS call-in system or using a NMFS interactive voice response system (IVR) to NMFS VMS personnel.

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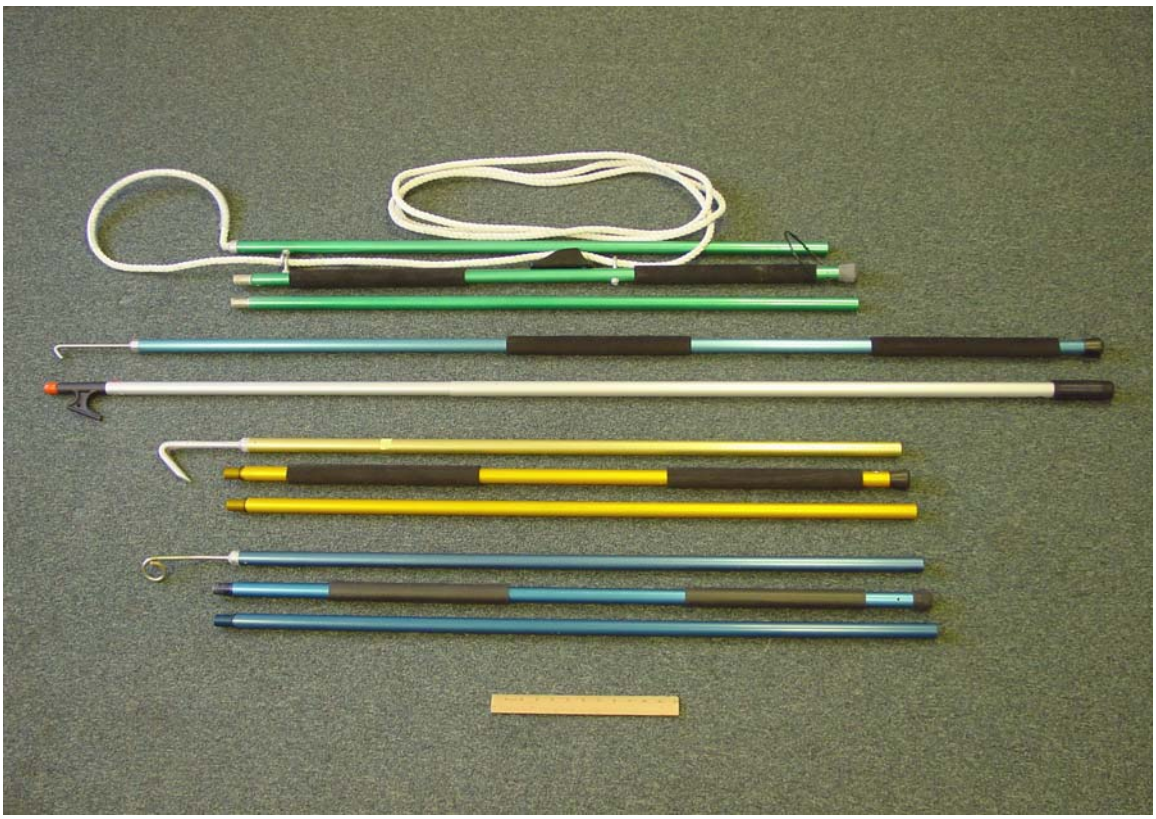
Appendix F – Careful Release Protocols for Sea Turtle Release With Minimal Injury

[Document begins on following page]

NOAA TECHNICAL MEMORANDUM NMFS-SEFSC-524

CAREFUL RELEASE PROTOCOLS FOR SEA TURTLE RELEASE WITH MINIMAL INJURY

Sheryan Epperly
Lesley Stokes
Shawn Dick



June 2004

U.S. Department of Commerce
National Oceanic and Atmospheric Administration
NOAA Fisheries
Southeast Fisheries Science Center
75 Virginia Beach Drive
Miami, Florida 33149

NOAA TECHNICAL MEMORANDUM NMFS-SEFSC-524

CAREFUL RELEASE PROTOCOLS FOR SEA TURTLE RELEASE WITH MINIMAL INJURY

Sheryan Epperly
Lesley Stokes
Shawn Dick

U.S. DEPARTMENT OF COMMERCE
Donald L. Evans, Secretary

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
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June 2004

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or

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Careful Release Protocols for Sea Turtle Release with Minimal Injury

Introduction

The following sea turtle handling protocols, prepared by NOAA Fisheries Southeast Fisheries Science Center, describe the tools and techniques for removing fishing gear from incidentally captured sea turtles and other bycatch species. They should be followed whenever an interaction, such as a hooking and/or an entanglement, with a sea turtle occurs. The survival benefit of removing gear from animals before release has been clearly demonstrated. The required and recommended equipment and techniques described here are intended to reduce sea turtle injury and promote post-release survival. A demonstration of the use of these tools and techniques can been seen in the video "Removing Fishing Gear from Longline Caught Sea Turtles" (Hataway and Epperly 2004). Although these guidelines were written for sea turtle release, this equipment should also be used for all bycatch species to reduce mortality.

These protocols synthesize the results of scientific research involving sea turtle mitigation measures and post-hooking mortality criteria developed for pelagic longline fisheries. In 2001-2003, experiments were conducted in the Western Atlantic Northeast Distant Waters statistical reporting area (NED) to evaluate sea turtle mitigation measures in the pelagic longline fisheries (Watson et al. 2004). Interviews with all of the captains and observers were conducted after each trip to specifically discuss the efficacy of various tools provided to remove gear from sea turtles. Based on the field-testing and user feedback from these experiments, gear removal tools have been updated, and equipment design standards, requirements and recommendations have been revised accordingly.

Previously, all U.S. pelagic longline vessels with Federal HMS permits have been required to carry onboard dip nets and line clippers meeting NOAA Fisheries' design standards, and to comply with handling and release guidelines for the handling of incidentally-caught sea turtles (65 FR 60889, October 13, 2000, and 66 FR 17370, March 30, 2001). The revised gear recommended or required in "Requirements and Equipment Needed for the Careful Release of Sea Turtles Caught in Hook and Line Fisheries," (NOAA Fisheries 2004) must now be used in accordance with the following protocols to ensure that sea turtles are released with minimal injury. As specified in CFR 50 635.21(a)(3) and 50 CFR 635(c)(5)(ii), these protocols are required to be inside the wheelhouses of all Atlantic vessels that have pelagic longline gear onboard and have been issued, or are required to have, Federal HMS limited access permits.

Part 1 Vessel's Responsibilities Upon Sighting a Sea Turtle

Captains and crews are required to scan the main line as far ahead as possible during gear retrieval to sight turtles in advance and to avoid getting ahead of the main line while retrieving gear. Upon sighting a turtle, the vessel and main line reel speed will be slowed and the vessel direction will be adjusted to move toward the turtle, minimizing tension on the main line and the branch line with the turtle. When the snap of the branch line is in hand, the vessel will continue to move toward the turtle as slowly as possible. If slow speed is not possible, the vessel will stop with the engine out of gear, and the turtle will be brought along side the vessel. The branch line will be retrieved slowly while a crew member keeps a gentle, consistent tension on the line with enough slack to keep the turtle near the vessel and in the water. A laminated instruction card for sea turtle handling/release guidelines will be provided to each vessel to be prominently displayed in the wheelhouse for instant reference (66 FR 48813, September 24, 2001).

Once the turtle is brought alongside the vessel, stop and put the vessel in neutral. Do not use gaffs or other sharp objects in direct contact with the turtle to retrieve or control it, although a gaff may be used to control the line (refer to Section 2.1.4.1). Assess the turtle's condition and size, and determine if it is hooked or entangled and, if hooked, the location of the hook. There are 3 possible sea turtle interactions with the fishing gear: 1) Entangled animal but not hooked, 2) Hooked animal but not entangled, and 3) Hooked and entangled animal. The vessel must be stopped in order to respond to these interactions, and a decision must be made whether the turtle can be brought onboard safely.

It is expected that all turtles less than 3 ft in straight carapace length generally can be boated safely if sea conditions permit; larger turtles should also be boated when conditions and equipment permit. If it is determined that the turtle cannot be brought aboard without causing further injury to the turtle, or if conditions are such that the turtle cannot be safely brought aboard, then protocols for turtles not boated should be followed (Part 2). Whenever possible, turtles should be brought onboard to make gear removal easier and safer, following the handling guidelines for turtles boated (Part 3). The vessel must attempt to remove all of the gear, line and hooks from the turtle. The vessel is responsible for the turtle's safety from first sighting until release, and all efforts should be made to release the turtle with minimal injury and minimal remaining gear.

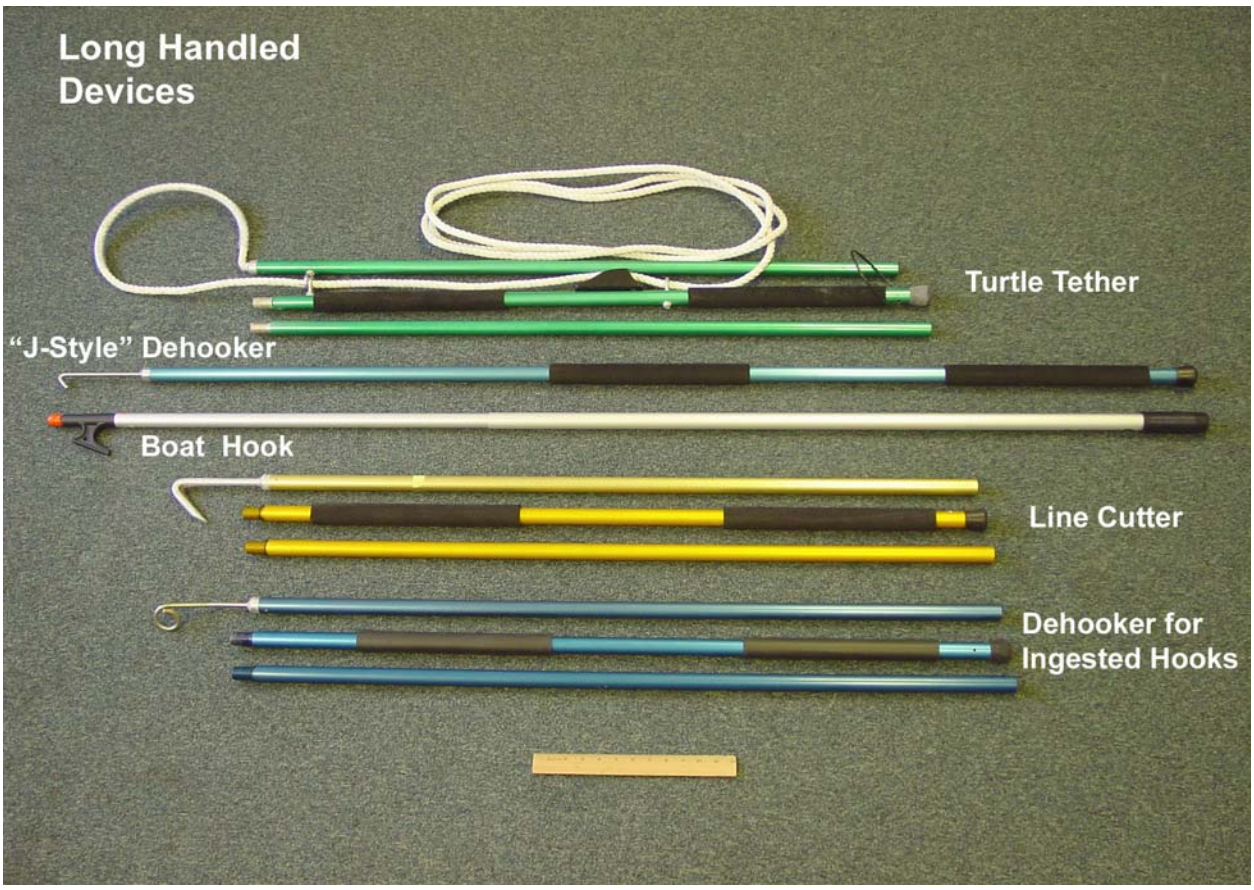
Part 2 Sea Turtles Not Boated

When a turtle is too large to be boated, or if sea conditions prevent the safe boating of turtles, vessels must remove the gear while the turtle remains in the water. The turtle should be brought as close as possible, but it may need a short time to calm down before being brought fully alongside, where gear removal must be conducted as quickly as possible. The first section in this chapter details the tools and techniques to be used for gear removal. Next, different possible scenarios involving 3 types of potential gear interactions will be described, outlining the combination of tools best adapted for each scenario. For a quick reference for the equipment used with sea turtles not boated, see the flow chart in Part 4.

2.1 Equipment and techniques

2.1.1 Turtle tether

A "Turtle tether" is used to help control the animal near the side of the boat, minimizing the possibility for injury to the crew and the turtle. The tether is used to take pressure off the involved branch line and help stabilize the animal. The end of the negatively buoyant tether line should be threaded through an eyebolt at the end of the tether, then through two eyebolts farther down the pole. A tag line threaded through the end of the tether must be attached to the vessel to ensure that the turtle cannot escape with the tether attached. Loop the stiff rope around the front flipper up to the shoulder region, tighten and cinch the rope in the cleat. Keep a firm hold of the tether pole to keep the animal near the vessel, allowing for dehooking and disentanglement. Use dehookers and line cutters as needed, depending on the type of gear interaction, as described in Sections 2.2.1 - 2.2.3.



2.1.2 Equipment to cut monofilament line

a) Long-handled line clipper/cutter

A line clipper or cutter is designed to cut high-test monofilament line to assist in removing line from entangled sea turtles. It may also be used to cut the line as close as possible to the hook, minimizing remaining gear when hook removal is not possible. Carefully slide the blunt end of the line cutter under the line that you wish to remove and pull the line cutter to capture the line within the recessed blade(s) of the device.

b) Monofilament cutters

If the turtle is close to the vessel, hand-held monofilament cutters may be used to remove line from entangled turtles. Turtles should be released with as little line as possible remaining.

2.1.3 Equipment to remove hooks

a) Long-handled dehooker for internal hooks

1) ARC Pole Model Deep-Hooked Dehooker (Refer to Plate 2.1.3.a.1)

The ARC Pole Model Deep-Hooked Dehooker is one example of a NOAA Fisheries certified piece of equipment. The dehooker is used to remove internal hooks from sea turtles that cannot be boated, but it is also effective on external hooks. This device engages and secures the leader, allowing the hook to be secured within an offset loop without re-engaging the barb during the removal process.

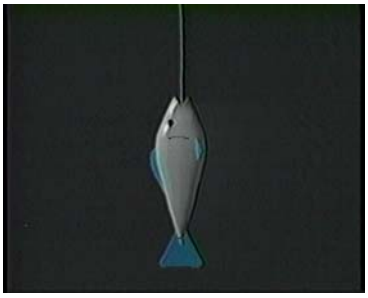
1) The leader person (person controlling the branch line) must carefully bring the animal alongside the vessel, using a tether to help control the turtle if possible. They should stay to the left of the dehooking person and maintain a taut leader.
2) The dehooking person should be to the right of the leader person to capture the leader, and no one should get in between the leader and the dehooking device in case the line breaks or the hook dislodges.
3) There is only one correct way to place the pigtail over the branch line. The leader person must maintain leader tension. The dehooking person places the dehooker on the leader at a 90° angle with the open end of the curl facing them, and the tail end of the curl facing up. Pull until the curl of the dehooking device captures the line (like a bow and arrow), and rotate the device ¼ turn <u>clockwise</u>. When placed correctly, the leader will be in the center of the pigtail curl.
4) Slide the dehooker down the leader until it engages the shank of the hook and bottoms out. Slightly rotate the device back and forth to ensure proper engagement on the hook.
5) When the hook is engaged, the dehooking device must be brought together with the leader, parallel to the line. If the line is not parallel with the dehooking device, the point of the hook will have a tendency to turn out and allow for possible re-engagement after release.
6) Working together, the leader person and the dehooking person must communicate and keep the line taut until the exact moment that the dehooking person disengages the hook with a short, sharp jab downward. The leader person must give a little slack when the dehooking person is jabbing downward, so timing and communication are important. After the hook is removed, the point of the hook will rotate and stop on the offset bend of the dehooker, protecting the point and preventing re-engagement of the hook.

6/22/2004

Plate 2.1.3.a.1

Instructions for ARC Deep-hooked (pigtail curl) Dehooker

This dehooker is designed for removing hooks that are swallowed and are lodged in the mouth, throat, or esophagus of fish, sea turtles, marine mammals, and sea birds without touching or removing the catch from the water. It also can be used for removing hooks that are embedded in the body, flippers, beak, or lip of larger fish, marine mammals, sea turtles, and sea birds. The illustrations depict fish, but the technique is the same for other animals.



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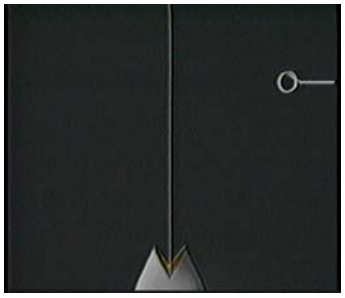

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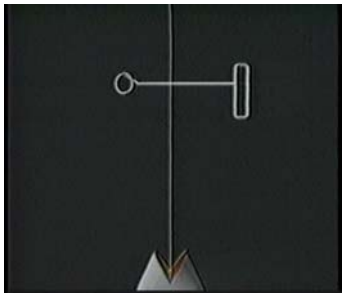

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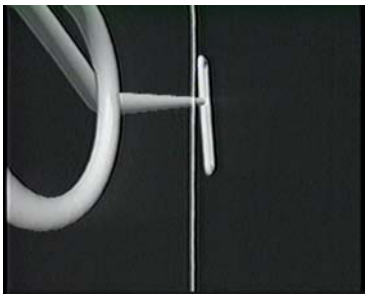

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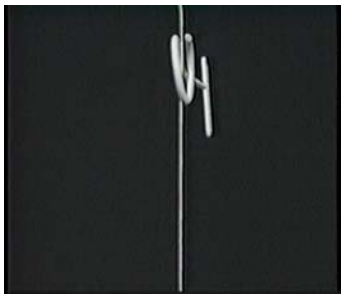

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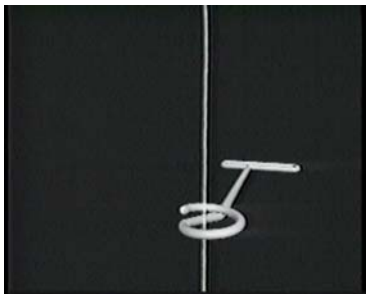
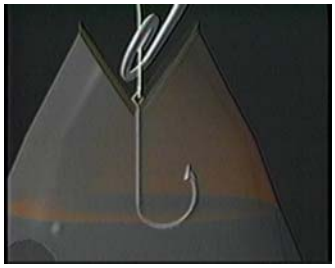


Step 6

(1) Grab the leader with your left hand.
(2) Hold the dehooker in your right hand, making sure the open end of the pigtail is facing up.
(3) Place the rod of the dehooker on the leader perpendicular to the leader as you would a bow and arrow.
(4&5) Draw the dehooker back towards you until you engage the line.
(6) Turn the dehooker 1/4 turn clockwise. This puts the leader in the center of the curl.

6/22/2004

Plate 2.1.3.a.1 Continued



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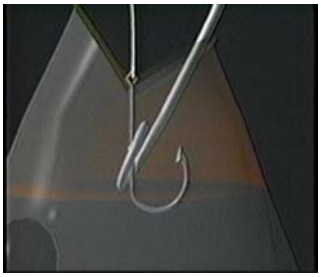

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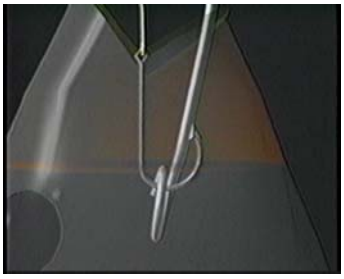

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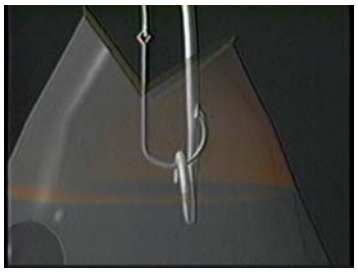

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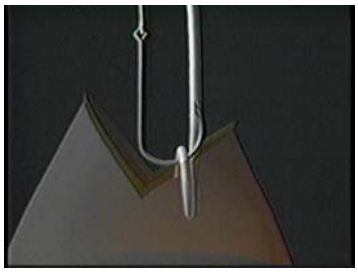

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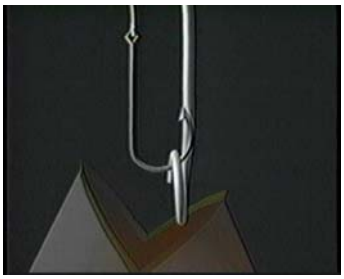


Step 12

(7-9) Keeping your hands apart, follow the leader down until the dehooker bottoms out on the hook.

(10) Bring your hands together making sure the leader is tight and parallel with the dehooking device.

(11&12) Give a slight thrust downward with the dehooking device until the hook disengages, then pull out the dehooker with the hook. The point of the hook will be hidden by the offset bend (so that the hook does not re-engage). The animal is safely and instantly released.

b) Long-handled dehooker for external hooks

1) "J-Style" dehooker (Refer to Plate 2.1.3.b.1)

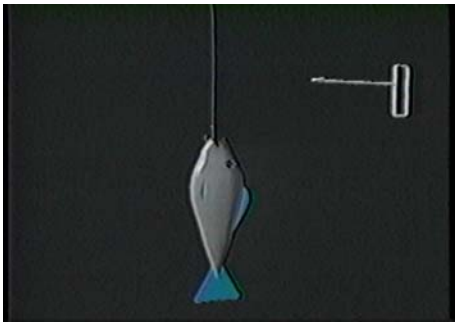
This long-handled dehooking device may be used for dehooking in circumstances where the animal is hooked externally. Hold the leader in your left hand with tension and hold the "J-Style" dehooker in your right hand. Place the dehooker on the leader and follow the leader down until it bottoms out on the shank of hook. With tension on the leader, lower the left hand (the hand with the leader) to the 8 o'clock position and the right hand with the dehooker to the 2 o'clock position; twist the dehooker slightly and pull until the hook is dislodged. Be cautious not to allow the hook to re-engage once removed.

6/22/2004

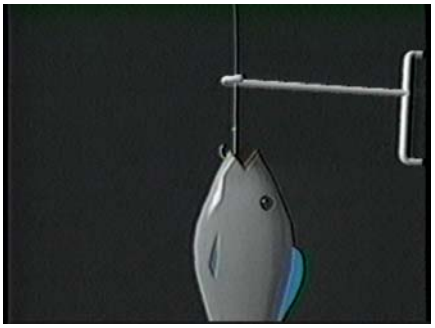
Plate 2.1.3.b.1

Instructions for the "J-Style" Dehooker

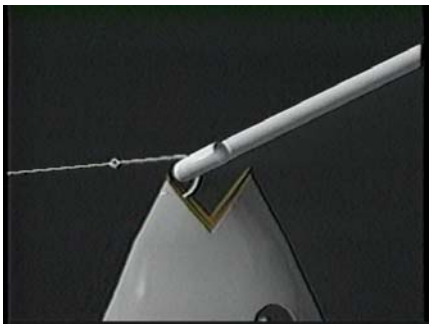
This dehooker is designed for removing smaller hooks, jigs, and lures that are embedded in the lip, body, flippers, and beak of fish, marine mammals, sea turtles, and sea birds.



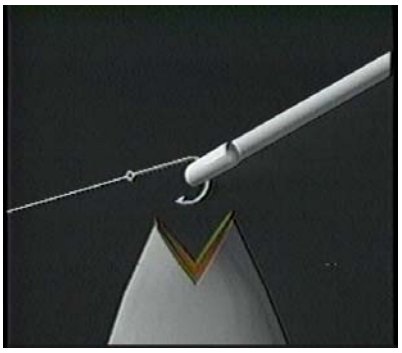
Step 1



Step 2



Step 3



Step 4

(1) Grab the leader with your left hand and hold the dehooking device with your right hand (with the J bend facing toward you).
(2) Place the dehooking device on the leader.
(3) Follow the leader down until you engage the hook.
(4) Pull the dehooking device and leader apart with constant pressure until your right hand (dehooking device) is at the two o'clock position and your left hand (leader) is at the eight o'clock position. With a slight twist and shake the hook will be disengaged.

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2.1.4 Long-handled device to pull an "Inverted V" during disentanglement

A standard boat hook, long-handled "J-Style" dehooker, or standard fishing gaff may be used to assist in disentanglements and to pull a "V" for dehooking entangled sea turtles, as described in the "Inverted V" dehooking technique below.

2.1.4.1 "Inverted V-Style" technique

1) Once at the surface, the animal may have a tendency to entangle itself more. After the first inspection, let the turtle calm down for a short period of time (in some cases up to 10 minutes) then gently draw it to the boat, using the tether when practical to control the animal.
2) An additional crew member should carefully engage the monofilament leader closest to the embedded hook with a gaff, boat hook or long-handled "J-Style" dehooker, depending on the distance to the hook. If using a gaff, care should be taken to ensure that the point of the gaff does not ever contact the turtle. The gaff person should pull the line upward into an "Inverted V" to enable engagement of the dehooking device on the line closest to the hook.
3) Follow the instructions in Section 2.1.3 to remove the hook from the turtle using a long-handled dehooking device. The gaff person would serve the same function as the leader person.
4) After the hook is removed and secured by the dehooker, carefully remove all line with the line cutter to disentangle the animal (Section 2.1.2).

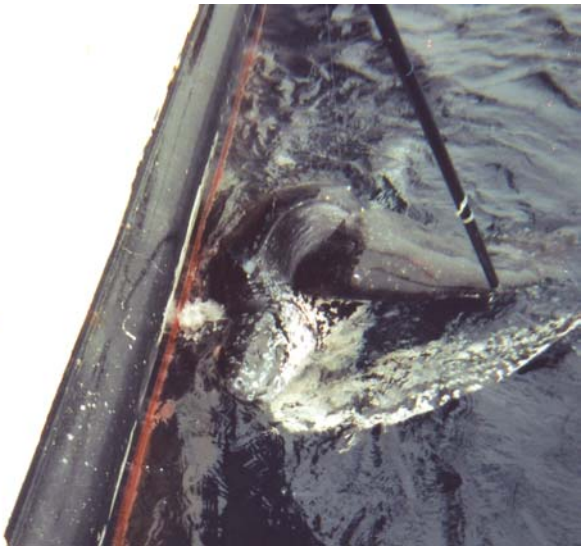
2.2 Possible Scenarios Encountered

2.2.1 When a turtle is entangled but not hooked (2 crew / dehooker/ line cutter/gaff, boat hook, or long-handled "J-Style" dehooker)

Control the turtle at the side of the boat using the branch line, or preferably with a turtle tether (Section 2.1.1). Secure the loose hook with the long-handled dehooker for internal hooks and carefully slide the blunt end of the line cutter under the line that you wish to remove. Pull the line cutter and the line will be captured within the recessed blade(s) of the device. The long-handled "J-Style" dehooker, boat hook, or gaff may be carefully used to manage the line while cutting with the line cutters. Monofilament cutters may also be useful if the turtle is close to the side of the vessel.

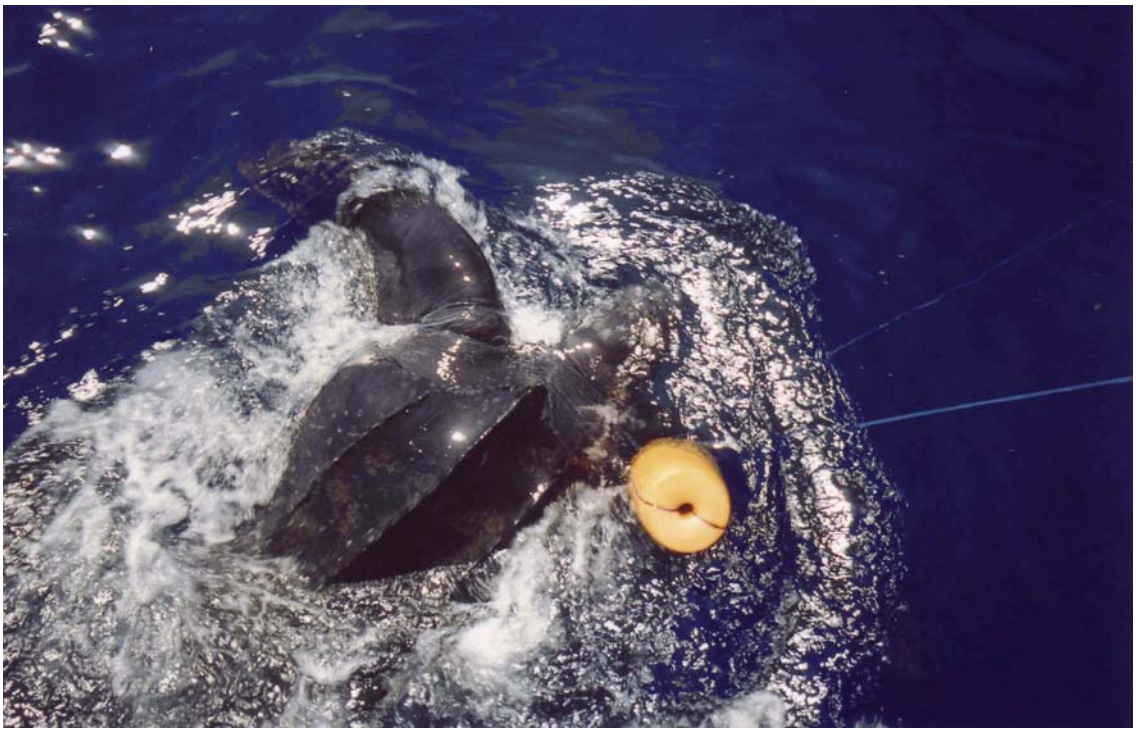
2.2.2 When a turtle is hooked but not entangled (at least 2 crew, turtle tether and long-handled dehooker or "J-Style" dehooker).

Control the turtle at the side of the boat using the branch line, or preferably with a turtle tether (Section 2.1.1). The choice of dehooker will depend on the location and depth of the hook. Do not ever attempt to remove hooks that have been swallowed beyond where the insertion point of the barb is visible, or when it appears that hook removal will cause further serious injury to the turtle. If the hook cannot be removed, ensure that as much line as possible is removed and, if possible, remove some of the hook with bolt cutters. The long-handled dehooker for internal hooks may be used when the hook is more deeply embedded; the long-handled dehooker for external hooks may be used when the turtle is lightly hooked, and hooks are easily removed using a simple pushing or pulling motion.



2.2.3 When a turtle is hooked and entangled (multiple crew /turtle tether/ dehooker/ line cutter /gaff or long-handled "J-Style" dehooker)

Control the turtle at the side of the boat using the branch line, or preferably with a turtle tether (Section 2.1.1). For turtles wrapped in line or hooked in the armpit or shoulder with the line running under, not over the turtle, the "Inverted V-Style" technique is necessary for release (See Section 2.1.4.1). Follow the instructions in Sections 2.2.1 and 2.2.2 for removing hooks and line.



Part 3 Sea Turtles Boated

3.1 Boating the turtle

It is very important that the turtle is never pulled out the water, even partially or for a short distance, using the branch line. This could cause serious injury to the turtle, especially when the turtle has swallowed the hook. Once boated, the turtle will be handled according to the procedures for boated turtles (Section 3.2 – 3.6). For a quick reference for the equipment used with sea turtles boated, see the flow chart in Part 5.

3.1.1 Dip net

If the turtle is small enough, and if conditions are such that it can be brought aboard the vessel safely, a crew member will use a dip net (meeting standards specified in NMFS regulations) to carefully bring the turtle aboard. The net will be placed under the turtle, and it will be safely lifted out of the water and onto the deck. If the vessel is equipped with "cut out doors," use this door to minimize the distance from the water for the turtle to be retrieved.

3.1.2 Large turtle hoist

A hoist is recommended to bring turtles onboard that cannot be boated using a smaller dip net. This is particularly useful when removing gear from leatherback sea turtles. The hoist is lowered into the water using a hydraulic lift and brought near the turtle. Once the lift is in the water, the turtle can be guided into the device using the branch line and/or turtle tether. Once the turtle is positioned within the hoist, release tension on the line, and the turtle will descend deeper into the lift. The hoist and turtle are then raised slowly back onto the deck. The device is designed so that when onboard, the turtle is suspended above the deck on a platform of mesh netting supported by a rigid ring and contained within a webbing fence. The turtle is immobilized in this lift, facilitating safe and rapid gear removal. Once all gear has been removed, the hoist and turtle are lowered back into the water deep enough for the turtle to swim out of the frame. Orient the hoist so that the turtle is facing away from the boat upon release. The use of this device is demonstrated in the video "Leatherbacks Aboard" (Epperly and Hataway 2004).

3.2 Holding the turtle

While onboard, the turtle must be kept moist and in the shade, maintaining its body temperature above 60° F, similar to water temperatures at capture. It must be safely isolated and immobilized on a cushioned surface. The large turtle hoist serves this purpose; smaller turtles will need to be placed on an automobile tire. If you encounter a turtle with a tag, note the tag number and species and report the find to the address on the tag. All gear should be removed immediately. If possible, and especially if the turtle appears lethargic, leave the turtle on deck from some time (up to 24 hours) and monitor its condition, allowing stress toxins to dissipate.

3.2.1 Standard automobile tire

The vessel is responsible for providing a standard automobile tire to safely isolate and immobilize the animal once it is onboard. It is important to place the turtle in its normal orientation whenever possible while immobilized on the tire, unless there is a specific reason to have it temporarily resting on its back.

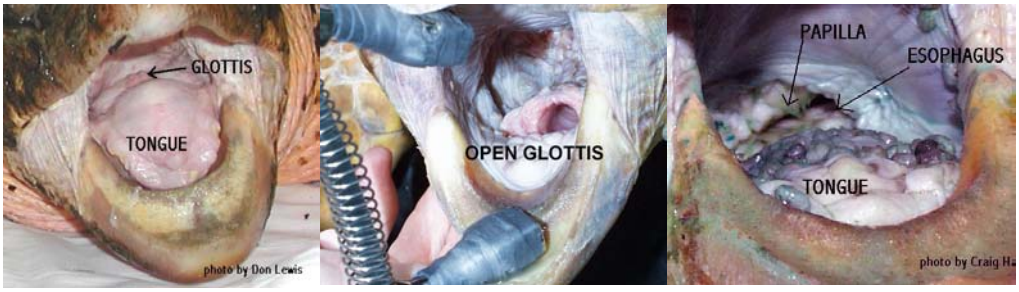
3.2.2 Comatose turtles

If a turtle appears to be comatose (unconscious), you should attempt to revive it before release per 66 FR 67495, December 31, 2001. Place the turtle on its plastron (lower shell) and elevate the hindquarters several inches to permit the lungs to drain off water. A comatose but live sea turtle may, in some cases, exhibit absolutely no movement or signs of life (no muscle reflexes). In other cases, an unconscious turtle may show some evidence of eyelid or tail movement when touched. Sea turtles may take some time to revive; do not give up too quickly. Regulations allow a fisherman to keep a turtle on deck up to 24 hours for resuscitation purposes without a permit. Even turtles successfully resuscitated benefit from being held on deck as long as possible to allow toxins that built up as a result of stress to dissipate from the body. Keep the skin, and especially the eyes, moist while the turtle is on deck by covering the animal's body with a wet towel, periodically spraying it with water, or by applying petroleum jelly to its skin and carapace.

A turtle that has shown no sign of life after 24 hours on deck (held in the shade, kept moist and its body temperature maintained above 60° F) may safely be considered dead. If the turtle cannot be revived before returning to port, it should be returned to the water, preferably in a non-fishing area.

3.2.3 When to remove hooks

The decision whether to remove a hook is very important, and may directly affect the turtle's chances for survival. If you are unsure whether hook removal will cause further serious injury to the turtle, do not remove the hook. All externally embedded hooks should be removed. Hooks in the mouth should be removed when they are visible in part or whole, but judgment should be used in each case. If the hook is in the braincase, glottis, or otherwise deeply embedded, and where you believe removal will cause more damage, do not remove the hook. The glottis is located in the middle of the tongue (large muscular organ fixed to the floor of the mouth), and consists of the opening to the trachea and the valve to open and close the airway.



The esophagus begins at the back of the mouth and is lined with papillae. Only remove hooks from the esophagus when the insertion point of the barb is clearly visible, and exercise extreme caution during hook removal. Never attempt to remove a hook that has been swallowed when the insertion point is not visible, as removal may cause more damage to the turtle than leaving the hook in place. When a hook cannot safely be removed, monofilament cutters should be used to cut the line as close as possible to the eye of the hook. If part of the hook is visible and accessible, but cannot be removed (e.g., hook in glottis), bolt cutters should be used to cut off and remove the visible part of the hook.

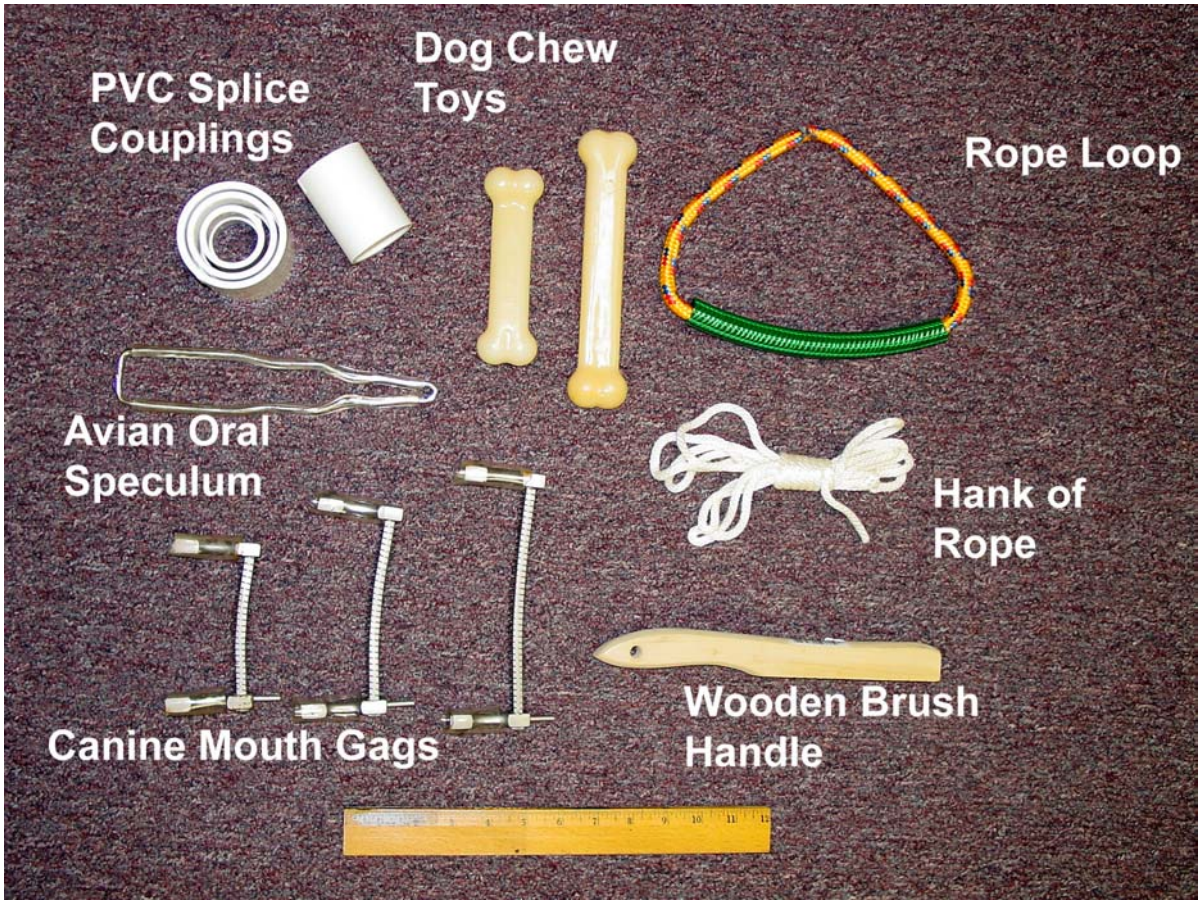
3.3 Opening the mouth

When a turtle with an internal hook injury is brought on board, it will more than likely have its mouth open. If the animal is not voluntarily opening its mouth, there are a few mouth-opening techniques you can apply:

1) Block the turtle's nostrils to make the turtle breath through its mouth.
2) Tickle the throat or pull outward on the throat skin.
3) Cover the nostrils and carefully apply light pressure to the anterior corner of the eye socket (not the eye itself) with one hand and apply firm pressure in the throat area with your other hand.

3.3 Continued

If you still cannot open the mouth, use the rope loops covered with protective tubing or the avian speculum as mouth openers. The mouth openers will enable you to open the turtle's mouth, and the mouth gags will maintain your access inside a turtle's mouth so you can remove any hooks and/or line. Keep in mind that different mouth gags will block your view inside the mouth in various ways. Therefore, select which mouth gag will best suit the dehooking or disentanglement procedure that you need to perform. You can improve your visibility at the back of the turtle's mouth and upper esophagus by using the needlenose pliers. After securing the mouth open, gently slide the pliers in the closed position forward into the upper esophagus and separate the pliers' jaws to open the "throat."



The following devices can be used to open the mouth and/or maintain the mouth in an open position:

3.3.1 Loops of rope with protective tubing (both a mouth opener and mouth gag)

Slide the ropes with the protected tubing in between the jaws and move them away from the front of the mouth to gain the greatest leverage. Care should be taken to avoid contact with the eyes. With the free ends of the rope knotted together to form a loop, you can hold the lower rope loop with your foot and the other with one hand, leaving one free hand.

3.3.2 Large avian oral speculum (both a mouth opener and mouth gag)

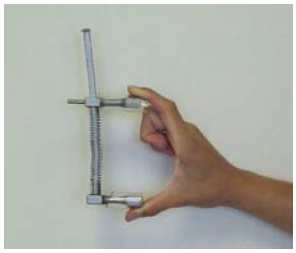
Slide the avian speculum flat inside the turtle's mouth and rotate it. Notice that the speculum is stepped and can be used for different sized turtles by selecting for its different widths. This mouth opener can be used only on the smallest of the animals.

3.3.3 Block of hard wood (mouth gag)

Soak the wood block/handle first to soften it and decrease damage to the beak. Position it in the posterior corner of the jaw to keep the mouth open.

3.3.4 Set of (3) canine mouth gags (mouth gag)

This type of gag locks into the open position and allows for hands free operation once it is in place. The canine mouth gag's arms are compressible when they are perpendicular to the main axis. The rubber feet on the gag lock nicely into the groove on the upper and lower beak. When the turtle bites down on the extremity of the arms, they will shift from being perpendicular and therefore will lock. Use the smallest one possible that will not crush. Compress the gag and insert it in the turtle's mouth. As the turtle opens its mouth, the gag will expand. Maintain your hold on the gag until it has locked in place. Do not force the turtle's mouth open all the way; let the spring tension on the gag and turtle's own mouth movement set the maximum open position. Position the mouth gag at the front center of the jaw with the axis off to one side to provide the maximum open working area in the mouth and the surest footing for the gag.



3.3.5 Set of (2) nylon dog chew bones (mouth gag)

Position the proper size dog bone in the posterior corner of the jaw to keep the mouth open. The larger bones are easy to hold, but block access to much of the mouth. Smaller bones do not reduce your view inside the turtle's mouth and work equally well.

3.3.6 Hank of rope (mouth gag)

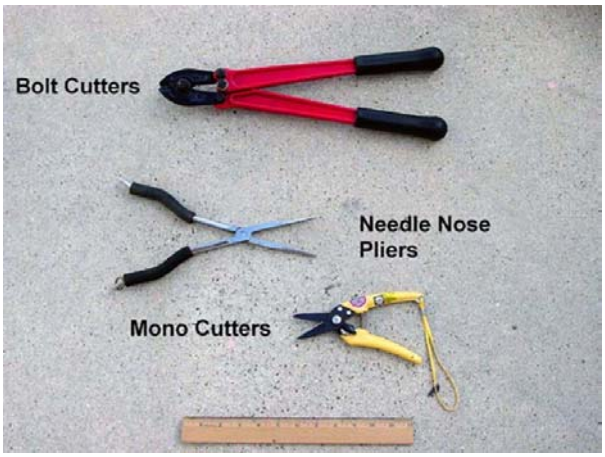
Position the lanyard in the posterior corner of the jaw to keep the mouth open. Alternatively, you can place the rope across the entire width of the mouth and block both sides of the jaw, but this blocks your view of the back of the mouth.

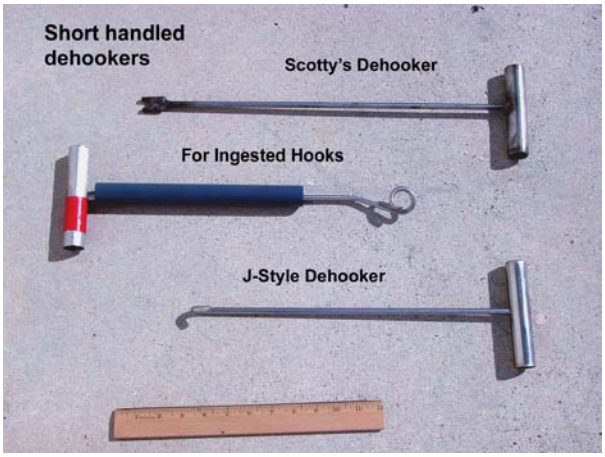
3.3.7 Set of (4) PVC splice couplings (mouth gag)

Insert the appropriate size PVC splice coupling (chosen by considering both the size of the turtle and the tools to be used) inside the turtle's mouth. Hold it steady with a pair of pliers to stabilize it inside the mouth. In order to prevent the coupling from interfering with the dehooking devices, thread the line through the coupling before inserting it.

3.4 Equipment to remove hooks

When dehooking is possible, several devices may be used to remove hooks, depending on the depth and location. Some hooks that are lightly hooked externally may be easily removed using your hand. The following hand-held devices may also be used.





3.4.1 Needle-nose or long-nose pliers

The needle-nose pliers can be used to remove hooks that are deep in the animal's flesh and must be twisted during removal. They are also useful in holding PVC splice couplings in place when used as mouth openers, and can be used to remove hooks in the mouth in some situations.

3.4.2 Bolt cutters

Bolt cutters are essential for removing hooks, as the easiest way to remove a hook may be to cut off the eye or barb so that the hook can be pushed through or backed out without causing further injury to the sea turtle. If the hook cannot be removed, bolt cutters should be used to cut off as much of the hook as possible.

3.4.3 Short-handled dehooker for internal hooks

a) 16" Hand Held Bite Block Deep-Hooked Turtle ARC Dehooking Device (Refer to Plate 3.4.3.a)

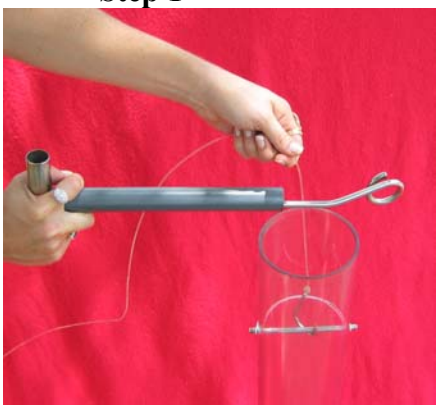
This device has been designed to prevent sea turtles from biting down on the dehooking device during internal hook removal. The PVC bite block also reduces the damage on the sea turtle's beak if the turtle bites down.

a) To correctly use this dehooking device, you must keep the PVC bite block pulled up along the handle when engaging the leader to allow for proper leader and hook engagement.
b) Maintain leader tension and place the dehooker on the leader at a 90° angle with the open end of the curl up.
c) Pull the dehooker towards you (like a bow and arrow) until the open end of the curl engages (captures) the leader.
d) Turn the dehooker ¼ turn clockwise. The leader is now in the center of the pigtail.
e) Release the bite block, allowing it to fall to the bottom of the dehooker. Following the leader, insert the curl and PVC end into the mouth as far as the animal will allow before it bites down.
f) Once the sea turtle bites down, the dehooker will still slide up to 5" in and out.
g) With the sliding motion allowed by the bite block, continue to follow the leader down to the shank of the hook.
h) After the dehooker is seated on the shank of the hook, (leader tight) give a sharp jab downward with the dehooker. The hook is removed, and the point of the hook will rotate and stop on the offset bend of the dehooker, protecting the point and preventing re-engagement of the hook.
i) After hook is dislodged, keep the leader tight and pull the dehooker out until it stops at the PVC bite block.
j) The bite block will cover the hook and further prevent re-engagement.
Wait for the turtle to open its mouth and remove the entire dehooking device and hook.

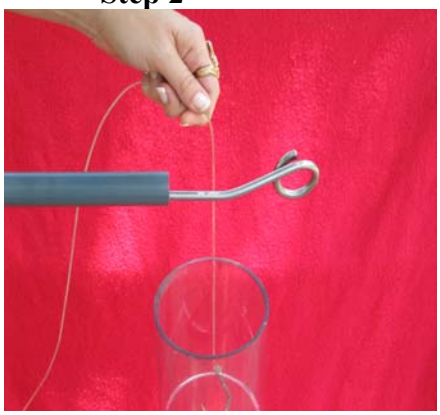
Plate 3.4.3.a

Instructions for the ARC Dehooker with Turtle Bite Block

Step 1



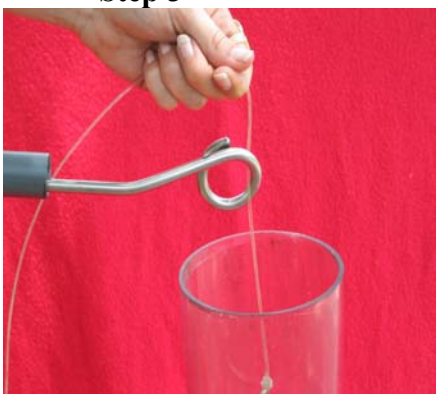
Step 2



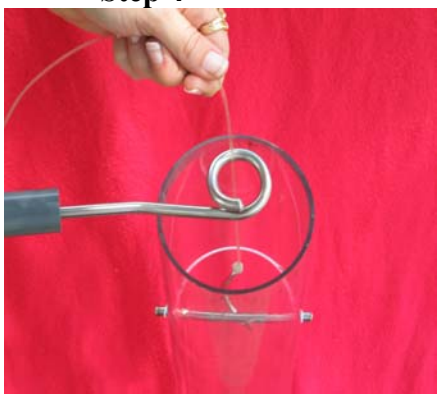
(1) To correctly use this dehooking device, you must keep the PVC bite block pulled up along the handle when engaging the leader to allow for proper leader and hook engagement.

(2) Maintain leader tension and place the dehooker on the leader at a 90 degree angle with the open end of the curl up.

Step 3



Step 4



(3) Pull the dehooker towards you (like a bow & arrow) until the open end of the curl engages/captures the leader.

(4) Turn the dehooker ¼ turn clockwise. The leader is now in the center of the pigtail.

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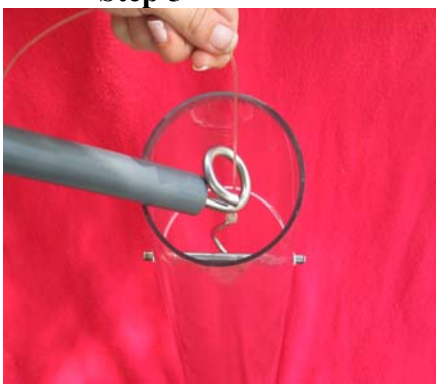
Plate 3.4.3.a Continued

Step 5



Step 6

(5) Release the bite block, allowing it to slide to the bottom of the dehooker. Following the leader, insert the curl and PVC end into the mouth as far as the animal will allow.

(6) Should the sea turtle bite down, the dehooker will slide up to 5" in and out.

Step 7

Step 8

(7) With the sliding motion allowed by the bite block, continue to follow the leader down the shank of the hook.

(8) After the dehooker is seated on the shank of the hook, (leader tight) give a sharp, short jab downward with the dehooker. As the hook is removed, the point of the hook will rotate and stop on the offset angle of the dehooker, protecting the point and preventing re-engagement of the hook

Plate 3.4.3.a Continued

Step 9

Step 10

(9) After the hook is dislodged, keep the leader tight and pull the dehooker out until it stops at the PVC bite block.

(10) The bite block will cover the hook and further prevent re-engagement.

Step 11

(11) Wait for the turtle to open its mouth and remove the entire dehooking device and hook.

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3.4.4 Short-handled dehooker for external hooks

a) Short-handled "J-Style" dehooker or "Flipstick" (refer to Plate 2.1.3.b.1)

This dehooker is designed for use only when the hook is visible in the front of the mouth or beak (and the barb is not visible), or is external. Use of the "J-Style" dehooker requires a pulling motion to be employed; consider hook location and placement prior to use. Hold the leader in your left hand with tension and hold the "J-Style" dehooker in your right hand. Place the dehooker on the leader and follow the leader down until it bottoms out on the shank of hook. With tension on the leader, lower the left hand (the hand with the leader) to the 8 o'clock position, and lower the right hand with the dehooker to the 2 o'clock position. Twist the dehooker slightly and pull until the hook is dislodged, and be cautious not to allow the hook to re-engage once removed.

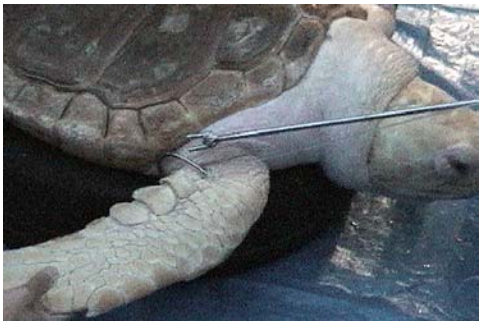
b) Scotty's dehooker (Refer to Plate 3.4.4.b)

This dehooker is designed for use only when the hook is visible in the front of the mouth or beak (and the barb is not visible), or is external. Use of the Scotty's dehooker requires a pushing motion to be employed; consider hook location and placement prior to use. Hold the leader in your left hand with tension and hold the Scotty's dehooker in your right hand. Position the dehooker so that it is firmly seated against the shank of the hook. Bring both hands together (leader and dehooker parallel with each other) while maintaining tension on the leader. With the leader and dehooker together, give a short, sharp jab to dislodge the hook and remove it from the animal. Be cautious not to allow the hook to re-engage once removed.

Plate 3.4.4.b

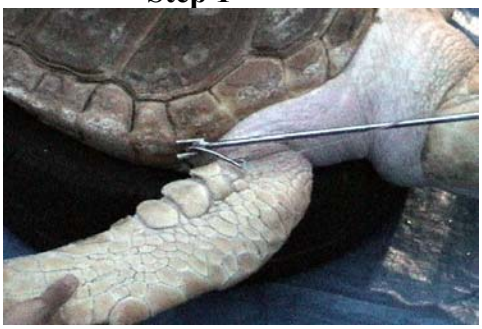
Instructions for Scotty's Dehooker

This dehooker is designed for removing hooks visible in the front of the mouth or beak, or external hooks. Use of Scotty's dehooker requires a pushing motion, and hook location should be considered when choosing this tool.



Step 1

Step 2



Step 3

Step 4

Step 5

(1) Hold leader in left hand with tension and hold Scotty's dehooker in right hand.
(2) Position the dehooker so that it is firmly seated against the shank of the hook.
(3) Bring both hands together (leader and dehooker parallel with each other) while maintaining tension on the leader. With the leader and dehooker together, give a short, sharp jab to dislodge the hook and remove it from the animal.
(4) Rotate or twist slightly if necessary to remove the hook.
(5) Be careful not to allow the hook to re-engage once removed.

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3.5 Equipment to cut monofilament line

See Section 2.1.2.b.

3.6 Releasing the turtle

Once gear is removed and the turtle recovered, boated turtles should be released in waters of similar temperature as at capture, preferably in a non-fishing area. Release the turtle by lowering it over the aft portion of the vessel, close to the water's surface, when gear is not in use and the engines are in neutral. The turtle's behavior and swimming and diving abilities should be monitored after release and recorded in the daily logbook.

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NOAA Fisheries. 2004. Final Supplemental Environmental Impact Statement for the Reduction of Sea Turtle Bycatch and Bycatch Mortality in the Atlantic Pelagic Longline Fishery. U.S. Department of Commerce, National Marine Fisheries Service, Office of Sustainable Fisheries, Highly Migratory Species Management Division, Silver Spring, MD. Public Document.

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Part 4

Sea Turtles Not Boated

Entangled and/or Hooked

Entangled

Long-handled line cutter (2.1.2.a)

AND

Long-handled device to pull "Inverted V"

Gaff (2.1.4)
or
Boat hook (2.1.4)
or
Long-handled "J" Style dehooker (2.1.3.b.1)

AND

Long-handled dehooker
(to secure loose hook)

Long-handled dehooker for internal hooks (2.1.3.a)

Hooked

Long-handled dehooker

External

Long-handled dehooker for internal hooks (2.1.3.a)
or
Long-handled dehooker for external hooks (2.1.3.b)

Internal

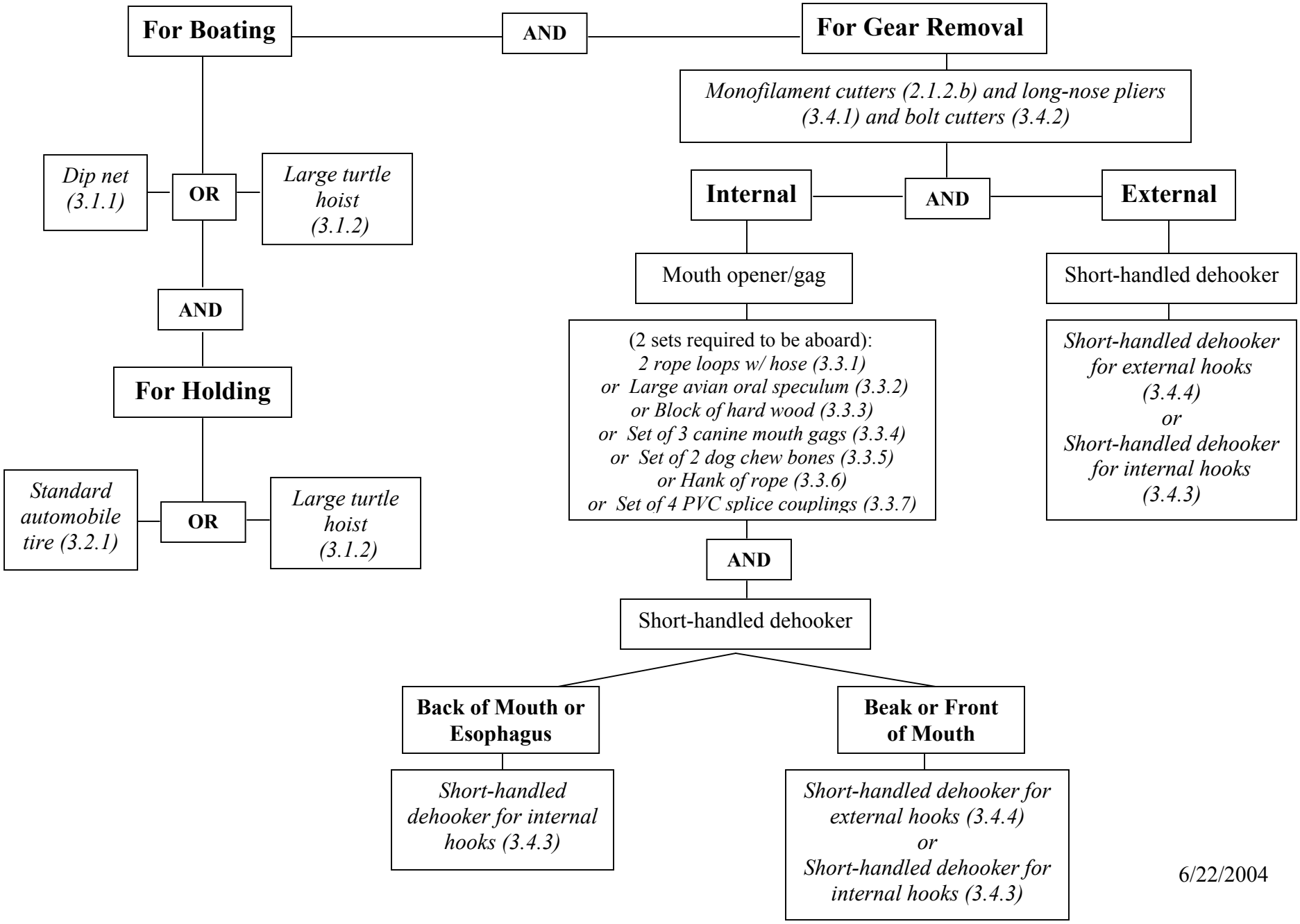
Long-handled dehooker for internal hooks (2.1.3.a)

To control turtle at side of boat

Turtle tether (2.1.1)

Part 5

Sea Turtles Boated



6/22/2004