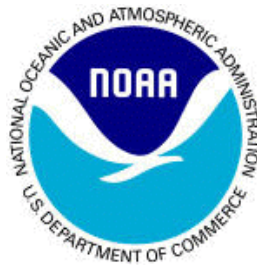


**ENVIRONMENTAL ASSESSMENT,
REGULATORY IMPACT REVIEW, AND
REGULATORY FLEXIBILITY ACT ANALYSIS TO REPEAL THE FISHERY
MANAGEMENT PLAN FOR THE STONE CRAB FISHERY OF THE GULF OF
MEXICO**

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ABBREVIATIONS USED IN THE DOCUMENT

ACL	Annual Catch Limit
AM	Accountability Measure
ASMFC	Atlantic States Marine Fisheries Commission
Council	Gulf of Mexico Fishery Management Council
EEZ	Exclusive Economic Zone
EFH	Essential Fish Habitat
EJ	Environmental Justice
ESA	Endangered Species Act
FMP	Fishery Management Plan
FTE	Full time equivalent
FWC	Florida Fish and Wildlife Conservation Commission
GMFMC	Gulf of Mexico Fishery Management Council
GSMFC	Gulf States Marine Fisheries Commission
Gulf	Gulf of Mexico
HAPC	Habitat Area of Particular Concern
IRFA	Initial Regulatory Flexibility Analysis
Magnuson-Stevens Act	Magnuson-Stevens Fishery Conservation and Management Act
MMPA	Marine Mammals Protection Act
MPA	Marine Protected Area
NEPA	National Environmental Policy Act
NMFS	NOAA's National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
RA	Regional Administrator
RFA	Regulatory Flexibility Act
RIR	Regulatory Impact Review
Secretary	Secretary of Commerce
SFA	Sustainable Fisheries Act
TIP	Trip Interview Program
USGS	United States Coast Guard

TABLE OF CONTENTS

ABBREVIATIONS USED IN THE DOCUMENT	1
TABLE OF CONTENTS.....	2
LIST OF TABLES	3
1.0 INTRODUCTION	4
1.1 Background.....	4
1.2 Purpose and Need	5
1.3 History of Management.....	5
2.0 MANAGEMENT ALTERNATIVES.....	7
Action: Stone Crab FMP	7
3.0 AFFECTED ENVIRONMENT	8
3.1 Description of the Fishery	8
3.1.1 Commercial	8
3.1.2 Recreational.....	10
3.1.3 Status of the Stock.....	10
3.2 Physical Environment.....	10
3.2.1 EFH	11
3.2.2 Habitat Areas of Particular Concern (HAPC) and Other Environmental Sites of Special Interest.....	11
3.3 Biological Environment	12
3.3.1 Stone Crab Populations	12
3.3.2 Species Protected Under the Endangered Species Act (ESA) and Marine Mammal Protection Act (MMPA)	14
3.4 Economic and Social Environment	15
3.4.1 Economic Description of the Commercial Fishery	15
Permits.....	16
3.4.2 Social Environment	16
3.5 Administrative Environment	16
3.5.1 Federal Fishery Management	16
3.5.2 State Fishery Management	17
4.0 ENVIRONMENTAL CONSEQUENCES	19
4.1 Direct and Indirect Effects on the Physical and Biological/Ecological Environments.....	19
4.2 Direct and Indirect Effects on the Economic Environment	20
4.3 Direct and Indirect Effects on the Social Environment.....	21
4.4 Direct and Indirect Effects on the Administrative Environment.....	22
4.5 Cumulative Effects	23
5.0 REGULATORY IMPACT REVIEW (RIR)	26
5.1 Introduction	26
5.2 Problems and Objectives	26
5.3 Description of Fisheries.....	26
5.4 Impacts of Management Measures.....	26
5.5 Public and Private Costs of Regulations	27
5.6 Determination of Significant Regulatory Action	27

6.0	REGULATORY FLEXIBILITY ACT ANALYSIS (RFA).....	27
6.1	Introduction	27
6.2	Statement of the need for, objectives of, and legal basis for the rule.....	28
6.3	Description and estimate of the number of small entities to which the proposed action would apply.....	28
6.4	Description of the projected reporting, record-keeping and other compliance requirements of the proposed rule, including an estimate of the classes of small entities which will be subject to the requirement and the type of professional skills necessary for the preparation of the report or records.....	28
6.5	Identification of all relevant federal rules, which may duplicate, overlap or conflict with the proposed rule	29
6.6	Significance of economic impacts on small entities	29
6.7	Description of significant alternatives to the proposed action and discussion of how the alternatives attempt to minimize economic impacts on small entities	29
7.0	LIST OF PREPARERS.....	30
8.0	LIST OF AGENCIES AND PERSONS CONSULTED	30
9.0	REFERENCES	31

LIST OF TABLES

Table 3.1	Annual landings of stone crab claws in pounds from the Gulf of Mexico.	9
Table 3.2.	Five-year ¹ average performance statistics.	15

1.0 INTRODUCTION

At its October 2010 meeting, the Gulf of Mexico Fishery Management Council (Council) voted to repeal the Fishery Management Plan for the Stone Crab Fishery of the Gulf of Mexico (FMP). The Magnuson-Stevens Fishery Management and Conservation Act (Magnuson-Stevens Act) requires a favorable vote by 75% of all voting members. This supermajority vote was met with a vote of 14 in favor, 0 against, and 3 not present.

The commercial stone crab fishery is executed primarily in coastal Florida waters. Florida has actively managed the fishery since 1929. The federal FMP was originally implemented in 1979 in response to competing gear use between stone crab and shrimp fishermen, and applies only to federal Gulf of Mexico (Gulf) waters adjacent to Florida waters. The objectives, as outlined in the original FMP, included: 1) Provide for orderly conduct of the stone crab fishery in the management area in order to reduce conflict between stone crab fishermen and other fishermen in the area, 2) establish an effective statistical reporting system for monitoring the stone crab fishery, 3) attain full utilization of the stone crab resource in the management area, and 4) promote uniformity of regulations throughout the management area. The last objective is particularly relevant in this fishery because, traditionally, the vast majority of stone crab harvest has been taken from state waters (out to nine nautical miles on the Florida west coast).

The management consequence of this action is the Florida Fish and Wildlife Conservation Commission (FWC) will exclusively manage vessels registered in the state or returning to a port in that state that land stone crab claws. Most stone crab claws are landed in Florida, and the FMP only applies to federal waters off Florida. In a letter to the Council dated August 13, 2010, the FWC stated they were fully prepared to protect the stone crab resource and the interests of fishermen in state and federal waters through appropriate regulations. On June 9, 2011, the FWC extended state regulations into federal waters off Florida.

1.1 Background

Two species of stone crab are in the fishery management plan: the Florida stone crab, *Menippe mercenaria*, which occurs along the peninsula of Florida, and the Gulf stone crab, *M. adina*, which occurs from northwest Florida to the western Gulf (Bert 1986). Zones of hybridization occur between the two species in the Gulf between Cedar Key and Cape San Blas and in the Atlantic between Cape Canaveral and Charleston, South Carolina (Bert and Harrison 1988).

The Council developed the FMP to manage the stone crab fishery and reduce gear conflicts between stone crab fishermen and shrimp fishermen in southwest Florida (GMFMC 1979). The Council and NOAA Fisheries Service have worked closely with Florida to adopt compatible management measures, develop a framework to allow the Regional Administrator to solve gear conflicts, implement a three-year vessel moratorium, and recognize FWC's license, trap certificates, and trap tags for use in the exclusive economic zone (EEZ) in lieu of a federal permit. Louisiana and Texas also have small landings of stone crab off their coasts, but have not extended their regulations into federal waters.

In March 1996, NOAA Fisheries Service published a proposed rule to withdraw the Stone Crab

FMP and remove its implementing regulations (61 FR 12056). This action was proposed in response to President Clinton's initiative to reinvent government and to eliminate, consolidate, and/or revise regulations that were outdated or otherwise in need of reform. Because the FMP had adopted Florida's rules in the EEZ, NOAA Fisheries Service made a preliminary conclusion that Florida's regulations were consistent with the National Standards, and were adequate to protect and manage the stone crab resource throughout its range. Consequently, NOAA Fisheries Service determined that the Federal regulations were not "necessary and appropriate," and continuing the Federal rules would not be consistent with National Standard 7, which requires, "conservation and management measures shall, where practicable, minimize costs and avoid unnecessary duplication".

Following the public comment period, NOAA Fisheries Service published a *Federal Register* notice withdrawing the Proposed Rule (61 FR 60254). The decision not to repeal the FMP was in response to comments from the Council opposed to withdrawal of the FMP because of the potential for gear conflicts. However, the FMP for the Shrimp Fishery in the Gulf of Mexico also establishes the same areas closed to shrimping to prevent gear conflicts with the stone crab fishery. These closed areas include shrimp/stone crab separation zones and a southwest Florida seasonal trawl closure. Although federal regulations may no longer prevent stone crab trap deployment in Zones IV and V, the state has the authority to enact these same regulations for all current participants, much as they have done for Zone II, which is entirely within state waters.

1.2 Purpose and Need

In the process of developing new federal regulations, NOAA Fisheries Service and the Council reviewed all FMPs to determine which species are in need of federal management. National standard guidance (50 CFR 600.340) lists criteria to consider in deciding whether a fishery needs federal management, including if the fishery could be or already is adequately managed by states. Because the stone crab FMP only covers federal waters adjacent to Florida, and state regulations are consistent with current federal regulations, NOAA Fisheries Service is considering action that would repeal the stone crab FMP and allow Florida to exclusively manage the stone crab fishery in adjacent federal waters beginning with the 2011/2012 season. The action would promote management of the stone crab fishery in the most efficient manner, while maintaining conservation of the resource and the ecosystem and properly conform to National Standard Guidance under the Magnuson-Stevens Act.

1.3 History of Management

The Fishery Management Plan for the Stone Crab Fishery of the Gulf of Mexico was implemented on September 30, 1979 (44 FR 53519). The FMP resolved a conflict over competing gear use between stone crab and shrimp fishermen operating in the EEZ off southwest Florida and extended Florida's rules regulating the fishery into the EEZ. The management area of the FMP is limited to the EEZ seaward of the west coast of Florida in the Gulf. The FMP and compatible state action created marine protected areas (MPAs) totaling about 10,360 km² (4,000 mi²) where shrimp trawling is prohibited permanently or seasonally.

Amendment 1, implemented on November 8, 1982 (47 FR 41757), specified a procedure for

modifying the zoned area to resolve the gear conflict.

Amendment 2, implemented on August 31, 1984 (49 FR 30713), established procedures for resolving gear conflicts in central west Florida. This amendment established marine protected areas totaling about 170 nm² where shrimp trawling is permanently prohibited.

Amendment 3, implemented on September 25, 1985 (51 FR 30663), included management measures to enhance survival of crabs held on board vessels and prohibited harvest of egg-bearing female crabs.

Amendment 4, approved on February 21, 1991 (56 FR 6837), contained provisions for adding a scientifically measurable definition of overfishing and an action plan to arrest overfishing, should it occur, as required by the Magnuson-Stevens Act National Standards, a section on vessel safety considerations, and a revised habitat section as required by the Magnuson-Stevens Act.

Amendment 5, implemented April 14, 1995 (60 FR 13918), placed a three-year moratorium on registration of stone crab vessels by NOAA Fisheries Service because the Florida Legislature proposed a state moratorium on issuance of permits while the industry considered development of a limited access system. Amendment 5 also included a protocol and procedure (framework) under which the Regional Administrator could approve certain types of rules proposed by Florida for implementation in the EEZ after review by the Advisory Panel, Scientific and Statistical Committee, and the Council. Amendment 5 also updated the description of the fishery habitat and factors affecting this habitat.

Amendment 6, implemented August 20, 1998 (63 FR 45595), extended the moratorium on the issuance of registration of stone crab vessels by NOAA Fisheries Service through June 30, 2002.

The Generic Sustainable Fisheries Act (SFA) Amendment, implemented June 19, 2000 (65 FR 31831), addressed new provisions to prevent overfishing and rebuild overfished stocks. The amendment also provided demographic and economic information on fishing communities, and revised stone crab trap construction requirements to be compatible with those of Florida and to reduce finfish bycatch.

Amendment 7, implemented November 4, 2002 (67 FR 61990), created a trap limitation system in cooperation with the trap limitation system implemented by Florida in 2000.

Amendment 8, implemented August 19, 2002 (67 FR 47467), was the Council's Generic Amendment establishing the Tortugas Marine Reserves.

The Generic Essential Fish Habitat (EFH) Amendment 3, implemented January 23, 2006 (70 FR 76216), described EFH for stone crabs.

2.0 MANAGEMENT ALTERNATIVES

Action: Stone Crab FMP

Alternative 1: No action, retain federal management of stone crab species (*Menippe mercenaria*, *M. adina*, and their hybrids) under the FMP

Alternative 2: Delegate management of stone crab species to the FWC

Preferred Alternative 3: Repeal the FMP

Discussion: **Alternative 1** would continue dual management of the stone crab fishery by federal and state governments. This alternative could be viewed as inconsistent with National Standard 7, which requires management measures avoid unnecessary duplication. Guidance on National Standard 7 states the following general factors should be considered, among others, when deciding whether a fishery needs federal management: 1) The importance of the fishery to the Nation and the regional economy, 2) whether an FMP can improve the condition of the stock, 3) the extent to which the fishery could be or already is adequately managed by states, 4) whether an FMP can further the resolution of competing interests and conflicts, 5) whether an FMP can produce more efficient utilization of the fishery, 6) whether an FMP can foster orderly growth of a developing fishery, and 7) costs of the FMP balanced against benefits. Although this fishery is clearly important to the economy of the region, the FMP is unlikely to improve the conditions in factors 2, 4, 5, or 6 any better than state regulation. For factor 3, the current federal regulations generally mimic the state regulations; thus the state could likely adequately manage this fishery. Factor 7 is addressed in Section 4.2.

The impact of repealing the FMP is that future federal management actions would not need to be implemented for this fishery. For example, the Magnuson-Stevens Act requires NOAA Fisheries Service to establish annual catch limits (ACLs) and accountability measures (AMs) for all managed species by the end of 2011. If **Alternative 1** were chosen, an ACL and AMs would be needed for the stone crab fishery.

Delegation of management to Florida would still retain the federal FMP. As such, all the discussion related to **Alternative 1** would also apply to **Alternative 2**. Further, under **Alternative 2**, the Secretary of Commerce (Secretary) would be required to review all state stone crab regulations to determine that they are consistent with the FMP. In 2008, NOAA Fisheries Service repealed the Atlantic Coast Red Drum FMP and delegated management to the Atlantic States Marine Fishery Commission (ASMFC) under the Atlantic Coastal Act. In this case, the FMP did not need to be retained because the Secretary was delegating management to another federal entity with regulatory authority. A similar alternative to delegate management of stone crabs to the Gulf States Marine Fishery Commission (GSMFC) was not considered because the GSMFC does not have regulatory authority.

Delegation to FWC would require the state to agree to accept the responsibility of stone crab management, but NOAA Fisheries Service would establish and implement an ACL and AMs. Under **Alternative 2**, FWC and the Council would work jointly to maintain landings below the ACL implemented by NOAA Fisheries Service and to apply AMs to account for any overages, if and when they occur. This method of management is similar to current management practices. FWC has taken the lead in documenting commercial stone crab landings and developing a

license, trap certificate, and trap tag program that can be used in state and federal waters of the Gulf of Mexico.

Under **Preferred Alternative 3**, NOAA Fisheries Service recognizes Florida's authority under section 306(a)(3) of the Magnuson-Stevens Act to regulate vessels registered under its laws when such vessels harvest stone crabs in the EEZ. These regulations are essentially the same as the current federal regulations, so no practical changes to the biological or social and economic environment are expected. If fishing practices outside Florida's authority should constitute an emergency situation that jeopardizes effective management of the stone crab fishery in the EEZ, NOAA Fisheries Service would consider issuing emergency regulations to address the emergency, as authorized by section 305(c)(1) of the Magnuson-Stevens Act.

If the federal FMP is withdrawn, Florida regulations could only be applied to vessels registered in Florida or that land in Florida. This raises concerns about out-of-state vessels fishing in the EEZ off Florida then landing elsewhere. Discussions with FWC staff and industry representatives indicate this situation is unlikely because the highest abundance of stone crabs is in south Florida. A vessel from out of state would need to travel a long distance, expending fuel, to reach the fishing grounds. Further, most fishermen deploy and service traps in multiple trips, and store traps on shore between trips. As no vessel owner from outside of Florida has ever applied for a federal stone crab permit or trap tags for fishing in the EEZ, interest in doing so seems non-existent at this time. After repeal of the FMP, if a vessel owner wanted to fish for stone crabs in the EEZ, they would need any permits required by the adjacent state.

3.0 AFFECTED ENVIRONMENT

Section 1502.15 of the CEQ regulations states "environmental impact statements shall succinctly describe the area(s) to be affected or created by the alternatives under consideration." A detailed description of the physical, biological, social, economic, and administrative environments related to the stone crab fishery is provided in the Final Environmental Impact Statement for the Council's Generic Essential Fish Habitat Amendment (GMFMC 2004). That information is incorporated here by reference and summarized and updated below.

3.1 Description of the Fishery

The stone crab fishery is unusual because only the claws are harvested and the crab is returned to the water alive. Approximately 13% of harvested claws measured in fish houses were regenerated (Simonson and Hochberg 1992). For both commercial and recreational sectors, the season begins on October 15 each year and ends May 15 the following year. The summer closed season is intended to cover the peak reproductive period, but harvesting claws from egg-bearing females is prohibited at all times. The minimum claw size is 2.75 inches (70.0 cm).

3.1.1 Commercial

Federal regulations require a commercial vessel permit for fishermen to possess or use a stone crab trap, possess more than one gallon of stone crab claws, or sell stone crab claws in or from

the management area. Trap certificates and annual trap tags are issued to commercial vessel permit holders. In Florida, trap certificates and tags are only assigned to individuals holding a saltwater products license with a restricted species endorsement and a stone crab endorsement.

Traps, trap throats, and buoys must be of specific sizes and have specific markings. Traps may be soaked for 10 days before the season opens and may be removed from the water up to five days after the season closes. Traps may be tended only between one hour before sunrise and one hour after sunset. Live crabs can be held on board if in shade and kept damp; the claws must be removed and bodies returned to the water before the vessel reaches shore. A southwest Florida seasonal trawl closure and shrimp/stone crab separation zones are also defined in the federal regulations.

NOAA Fisheries Service implemented a trap limitation program that compliments the Florida program. The major difference is that federal trap certificates and tags cannot be transferred, whereas state certificates and tags can. Transfers of state certificates and tags are subject to a passive reduction if outside of the immediate family.

Commercial landings of stone crab in the Gulf from the early 1990s were high, but whether the crabs were caught in state or federal waters was not always recorded. After 1997, commercial landings records improved with fewer landings being recorded from unidentified waters. Using the 1997-2010 time series, the proportions of landings from state, federal, and unknown waters were 57%, 42%, and less than 1%, respectively. Stone crab landings are also documented from the South Atlantic; however, landings from federal waters were equal to or less than 50,000 pounds of claws per year since 2000.

Table 3.1 Annual landings of stone crab claws in pounds from the Gulf of Mexico.

Year	Federal waters	Florida waters	Unknown	Total
1997	1,070,098	1,469,409	8,635	2,548,142
1998	1,152,029	1,698,094	8,201	2,858,324
1999	893,892	1,261,394	2,152	2,157,438
2000	1,060,575	1,638,543	16,639	2,715,756
2001	1,174,946	1,537,940	3,263	2,716,149
2002	1,039,263	1,654,840	3,670	2,697,772
2003	944,308	1,266,329	521	2,211,159
2004	997,177	1,487,791	1,197	2,486,165
2005	875,095	953,053	482	1,828,631
2006	885,669	1,238,055	58	2,123,782
2007	1,057,841	1,580,653	1,443	2,639,936
2008	1,310,041	1,550,398	0	2,860,439
2009	1,095,206	1,453,673	1,147	2,550,026
2010	1,128,052	1,049,143	387	2,177,582

Source: FWC. Note: Landings from 2010 are preliminary and may be incomplete.

3.1.2 Recreational

Stone crabs are taken recreationally mainly by SCUBA diving and wading. The Code of Federal Regulations does not have specific recreational regulations for stone crabs; however, the regulations state that, except for a person in compliance with the FWC trap limitation program, a federal commercial vessel permit is required to possess or use a stone crab trap, possess more than one gallon of stone crab claws, or sell stone crab claws in or from the federal management area. By extension, this means a recreational fisher in federal waters cannot use a stone crab trap, can possess up to one gallon of stone crab claws, and cannot sell stone crab claws in or from the management area. Florida recreational regulations are slightly different in that they allow possession of up to one gallon of claws per person or two gallons per vessel, and up to five traps (with proper markings). Recreational fishermen in Florida waters must pull the traps manually.

No federal recreational fishing statistics are collected and FWC currently does not have a program to record and track landings from the recreational sector. As a result, no estimates are available on landings or effort in the recreational sector of the stone crab fishery.

3.1.3 Status of the Stock

The most recent stone crab stock assessment was conducted by FWC in 2006 (Muller et al. 2006). The authors concluded the fishery was undergoing overfishing; however, overfishing was not determined on a biological basis as defined in the Magnuson-Stevens Act, but on landings versus the number of traps in the fishery (R. Muller, personal communications). More often this situation is referred to as overcapacity, rather than overfishing. The unique nature of the fishery renders landings-based models inappropriate for biological interpretation, because a landed claw could represent 0% mortality (crab survived), 100% mortality (crab died), or 50% mortality (crab contributed two claws before dying), as well as other possibilities.

The lack of a declining recruitment trend from the models indicates the stock is able to maintain current recruitment levels. The stone crab fishery may be resilient because most female stone crabs spawn one or more times before their claws reach legal size, because some crabs survive declawing, and because the fishing season is closed during the principal spawning season. Also recruits come from two sources: crabs whose claws have reached legal size, and crabs that have been declawed in the fishery or due to natural causes, survived, and undergone sufficient molts for their regenerated claws to attain legal size again. Landings have been variable but without trend since the early 1990s while the trap effort in the fishery has increased (Vondruska 2010). The increase in effort suggests that the current level of landings is the maximum that can be harvested under current environmental conditions, regulations, and fishery practices and that the fishery may be overcapitalized. As suggested above, this overcapacity does not appear to be resulting in significant adverse impacts on the status of the stock.

3.2 Physical Environment

The Gulf has a total area of approximately 600,000 mi² (1.5 million km²), including state waters (Gore 1992). 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 into the northern Gulf, and a semi-permanent, anticyclonic gyre in the western Gulf. Gulf surface water temperatures range from 12-29° C (54-84° F) depending on time of year.

3.2.1 EFH

Essential fish habitat (EFH) is defined as “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.” The EFH provisions of the Magnuson-Stevens Act support one of the nation’s overall marine resource management goals - maintaining sustainable fisheries. Essential to achieving this goal is the maintenance of suitable marine fishery habitat quality and quantity. The Magnuson-Stevens Act directs NOAA Fisheries Service and the Councils to identify actions to encourage the conservation and enhancement of EFH and identify measures to minimize, to the extent practicable, the adverse effects of fishing on EFH.

EFH for stone crabs is identified and described as: all Gulf of Mexico estuaries; Gulf of Mexico waters and substrates extending from the US/Mexico border to Sanibel, Florida from estuarine waters out to depths of 10 fathoms; waters and substrates extending from Sanibel, Florida to the boundary between the areas covered by the Gulf of Mexico Fishery Management Council and the South Atlantic Fishery Management Council from estuarine waters out to depths of 15 fathoms.

Repeal of the Stone Crab FMP would result in the above identified habitats not being identified and described as EFH for stone crab in the Gulf of Mexico. However, taking into account the considerable overlap of the distribution and life history habitat requirements of the remaining species managed by the Gulf Council and NOAA Fisheries Service, no individual habitat type or geographic area previously identified as EFH would lose that designation. The proposed repeal of the Stone Crab FMP is not considered to have an adverse impact on EFH requiring consultation. Having particular habitat types designated as EFH for multiple life stages of multiple species provides a relative indicator of the overall value of a particular habitat which serves to strengthen the basis of NOAA Fisheries Service EFH Conservation Recommendations. However, because the proposed action will not result in any individual habitat type or geographic area previously identified as EFH to lose that designation, NOAA Fisheries Service’s authority to protect and conserve those habitats through the EFH consultation process is not considered to be significantly diminished.

3.2.2 Habitat Areas of Particular Concern (HAPC) and Other Sites of Special Interest

NOAA Fisheries Service and the fishery management councils must also consider a second, more limited habitat designation for each species in addition to EFH. Habitat Areas of Particular Concern (HAPC) are described as subsets of EFH which are rare, particularly susceptible to human-induced degradation, especially ecologically important, or located in an environmentally stressed area. Examples of HAPCs include coral communities, areas where spawning aggregations are known to occur, and topographic features of special value.

Madison/Swanson and Steamboat Lumps Marine Reserves are no-take marine reserves

where all fishing except for surface trolling during May through October is prohibited. **Tortugas North and South Marine Reserves** are no-take marine reserves cooperatively implemented by Florida, NOAA's National Ocean Service, the Council, and the National Park Service.

Individual reef areas and bank HAPCs of the northwestern Gulf containing pristine coral areas are protected by preventing use of some fishing gear that interacts with the bottom. Bottom anchoring and the use of trawling gear, bottom longlines, buoy gear, and all traps/pots on coral reefs are prohibited in the **East and West Flower Garden Banks, McGrail Bank**, and on the significant coral resources on **Stetson Bank**. **Florida Middle Grounds HAPC** is a pristine soft coral area protected from use of any fishing gear interfacing with bottom. A portion of **Pulley Ridge HAPC** is where deepwater hermatypic coral reefs are found is closed to anchoring and the use of trawling gear, bottom longlines, buoy gear, and all traps/pots.

In the **Alabama SMZ**, fishing by a vessel operating as a charter vessel or headboat, a vessel that does not have a commercial permit for Gulf reef fish, or a vessel with such a permit fishing for Gulf reef fish, is limited to hook-and-line gear with no more than three hooks. Nonconforming gear is restricted to bag limits, or for reef fish without a bag limit, to 5% by weight of all fish aboard.

In addition, the Generic EFH Amendment prohibited the use of anchors in these HAPCs by the stone crab fishery and established an education program on the protection of coral reefs when using various fishing gears in coral reef areas for recreational and commercial fishermen (GMFMC 2004).

The U.S.S. Hatteras is in federal waters off Texas and is listed in the National Register of Historic Places. Shipwrecks in the Florida Keys and Dry Tortugas include USCG Cutter Duane, USS Alligator, San Pedro, Windjammer, and Bird Key. Fishing activity already occurs in the vicinity of these sites; but actions within this amendment would have no additional impacts on the above listed historic resources, nor would they alter any regulations intended to protect them.

3.3 Biological Environment

3.3.1 Stone Crab Populations

Habitat

Stone crabs are found from North Carolina south around peninsular Florida to the Yucatan and Belize, and throughout the Bahamas and Greater Antilles. The Florida stone crab, *Menippe mercenaria*, and the Gulf stone crab, *M. adina* comprise the stone crab fishery in the Gulf. The Gulf stone crab is typically smaller than the Florida stone crab and replaces it in the northern and western Gulf. Zones of hybridization occur between the two species in the Gulf between Tampa Bay and Cape San Blas, and in the Atlantic between Cape Canaveral and Charleston, South Carolina (Bert and Harrison 1988).

Adult stone crabs are found from the shoreline to depths of 60 m. The Florida stone crab is generally found in burrows under rock ledges or in seagrass beds. The Gulf stone crab prefers

muddier bottoms. Hybrids can be found in either habitat. Juveniles live on shell bottom, sponges, and oyster bars.

Stone crab larvae are planktonic and require warm water and high salinity for most rapid growth. Larval survival and growth rates decline rapidly below 77°F (25°C) and 25 ppt (Brown et al 1992). Juvenile and adult stone crabs are able to survive and grow within a greater range of environmental conditions. The Gulf stone crab can tolerate lower temperatures and salinities than the Florida stone crab (Brown and Bert 1993).

Reproduction

The size of 50% morphological maturity occurs at approximately 70 mm carapace width for males and 60 mm carapace width for females (Gerhart and Bert 2008). Because fertilization is internal, females are only able to mate immediately after a molt while their shells are soft. Female molting and mating occurs mainly in the fall (September-November), but also in the spring. Females can retain sperm received during the fall mating season until the next season's molt. Eggs are extruded beginning in the spring through fall of each year. The number of eggs a female produces is related to her body size. Large females can produce up to a million eggs per brood and may produce four to six broods in a single spawning season.

Development and Growth

Female stone crabs incubate eggs for about two weeks before hatching, and broadcast larvae into the water. Larvae remain in the plankton for approximately four weeks before settling at about 2 mm carapace width (Brown et al 1992).

Juveniles of both sexes molt often, mainly during the warm months of summer and fall, but the frequency of molting decreases as they grow larger. Under normal temperature and salinity, juveniles reach 30 mm carapace width after one year, and reproductive maturity is reached at age two or three (Gerhart and Bert 2008). After maturity, the molt cycle of both sexes is timed to the female reproductive cycle. Females cannot molt while bearing eggs; therefore, they molt before and after the reproductive season. Male stone crabs mate with females only immediately after the females molt, and males must be between molts when they mate. Few mature females molt during the coldest time of the year; consequently, adult males have a distinct annual peak in molting during January. Growth increments (change in size) of stone crabs can decrease by up to one-third when one or both claws are removed (Sullivan 1979), and the time between molts may increase or decrease, depending on when in the molt cycle the claws are lost (Savage and Sullivan 1978).

Males enter the commercial fishery during age three and females during age four. Females have contributed to the reproductive population prior to entering the fishery, but most males probably have not (Gerhart and Bert 2008).

Ecological Relationships

The stone crab is a high trophic level predator and is primarily carnivorous at all life stages. Juveniles feed on small molluscs, polychaetes and crustaceans. Adults consume several species of mollusks, including oysters and mussels, but also consume carrion and vegetable matter such as seagrass (Lindberg and Marshall 1984). Stone crabs have few predators as adults, but are

consumed by reef fish as juveniles.

3.3.2 Species Protected Under the Endangered Species Act (ESA) and Marine Mammal Protection Act (MMPA)

As many as 28 different species of marine mammals may occur in the Gulf; all are protected under the MMPA and six are also listed as endangered under the ESA (i.e., sperm, sei, fin, blue, humpback and North Atlantic right whales). Other species protected under the ESA occurring in the Gulf include five sea turtle species, two fish species, and two coral species. Information on the distribution, biology, and abundance of these protected species in the Gulf is included in the final EIS to the Generic EFH amendment (GMFMC 2004), the September 2009 ESA Biological Opinion (opinion) on the stone crab fishery (NMFS 2009a), and the *Acropora* Status Review (*Acropora* Biological Review Team 2005). Marine Mammal Stock Assessment Reports and additional species information are also available on the NMFS Office of Protected Species website: <http://www.nmfs.noaa.gov/pr/species/>.

The Gulf stone crab trap fishery is classified in the 2011 MMPA List of Fisheries as a Category III fishery (75 FR 68468; November 8, 2010). This classification indicates a remote likelihood of mortality or serious injury of a marine mammal stock resulting from the fishery (less than or equal to 1% annually of the potential biological removal¹). Bottlenose dolphins are the only species documented as interacting with this fishery; may predate and depredate on the bait, catch, and/or released discards.

The opinion determined that the federal stone crab fishery was not likely to adversely affect ESA-listed whales (NMFS 2009a). All species of ESA-listed whales were either unlikely to occur in the Gulf (i.e., North Atlantic right, fin, and humpback whales) or only occurred in very deep waters (i.e., blue, sei, and sperm whales) and did not overlap spatially with the area the fishery operates. The opinion also cited the lack of documented interactions between large whales and the fishery as additional support that the fishery was not likely to adversely affect these species (NMFS 2009a).

Gulf sturgeon are also not likely to be adversely affected by the federal stone crab fishery. Gulf sturgeon inhabit coastal rivers from Louisiana to Florida during the warmer months and over-winter in estuaries, bays, and the Gulf. The opinion determined the federal stone crab fishery in the Gulf operated outside of the preferred habitat and salinity ranges of Gulf sturgeon, and was therefore unlikely to adversely affect this species.

The relative rarity of elkhorn coral (*Acropora palmata*) and staghorn coral (*A. cervicornis*) in the action area, coupled with use of stone crab traps in areas that do not support these species, led NOAA Fisheries Service to conclude in the opinion that the stone crab fishery was not likely to adversely affect these species.

The opinion determined that commercial stone crab traps were likely to adversely affect sea

¹The potential biological removal is the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population

turtles (Kemp’s ridley, loggerhead, green, leatherback, and hawksbill) and smalltooth sawfish via entanglement and/or forced submergence. For the three fishing seasons from 2005-2008, the stone crab fishery was estimated to have taken approximately 25 sea turtles, with an estimated 23% mortality. The opinion concluded the same number of incidental takes was likely to occur in the future over consecutive three-year periods. Commercial stone crab trap fishing is concentrated in southwestern Florida, an area within the core range of the smalltooth sawfish. Based on this overlap and the known entanglement of smalltooth sawfish in similar trap gears (i.e., spiny lobster traps), the opinion anticipated one non-lethal smalltooth sawfish take could occur in stone crab trap gear over consecutive three-year periods. Because the opinion determined the continued operation of the federal stone crab fishery would adversely affect ESA-listed species, it required the implementation of certain reasonable and prudent measures and implementing terms and conditions that could minimize the impacts from those potential adverse affects.

3.4 Economic and Social Environment

As discussed in Section 3.1.2, neither the FWC nor the federal government collects recreational fishing statistics for stone crab harvests or effort. As a result, the following discussion covers just the commercial sector of the stone crab fishery.

3.4.1 Economic Description of the Commercial Fishery

Number of Vessels, Harvest, and Ex-vessel Value

An economic description of the commercial stone crab fishery is contained in Vondruska (2010) and is incorporated herein by reference. Select summary statistics are provided in Table 3.2. Landings information is provided in Section 3.1.1. It is noted that the landings weights provided in Section 3.1.1 are claw weight whereas the landings information contained in Vondruska (2010) are whole crab weight (harvested claws are assumed to equal half of the whole crab weight).

Table 3.2. Five-year¹ average performance statistics.

Species	Vessels	Ex-vessel Value² Species (millions)	Average Ex-vessel Value per Vessel	Average Ex-vessel Value per Trip
Stone Crab	987	\$26.56	\$29,410	\$1,298

¹Fishing-year (2004/2005, 2005/2006-2008/2009).

²2008 dollars.

Source: FWC Trip Ticket System and NMFS SEFSC Accumulated Landings System.

Economic Activity

Estimates of the economic activity (impacts) associated with the Gulf commercial stone crab harvest were derived using the model developed for and applied in NMFS (2009b). These estimates of economic activity include the direct effects (effects in the sector where an expenditure is actually made), indirect effects (effects in sectors providing goods and services to directly affected sectors), and induced effects (effects induced by the personal consumption

expenditures of employees in the direct and indirectly affected sectors). Based on the average annual ex-vessel revenues for stone crab over the period 2004-2009 of \$26.56 million (2008 dollars), the commercial stone crab harvests are estimated to support 2,107 full time equivalent (FTE) jobs and generate approximately \$106.4 million in output (sales) impacts and approximately \$56.6 million in income impacts per year to the Florida economy. At the U.S. level, these values increase to 5,046 FTE jobs, and approximately \$350.3 million and \$149.8 million in output and income impacts, respectively. Among the jobs supported in Florida, 484 FTE jobs are estimated to be in the harvesting sector. The number of FTE jobs should not be compared to the number of average vessels per year with recorded landings because the stone crab fishery is not prosecuted on a full-time annual basis. Approximately two-thirds of the jobs supported by these harvests are estimated to accrue to the restaurant sector.

Permits

Either a state saltwater products license with a restricted species endorsement and a stone crab endorsement or federal commercial vessel permit for stone crab is required for the harvest of commercial quantities of stone crabs in federal waters. To date, however, no federal permits have been issued.

3.4.2 Social Environment

Descriptions of the social environment in the Gulf can be found at <http://sero.nmfs.noaa.gov/sf/socialsci/socialsci.htm>, in GMFMC (2011), and in GMFMC/SAFMC (2011) and are incorporated herein by reference. Based on 2008 NOAA Fisheries Service data, stone crab were purchased by 180 Florida dealers in 68 Florida cities. In terms of ex-vessel value, only five of these cities accounted for more than 5% of the harvests, with Marathon accounting for the largest proportion, approximately 16.5%. The remaining top cities cannot be identified due to confidentiality considerations.

3.5 Administrative Environment

3.5.1 Federal Fishery Management

Federal fishery management is conducted under the authority of the Magnuson-Stevens Act (16 U.S.C. 1801 *et seq.*), originally enacted in 1976 as the Fishery Conservation and Management Act. The Magnuson-Stevens Act 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 U.S. anadromous species and continental shelf resources that occur beyond the EEZ.

Responsibility for federal fishery management decision-making is divided between the Secretary 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 is responsible for promulgating regulations to implement proposed plans and amendments after ensuring that management measures are consistent with the Magnuson-Stevens Act, and with other applicable laws summarized in Section 9. In most cases, the Secretary has delegated this authority to NOAA Fisheries Service.

The Council is responsible for fishery resources in federal waters of the Gulf. These waters extend to 200 nautical miles offshore from the nine-mile seaward boundary of Florida and Texas, and the three-mile seaward boundary of Alabama, Mississippi, and Louisiana. The Council consists of 17 voting members: 11 public members appointed by the Secretary; one each from the fishery agencies of the Gulf states; and one from NOAA Fisheries Service. The Council uses a Scientific and Statistical Committee to review the data and science being used in assessments and fishery management plans/amendments. Regulations contained within FMPs are enforced through actions of the NOAA's Office for Law Enforcement, the U.S. Coast Guard, and various state authorities

The public is involved in the fishery management process through participation at public meetings, on advisory panels and through Council meetings that, with few exceptions for discussing personnel matters, are open to the public. The regulatory process is 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.

3.5.2 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 have the authority to manage their respective state fisheries including enforcement of fishing regulations. Each of the five states exercises legislative and regulatory authority over their states' natural resources through discrete administrative units. Although each agency listed below 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. The states are also involved through the GSMFC in management of marine fisheries. This commission was created to coordinate state regulations and develop management plans for interstate fisheries.

NOAA Fisheries Service' State-Federal Fisheries Division is responsible for building cooperative partnerships to strengthen marine fisheries management and conservation at the state, inter-regional, and national levels. This division implements and oversees the distribution of grants for two national (Inter-jurisdictional Fisheries Act and Anadromous Fish Conservation Act) and two regional (Atlantic Coastal Fisheries Cooperative Management Act and Atlantic Striped Bass Conservation Act) programs. Additionally, it works with the commissions to develop and implement cooperative State-Federal fisheries regulations.

More information about state agencies can be found from the following Web pages:

Texas Parks & Wildlife Department <http://www.tpwd.state.tx.us>

Louisiana Department of Wildlife and Fisheries <http://www.wlf.state.la.us/>

Mississippi Department of Marine Resources <http://www.dmr.state.ms.us/>

Alabama Department of Conservation and Natural Resources <http://www.dcnr.state.al.us/>

Florida Fish and Wildlife Conservation Commission <http://www.myfwc.com>

4.0 ENVIRONMENTAL CONSEQUENCES

4.1 Direct and Indirect Effects on the Physical and Biological/Ecological Environments

No changes in the impacts on the physical or biological environment would be expected under any of the alternatives for this action. The action is administrative in nature and should not change how the fishery is prosecuted. None of the alternatives would result in the introduction or spread of non-indigenous species.

Traps may impact and degrade habitat because of their use to harvest species associated with coral and hard bottom habitat. Hunt and Matthews (1999) evaluated the potential damage lobster and stone crab traps can cause in waters around Florida. Traps can reduce the abundance of gorgonian colonies from rope entanglement. Seagrass smothering occurs from trap placement, although this appears to be a problem primarily with lost “ghost traps.” Uhrin et al. (2002) found seagrasses recovered when lobster traps were deployed in grassbeds less than six weeks. Traps remained static on the seafloor, except in cases where insufficient line and large swells caused them to bounce off the bottom. When traps were hauled back along the bottom, a track was left in the sediments, but abundances of organisms within that track were not affected. This suggests the frequency and intensity of trapping may be more important than individual trap contact. Also, traps are not placed randomly; rather they are fished in specific areas multiple times before fishing activity moves to other grounds. Therefore, trap damage will be concentrated in particular areas rather than be uniform.

The effect of the fishery on stone crab populations is described in Section 3.1. Under **Alternatives 1 and 2**, NOAA Fisheries Service would be required to establish and implement an ACL and AMs for the stone crab fishery. ACLs and AMs are intended to help prevent overfishing of federally managed species. However, because of the unique nature of the fishery, in which only claws are kept and the animal is returned to the water, determining a biologically relevant ACL would be complicated. Landings are reported in pounds of claws. To relate this to biomass, would require knowing the average weight of claws in each size category (likely on a regional basis) to determine number of claws. How many individual crabs those claws represent would also have to be determined – one or both claws can be removed from a crab depending on size. Finally, mortality of crabs with claws removed would need to be estimated. The Trip Information Program (TIP) characterizes claw breaks as good or bad. A bad break indicates the crab would die from the injury; a good break may not result in immediate death, but survival rates of crabs with one or both claws missing are unknown.

Under **Alternative 3**, ACLs and AMs would not be required by Florida. If stone crabs are in danger of overfishing, **Alternative 3** would be less beneficial than **Alternative 1 or 2**. However, catch in this fishery has traditionally been regulated through effort management and a lack of federal catch limits would not be expected to result in any significant adverse impacts to the short-term or long-term biological health of the resource.

Principal bycatch species include small and juvenile fish, mollusks, and other crustaceans. Fishermen indicate such catch per trap is usually small, largely because of the small size of the traps. In some years, octopi are commonly taken as bycatch in significant quantities and enter

traps presumably to feed on stone crabs. Traps may also cause ghost fishing, but biodegradable panels or fastenings are designed to allow catch to escape. Mortality of bycatch in traps is generally low because of ease of escapement and short soak times.

The impacts of the **Alternatives 1 and 2** on ESA-listed species would be similar and would likely perpetuate the existing level of risk for interactions between protected species and the fishery, as described in the 2009 biological opinion. Under **Alternative 1**, the measures prescribed in the biological opinion to minimize the impacts to ESA-listed species from incidental take would remain in effect. These measures include distribution of information on resuscitation and handling of captured sea turtles and sawfish, requiring marking of trap lines, measures concerning data collection for stranded seas turtles and entangled sawfish, and tracking of stone crab fishing effort. Under **Alternative 2**, the FMP would remain in place with the primary difference being Florida manages the fishery. Because the FMP would still remain, the measures prescribed in the biological opinion to minimize the impacts to ESA-listed species from incidental take would also still apply. The impacts of **Preferred Alternative 3** on protected species are unclear. With the repeal of the FMP, the measures prescribed in the biological opinion to minimize the impacts to ESA-listed species from incidental take would no longer apply. However, some of those measures are actions such as conducting outreach, which NOAA Fisheries Service could continue. Many of the remaining measures, including those to help improve the monitoring of incidental takes, could only be implemented through federal and state cooperation. If Florida decides to implement measures similar or more protective than those prescribed in the biological opinion, then the biological impacts of **Preferred Alternative 3** on ESA-listed species may be very similar to or more beneficial than those anticipated under **Alternatives 1 and 2**. However, if Florida does not adopt the measures in the biological opinion, or adopts less protective measures, the alternative may be less beneficial to ESA-listed species than the other two alternatives.

4.2 Direct and Indirect Effects on the Economic Environment

Alternative 1 would maintain all current stone crab management measures. As a result, all current stone crab fishing behaviors, including the customary number of participants, number of trips taken, number of traps fished, as well as harvests, marketing patterns, and pricing, as determined by market supply and demand, could continue unchanged. Therefore, no direct economic effects would be expected to occur under **Alternative 1**. However the establishment of ACLs and AMs is a requirement of FMPs. As a result, **Alternative 1** would require subsequent action to establish the necessary limit and accountability measures. Because of the health of the resource and effectiveness of current management measures at the state and federal level, no corrective measures are believed to be necessary at this time to correct any fishery problems. As discussed in Section 3.1.3, some evidence of overcapitalization exists. However, no industry or management originated effort to change the federal trap limits adopted in 2002 (which are compatible with state limitations) has developed. Further, because the fishery largely occurs in state waters, any change at the federal level would not likely be sufficient to accomplish meaningful improvement in overcapacity without the adoption of compatible state regulations. As a result of the absence of resource or other management issues, the establishment of ACLs or AMs would not be expected to require the establishment of any corrective management measures or result in any associated direct short-term or foreseeable

long-term economic effects. However, additional administrative costs would be incurred to develop and implement these required components, and such redundancy in management action would be economically inefficient.

Because delegation of management authority to Florida would retain the FMP and its required components, the economic effects of **Alternative 2** would be expected to be similar to those of **Alternative 1**. Management of the fishery in federal waters would be expected to continue unchanged because current management mirrors Florida regulations. As a result, current fishing behavior and performance would be expected to continue unchanged, with no adverse economic effects expected to occur. The administrative costs of management may increase under **Alternative 2** because it may be more administratively difficult for the Secretary to review all state stone crab regulations and ensure consistency with the FMP than to do similar for measures developed internally.

Preferred Alternative 3 would also be expected to result in continued normal fishing behavior, with no change in economic performance. This alternative would also avoid the additional economic costs of additional management action that would accrue to **Alternatives 1** and **2** associated with the establishment of ACLs and AMs, and the potential increased costs of administrative complexity of **Alternative 2**. No change in the economic performance of the fishery would be expected because Florida intends to extend its jurisdiction into federal waters off Florida upon withdrawal of the FMP. As explained in Section 2, although Florida could only extend its jurisdiction to vessels with Florida registrations, or regulate fishermen who land stone crab in Florida, it is not expected in the foreseeable future that any fishermen will attempt to harvest stone crab in federal waters off Florida for landing in other states. Because of the importance of the fishery to the state and the effectiveness of state management to date, again noting the possibility of overcapacity as discussed above, the absence of ACLs and AMs, which would not be established under **Preferred Alternative 3**, would not be expected to result in any significant changes in current or future harvests, or significant change in any associated economic benefits. Thus, the stone crab fishery would be expected to continue to be a Florida fishery and be properly managed by Florida, the health of the resource be appropriately protected, and the economic benefits associated with the fishery be maintained. Further, to the extent that overcapacity may need to be reduced in the future, common management of the fishery throughout its range by a single management entity, i.e., Florida, may allow for more efficient and effective regulatory action.

4.3 Direct and Indirect Effects on the Social Environment

The social effects of the alternatives would be expected to mirror the economic effects discussed in Section 4.2. Because of the effectiveness of Florida management of the stone crab fishery in state waters, and the expectation that equal protection and effective management would be extended into federal waters under both **Alternative 2** and **Preferred Alternative 3** (current federal regulation, which would continue under **Alternative 1**, are consistent with Florida regulations), none of the alternatives considered would be expected to result in any change in how the fishery is prosecuted, in either the short term or long term, or the associated social benefits. As a result, the potential social effects of the alternatives considered may reduce to considerations of the perception of rational management. In general, public dissatisfaction with

the fishery management process may result in declines in active participation in the management process, such as at scoping meetings, public hearings, during public comment periods, and in data collection programs. These behaviors can lead to incomplete or erroneous information being available to managers and subsequent management decisions that do not support optimal social and economic benefits. The duplication of management action that would be required in response to **Alternatives 1 and 2**, to establish mandated ACLs and AMs for federally managed species, may be perceived as a dereliction of responsibility and an inefficient use of public resources; specifically, because **Alternatives 1 and 2** would require the establishment of ACLs and AMs, the absence of alternative ACL and AM specifications in the current action would require that the adoption of either **Alternative 1 or 2** result in additional amendment development to select appropriate specifications. **Preferred Alternative 3** would avoid this issue while potentially invoking the issue of whether federal oversight for stone crab is appropriate. Constituents who feel federal oversight of stone crab is justified and necessary would be expected to be most supportive of **Alternatives 1 and 2**, though the extent of oversight might be reduced under **Alternative 2** compared to **Alternative 1**. Conversely, constituents who feel federal oversight is redundant to state management, a needless exercise of government control, and a waste of government resources, would be expected to be most supportive of **Preferred Alternative 3**. Which group might dominate is unknown. As demonstrated in Section 1.4, however, other than the description of essential habitat in 2006, federal regulatory change in the fishery has not occurred since 2002, arguably demonstrating an absence of acute management issues and substantial effectiveness of and satisfaction with the management system in state waters and compatible regulation in federal waters. This may suggest that complete management by Florida, as would be expected in response to the implementation of **Preferred Alternative 3**, would be expected to be generally accepted by the public and result in a net gain in social benefits due to a perception of responsible and appropriate management action.

Environmental Justice (EJ)

Executive Order 12898 requires federal agencies to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations. This executive order is generally referred to as EJ.

No EJ issues are expected to arise as a result of the proposed action. As discussed in Sections 4.2 and 4.3, the proposed action, if implemented, would not be expected to result in any reduction in economic or social benefits to any fishermen, associated businesses, or communities. All current and customary fishing and business practices associated with the stone crab fishery would be expected to continue unchanged. As a result, no populations, EJ or otherwise, would be expected to be adversely affected.

4.4 Direct and Indirect Effects on the Administrative Environment

The action would have a direct effect on the administrative environment. The process of repealing the stone crab FMP, would in the short term, add a burden to NOAA Fisheries Service staff requiring the development and implementation documentation for the appropriate regulatory process. In the long term, future federal management actions would not need to be implemented for this fishery. For example, the ACLs and AMs required by the Magnuson-

Stevens Act would not be required for the stone crab fishery.

The Florida administrative environment will be directly affected by the repeal of the FMP. Chapter 68B-13 of the Florida regulations will need to be modified to incorporate the extension of the regulations into federal waters for vessels registered in the state or returning to port in the state. During their June 2011 Commission meeting, the FWC approved such regulations. In addition, with the repeal of the FMP, the sea turtle and smalltooth sawfish incidental takes enumerated in the biological opinion would no longer be authorized. Taking of an ESA-listed species while conducting an otherwise legal activity is prohibited in state waters. Incidental taking of an ESA-listed species in state waters by the stone crab fishery can only be authorized via a Section 10(a)(1)(B) permit. Currently, no such permit currently exists for the stone crab fishery.

4.5 Cumulative Effects

As directed by the National Environmental Policy Act (NEPA), federal agencies are mandated to assess not only the indirect and direct impacts, but cumulative impacts of actions as well. The NEPA defines a cumulative impact as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time” (40 CFR 1508.7). Cumulative effects can either be additive or synergistic. A synergistic effect occurs when the combined effects are greater than the sum of the individual effects. The following are some past, present, and future actions that could impact the environment in the area where the Gulf stone crab fishery is prosecuted.

Past Actions

On April 20, 2010, an explosion occurred on the Deepwater Horizon MC252 oil rig, resulting in the release of an estimated 4.9 million barrels of oil into the Gulf. In addition, 1.84 million gallons of Corexit 9500A dispersant were applied as part of the effort to ameliorate effects of the spill. The cumulative effects from the oil spill and response may not be known for several years.

The impacts of the oil spill on the physical environment are expected to be significant and may be long-term. However, the oil remained outside most of the area where this species is most abundant and where the primary fishery is prosecuted. Oil is dispersed on the surface, and because of the heavy use of dispersants, oil is also documented as being suspended within the water column, some even deeper than the location of the broken well head. Floating and suspended oil washed onto shore in several areas of the Gulf as well as non-floating tar balls. Whereas suspended and floating oil degrades over time, tar balls are more persistent in the environment and can be transported hundreds of miles. Oil on the surface of the water could restrict the normal process of atmospheric oxygen mixing into and replenishing oxygen concentrations in the water column. In addition, microbes in the water that break down oil and dispersant also consume oxygen; this could lead to further oxygen depletion. Zooplankton that feed on algae could also be negatively impacted, thus allowing more of the hypoxia-fueling algae to grow.

Oil present in surface waters could affect the survival of eggs and larvae, affecting future recruitment. Effects on the physical environment, such as low oxygen, could lead to impacts on the ability of larvae and post-larvae to survive, even if they never encounter oil. In addition, effects of oil exposure may create sub-lethal effects on the eggs, larva, and early life stages. The stressors could potentially be additive, and each stressor may increase the susceptibility to the harmful effects of the other. If eggs and larvae are affected, impacts on harvestable-size stone crabs will begin to be seen when the 2010 year class becomes large enough to enter the fishery. Stone crabs enter the fishery at age three (male) or four (female); therefore, a year-class failure in 2010 would not be felt by the fishery until 2013. The impacts would be felt as reduced fishing success and reduced spawning potential, and would need to be taken into consideration in the next stock assessment. However, the oil remained outside most of the area where this species is most abundant, and such effects would be expected only for that portion of the population existing in the north-central Gulf, which is largely outside the range of the FMP.

Indirect and inter-related effects on the biological and ecological environment of the stone crab fishery in concert with the Deepwater Horizon MC252 oil spill are not well understood. Changes in the population size structure could result from shifting fishing effort to specific geographic segments of stone crab populations, combined with any anthropogenically-induced natural mortality that may occur from the impacts of the oil spill. The impacts on the food web from phytoplankton, to zooplankton, to molluscs, to top predators may be significant in the future. Impacts to stone crabs from the oil spill may similarly impact other species that may be preyed upon by stone crabs, or that might benefit from a reduced stock.

Present Actions

Federal actions currently under development in the Gulf are unlikely to impact the stone crab population. Under the Magnuson-Stevens Act, all federally managed fisheries must have ACLs and AMs by the end of the 2011 fishing year. The only federally managed fishery that may substantially impact the stone crab fishery is the spiny lobster fishery, because it is also a trap fishery and stone crab is the major bycatch species. However, new actions under Amendment 10 to the Spiny Lobster FMP are not expected to change how the spiny lobster fishery is prosecuted and, therefore, are not expected to change the interaction between the two fisheries.

Future Actions

How global climate changes will affect Gulf fisheries is unclear. Climate change can impact marine ecosystems through ocean warming by increased thermal stratification, reduced upwelling, sea level rise; and through increases in wave height and frequency, loss of sea ice, and increased risk of diseases in marine biota. Decreases in surface ocean pH due to absorption of anthropogenic CO₂ emissions may impact a wide range of organisms and ecosystems, particularly organism that absorb calcium from surface waters, such as corals and crustaceans (IPCC 2007, and references therein).

Hurricane season is from June 1 to November 30, and accounts for 97% of all tropical activity affecting the Atlantic Basin. These storms, although unpredictable in their annual occurrence, can devastate areas when they occur. However, while these effects may be temporary, those fishing-related businesses whose profitability is marginal may go out of business if a hurricane strikes. Tropical storms can have both positive and negative economic impacts on stone crab

fishermen. The beneficial impact is that a storm can cause crabs to move and enter traps, which increases landings. However, the negative impacts include damages to and losses of traps, other gear, and vessels and associated losses of landings and revenues.

5.0 REGULATORY IMPACT REVIEW (RIR)

5.1 Introduction

NOAA Fisheries Service requires a RIR for all regulatory actions that are of public interest. The RIR does three things: 1) Provides a comprehensive review of the level and incidence of impacts associated with a proposed or final regulatory action; 2) 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) 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.

5.2 Problems and Objectives

The problems and objectives addressed by this proposed action are discussed in Section 1 of this document.

5.3 Description of Fisheries

A description of the stone crab fishery is provided in Section 3.3.1 of this document.

5.4 Impacts of Management Measures

The proposed action, if implemented, would be expected to result in continued normal fishing practices, harvests, prices, and revenues. This proposed action would not be expected to result in any change in the economic performance of the fishery because current federal regulations mirror Florida regulations and Florida intends to extend their jurisdiction into federal waters off Florida. Although Florida would only be able to extend its jurisdiction to vessels registered in Florida, or regulate fishermen who land stone crab in Florida, it is not expected that any fishermen would attempt to harvest stone crab in federal waters off Florida for landing in other states in the foreseeable future. Because of the importance of the fishery to the state, and the effectiveness of state management, the absence of ACLs and AMs, which would not be established under the proposed action, would not be expected to result in any jeopardy to the short-term or long-term biological health of the resource, current or future harvests, or any associated economic benefits. As a result, the stone crab fishery would be expected to continue to be a Florida fishery; be properly managed by Florida; the health of the resource appropriately protected; and the economic benefits associated with the fishery maintained. In summary, no economic impacts would be expected to result from the proposed action.

5.5 Public and Private Costs of Regulations

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

NOAA Fisheries Service administrative costs of document preparation, meetings, and review	\$20,000
TOTAL.....	\$20,000

The federal costs of document preparation are based on staff time, travel, printing, and any other relevant items where funds were expended directly for this specific action. Elimination of federal management of the commercial stone crab fishery would not be expected to result in any increase in federal enforcement costs.

5.6 Determination of Significant Regulatory Action

Pursuant to Executive Order (E.O.) 12866, a regulation is considered a “significant regulatory action” if it is likely to result in: 1) An annual effect 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 or obligations of recipients thereof; or 4) raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in this executive order. Based on the information provided above, this action has been determined to not be economically significant for purposes of E.O. 12866.

6.0 REGULATORY FLEXIBILITY ACT ANALYSIS (RFA)

6.1 Introduction

The purpose of the 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 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 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 proposed action 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 proposed rule; 3) a description and, where feasible, an estimate of the number of small entities to which the proposed rule will apply; 4) a description of the projected reporting, record-keeping, and other compliance requirements of the proposed rule, including an estimate of the classes of small entities which will be subject to the 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 proposed rule.

6.2 Statement of the need for, objectives of, and legal basis for the rule

A discussion of the need for and objectives of this action is provided in Section 1 of this document. The Magnuson-Stevens Act provides the statutory basis for this proposed rule.

6.3 Description and estimate of the number of small entities to which the proposed action would apply

This proposed rule, if implemented, would be expected to directly affect commercial fishing vessels that harvest stone crab in the Gulf. For the period 2004-2009, an average of 987 vessels per year recorded commercial stone crab landings in Florida. The total average annual ex-vessel revenue from all stone crab harvest from these vessels during this period was approximately \$25.56 million (2008 dollars). The average annual total revenue per vessel during this period was approximately \$29,000 (2008 dollars).

The Small Business Administration has established size criteria for all major industry sectors in the U.S. including shellfish harvesters. A business involved in shellfish harvesting is classified as a small business if it is independently owned and operated, is not dominant in its field of operation (including its affiliates), and has combined annual receipts not in excess of \$4.0 million (NAICS code 114112, shellfish fishing) for all its affiliated operations worldwide. Based on the average revenue estimate provided above, all commercial fishing vessels expected to be directly affected by this proposed rule are determined for the purpose of this analysis to be small business entities.

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

This proposed rule would not establish any new reporting, record-keeping, or other compliance requirements.

6.5 Identification of all relevant federal rules, which may duplicate, overlap or conflict with the proposed rule

No duplicative, overlapping, or conflicting federal rules have been identified.

6.6 Significance of economic impacts on small entities

Substantial number criterion

This proposed rule, if implemented, would be expected to directly affect all commercial vessels that harvest stone crab in the Gulf. As previously discussed, all commercial vessels expected to be directly affected by this proposed rule are determined for the purpose of this analysis to be small business entities.

Significant economic impacts

The outcome of “significant economic impact” can be ascertained by examining two factors: disproportionality and profitability.

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

All entities expected to be directly affected by the measures in this proposed rule are determined for the purpose of this analysis to be small business entities, so the issue of disproportionality does not arise in the present case.

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

The proposed action, if implemented, would be expected to result in continued normal fishing practices, harvests, prices, and revenues. This proposed action would not be expected to result in any change in the economic performance of the fishery because current federal regulations mirror Florida regulations and Florida intends to extend their jurisdiction into federal waters off Florida. Although Florida would only be able to extend its jurisdiction to vessels registered in Florida, or regulate fishermen who land stone crab in Florida, it is not expected that any fishermen would attempt to harvest stone crab in federal waters off Florida for landing in other states in the foreseeable future. As a result, the stone crab fishery would be expected to continue to be a Florida fishery; be properly managed by Florida; the health of the resource appropriately protected; and the economic benefits associated with the fishery maintained. In summary, no economic impacts would be expected to result from the proposed action. Therefore, this proposed action, if implemented, would not be expected to have a significant direct adverse economic effect on the profits of a substantial number of small entities.

6.7 Description of significant alternatives to the proposed action and discussion of how the alternatives attempt to minimize economic impacts on small entities

This proposed action, if implemented, would not be expected to have a significant direct adverse economic effect on the profits of a substantial number of small entities. As a result, the issue of significant alternatives is not relevant.

7.0 LIST OF PREPARERS

PREPARERS

Name	Discipline/Expertise	Role in EA Preparation
Susan Gerhart, NMFS/SF	Fishery Biologist	Introduction, Management Alternatives, Description of the Fishery, Biological Environment and Impacts
Stephen Holiman, Ph.D. NMFS/SF	Economist	Economic/Social Environment and Impacts, Regulatory Impact Review, Regulatory Flexibility Act Analysis
Richard Malinowski, NMFS/SF	Fishery Biologist	Administrative Impacts

NMFS = National Marine Fisheries Service, SF = Sustainable Fisheries Division.

REVIEWERS

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NOAA = National Oceanic and Atmosphere Administration, NMFS = National Marine Fisheries Service, GC = General Counsel, HC = Habitat Conservation, PR = Protected Resources Division, SEFSC = Southeast Fisheries Science Center.

8.0 LIST OF AGENCIES AND PERSONS CONSULTED

Department of Commerce Office of General Counsel
 Florida Fish and Wildlife Conservation Commission
 Florida Keys Commercial Fishermen's Association
 National Marine Fisheries Service Office of General Counsel
 National Marine Fisheries Service Office of General Counsel Southeast Region
 National Marine Fisheries Service Southeast Regional Office
 National Marine Fisheries Service Southeast Fisheries Science Center
 National Marine Fisheries Service Silver Spring Office
 National Marine Fisheries Service Office of Law Enforcement
 United States Coast Guard
 United States Fish and Wildlife Services

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