5/18/2017

Modifications to Management Benchmarks, Annual Catch Limit, Annual Catch Target, and Prohibition of Traps for Recreational Harvest in the South Atlantic Exclusive Economic Zone

REGULATORY AMENDMENT 4 TO THE FISHERY MANAGEMENT PLAN FOR SPINY LOBSTER IN THE GULF OF MEXICO AND THE SOUTH ATLANTIC

INCLUDING ENVIRONMENTAL ASSESSMENT, REGULATORY IMPACT REVIEW, AND REGULATORY FLEXIBILITY ACT ANALYSIS

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ENVIRONMENTAL ASSESSMENT COVER SHEET

Including Environmental Assessment, Regulatory Impact Review, and Regulatory Flexibility Act Analysis

Type of Action

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ABBREVIATIONS USED IN THIS DOCUMENT

ABC	acceptable biological catch
ACL	annual catch limit
ACT	annual catch target
ALS	Accumulated Landings System
AM	accountability measure
AP	advisory panel
ASMFC	Atlantic States Marine Fisheries Commission
CFR	code of federal regulations
Councils	Gulf of Mexico and South Atlantic Fishery Management Councils
CS	consumer surplus
DPS	distinct population segment
EA	environmental assessment
EEZ	exclusive economic zone
EFH	essential fish habitat
EIS	environmental impact statement
EJ	environmental justice
E.O.	Executive Order
EPA	Environmental Protection Agency
ESA	Endangered Species Act
F	fishing mortality rate
FAC	Florida administrative code
FEUS	Fisheries Economics of the United States
FMP	fishery management plan
F_{MSY}	fishing mortality rate at maximum sustainable yield
FWC	Florida Fish and Wildlife Conservation Commission
FWRI	Fish and Wildlife Research Institute
GMFMC	Gulf of Mexico Fishery Management Council
GSMFC	Gulf States Marine Fisheries Commission
Gulf	Gulf of Mexico
Gulf Council	Gulf of Mexico Fishery Management Council
HAPC	Habitat Area of Particular Concern
Magnuson-Stevens Act	Magnuson-Stevens Fishery Conservation and Management Act
MFMT	maximum fishing mortality threshold
MMPA	Marine Mammal Protection Agency
mp	million pounds
MRIP	Marine Recreational Information Program
MSY	maximum sustainable yield
NARW	north Atlantic right whales
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Agency
NWA	northwest Atlantic
OFL	overfishing limit
PDARP	Programmatic Damage Assessment and Restoration Plan
Review Panel	Spiny Lobster Review Panel

RFA	Regulatory Flexibility Act
RQ	regional quotient
SAFMC	South Atlantic Fishery Management Council
Secretary	Secretary of Commerce
SEDAR	Southeast Data, Assessment, and Review
SERO	Southeast Regional Office
Spiny Lobster FMP	Fishery Management Plan for the Spiny Lobster Fishery of the Gulf of Mexico and South Atlantic
South Atlantic Council	South Atlantic Fishery Management Council
SPR	spawning potential ratio
SSC	Scientific and Statistical Committee
USCG	United States Coast Guard
ww	whole weight

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- ***Secretary of Commerce*** – Approves, disapproves, or partially approves the amendment as recommended by the Council.

1.1 Background

Stock status determination criteria and catch limits
The current overfishing limit (OFL), acceptable biological catch (ABC), annual catch limit (ACL), and annual catch target (ACT) for spiny lobster were established through Amendment 10 to the Fishery Management Plan for the Spiny Lobster Fishery of the Gulf of Mexico and South Atlantic (Spiny Lobster FMP) (Amendment 10; GMFMC and SAFMC 2011). Amendment 10 also included actions to specify the maximum sustainable yield (MSY) proxy, the overfishing threshold (maximum fishing mortality threshold), and the overfished threshold (minimum stock size threshold).

Using Tier 3a of the Gulf of Mexico (Gulf) ABC Control Rule (Appendix A), the Gulf of Mexico Fishery Management Council's (Gulf Council) Scientific and Statistical Committee (SSC) recommended the OFL be set as the mean of the most recent ten years of landings (i.e., fishing years 2000/2001 through 2009/2010) plus two standard deviations, and the ABC be set at the mean of the same time period plus 1.5 standard deviations. These years were selected because they represented a period of at least ten years that reflected the most recent conditions of the fishery and were also relatively stable.

Both the Gulf Council and the South Atlantic Fishery Management Council (South Atlantic Council) accepted these OFL and ABC recommendations and set the ACL equal to the ABC in Amendment 10. The Gulf and South Atlantic Councils (Councils) established the accountability measure (AM) as the ACT, which was set at 90% of the ACL. The AM stated that if landings exceeded the ACT, a panel would be convened to assess whether corrective action was necessary to prevent landings from exceeding the ACL. Table 1.1.1 shows the values for the management benchmarks established in Amendment 10.

Table 1.1.1. Management benchmarks for spiny lobster, as established in Amendment 10 in millions of pounds (mp).

Maximum Sustainable Yield (proxy)	MSY = OFL = 7.9 mp
Overfishing Threshold (Maximum Fishing Mortality Threshold)	MFMT = OFL = 7.9 mp
Overfished Threshold (Minimum Stock Size Threshold)	MSST = (1-M) x B_{MSY}.
OFL	7.9 mp
ABC = ACL	7.32 mp
ACT = 90%ACL	6.59 mp

The ACL and ACT for spiny lobster went into effect on January 3, 2012 (76 FR 75488). Table 1.1.2 shows landings from 1991/1992 through 2015/2016. In the 2013/2014 fishing year, landings exceeded the ACT, ACL, and OFL. In 2014/2015, landings exceeded the ACT, and in the 2015/2016 fishing year the ACT and ACL were exceeded.

After the National Marine Fisheries Service (NMFS) sent a letter to the Councils about the 2013/2014 overage, the Spiny Lobster Review Panel (Review Panel) was convened in February 2015 in compliance with the AM established in Amendment 10. The 2015 Review Panel received multiple presentations on spiny lobster landings, biological information about the species, environmental factors that affect harvest, and economic characteristics of the fishery. The 2015 Review Panel did not make any recommendations to revise the OFL, ABC, ACL and ACT, but it did conclude that management through the specification and monitoring of an ACL and ACT is not suitable for spiny lobster. In response, the Councils sent a letter to NMFS requesting an exemption from the requirement to establish an ACL and AM for spiny lobster. NMFS responded in a letter to the Councils that under the current Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) requirements for ACLs and AMs, spiny lobster does not qualify for an exemption.

The landings in 2014/2015 also exceeded the ACT, and the Councils reconvened the Review Panel via webinar in January 2016. The 2016 Review Panel reviewed landings and other factors that may have affected spiny lobster catch and discussed options for setting the ACL based on different time periods using a tool developed by Gulf Council staff. The 2016 Review Panel approved a motion to recommend using a longer time period, starting in 1991. The 2016 Review Panel recommended the longer time period because this would better capture the dynamics of the fishery that are influenced by factors beyond spiny lobster biology and harvest (as discussed in Section 3) because the spiny lobster fishery is heavily regulated including a limited number of traps and commercial divers, restricting growth in the fishery. The 2016 Review Panel concluded that a control on output through an ACL is likely not the most effective way to manage the fishery, relative to the effort controls in place (such as the cap on the number of traps, gear restrictions, limited entry, seasonal closures, and spatial closures). The recommended longer time period would result in an ACL at a higher level than the current ACL, but also incorporates periods of low landings to establish a more precautionary catch limit than if the OFL/ABC/ACL was based on the (updated) most recent ten years (2006/2007through 2015/2016).

The 2016 Review Panel report is available here: http://safmc.net/download/Briefing%20Book%20June%202016/Spiny%20Lobster/Att2_SpinyLobReviewPanelReport_032816.pdf.

Table 1.1.2. Spiny lobster landings (in thousands of pounds, whole weight (ww)) from 1991/1992 through 2015/2016. The 2012/2013 fishing year was the first season after implementation of the ACL (7.32 mp) and ACT (6.59 mp).

Year	Commercial	Recreational	Total
1991/92	6,836	1,816	8,652
1992/93	5,369	1,353	6,722
1993/94	5,311	1,883	7,194
1994/95	7,219	1,906	9,125
1995/96	7,021	1,930	8,951
1996/97	7,745	1,923	9,668
1997/98	7,641	2,304	9,945
1998/99	5,447	1,302	6,749
1999/00	7,667	2,462	10,129
2000/01	5,570	1,949	7,519
2001/02	3,080	1,251	4,331
2002/03	4,573	1,455	6,028
2003/04	4,160	1,411	5,571
2004/05	5,451	34*	5,485
2005/06	2,969	1,130	4,099
2006/07	4,824	1,304	6,128
2007/08	3,794	1,215	5,009
2008/09	3,285	1,264	4,549
2009/10	4,394	1,266	5,660
2010/11	5,970	1,417	7,387
2011/12	5,855	1,230	7,085
ACL (7.32 mp) and ACT (6.59 mp) implemented January 2012			
2012/13	4,079	1,559	5,638
2013/14	6,373	1,602	7,975
2014/15	5,453	1,621	7,074
2015/16	6,060	1,492	7,552
2016/17**	5,151	Will be added when available	

* Recreational surveys were not conducted during the 2004/2005 fishing year due to the active hurricane season.
** 2016/17 commercial landings are preliminary; recreational and total landings not available at this time.
The fishing year for spiny lobster is August 6 through March 31.
Data source: Florida Fish and Wildlife Conservation Commission, Fish and Wildlife Research Institute

In April 2016, the South Atlantic and Gulf Spiny Lobster Advisory Panels (APs) met jointly and also recommended using the time period of 1991/1992 through 2015/2016 to determine the catch limits. The APs felt that the spiny lobster fishery was healthy and that the recent efforts to reduce ghost traps had helped to reduce mortality. Additionally, AP members pointed out that

recent changes to vessels and fishing practices in order to supply lobsters to the live market have also helped to reduce mortality for undersized lobsters that are used as attractants.

The Gulf Council's Spiny Lobster SSC met in June 2016 and concurred with the 2016 Review Panel recommendation to use the longer time series of 1991/1992 through 2015/2016, as applied using Tier 3a of the Gulf ABC Control Rule to re-specify the OFL and ABC for spiny lobster. The Gulf Council's SSC stated that the 10-year time series of landings reflected the most recent conditions of the fishery, and landings were relatively stable. The meeting summary is available here: http://gulfcouncil.org/council_meetings/BriefingMaterials/BB-06-2016/SSC meetingsummary06-2016.pdf.

In June 2016, the NMFS Southeast Regional Administrator sent a letter notifying the Councils that 2015/2016 spiny lobster landings had exceeded the ACT for the third year in a row. The letter outlined the recommendations from the 2016 Spiny Lobster Review Panel, the joint APs, and the Gulf Council's Spiny Lobster SSC, and specified that if the South Atlantic Council's SSC concurred with those recommendations, then the Councils could revise the ACL for spiny lobster. The South Atlantic Council's SSC met via webinar on November 21, 2016, and concurred with the 2016 Review Panel and Gulf Council's SSC's OFL and ABC recommendations.

Trap prohibition

In 2016, an individual from North Carolina contacted the NMFS Southeast Regional Office (SERO) to request information on applicable regulations for recreational harvest of spiny lobster using traps in the exclusive economic zone (EEZ) off North Carolina. NMFS provided regulatory information and also assigned a buoy color to the individual. The level of harvest using traps in the EEZ off Georgia, South Carolina, and North Carolina is unknown, but is likely minimal. However, the South Atlantic Council expressed concern about potential habitat impacts and protected species interaction from traps, particularly because traps are not efficient for spiny lobster harvest north of Florida and that there is also no limit on the number of traps that may be used by each individual. Currently recreational harvest of spiny lobster with traps in the EEZ off Florida is prohibited, but there are no specific regulations on recreational traps in the EEZ off other states in the South Atlantic. The Gulf Council reviewed the South Atlantic Council's recommendation to include this action in the amendment, but the Gulf Council did not indicate that there was a need to also consider extending the prohibition to the EEZ off states in the Gulf.

To address these concerns, the Councils are considering extending the prohibition on recreational traps to the EEZ off Georgia, South Carolina, and North Carolina.

The actions will be addressed through the framework process established for spiny lobster, most recently updated in Amendment 10. To maintain consistency in spiny lobster amendment names and numbering, this amendment is referred to as a "regulatory amendment." It should be noted that a regulatory amendment and framework amendment are identical in procedure and format.

1.2 Purpose and Need

The purpose of this amendment is to modify the stock status determination criteria and catch levels for spiny lobster based on updated information and revised scientific recommendations, and to consider restrictions on the use of traps for recreational harvest of spiny lobster.

The need for this amendment is to ensure that the stock status determination criteria and catch levels for spiny lobster are based on the best scientific information available, to prevent overfishing, and to minimize negative effects of recreational traps in the South Atlantic. The proposed actions would contribute to increased social, economic, and biological benefits through sustainable and profitable harvest in accordance with provisions set forth in the Magnuson-Stevens Act.

1.3 History of Management

The Spiny Lobster FMP largely extended Florida's rules regulating the fishery to the EEZ throughout the range of the fishery, i.e., North Carolina to Texas. The original Spiny Lobster FMP regulations were effective on July 2, 1982 (47 FR 29203).

Amendment 1/Environmental Assessment (EA) (1987) updated the Spiny Lobster FMP rules to be more compatible with those of Florida and made the following management measures: limited live undersized attractants to 100 per vessel, required live wells, required a commercial vessel permit, provided for a recreational permit, limited recreational possession to six lobsters, modified the special 2-day recreational season before the commercial season, modified the duration of the closed commercial season, provided a 10-day trap retrieval period, prohibited possession of egg-bearing spiny lobster, specified the minimum size limit for tails, provided for a tail separation permit, and prohibited possession of egg-bearing slipper lobster.

Amendment 2/EA (1989) modified the issues and objectives of the Spiny Lobster FMP, modified the optimum yield statement, established a regulatory amendment procedure for instituting future compatible state and federal rules without amending the Spiny Lobster FMP, and added vessel safety and habitat standards to the Spiny Lobster FMP.

Amendment 3/EA (1991) added a scientifically measurable definition of overfishing, outlined an action plan to prevent overfishing, and added the requirement for collection of fees for the administrative cost of issuing permits.

Regulatory Amendment 1/EA (1992) extended the Florida spiny lobster trap certificate system for reducing the number of traps in the commercial fishery to the EEZ off Florida; revised the Spiny Lobster FMP commercial permitting requirements; limited the number of live undersized lobster that could be used as attractants; specified allowable gear for commercial fishing in the EEZ off Florida, specified the possession limit of spiny lobsters by persons diving at night; required that lobsters harvested by divers be measured without removing from the water; and specified uniform trap and buoy numbers for the EEZ off Florida.

Regulatory Amendment 2/EA (1993) changed the days for the special recreational season in the EEZ off Florida; prohibited night-time harvest off Monroe County, Florida, during that

season; specified allowable gear during that season; and created different bag limits during that season off the Florida Keys and the EEZ off other areas of Florida.

Amendment 4/EA (1995) allowed harvest year-round for any person limited to a daily bag and possession limit of two lobsters per person in the EEZ off North Carolina, South Carolina, and Georgia.

Amendments 5/EA (1998) identified essential fish habitat (EFH) and habitat areas of particular concern (HAPC) for spiny lobster in the South Atlantic (developed by the South Atlantic Council).

Amendment 6/EA (1998) determined that the overfishing level for spiny lobster was a fishing mortality rate (F) in excess of F at 20% of the spawning potential ratio (developed by the South Atlantic Council).

Generic Amendment EFH/EA (1999) identified EFH for spiny lobster in the Gulf (developed by the Gulf Council).

Generic Amendment Sustainable Fisheries Act/EA (1999) updated the description of the spiny lobster fisheries and provided community assessment information for Monroe County (developed by the Gulf Council).

Amendment 7/Environmental Impact Statement (EIS) (2002) established the Tortugas Marine Reserves (developed by the Gulf Council).

Regulatory Amendment 3/EA (2002) specified that the holder of a valid crawfish license or trap number, lobster trap certificate, and state saltwater products license issued by Florida may harvest and possess, while in the EEZ off Florida, undersized lobster. However, possession may not exceed 50 in number per boat, and there may be no more than one trap aboard each boat if used exclusively for luring, decoying, or otherwise attracting non-captive lobster to traps.

Amendment 8/EIS (2008) restricted imports of spiny lobster into the U.S. to minimum conservation standards in an effort to achieve an increase in the spawning biomass of the stock and increase long-term yields from the fishery.

Amendment 9/EIS (2009) provided spatial information for EFH and HAPC designations for species in the Spiny Lobster FMP in the South Atlantic (developed by the South Atlantic Council as the generic Comprehensive Ecosystem-Based Amendment 1).

Amendment 10/EIS (2012) established the ABC, ACL, ACT and AM for Caribbean spiny lobster; removed smoothtail spiny lobster, spotted spiny lobster, Spanish slipper lobster and ridged slipper lobster from the fishery management unit; defined MSY, overfished, and overfishing thresholds; updated the protocol for enhanced cooperative management and the framework procedure; modified the regulations regarding the use of undersized lobster as bait and tailing permit requirements; and addressed the removal of abandoned traps in Florida waters.

Amendment 11/supplemental EIS (2012) implemented areas closed to trapping in the Florida Keys measures to protect threatened and endangered coral species compliant with the 2009 biological opinion on the spiny lobster fishery.

Amendment 12/EA (2014) consolidated the existing South Atlantic and Gulf of Mexico federal dealer permits; required permits for dealers and increased the frequency of federal dealer reporting from monthly to weekly; and established requirements to maintain a federal dealer permit.

CHAPTER 2. MANAGEMENT ALTERNATIVES

2.1. Action 1: Modify the Current Definitions of Management Benchmarks

Action 1.1: Maximum Sustainable Yield (MSY) and Overfishing Threshold (Maximum Fishing Mortality Threshold [MFMT])

Alternative 1: No Action - The MSY proxy and MFMT are equal to the previous overfishing limit (OFL) as set by the Gulf and South Atlantic Councils' Scientific and Statistical Committees (SSCs) using the mean landings from the years 2000/2001-2009/2010 plus two standard deviations (7.9 million pounds (mp)).

Preferred Alternative 2: The MSY proxy and MFMT will be equal to the revised OFL as recommended by the Gulf and South Atlantic Councils' SSCs using the mean landings from the years 1991/1992- 2015/2016 plus two standard deviations (10.46 mp).

Discussion:

This action considers the biological reference points for MSY and MFMT. MSY is defined as the largest long-term average catch or yield that can be taken from a stock or stock complex under prevailing ecological and environmental conditions. MFMT is the level or rate of fishing mortality that, if exceeded, constitutes overfishing because it jeopardizes the capacity of a stock or stock complex to produce MSY on a continuing basis. The acceptable biological catch (ABC) control rule developed by the Gulf of Mexico Fishery Management Council's (Gulf Council) SSC to set OFL and ABC for spiny lobster (Appendix A) determines the appropriate level of risk and/or buffer to set between the OFL and ABC based on the amount of information for a given stock. Stocks with less information have greater scientific uncertainty, so the buffer between the OFL and ABC should be greater.

Alternative 1 would retain the current MSY proxy and MFMT, which were set equal to the OFL (7.9 mp). The Councils implemented these benchmarks through Spiny Lobster Amendment 10 (GMFMC and SAFMC 2011). The OFL was set at the mean of the most recent 10 years' landings at that time (i.e., fishing years 2000/2001-2009/2010) plus two standard deviations from the mean.

The Gulf Council's SSC determined that landings should be used to determine the OFL as the assessment review panel rejected the SEDAR (Southeast Data, Assessment, and Review) update assessment. Further, the Gulf Council's SSC determined that it was appropriate to set OFL using the mean landings over the most recent 10 years plus two standard deviations using Tier 3a of the ABC Control Rule. The Gulf Council's SSC stated that the 10-year time series of landings reflected the most recent conditions of the fishery, and landings were relatively stable. Population genetics and physical transport data also indicate that the juvenile spiny lobster that settle in south Florida may have recruited from populations throughout the greater Caribbean;

recent studies have found internal recruitment is likely higher than these previous data had suggested. As most of the recruitment comes from outside the United States, the stock is not at risk of undergoing overfishing.

For Spiny Lobster Amendment 10 (GMFMC and SAFMC 2011), the Gulf Council's SSC requested, and the South Atlantic Council's SSC concurred, that the MFMT be defined by the recommended OFL at 7.90 mp. Biomass estimates for spiny lobster were determined to be unreliable based on the assessment update and resultant Councils' SSC determinations; thus, biomass-based estimates of MSY and MFMT are not available. However, the benchmarks are described for the SEDAR 8 (2005) and the update assessment (2010) in Table 2.1.2. The proxy of $F_{20\%}$ spawning potential ratio (SPR) for fishing mortality at MSY (F_{MSY}) was used to estimate this value in both the update and benchmark assessments (Table 2.1.2). The value estimated from the update assessment for MFMT was 0.45 per year which is very close to the estimate calculated from the benchmark assessment of 0.49 per year. These estimates are based on a fishing mortality rate at MSY, or in the case of spiny lobster, a proxy for F_{MSY} defined as $F_{20\%}$SPR. The Councils concluded that the landings-based estimate was more appropriate for the MFMT rather than using the fishing mortality proxy. Since the MSY proxy was equal to the OFL (7.90 mp), specifying the overfishing threshold at a rate that exceeds 7.90 mp was appropriate.

Table 2.1.1. Management benchmarks for spiny lobster in the southeastern United States set during the most recent stock assessments.

Criterion	Description	Definition	Unaccepted Values 2010 Update Assessment	Accepted Values from SEDAR 8 2005
MSY	Maximum Sustainable Yield	Yield@$F_{20\%}$SPR	7.95 mp	Not estimated
MFMT	Maximum Fishing Mortality Threshold	F_{MSY} =$F_{20\%}$SPR	0.45 per year	0.49 per year

Source: Update Assessment Review Workshop Report 2010 (unaccepted assessment values) and SEDAR 8 Benchmark Assessment 2005.

Preferred Alternative 2 would integrate the extended time series information from the mean landings of the years 1991/1992- 2015/2016 plus two standard deviations to calculate the OFL (10.46 mp), as recommended by the Gulf and South Atlantic Councils' SSCs in 2016, and also adhere to the Tier 3a Gulf Council ABC Control Rule. The MSY proxy and MFMT would be set equal to the OFL, which is consistent with the method used to set these biological reference points in Spiny Lobster Amendment 10 (GMFMC and SAFMC 2011). Extending the mean landings time series to include 1991/1992 through 2015/2016 increases the OFL by 2.56 mp (to 10.46 mp). By incorporating the longer time period and also including the most recent four years, the MSY proxy and MFMT are expected to better capture the dynamics of the fishery based on factors beyond biology and harvest. The Gulf and South Atlantic Councils' SSCs reviewed the status and information on spiny lobster, and recommended expanding the time series for the calculation of the OFL to use the time period of 1991/1992 through 2015/2016.

Action 1.2: Modify the Annual Catch Limit (ACL) and Annual Catch Target (ACT) for Spiny Lobster

Alternative 1: No Action – The current ACL is equal to the ABC recommended by the Gulf and South Atlantic Councils' SSCs using the mean landings from the years 2000/2001-2009/2010 plus 1.5 standard deviations (7.32 mp). The ACT is 90% of the ACL (6.59 mp).

Preferred Alternative 2: The ACL is equal to the ABC as recommended by the Gulf and South Atlantic Councils' SSCs using the mean landings from the years 1991/1992-2015/2016 plus 1.5 standard deviations (9.6 mp). The ACT is 90% of the new ACL (8.64 mp).

***Note: A review panel should be convened if there are two consecutive years of low landings, i.e., landings below 5.3 mp; this will *NOT* replace the existing accountability measure (AM).**

Discussion:

Alternative 1 would retain the ACL definition and the ABC as recommended by the SSCs in 2011. In Spiny Lobster Amendment 10 (GMFMC and SAFMC 2011), the Gulf and South Atlantic Councils set the spiny lobster ABC as the mean landings from the years 2000/01-2009/10 plus 1.5 standard deviations. The amendment also set the spiny lobster ACL equal to the ABC and the ACT equal to 90% of the ACL. There has not been an approved stock assessment for spiny lobster since 2005. In 2010, the SEDAR Review Panel rejected the assessment update of SEDAR 8 because it had no confidence in the reference points. Caribbean-wide spiny lobster stock and spawning biomass cannot be determined because the data are insufficient to address this. There have been efforts to improve data collection/standardization and the first meeting of an international working group on Caribbean spiny lobster was convened in October 2014 to begin to address this topic (FAO 2015).

In Amendment 10 (GMFMC and SAFMC 2011), the Councils considered alternatives to establish the ACL equal to the ABC; at 90% of the ABC; and at 80% of the ABC. The Councils decided to set the ACL equal to the ABC for spiny lobster. This formula is also used for several coastal migratory pelagic species, South Atlantic snapper grouper species, Gulf reef fish species, and Atlantic dolphin and wahoo. The Councils are considering updating the ACL and ACT based on new information and revised scientific recommendations, not developing new formulas for calculating an ACL. Therefore, the Councils and the National Marine Fisheries Service (NMFS) determined it is not reasonable to include additional alternatives that incorporate a buffer between the ABC and ACL because: 1) the Council already considered alternatives to set the ACL at a percentage of the ABC, but selected ACL=ABC as the preferred alternative in Spiny Lobster Amendment 10; and 2) the ACT, not the ACL, is the benchmark that triggers the accountability measure (convening the review panel), and the ACT is set with a buffer of 90% of the ACL.

Since implementation of the OFL, ACL, and ACT in 2012, the ACT has been exceeded three times, the ACL has been exceeded twice, and the OFL has been exceeded once (Table 1.1.1).

The AM for spiny lobster is to convene a review panel if the ACT is exceeded; the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) states that if the ACL is exceeded more than once in a four-year period, then the ACL should be reevaluated. Thus, a Spiny Lobster Review Panel (Review Panel) was convened in February 2015 and reconvened in March 2016. Both the South Atlantic and the Gulf Councils' SSCs reviewed the 2015 and 2016 summaries from the Review Panel.

Preferred Alternative 2 would update the ACL and ACT based on the new ABC recommended by the SSCs. At its September 2016 meeting, the Gulf Council's SSC reevaluated the ABC and changed the years used to calculate the ABC from 2000/01-2009/10 to 1991/92-2014/15. The South Atlantic Council's SSC made the same recommendation at its meeting via webinar in November 2016. Thus, the Councils are proposing to update the ACL and ACT based on the ABC to use the years proposed by both the Review Panel and the Spiny Lobster advisory panels. The definitions of the ACL equal to the ABC and the ACT equal to 90% of the ACL would remain the same.

2.2 Action 2: Prohibit the Use of Traps for Recreational Harvest of Spiny Lobster in the South Atlantic Exclusive Economic Zone (EEZ)

Alternative 1: No Action – Traps are prohibited gear for recreational harvest of spiny lobster in the EEZ off Florida waters, but are not prohibited for recreational harvest of spiny lobster in other parts of the South Atlantic EEZ. Traps must comply with requirements for vessel and gear identification, trap construction, and harvest limits as specified by 50 CFR Part 622.

Preferred Alternative 2: Prohibit the use of traps for recreational harvest of spiny lobster in the South Atlantic EEZ.

Discussion:

Traps, which are also referred to as pots, are currently listed as allowable gear types for recreational harvest of spiny lobster at 50 CFR 600.745. The South Atlantic Council is concerned about the use of traps for recreational harvest of spiny lobster in the South Atlantic EEZ. Recreational traps are not allowed in Florida state waters or the EEZ off Florida, but are allowable gear for recreational harvest of spiny lobster in the EEZ off Georgia, South Carolina, and North Carolina (**Alternative 1**, No Action). In general, there has been little interest in harvesting spiny lobster north of Florida with traps. The recreational bag limit for spiny lobster in federal waters is two per person per trip. Individuals who want to use traps for recreational spiny lobster harvest outside of Florida must comply with federal regulations for gear and vessel identification, traps construction, and harvest limits in 50 CFR Part 622 (the same regulations apply to commercial harvest with traps in Florida waters). Table 2.2.1 provides a summary of the regulations.

The Councils are proposing to prohibit traps for recreational harvest in the South Atlantic EEZ (**Preferred Alternative 2**) because there is no limit on the number of traps in the EEZ off Georgia, South Carolina, and North Carolina, and traps are not efficient gear to harvest spiny lobster in those areas. There is also concern about potential negative impacts on essential fish habitat and the use of vertical lines that may interact with protected species. Positive direct and indirect effects to the biological and physical environment would be expected under **Preferred Alternative 2** compared to **Alternative 1** (No Action).

There is little information on recreational spiny lobster landings and gear types used for recreational harvest in the EEZ off Georgia, South Carolina, and North Carolina. It is likely that recreational effort and landings of spiny lobster from the EEZ off Georgia, South Carolina, and North Carolina are minimal. The Marine Recreational Information Program (MRIP) does not collect data on recreationally caught spiny lobster, and only Florida collects data to estimate recreational landings in Florida waters. Negligible economic effects are expected under **Preferred Alternative 2** compared to **Alternative 1** (No Action). There may be some social benefits associated with the biological benefits of reduced likelihood of habitat damage by traps under **Preferred Alternative 2. Preferred Alternative 2** would create a lower impact on the administrative environment compared with **Alternative 1** (No Action), because it would ease the

burden on law enforcement officials to track compliance across the federal jurisdictional boundaries. **Preferred Alternative 2** would also make regulations in the EEZ off North Carolina, South Carolina, and Georgia, consistent with current regulations in the EEZ off Florida. Therefore, the direct and indirect effects on the administrative environment under **Preferred Alternative 2** would be expected to be lower than **Alternative 1** (No Action).

For reasons explained above, only two alternatives were considered as the range of reasonable alternatives under this action.

Table 2.2.1. Summary of federal regulations that apply to recreational traps for spiny lobster harvest.

Vessel and Gear Identification
- Federal vessel permit number displayed and identifiable from air and water
- Vessel's color code must be displayed above the vessel's federal permit number
- A buoy must be attached to each trap or string of traps, with the vessel's color code and permit number
- Abandoned traps or buoys are the owner's responsibility
Prohibited Gears/Methods
- Spear, hook or similar device
- Use of net or trawl in a directed fishery
- Poisons or explosives
Trap Construction and Tending
- No larger than 3 ft x 2 ft x 2 ft or volume equivalent
- If trap is not wood, it must have a panel made of wood or other material that degrades at the same rate and must allow an opening no smaller than the entrance of the trap when it is removed
- Traps pulled or tended in daylight hours only by the trap owner (exception with permission of Regional Administrator)
Harvest Regulations
- Minimum size limit 3" carapace length
- Recreational traps are prohibited (other gear types limited to 6/person/day)
- Commercial and recreational limit in other South Atlantic states is 2/person/day
- Florida season is August 6 – March 31; other states harvest is year-round
- Harvest of berried lobsters prohibited
- Lobsters must be landed intact unless a vessel has a federal commercial tailing permit
- Bag limit sales prohibited

CHAPTER 3. AFFECTED ENVIRONMENT

3.1 Description of the Fishery

A more complete description of the affected environment can be found in Chapter 3 of Amendment 10 to the Fishery Management Plan for Spiny Lobster in the Gulf of Mexico and South Atlantic (Spiny Lobster FMP). That description is summarized in the following sections and incorporated herein by reference.

The spiny lobster in the U.S. Exclusive Economic Zone (EEZ) of the Atlantic Ocean and Gulf of Mexico (Gulf) is jointly managed by the South Atlantic and Gulf of Mexico Fishery Management Councils (Councils) through the Spiny Lobster FMP. In the U.S. EEZ off the Caribbean Sea surrounding Puerto Rico and the U.S. Virgin Islands, the resource is managed by the Caribbean Fishery Management Council through a separate FMP. In the Gulf and South Atlantic, the commercial fishery, and most of the recreational fishery, occurs off South Florida, primarily in the Florida Keys. To streamline a management process that involves both state and federal jurisdictions, the FMP extends the Florida Fish and Wildlife Conservation Commission (FWC) rules regulating the state fishery to the southeastern U.S. EEZ from North Carolina to Texas.

Harvest or possession regulations for spiny lobsters in the U.S. Gulf and South Atlantic EEZ are specified in the Code of Federal Regulations (CFR). Anyone who sells, trades, or barters or attempts to sell, trade, or barter spiny lobster must have the appropriate licenses and certificates specified to be a "commercial harvester," as defined in the Florida Administrative Code (FAC) as of July 1, 2008. The FAC defines "commercial harvester" as "a person who holds a valid crawfish license or trap number, lobster trap certificates if traps are used to harvest spiny lobster or a valid commercial dive permit if harvest is by diving, and a valid saltwater products license with a restricted species endorsement issued by the FWC...". Similarly, any person who sells, trades, or barters or attempts to sell, trade, or barter a spiny lobster harvested in the EEZ other than off Florida must have a federal vessel permit.

In the EEZ off Florida, a commercial vessel must have either a federal spiny lobster permit or all required Florida licenses and certificates to harvest the species. Any vessel that harvests spiny lobster in the EEZ off Florida under the federal spiny lobster permit must land the species whole. Any vessel that separates the spiny lobster tail caught in the EEZ must have a federal tailing permit on board whether it has all required Florida licenses or the federal permit. Lobster tailing permits are only for vessels that are on trips for 48 hours or more in federal waters. Permitting prerequisites for the tail-separation permit are either a valid federal vessel permit for spiny lobster or all required valid Florida licenses. Vessels with a tailing permit must land lobsters all whole or tailed. Both the spiny lobster and spiny lobster tailing permits are open access permits. The annual cost of one or both permits is no more than $25 for the first permit and $10 for the second.

The commercial and recreational fishing season for spiny lobster in the EEZ off Florida and the Gulf states other than Florida, begins on August 6 and ends March 31. South Atlantic states,

other than Florida, have year round spinly lobster fishing for both commercial and recreational fishers with a 2 per person trip limit. Lobster traps may be worked during daylight hours only and no spiny lobster can be harvested in excess of the bag limit by diving at night. A separated spiny lobster tail from the EEZ is authorized only when the possession is incidental to fishing exclusively in the EEZ on a trip of 48 hours or more and the appropriate permits and licenses are on board the vessel. Spiny lobster must be landed either all whole or all tailed on a single fishing trip. Specifications for commercial requirements, traps and buoys, identification requirements, and prohibitions are detailed in sections within the CFR, which incorporates by reference FAC in effect as of July 1, 2008. The Florida recreational spiny lobster fishing season has two parts: a two-day sport season that occurs before commercial spiny lobster fishermen place their traps in the water, and a regular season that coincides with the commercial fishing season. No person can harvest, attempt to harvest, or have in his possession, regardless of where taken, any spiny lobster during the closed season of April 1 through August 5 of each year, except during the two-day sport season. During the two-day sport season, no person can harvest spiny lobster by any means other than by diving or with the use of a bully net or hoop net. Further restrictions are in effect for Monroe County, Florida, during the sport season.

In 2016, Florida issued 1,807 commercial spiny lobster permits and 242 commercial dive permits. As of December 31, 2016, the National Marine Fisheries Service (NMFS) listed 206 valid federal spiny lobster permits and 256 federal tail-separation permits. Florida has a variety of permits that allow recreational fishermen to take spiny lobster. From March 2016 to March 2017, the state issued 122,674 Florida resident annual or five-year spiny lobster permits; in addition, they issued 61,350 other permits, such as Military Gold Sportsman's or Saltwater Lifetime permits, that also allow holders to take spiny lobster. Non-residents were issued 26,668 annual permits. NMFS does not require a permit for recreational fishing of spiny lobster in the EEZ.

The most recent five-year overall landings have averaged around seven million pounds (Table 3.1.1). Landings began to decrease in the early 2000s with an increasing trend starting in the late 2000s. Most commercial landings are from trapping; other regularly used gears include diving and bully nets. The proportion of landings from recreational fishing has remained fairly constant, around 20-25% over time.

Table 3.1.1. Florida landings of spiny lobster, by sector, gear and recreational license type (million pounds, whole weight (ww)).

Fishing Year	Commercial								Recreational					Overall total
	Traps	Diving	Bullynet	Other	Mixed	Unknown	Total	% of total	Special	Regular	SRL	% of total	Total	
91/92	3,368,835	91,968	31,880	6,335	1,238	3,364,507	6,864,763	79	459,848	1,355,943		21	1,815,791	8,680,554
92/93	3,931,991	147,879	1,905	6,216	4,389	1,276,719	5,369,099	80	543,785	808,658		20	1,352,443	6,721,542
93/94	4,978,674	168,025	6,134	9,583	4,898	143,230	5,310,544	74	356,987	1,526,128		26	1,883,115	7,193,659
94/95	6,843,718	252,028	20,305	4,674	1,238	95,614	7,217,577	79	394,395	1,436,710	74,890	21	1,905,995	9,123,572
95/96	6,639,750	307,251	19,464	3,581	422	50,579	7,021,047	78	249,394	1,614,178	67,145	22	1,930,717	8,951,764
96/97	7,319,956	337,388	29,815	2,620	160	56,017	7,745,956	80	382,535	1,485,450	54,612	20	1,922,597	9,668,553
97/98	7,143,583	395,122	28,129	12,143	4,733	56,581	7,640,291	77	497,297	1,756,794	50,096	23	2,304,187	9,944,478
98/99	5,036,341	351,145	12,147	3,369	2,026	42,718	5,447,746	81	289,299	963,885	49,493	19	1,302,677	6,750,423
99/00	6,994,124	588,105	17,459	7,499	1,766	59,313	7,668,266	76	567,643	1,832,888	61,449	24	2,461,980	10,130,246
00/01	4,862,624	634,574	12,193	3,756	318	55,843	5,569,308	74	398,618	1,512,348	38,096	26	1,949,062	7,518,370
01/02	2,621,748	446,691	8,561	797	1,323	0	3,079,120	71	282,861	935,929	32,291	29	1,251,081	4,330,201
02/03	3,988,822	560,739	19,854	1,298	602	333	4,571,648	76	355,184	1,055,648	44,466	24	1,455,298	6,026,946
03/04	3,726,732	406,588	21,743	1,003	2,632	0	4,158,698	75	375,119	997,408	38,981	25	1,411,508	5,570,206
04/05	5,104,913	310,394	34,111	1,577	395	0	5,451,390	99	**	**	34,136	1	34,136	5,485,526
05/06	2,686,701	266,115	14,760	1,450	94	0	2,969,120	72	331,388	773,199	26,427	28	1,131,014	4,100,134
06/07	4,541,462	251,319	29,764	813	754	0	4,824,112	79	320,474	957,062	26,974	21	1,304,510	6,128,622
07/08	3,467,858	292,531	29,776	2,875	27	0	3,793,067	76	354,669	839,471	20,929	24	1,215,069	5,008,136
08/09	3,007,289	246,089	29,873	639	67	922	3,284,879	72	422,311	824,585	16,612	28	1,263,508	4,548,387
09/10	4,181,282	156,154	54,833	517	137	1,047	4,393,970	78	419,795	835,054	10,727	22	1,265,576	5,659,546
10/11	5,739,252	166,160	58,206	3,607	930	1,797	5,969,952	81	437,575	971,920	6,971	19	1,416,466	7,386,418
11/12	5,580,904	201,517	67,167	2,983	1,065	538	5,854,174	83	324,221	902,523	3,665	17	1,230,409	7,084,583
12/13	3,899,828	128,539	47,997	284	0	1,546	4,078,194	72	384,466	1,174,529		28	1,558,995	5,637,189
13/14	5,938,766	214,810	216,060	1,406	1,728	235	6,373,005	80	328,422	1,274,232		20	1,602,654	7,975,659
14/15	5,062,422	200,467	187,969	1,655	271	482	5,453,266	77	328,136	1,293,046		23	1,621,182	7,074,448
15/16	5,730,261	178,599	146,731	2,497	197	2,124	6,060,409	80	371,946	1,119,542		20	1,491,488	7,551,897
5-yr avg	5,242,436	184,786	133,185	1,765	652	985	5,563,810	78	347,438	1,152,774		22	1,500,946	7,064,755

Note: Five year average is for 11/12-15/16. This table updates and replaces Table 4.3.1.1 in Amendment 10. SRL (Special Recreational License) was available from 1994/95 through the 2011/12 season. **Data Unavailable—Recreational Surveys were not conducted due to hurricanes. Sources: Commercial landings, FTT, as of 10Oct16. Recreational landings are estimated using surveys of recreational lobster permit holders and represent landings during the special 2-day sport season ("Special") and from opening day of the regular season (Aug. 6) through Labor Day ("Regular"). Grand total excludes estimated fishing mortality for bait.

3.2 Description of the Physical Environment

Detailed descriptions of the physical environments related to the spiny lobster fishery are provided in the Gulf Council's Generic Essential Fish Habitat (EFH) Amendment (GMFMC 2004) and in the South Atlantic Council's Fishery Ecosystem Plan (SAFMC 2009), and are incorporated by reference herein.

The Gulf is approximately 600,000 square miles (1.5 million km^2), 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 (Figure 3.2.1), the discharge of freshwater into the Northern Gulf, and a semi-permanent, anti-cyclonic gyre in the western Gulf.

The Gulf is both a warm temperate and a tropical body of water (McEachran and Fechhelm 2005). Based on satellite derived measurements from 1982 through 2009, mean annual sea surface temperature ranged from 73 through 83º F (23-28º C) including bays and bayous (Figure 3.1.2.1). In general, mean sea surface temperature increases from north to south depending on time of year with large seasonal variations in shallow waters (NODC 2012: http://accession.nodc.noaa.gov/0072888).

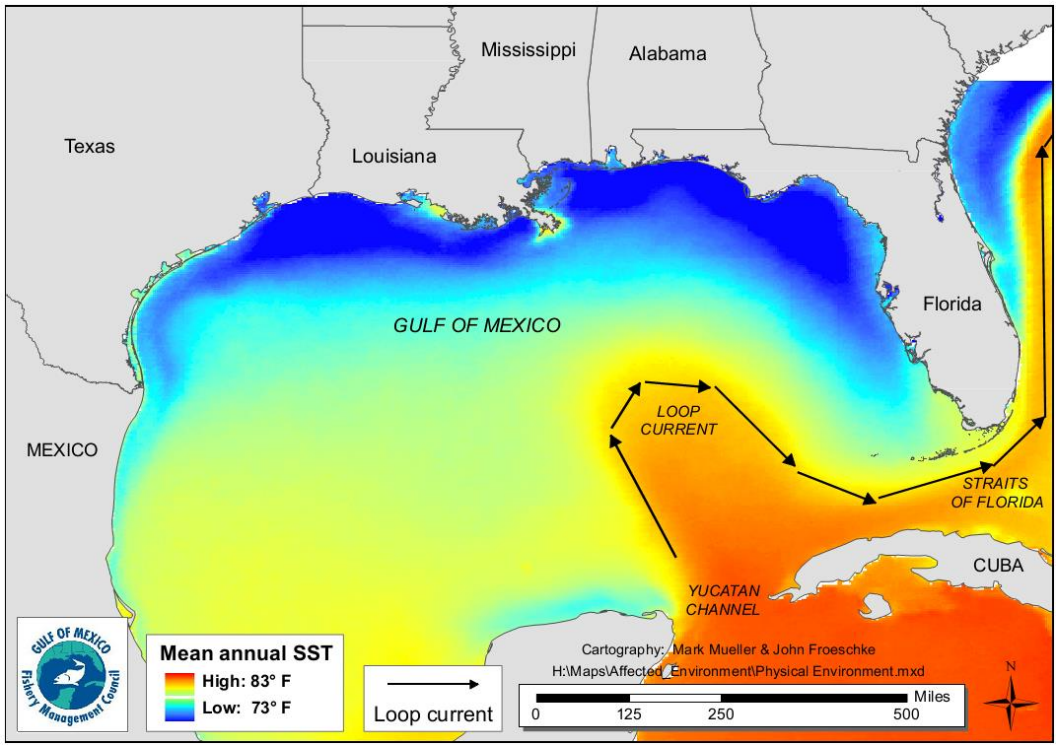

Figure 3.2.1. Mean annual sea surface temperature derived from the Advanced Very High Resolution Radiometer Pathfinder Version 5 sea surface temperature data set (http://pathfinder.nodc.noaa.gov).

The South Atlantic continental shelf off the southeastern U.S., extending from the Dry Tortugas to Cape Hatteras, North Carolina, encompasses an area in excess of 100,000 km^2 (Menzel 1993). Based on physical oceanography and geomorphology, this environment can be divided into two regions: Dry Tortugas to Cape Canaveral, Florida, and Cape Canaveral to Cape Hatteras. The break between these two regions is not precise and ranges from West Palm Beach, Florida, to the Florida-Georgia border, depending on the specific data considered. The shelf from the Dry Tortugas to Miami, Florida, is approximately 25 km wide and narrows to approximately 5 km off Palm Beach. The shelf then broadens to approximately 120 km off Georgia and South Carolina before narrowing to 30 km off Cape Hatteras. The Florida Current/Gulf Stream flows along the shelf edge throughout the region. In the southern region, this boundary current dominates the physics of the entire shelf (Lee et al. 1994). Spatial and temporal variation in the position of the western boundary current has dramatic effects on water column habitats. Variation in the path of the Florida Current near the Dry Tortugas induces formation of the Tortugas Gyre (Lee et al. 1994). This cyclonic eddy has horizontal dimensions on the order of 100 km and may persist in the vicinity of the Florida Keys for several months. The Pourtales Gyre, which has been found to the east, is formed when the Tortugas Gyres moves eastward along the shelf. Upwelling occurs in the center of these gyres, thereby adding nutrients to the near surface (less than 100 m) water column.

Given the large to near total dependence on larval recruitment from the Caribbean, it is appropriate to include the Caribbean area in the description of the physical environment. A detailed description of the physical environment in the Caribbean related to the spiny lobster fishery is provided in Amendment 8 to the FMP (CFMS, GMFMC, and SAFMC 2008) and is incorporated by reference herein. The Caribbean Sea is an interior sea formed by a series of basins lying to the east of Central America and separated from the North American Basin of the Atlantic by an island arc 2,500 nm long which joins the Florida Peninsula to the north coast of Venezuela. This arc is demarcated by the Greater Antilles (Cuba, Jamaica, Hispaniola, and Puerto Rico) and the Lesser Antilles (the Virgin Islands, Guadeloupe, Martinique, St. Lucia, Barbados, and Trinidad). As a seismic and volcanic region, the Caribbean has a complex topography and has numerous openings into the North American Basin. The Jamaican Ridge, running from Cape Gracias a Dios to Jamaica and Hispaniola, divides the Caribbean into two sections: one in the northwest, the other southeast, communicating across a 1500 m sill which is 20 nm wide at 100 m depth. The northwest basin is itself divided in two by the Cayman Ridge, which from the southwest point of Cuba runs toward, without reaching it, the Gulf of Honduras. Between the Gulf and the Cayman Ridge lies the Yucatan Basin, of which the central part is 4,700 m deep. At its western extremity it communicates freely at depth of more than 5,000 m with the second basin, the Cayman Basin. In the eastern part of the Cayman Basin, between the southwest point of Cuba and against the Cayman Ridge lies a narrow trench 7,680 m deep. The Caribbean Basin is entirely in the tropical Atlantic. The mean annual temperature is near 25° C and seasonal variations are small. The winds, the eastern sector predominating, are tied to the trade wind system of the Northern Hemisphere.

Deepwater Horizon MC252 Oil Spill

The Deepwater Horizon MC252 oil spill in 2010 affected more than one-third of the Gulf area from western Louisiana east to the panhandle of Florida and south to the Campeche Bank in Mexico. 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 spiny lobster are abundant. Oil was dispersed on the surface, and because of the heavy use of dispersants, oil was 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 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. It is also possible that zooplankton that feed on algae could be negatively impacted, thus allowing more of the hypoxia-fueling algae to grow.

Climate Change

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 CO^2 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).

There is a large and growing body of literature on past, present, and future impacts of global climate change induced by human activities. The Environmental Protection Agency's (EPA) climate change webpage (https://www.epa.gov/CLIMATECHANGE) provides basic background information on these and other measured or anticipated effects. In addition, the Intergovernmental Panel on Climate Change's Fourth Assessment Report (IPCC 2007) contains a compilation of scientific information on climate change and is incorporated herein by reference (http://www.ipcc.ch/publications_and_data/publications_and_data_reports.shtml). Global climate change could have significant effects on Gulf and South Atlantic fisheries; however, the extent of these effects cannot be quantified at this time.

It is unclear how climate change would affect spiny lobster, and likely would affect species differently. Climate change can affect factors such as migration, range, larval and juvenile survival, prey availability, and susceptibility to predators. In addition, the distribution of native and exotic species may change with increased water temperature, along with the prevalence of disease in keystone animals such as corals and the occurrence and intensity of toxic algae blooms. Hollowed et al. (2013) provided a review of projected effects of climate change on marine fisheries and dependent communities. Integrating the potential effects of climate change into fisheries stock assessment is currently difficult due to differences in time scales (Hollowed et al. 2013). Fisheries stock assessments rarely project across a time period that would include detectable climate change effects.

3.3 Description of the Biological/Ecological Environment

The Caribbean spiny lobster (*Panulirus argus*) is widely distributed throughout the western Atlantic Ocean as far north as North Carolina to as far south as Brazil including Bermuda, the Bahamas, Caribbean, and Central America (Herrnkind 1980; Figure 3.3.1.). Analyses of DNA indicate a single stock structure for the Caribbean spiny lobster throughout its range (Lipcius and Cobb 1994; Silberman et al. 1994; Hunt et al. 2009). More recent genetic studies have shown almost all recruits in U.S. waters are from elsewhere in the Caribbean. Spiny lobster is known to have the longest larval duration of any oceanic marine animal. However, other studies have shown that the wind effects or the presence of local gyres or loop currents in certain locations could influence the retention of locally spawned larvae in some years more than others (Johnson 1960; Phillips 1989; Yeung and McGowan 1991; Yeung 1996; Yeung et al. 2001). A more recent study has shown retention of local larvae in Florida ranges between 10-40 percent (Kough et al. 2013). While recruitment is considered stable, it is not thought to be linked to production.

Figure 3.3.1. Distribution of Caribbean spiny lobster (in red).
Source: FAO Fisheries Synopsis 1991

With the majority of spiny lobster larvae coming from outside sources, reliable estimation of management reference points was not possible during the most recent stock assessment (SEDAR 8 Update 2010). Currently, there is an inability to perform a Caribbean-wide stock assessment because not all countries report landings. The US stock cannot be assessed in isolation and is not the appropriate geographical and biological scale needed to capture population-wide dynamics. It was concluded that the stock status of spiny lobster in the southeast US is essentially unknown. Therefore, the most recent stock assessment was not considered sufficient to inform the Scientific and Statistical Committees (SSC). Due to these uncertainties, there is a lack of confidence in the reliance on recruitment from other populations in the Caribbean. Therefore, the most recent stock assessment was rejected and other management methods were determined to be needed.

This species typically inhabits shallow waters, occasionally as deep as 295 ft (90 m). Spiny lobster can be found among rocks, on reefs, in seagrass beds or in any habitat that provides

protection. This species is gregarious and migratory. Maximum total body length recorded is 18 in (45 cm), but the average total body length for this species is 8 in (20 cm; FAO Fisheries Synopsis 1991).

Distribution and dispersal of spiny lobster is determined by the long planktonic larval phase, called the puerulus, during which time the infant lobsters are carried by the currents until they become large enough to settle to the bottom (Acosta et al. 1997; Davis and Dodrill 1989). As the lobsters begin metamorphosis from puerulus to the juvenile form, the ability to swim increases and they move into shallow, nearshore environments to grow and develop.

Young benthic stages of spiny lobster typically inhabit branched clumps of red algae (*Laurencia* sp.), mangrove roots, seagrass banks, or sponges; they feed on invertebrates found within these habitats. In contrast to the social behavior of their older counterparts, juvenile lobsters are solitary and aggressive to ensure they remain solitary. Two to four year olds are nomadic, emigrating out of the shallows and moving to deeper, offshore reef environments. Adult spiny lobsters tend to aggregate in enclosed shelters including: natural holes in a reef, rocky outcrops, or artificially created environments (Lipcius and Cobb 1994).

Mass migrations of 2-60 spiny lobsters occur annually throughout the geographic range of the species and are dependent on latitude and climactic factors. Observed locations for the migration include Bermuda in October, the Bahamas and Florida in late October and early November, and the Yucatan and Belize in December (Herrnkind 1985). The first autumn storm in the tropics usually drops the water temperature by about 5°C and brings large sea swells. The shallow regions that the lobsters exploit during the summer months become turbid and cold, initiating the diurnal migration of thousands of lobsters to evade these conditions. The spiny lobster is highly susceptible to severe winter cooling and will exhibit reduced feeding and locomotion at temperatures 54-57 ºF (12-14 ºC); molting individuals usually perish under these conditions. According to Herrnkind (1985), the behavioral changes observed in spiny lobster as well as the known biological information about the species lends credence to the idea that individuals migrate to evade the stresses of the cold and turbidity in the winter. Biologically, the queuing behavior is an important hydrodynamic drag-reduction technique for the migration of individuals over long distances (Bill and Herrnkind 1976). Studies done by tagging individuals found that during the migration, individuals tended to move distances of 19-31 statute miles (30- 50 km; Herrnkind 1985).

3.3.1 Bycatch

Details of bycatch in the spiny lobster fishery can be found in Appendix D, Bycatch Practicability Analysis, of Amendment 10 to the Spiny Lobster FMP (GMFMC and SAFMC 2011), and is hereby incorporated by reference.

In summary, studies have documented low bycatch and bycatch mortality of finfish by the commercial trap fishery for both wooden and plastic traps (Matthews et al. 1994, Matthews and Donahue 1997). Most of the finfish caught in commercial spiny lobster traps are juveniles and all escape within 48 hours (Matthews and Donahue 1997). Stone crabs were the most dominant species caught in two studies of lobster traps (Matthews et al. 1994, Matthews and Donahue

1997). In the recreational fishery, bycatch primarily consists of undersized spiny lobsters. Because the gear types used by SCUBA divers and snorkelers targeting spiny lobster are considered highly selective for spiny lobster, very little bycatch of non-target species is expected in the recreational sector of the spiny lobster fishery. The total discard rate of finfish and invertebrates for the spiny lobster fisheries is generally between 8-15% and it is unlikely any one species comprises more than 5% of the catch (Seafood Watch 2015). Mortality of commercially and recreationally important finfish is negligible (Matthews and Donahue 1997). Little is known about the status of many finfish (e.g., grunts, cowfish, porgies) and invertebrate (e.g., spider crabs, urchins) species that are bycatch in lobster traps in the greatest numbers. None of these species have undergone (or are likely to undergo) formal stock assessments, because most are not targeted in commercial or recreational fisheries.

3.3.2 Protected Species

Species in the Gulf and South Atlantic protected under the Endangered Species Act (ESA) include marine mammal species (blue, sei, fin, sperm, North Atlantic right whales (NARW) and manatees); turtle species (Kemp's ridley, Northwest Atlantic (NWA) loggerhead distinct population segment (DPS), North Atlantic, green DPS, South Atlantic green DPS, leatherback, and hawksbill); fish species (New York Bight Atlantic sturgeon DPS, Chesapeake Bay Atlantic sturgeon DPS, Carolina Atlantic sturgeon DPS, South Atlantic sturgeon DPS, Gulf of Maine Atlantic sturgeon DPS, Gulf sturgeon, smalltooth sawfish U.S. DPS, shortnose sturgeon, and Atlantic sturgeon, and Nassau grouper); and coral species (elkhorn, staghorn, lobed star, knobby boulder, knobby star, mountainous star, pillar, and rough cactus). Additionally, Marine Mammal Protection Act (MMPA) protected dolphins are also present in the Gulf and South Atlantic and are potentially affected by the fishery.

Aside from the aforementioned protected species, portions of designated critical habitat for *Acropora* corals, NWA loggerhead sea turtles, and the NARW also occur within areas encompassed by the spiny lobster fishery.

On August 27, 2009, the Protected Resources Division issued a biological opinion which concluded that the continued operation of the Gulf of Mexico/South Atlantic spiny lobster fishery is not likely to jeopardize the continued existence of green, hawksbill, Kemp's ridley, leatherback, or loggerhead sea turtles, smalltooth sawfish, or *Acropora* species (NMFS 2009). On August 27, 2012, NMFS published a final rule (77 FR 44168) that limited spiny lobster trap fishing in certain areas in the exclusive economic zone off the Florida Keys to protect threatened species of corals and addresses the requirements of the 2009 biological opinion. The final rule prohibited spiny lobster trap fishing in 60 closed areas that were chosen due to their high benthic conservation value and areas of high coral density. On September 10, 2014, NMFS published a final rule to list 22 coral species under the ESA (79 FR 53851). Five of the 22 species occur in the Gulf and South Atlantic; however, because of protections including closed areas, NMFS determined the continued authorization of the Gulf/South Atlantic spiny lobster fishery is not likely to jeopardize the continued existence of any species proposed for listing.

On September 22, 2011, NMFS published a final rule (76 FR 58868) listing 9 distinct DPSs of loggerhead sea turtles; the NWA DPS loggerhead sea turtle could occur in the action area is

listed as threatened. On April 6, 2016, NMFS published a final rule (81 FR 20058) listing 11 DPSs of green sea turtles; the North Atlantic and South Atlantic DPSs of green sea turtles that could occur in the action area are listed as threatened. On June 29, 2016, NMFS published a final rule (81 FR 42268) listing Nassau grouper as threatened under the ESA. Nassau grouper may be affected by the spiny lobster fishery off southern Florida where the species overlaps with the fishery. The new listings triggered re-initiation of consultation under Section 7 of the ESA.

The Florida spiny lobster trap/pot fishery is classified in the final 2017 MMPA List of Fisheries as a Category III fishery (82 FR 3655, January 12, 2017), meaning there is a remote likelihood of incidental mortality or serious injury to marine mammals.

3.4 Description of the Economic Environment

3.4.1 Commercial Fishing Sector

In 2014, commercial fishermen in the U.S. harvested approximately 9.4 billion pounds of finfish and shellfish, earning approximately $5.5 billion for their catch (NMFS Fisheries Economics of the United States [FEUS] 2014). Over 60% of those landings were made up of ten key species and species groups; of those ten, four are also key species/species groups in the South Atlantic and Gulf.

Commercial fishermen in the South Atlantic landed 105 million pounds of finfish and shellfish with a dockside value (revenue) of approximately $184 million in 2014 (NMFS FEUS 2014), which represented 1% of national landings by weight and 3% by dockside revenue. Approximately 47% of the South Atlantic's total landings by weight and 52% by dockside revenue were from blue crab and shrimp (Table 3.4.1). Although not identified as one of the South Atlantic's key species or species group in the 2014 FEUS, dockside revenue from lobsters landed in East Florida ranks higher than that from snappers, groupers, or clams (Table 3.4.1).

Commercial fishermen in the Gulf landed 1.1 billion pounds of finfish and shellfish with a dockside value of $1 billion in 2014 (NMFS FEUS 2014), which is 11.7% of national landings by weight and 18% by dockside revenue. Although not identified in the 2014 FEUS as one of the Gulf's key species groups, dockside revenue from landings of lobsters in West Florida ranks higher than that from landings of six key species/species groups (crawfish, groupers, mullets, red snapper, stone crab, and tuna).

Table 3.4.1. Landings and revenues of key commercial species/species groups in the south Atlantic and lobsters in east Florida, 2014.

Key Species/ Species Group	Dockside revenue (thousands)	Pounds landed (thousands)	Average price per pound	Percent of all dockside revenue	Percent of all pounds landed
Blue crab*	$46,230	33,847	$1.37	25.1%	32.1%

Clams	$4,157	1,753	$2.37	2.3%	1.7%
Flounders	$13,470	4,726	$2.85	7.3%	4.5%
Groupers	$2,499	557	$4.49	1.4%	0.5%
King mackerels	$5,504	2,259	$2.44	3.0%	2.1%
Oysters	$7,146	1,140	$6.27	3.9%	1.1%
Shrimp*	$50,080	15,809	$3.17	27.2%	15.0%
Snappers	$3,883	1,149	$3.38	2.1%	1.1%
Swordfish	$5,656	1,699	$3.33	3.1%	1.6%
Tunas*	$6,233	2,659	$2.34	3.4%	2.5%
Total SA key	$144,858	65,598	$2.21	78.6%	62.3%
LOBSTERS	*$4,691*	*498*	*$9.42*	*2.5%*	*0.5%*
All Landings	**$184,346**	**105,343**	**$1.75**	**100.0%**	**100.0%**

* Also a national key species/species group.
Source: NMFS FEUS 2014

Lobster are among the key species groups in both East and West Florida. In 2014, dockside revenue from lobsters ranked first in West Florida ($50.5 million) and second in East Florida ($4.3 million) (Tables 3.4.3 and 3.4.4). Collectively, 5.3 million pounds of lobsters were landed in East and West Florida and accounted for dockside revenue of $54.7 million. The economic impacts of that $54.7 million to harvesters and the seafood industry in Florida are estimated to be 2,484 jobs, $61.0 million in income impacts, $92.3 million in total value added impacts, and $222.6 million in output impacts (calculated by NMFS Southeast Regional Office (SERO) using the model developed for and applied in NMFS FEUS 2014).

The average price (per pound) of lobsters is substantially higher than the average prices of almost all other key species or species groups in Florida. In 2014, for example, the average price of spiny lobster was $9.42 in East Florida and $10.54 in West Florida. Only stone crab in West Florida had a higher average price that year (Tables 3.4.3 and 3.4.4).

Although both Spanish slipper lobster and spiny lobster are commercially harvested in Florida, spiny lobster accounts for almost all of the lobster landings in the state (five-year average = 99.98%). The spiny lobster fishery is Florida's largest commercial fishery by dollars.

Table 3.4.2. Landings and revenues of key commercial species/species groups in the Gulf and lobsters in West Florida, 2014.

Key Species/ Species Group	Dockside revenue (thousands)	Pounds landed (thousands)	Average price per pound	Percent of all dockside revenue	Percent of all pounds landed
Blue crab*	$73,426	47,765	$1.54	7.1%	4.2%
Crawfish	$13,430	11,230	$1.20	1.3%	1.0%
Groupers	$28,830	8,547	$3.37	2.8%	0.7%

Menhaden*	$70,917	769,943	$0.09	6.9%	67.3%
Mullets	$10,292	13,604	$0.76	1.0%	1.2%
Oysters	$86,751	16,525	$5.25	8.4%	1.4%
Red snapper	$23,088	5,722	$4.03	2.2%	0.5%
Shrimp*	$587,986	206,774	$2.84	57.2%	18.1%
Stone crab	$27,135	1,890	$14.36	2.6%	0.2%
Tunas*	$6,330	1,757	$3.60	0.6%	0.2%
Total Gulf key	$928,185	1,083,757	$0.86	90.3%	94.8%
LOBSTERS	*$50,537*	*4,795*	*$10.54*	*4.9%*	*0.4%*
All Landings	**$1,027,885**	**1,143,715**	**$0.90**	**100.0%**	**100.0%**

* Also a national key species/species group.

Source: NMFS FEUS 2014.

Table 3.4.3. Key commercial species/species groups in east Florida, 2014.

Key Species/ Species Group	Dockside revenue (thousands)	Pounds landed (thousands)	Average price per pound	Percent of all dockside revenue	Percent of all pounds landed
Blue crab	$2,881	1,373	$2.10	5.4%	5.9%
Clams	$53	7	$7.57	0.1%	0.0%
Groupers	$596	134	$4.45	1.1%	0.6%
King mackerel	$4,260	1,690	$2.52	8.0%	7.3%
LOBSTERS	*$4,691*	*498*	*$9.42*	*8.8%*	*2.1%*
Sharks	$550	665	$0.83	1.0%	2.9%
Shrimp	$18,097	5,757	$3.14	33.9%	24.9%
Snappers	$2,084	632	$3.30	3.9%	2.7%
Spanish mackerel	$2,620	2,563	$1.02	4.9%	11.1%
Swordfish	$2,704	746	$3.62	5.1%	3.2%
Total Key	$38,536	14,065	$2.74	72.2%	60.7%
All Landings	**$53,368**	**23,165**	**$2.30**	**100.0%**	**100.0%**

Source: NMFS FEUS 2014.

Table 3.4.4. Key commercial species/species groups in west Florida, 2014.

Key Species/ Species Group	Dockside revenue (thousands)	Pounds landed (thousands)	Average price per pound	Percent of all dockside revenue	Percent of all pounds landed
Blue crab	$6,977	4,187	$1.67	3.4%	5.5%
Gag	$2,852	681	$4.19	1.4%	0.9%
LOBSTERS	*$50,537*	*4,795*	*$10.54*	*24.8%*	*6.3%*
Mullets	$8,072	10,495	$0.77	4.0%	13.8%
Oyster	$4,038	731	$5.52	2.0%	1.0%

Quahog clam	NA	NA	NA	NA	NA
Red grouper	$20,944	6,545	$3.20	10.3%	8.6%
Red snapper	$8,067	2,094	$3.85	4.0%	2.8%
Shrimp	$40,714	11,448	$3.56	20.0%	15.0%
Stone crab	$27,132	1,889	$14.36	13.3%	2.5%
Total Key	NA	NA	NA	NA	NA
All Landings	**$203,372**	**76,126**	**$2.67**	**100.0%**	**100.0%**

Source: NMFS FEUS 2014.

Florida accounts for almost all commercial landings of spiny lobster (Table 3.4.5). There were no commercial landings of spiny lobster in any other Gulf state from 2011 through 2015. Prior to 2011, combined commercial landings of the species in other states tend to represent less than a hundredth of a percentage of total annual landings (Table 3.4.5). Thus, the remainder of this section focuses exclusively on commercial fishing for spiny lobster in federal and state waters off Florida.

Table 3.4.5. Commercial landings of spiny lobster by state, 2011-2015.

Year	Commercial landings (pounds ww) of spiny lobster					
	East Florida	West Florida	North Carolina	South Carolina	Total	Percent Florida
2011	513,986	5,302,008	0	815	5,816,809	99.99%
2012	302,312	3,633,827	614	0	3,936,753	99.98%
2013	485,555	5,600,177	907	0	6,086,639	99.99%
2014	498,129	4,793,910	1,044	0	5,293,083	99.98%
2015	466,680	5,281,483	770	0	5,748,933	99.99%
Average	**453,332**	**4,922,281**	**667**	**163**	**5,376,443**	**99.98%**

Source: NMFS ALS, not including confidential data.

Commercial landings of spiny lobster occur on both Florida coasts; however, West Florida accounts for approximately 91% of annual landings by weight and 92% by value (Tables 3.4.6 and 3.4.7). Moreover, approximately 88% of the commercial trips that land spiny lobster are in West Florida (Table 3.4.8).

Table 3.4.6. Commercial spiny lobster landings in Florida by coast, 2011-2015.

Year	Pounds (ww) of spiny lobster commercially landed in Florida		
	East (%)	West (%)	Total
2011	513,798 (8.8)	5,301,220 (91.2)	5,815,018
2012	337,037 (8.2)	3,769,627 (91.8)	4,106,664
2013	485,764 (8.0)	5,608,680 (92.0)	6,094,444
2014	542,449 (9.7)	5,040,105 (90.3)	5,582,554
2015	479,922 (8.1)	5,448,671 (91.9)	5,928,593
Average	**471,794 (8.6)**	**5,033,661 (91.4)**	**5,505,455**

Source: FL FWC, Commercial Fisheries Landings Summaries, November 18, 2016.

Table 3.4.7. Nominal dockside revenue from spiny lobster landings in Florida by coast, 2011-2015.

Year	Nominal dockside revenue from spiny lobster		
	East (%)	West (%)	Total
2011	$3,203,920 (8.3)	$35,608,739 (91.8)	$38,812,659
2012	$1,888,930 (7.8)	$22,250,669 (92.2)	$24,139,599
2013	$3,437,244 (6.8)	$46,819,022 (93.2)	$50,256,266
2014	$5,146,867 (8.8)	$53,439,358 (91.2)	$58,586,225
2015	$3,727,716 (7.8)	$44,046,738 (92.2)	$47,774,454
Average	**(7.9)**	**(92.1)**	

Source: FL FWC, Commercial Fisheries Landings Summaries, November 18, 2016.

Table 3.4.8. Number of spiny lobster commercial trips by Florida coast, 2011-2015.

Year	Commercial trips that landed spiny lobster		
	East	West	Total
2011	2505 (12.6)	17420 (87.4)	19,925
2012	2253 (12.8)	15288 (87.2)	17,541
2013	2662 (11.7)	20014 (88.3)	22,676
2014	2720 (11.4)	21132 (88.6)	23,852
2015	2694 (12.2)	19286 (87.7)	21,980
Average	**2567 (12.2)**	**18628 (87.8)**	**21,195**

Source: FL FWC, Commercial Fisheries Landings Summaries, November 18, 2016.

The average commercial trip lands more spiny lobster in West Florida than in East Florida. From 2011 through 2015, the average West Florida trip landed approximately 48% (83 pounds) more spiny lobster (Table 3.4.9). The average nominal dockside price was also higher in West Florida. In 2014, prices for spiny lobster were highest on record. The following year, as the Asian economy slumped, the price fell (Table 3.4.9).

Table 3.4.9. Average commercial landings of spiny lobster per trip and average nominal dockside price per pound by Florida coast, 2011-2015.

Year	Average pounds per trip		Average nominal dockside price per pound	
	East	West	East	West
2011	205	304	$6.24	$6.72
2012	150	247	$5.60	$5.90
2013	182	280	$7.08	$8.35
2014	199	239	$9.49	$10.60
2015	178	283	$7.77	$8.08
Average	**183**	**270**		

Source: FL FWC, Commercial Fisheries Landings Summaries, November 18, 2016.

Commercial landings of spiny lobster in Monroe County account for almost all of West Florida's commercial landings. From 2011 through 2015, over 99% of the pounds landed in West Florida were in that county (Table 3.4.10). When East Florida and West Florida landings are combined, Monroe County accounts for an annual average of 91% of the state's total landings of spiny lobster.

Spiny lobster is the only species of lobster managed in federal waters of both the South Atlantic and Gulf, and it is managed jointly by the Gulf and South Atlantic Councils. Any vessel that commercially fishes for and sells spiny lobster caught in either the Gulf or South Atlantic EEZ, except off Florida (regulations are outlined in Section 3.1), must have a federal spiny lobster permit on board. Spiny lobster must be landed whole; any vessel that separates the spiny lobster tail caught in the EEZ must have a federal tailing permit on board.

While there has been an increase in the number of federal spiny lobster permits, the number of lobster tailing permits has declined (Figure 3.4.1). The decline coincides with the development of an Asian market for live lobsters. Currently, the dockside price of a live lobster is approximately twice that of a dead one (FWC September 8, 2016).

Table 3.4.10. Spiny lobster landings by Florida county, 2011-2015.

West Coast Counties	West Florida commercial landings (pounds ww) of spiny lobster					
	2011(%)	2012	2013	2014	2015	Average
Bay	0 (%)	0	0	1	0	0
Charlotte	1,259	1,286	716	352	0	723
Citrus	0	49	0	0	0	10
Collier	7,108	9,869	19,376	12,062	9,081	11,499
Gulf	6	0	251	19	121	79
Lee	57	0	1,892	0	1,219	634
Levy	569	0	0	0	0	114
Monroe	5,291,541	3,757,977	5,585,684	5,026,016	5,438,240	5,019,892
Pinellas	94	411	415	1,654	10	517

Sarasota	586	35	305	0	0	185
Total	**5,301,220**	**3,769,627**	**5,608,639**	**5,040,104**	**5,448,671**	**5,033,652**
Percent Monroe	99.8%	99.7%	99.6%	99.7%	99.8%	99.7%

Source: FL FWC, Commercial Fisheries Landings Summaries, November 18, 2016.

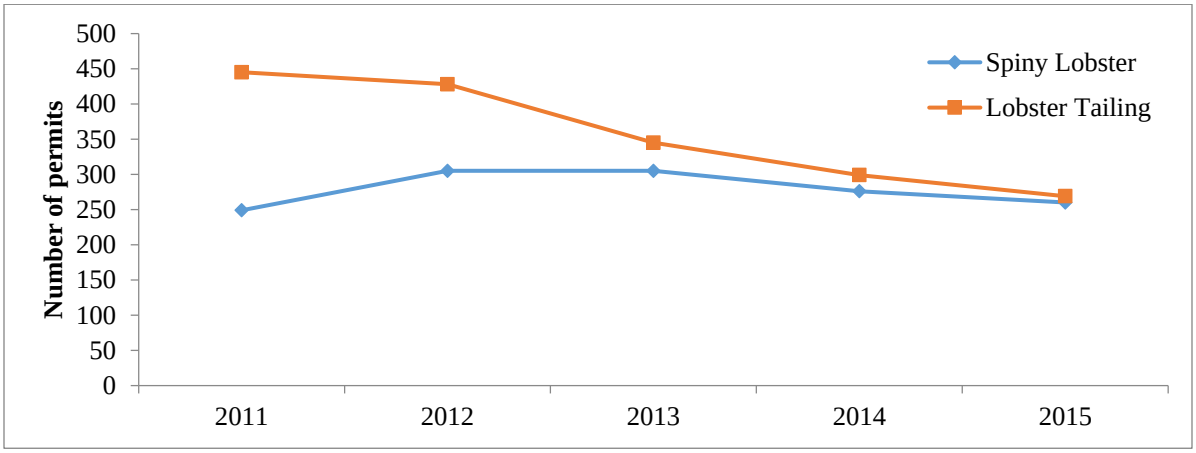

Figure 3.4.1. Number of federal spiny lobster and lobster tailing permits, 2011-2015.
Source: NMFS SERO PIMS.

As of November 18, 2016, 287 vessels have at least a federal spiny lobster permit or tailing permit (Table 3.4.11). All of the 83 vessels that have only the tailing permit have a permit holder who resides in Florida. These 287 vessels make up part of the spiny lobster fleet that operates in federal waters, and 222 (78%) of these vessels have Florida residents as permit holders. Other vessels in the fleet include those that do not have a federal permit, but harvest spiny lobster in the EEZ off Florida, land the species in Florida, and have all required Florida licenses.

Table 3.4.11. Number of vessels with federal spiny lobster and/or spiny lobster tailing permit(s) by state of permit holder.

State	Number of vessels with 1 or more federal lobster permits				Percent of total permits
	Spiny lobster only	Spiny lobster tailing only	Both	Total	
AL	6	0	4	10	3.5%
FL	50	83	89	222	77.6%
GA	1	0	2	3	1.0%
LA	2	0	0	2	0.3%
ME	1	0	0	1	0.3%
NC	9	0	22	31	10.8%
NJ	1	0	3	4	1.4%
NY	1	0	1	2	0.7%

SC	0	0	7	7	2.4%
TX	1	0	0	1	0.3%
VA	1	0	3	4	1.4%
Total	**73**	**83**	**131**	**287**	**100.0%**

Source: SERO PIMS Online as of November 18, 2016.

Two hundred and thirteen individuals hold the spiny lobster permits on the 287 federally permitted vessels in the fleet (Table 3.4.12). The number of vessels that an individual has with a federal spiny lobster permit ranges from 1 to 13; 84% of spiny lobster permit holders have only one permit.

Table 3.4.12. Number of federal spiny lobster permitted vessels by state of permit holder.

Number of spiny lobster permitted vessels	Number of spiny lobster permit holders										Total vessels
	AL	FL	GA	ME	NC	NJ	NY	SC	VA	Total	
1	0	154	1	1	11	2	2	5	2	178	178
2	4	14	1	0	4	1	0	1	1	26	52
3	0	2	0	0	1	0	0	0	0	3	9
6	0	2	0	0	0	0	0	0	0	2	12
7	0	2	0	0	0	0	0	0	0	2	14
9	0	0	0	0	1	0	0	0	0	1	9
13	0	1	0	0	0	0	0	0	0	1	13
Total	**4**	**175**	**2**	**1**	**17**	**3**	**2**	**6**	**3**	**213**	**287**

Source: SERO PIMS Online as of November 18, 2016.

Within Florida, Monroe County has the largest number of vessels with a federal spiny lobster permit (Table 3.4.13). Approximately 63% of the 222 vessels in the top 5 counties have a Florida resident as the permit holder. Monroe County also has the highest number of individuals with a state-issued commercial crawfish/lobster license.

Table 3.4.13. Number of federal spiny lobster permitted vessels by (Florida county) residence of permit holder.

County	Vessels with spiny lobster permit	County	Vessels with spiny lobster permit
	Number (%)		Number (%)
Alachua	1 (0.45)	Monroe	67 (30.18)
Bay	2 (0.90)	Nassau	1 (0.45)
Brevard	15 (6.76)	Okeechobee	1 (0.45)
Broward	4 (1.80)	Orange	1 (0.45)
Citrus	1 (0.45)	Palm Beach	10 (4.50)
Collier	1 (0.45)	Pinellas	16 (7.21)
Duval	9 (4.05)	Polk	1 (0.45)
Franklin	1 (0.45)	Sarasota	1 (0.45)

Hillsborough	15 (6.76)		Seminole	3 (1.35)
Indian River	2 (0.90)		St Johns	6 (2.70)
Lee	27 (12.16)		St Lucie	6 (2.70)
Manatee	1 (0.45)		Taylor	1 (0.45)
Martin	3 (1.35)		Volusia	14 (6.31)
Miami-Dade	12 (5.41)		**Total**	**222**

Source: SERO PIMS Online as of November 18, 2016.

3.3.2 Recreational Fishing Sector

The Marine Recreational Information Program (MRIP) and its predecessor, the Marine Recreational Fisheries Statistics Survey, are used to estimate national and regional recreational catch and their economic impacts but focus exclusively on finfish species. The Florida Wildlife Research Institute (FWRI), however, annually surveys recreational crawfish/spiny lobster license holders. These surveys are used to estimate recreational spiny lobster landings and fishing effort statewide during Florida's special 2-day sport season and during the first month of the regular spiny lobster season, when the majority of recreational lobster fishing occurs. As the season progresses, recreational fishers have to move with the migration of the lobsters from shallower to deeper waters where the waters are too deep for bully net or recreational diving. The special 2-day sport season occurs on the last consecutive Wednesday and Thursday of July each year.

Annual recreational landings of spiny lobster range from approximately 1.23 million to 1.62 million pounds ww from the 2011-12 through 2015-16 seasons (Figure 3.4.2). According to the Monroe County Tourist Development Council, the 25,000 or so visitors to the county that participated in the 2-day sport season in 2011 brought in $10 million in economic impacts to local businesses.

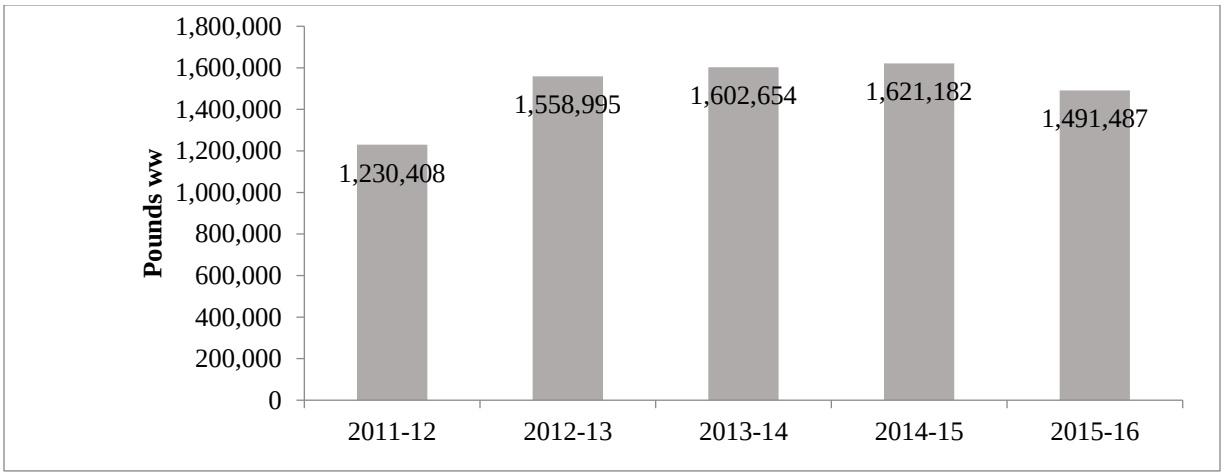

Figure 3.4.2. Recreational Landings (pounds ww) of Spiny Lobster, 2011-12 through 2015-16 Seasons.
Source: FWC October 10, 2016.

In Florida, an angler must have a recreational saltwater fishing license and a spiny lobster permit to harvest spiny lobster. For nonresidents, the cost of an annual fishing license is $47 or a three

day fishing license is $17, and they must also have a spiny lobster permit which costs $5. For state residents, an annual fishing license is $17; state residents must also purchase either an annual spiny lobster permit for $5 or a 5-year lobster permit for $25. A charter lobster permit is $5. Up through the 2011/2012 season there was a special recreational license.

3.5 Description of the Social Environment

This amendment affects commercial and recreational management of spiny lobster in the Gulf and South Atlantic. This section provides the background for the proposed actions which are evaluated in Chapter 4. Descriptions of the top communities involved in commercial fishing for spiny lobster in the Gulf and South Atlantic are included along with the top recreational fishing communities based on the number of state-issued permits. Community level data are presented in order to meet the requirements of National Standard 8 of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), which requires the consideration of the importance of fishery resources to human communities when changes to fishing regulations are considered. Lastly, social vulnerability data are presented to assess the potential for environmental justice concerns. Additional information on Gulf and South Atlantic commercial and recreational spiny lobster is provided in Sections 3.1 and 3.4.

3.5.1 Fishing Communities

The descriptions of Gulf and South Atlantic communities include information about the top communities based on a "regional quotient" (RQ) of commercial landings and value for spiny lobster. The RQ is the proportion of landings and value out of the total landings and value of that species for that region, and is a relative measure of engagement and reliance. These communities would be most likely to experience the effects of the proposed actions that could change the spiny lobster fishery and impact participants, associated businesses, and communities within the region. If a community is identified as a spiny lobster community based on the RQ, this does not necessarily mean that the community would experience significant impacts due to changes in the fishery if a different species or number of species were also important to the local community and economy. Additional detailed information about communities with the highest RQs, can be found for Gulf and South Atlantic communities on the SERO's Community Snapshots website at http://sero.nmfs.noaa.gov/sustainable_fisheries/social/community_snapshot/.

In addition to examining the RQs to understand how communities are engaged and reliant on fishing, indices were created using secondary data from permit and landings information for the commercial sector (Jacob et al. 2013; Jepson and Colburn 2013). Fishing engagement is primarily the absolute numbers of permits, landings, and value for all species. For commercial fishing, the analysis used the number of vessels designated commercial by homeport and owner address, value of landings, and total number of commercial permits for each community for all species. Fishing reliance includes the same variables as fishing engagement and is then divided by population to give an indication of the per capita influence of this activity.

Using a principal component and single solution factor analysis, each community receives a factor score for each index to compare to other communities. Factor scores of both engagement and reliance were plotted for the communities with the highest RQs. Two thresholds of one and one-half standard deviation above the mean are plotted to help determine a threshold for significance. The factor scores are standardized; therefore, a score above a value of 1 is also above one standard deviation. A score above one-half standard deviation is considered engaged or reliant with anything above one standard deviation to be very engaged or reliant.

The reliance index uses factor scores that are normalized. The factor score is similar to a z-score in that the mean is always zero, positive scores are above the mean, and negative scores are below the mean. Comparisons between scores are relative; however, like a z-score, the factor score puts the community on a point in the distribution. Objectively, that community will have a score related to the percent of communities with similar attributes. For example, a score of 2.0 means the community is two standard deviations above the mean and is among the 2.27% most vulnerable places in the study (normal distribution curve). Reliance score comparisons between communities are relative; however, if the community scores greater than two standard deviations above the mean, this indicates that the community is substantially reliant on fishing. Examining the component variables on the reliance index and how they are weighted by factor score provides a measurement of commercial reliance. The reliance index provides a way to gauge change over time in these communities and also provides a comparison of one community with another.

Landings for the recreational sector are not available by species at the community level. However, the addresses of state-issued recreational permit holders can be used to identify communities as engaged or reliant on recreational fishing for spiny lobster. Table 3.5.1.1 shows the top 20 communities by the number of Florida recreational spiny lobster permits. Because limited data are available concerning how recreational fishing communities are engaged and reliant on specific species, indices were created using secondary data from permit and infrastructure information for the southeast recreational fishing sector at the community level (Jacob et al. 2013; Jepson and Colburn 2013). Recreational fishing engagement is represented by the number of recreational permits and vessels designated as "recreational" by homeport and owners' address. Fishing reliance includes the same variables as fishing engagement, divided by population. Factor scores of both engagement and reliance were plotted. The top 20 recreational communities by the number of Florida recreational spiny lobster permits are presented.

A description of the social environment, including analysis of communities engaged in spiny lobster fishing, was provided in Amendment 10 for spiny lobster (GMFMC and SAFMC 2011) and is incorporated herein by reference. The referenced description focuses on available geographic and demographic data to identify top commercial spiny lobster communities using 2008 Accumulated Landings System (ALS) data and 2010 FWC permits. This section has been updated using 2014 ALS data and 2016 FWC permits, the most recent years available.

Commercial Communities

All Gulf communities with commercial landings of spiny lobster are located in Florida (SERO Community ALS, 2014). About 47% of spiny lobster is landed in the top community of

Marathon, representing about 48% of the Gulf-wide ex-vessel value for the species (Figure 3.5.1.1). The second ranked community of Key West represents about 32% of landings and 31% of value. Additionally, several other Florida Keys communities (Key Largo, Islamorada, Big Pine Key, Tavernier, Summerland Key, and Cudjoe Key) are included in the top communities and these communities represent about 21% of landings and 20% of value.

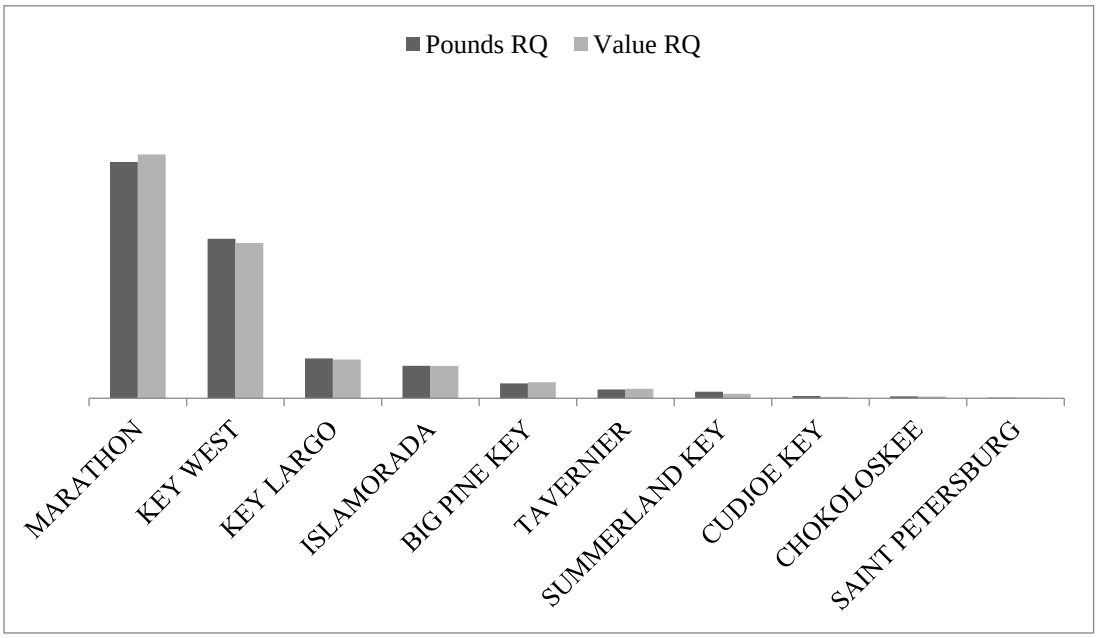

Figure 3.5.1.1. Top ten Gulf communities ranked by pounds and value RQ of spiny lobster. The actual RQ values (y-axis) are omitted from the figure to maintain confidentiality.
Source: SERO, Community ALS 2014.

South Atlantic communities with commercial landings of spiny lobster are located in Florida, North Carolina, and South Carolina (SERO Community ALS, 2014). About 75% of spiny lobster is landed in the top community of Miami, Florida, representing about 75% of the South Atlantic-wide ex-vessel value for the species (The Keys communities were included in the Gulf landings, Figure 3.5.1.2). The next four ranked communities (Coral Springs, Homestead, Fort Lauderdale, and Lauderhill, Florida) represent about 22% of landings and 23% of value.

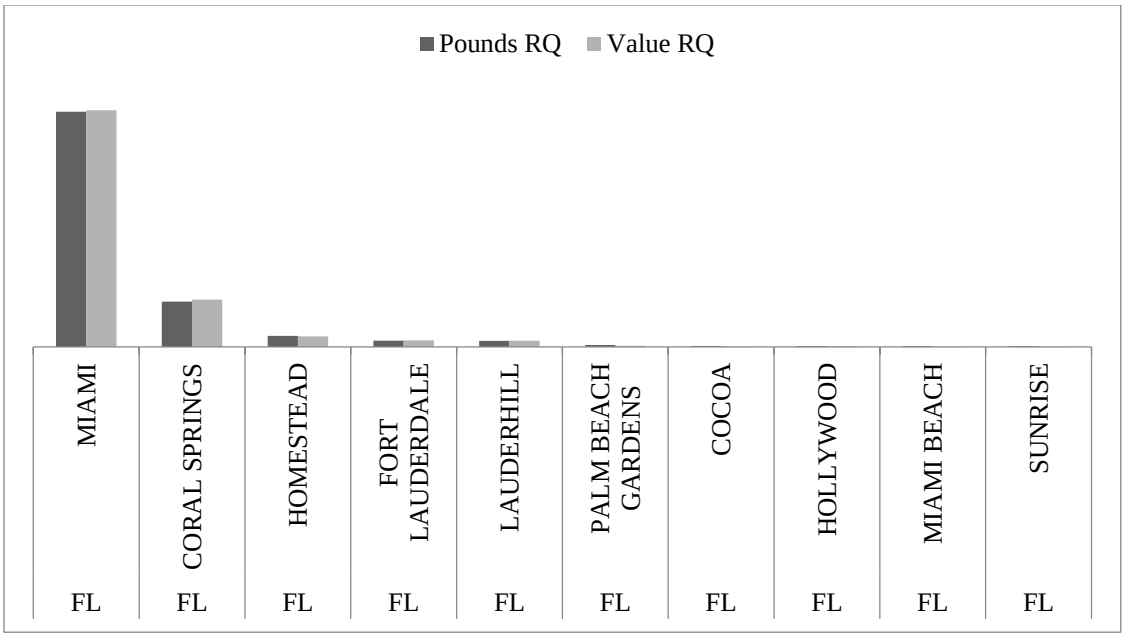

Figure 3.5.1.2. Top ten South Atlantic communities ranked by pounds and value RQ of spiny lobster. The actual RQ values (y-axis) are omitted from the figure to maintain confidentiality.
Source: SERO, Community ALS 2014.

The analysis described above for examining commercial engagement and reliance was applied to the 10 Gulf communities and 10 South Atlantic communities with the highest RQ ranking. The primary communities that demonstrate high levels of both commercial engagement and reliance include Marathon, Key West, and Big Pine Key, Florida (Figure 3.5.1.3).

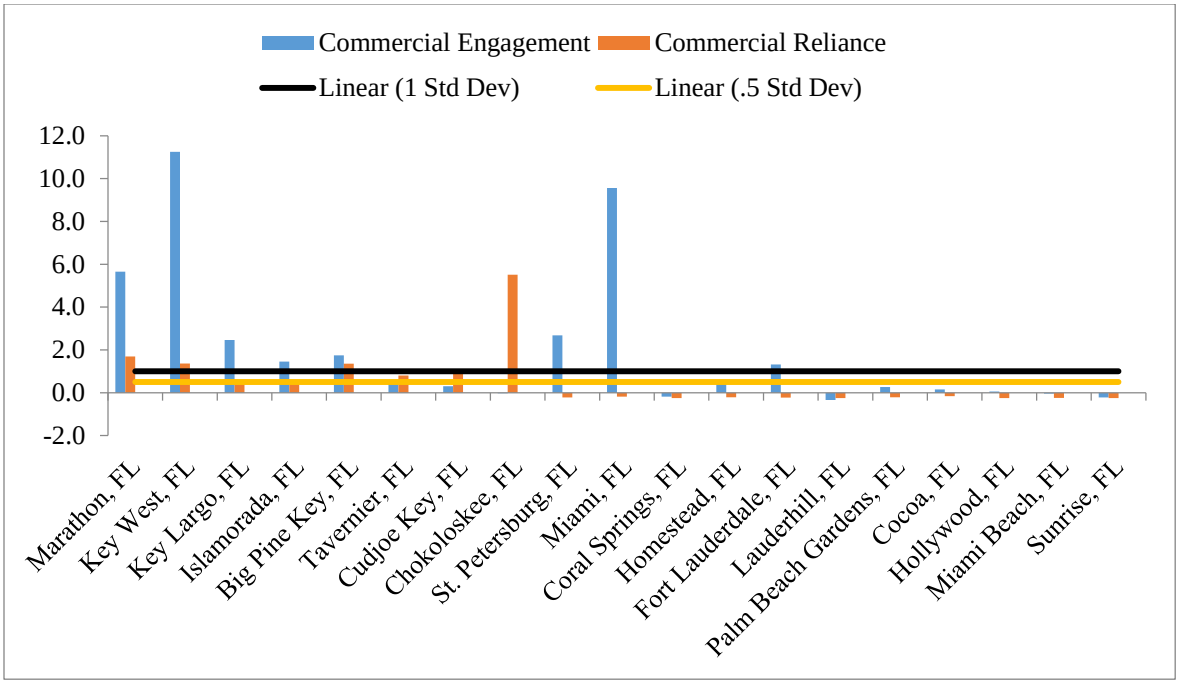

Figure 3.5.1.3. Top Gulf and South Atlantic spiny lobster communities' commercial engagement and reliance.
Source: SERO, Social indicators database (2012).

Recreational Communities

As of March 24, 2017, a total of 94,040 Florida state-licensed recreational spiny lobster permits (includes charter boat permits, charter captain permits, recreational vessel permits, non-resident annual permits, resident annual permits, and resident five year permits) were issued (FWC). The majority of Florida state-issued recreational spiny lobster permits are held by residents of Florida (approximately 91%, FWC), and all top communities are located in Florida (Table 3.5.1.1). Residents of Miami hold the most recreational spiny lobster permits (7.8%), followed by Tampa (2.1%), Key West (2%), and Naples (2%, Table 3.5.1.1).

The analysis described above for examining recreational engagement and reliance was applied to the 20 communities with the most Florida recreational spiny lobster permits. Two thresholds of 1.5 standard deviation above the mean were plotted to help determine a threshold for significance. The primary community that demonstrates high levels of both commercial engagement and reliance is Key West, Florida (Figure 3.5.1.4).

Table 3.5.1.1. Top twenty communities by number of Florida recreational spiny lobster permits.

State	Community	Number of Licenses
FL	Miami	7294
FL	Tampa	1958
FL	Key West	1850
FL	Naples	1840
FL	Hialeah	1607
FL	Jacksonville	1552
FL	Orlando	1433
FL	West Palm Beach	1385
FL	Jupiter	1358
FL	Homestead	1300
FL	Fort Myers	1296
FL	St. Petersburg	1229
FL	Fort Lauderdale	1185
FL	Boca Raton	1160
FL	Port St. Lucie	1120
FL	Cape Coral	1096
FL	Key Largo	1095
FL	Stuart	1082
FL	Sarasota	996
FL	Pompano Beach	988

Source: FWC, March 24, 2017.

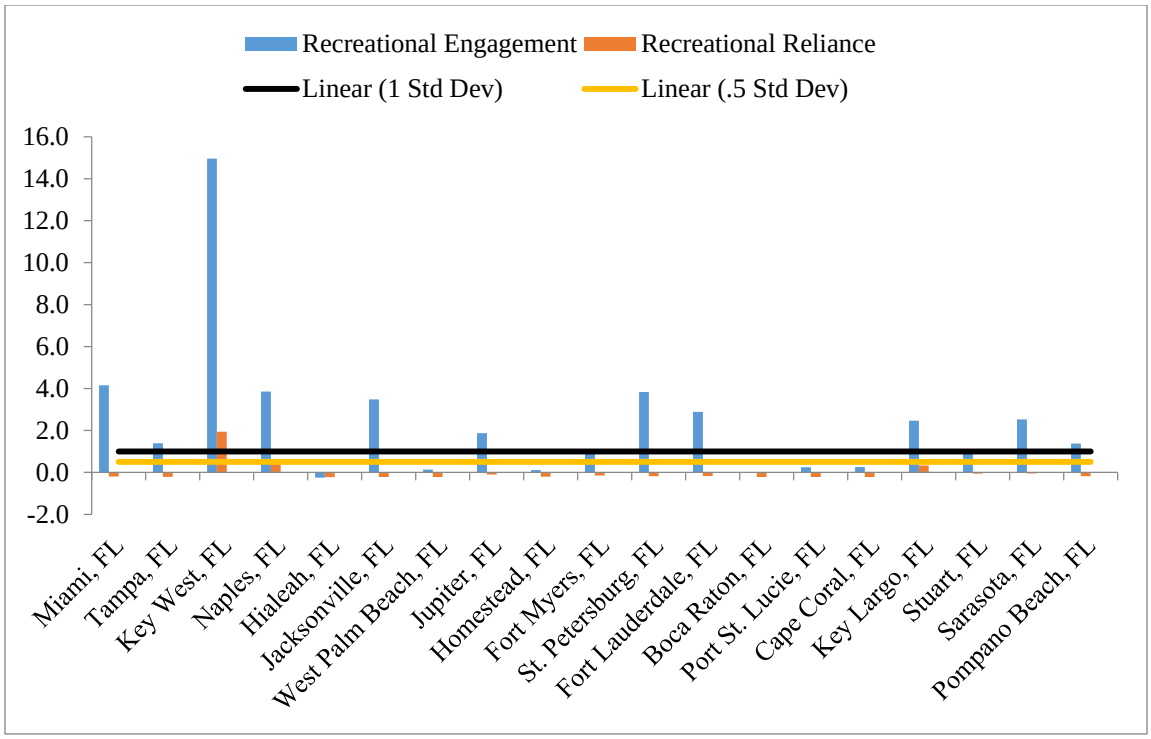

Figure 3.5.1.4. Top twenty spiny lobster communities' recreational engagement and reliance.
Source: SERO, Social indicators database (2012).

3.5.2 Environmental Justice Considerations

Executive Order (E.O) 12898 requires federal agencies conduct their programs, policies, and activities in a manner to ensure individuals or populations are not excluded from participation in, or denied the benefits of, or subjected to discrimination because of their race, color, or national origin. In addition, and specifically with respect to subsistence consumption of fish and wildlife, federal agencies are required to collect, maintain, and analyze information on the consumption patterns of populations who principally rely on fish and/or wildlife for subsistence. The main focus of Executive Order 12898 is to consider "the disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States and its territories…" This executive order is generally referred to as environmental justice (EJ).

Commercial and recreational fishermen and associated industries could be impacted by the proposed actions. However, information on the race and income status for groups at the different participation levels (individual fishermen and crew) is not available. Although information is available concerning communities overall status with regard to minorities and poverty (e.g., census data), such information is not available specific to fishermen and those involved in the industries and activities, themselves. To help assess whether any environmental justice concerns arise from the actions in this amendment, a suite of indices were created to examine the social vulnerability of coastal communities. The three indices are poverty, population composition, and personal disruptions. The variables included in each of these indices have been identified through the literature as being important components that contribute to a community's

vulnerability. Indicators such as increased poverty rates for different groups, more single female-headed households and households with children under the age of five, disruptions such as higher separation rates, higher crime rates, and unemployment all are signs of populations experiencing vulnerabilities. Again, for those communities that exceed the threshold it would be expected that they would exhibit vulnerabilities to sudden changes or social disruption that might accrue from regulatory change.

Figures 3.5.2.1. and 3.5.2.2 provide the social vulnerability of the top commercial and recreational communities. Several communities exceed the threshold of 0.5 standard deviation for at least one of the social vulnerability indices: Miami, Coral Springs, Homestead, Fort Lauderdale, Lauderhill, Cocoa, Hollywood, Miami Beach, Sunrise, Tampa, Hialeah, West Palm Beach, Fort Myers, Stuart, Sarasota, and Pompano Beach, Florida. The communities of Miami, Homestead, Fort Lauderdale, Lauderhill, Cocoa, Tampa, Hialeah, West Palm Beach, Fort Myers, and Pompano Beach, Florida exceed the threshold for all three social vulnerability indices. These communities have substantial vulnerabilities and may be susceptible to further effects from any regulatory changes depending upon the direction and extent of that change.

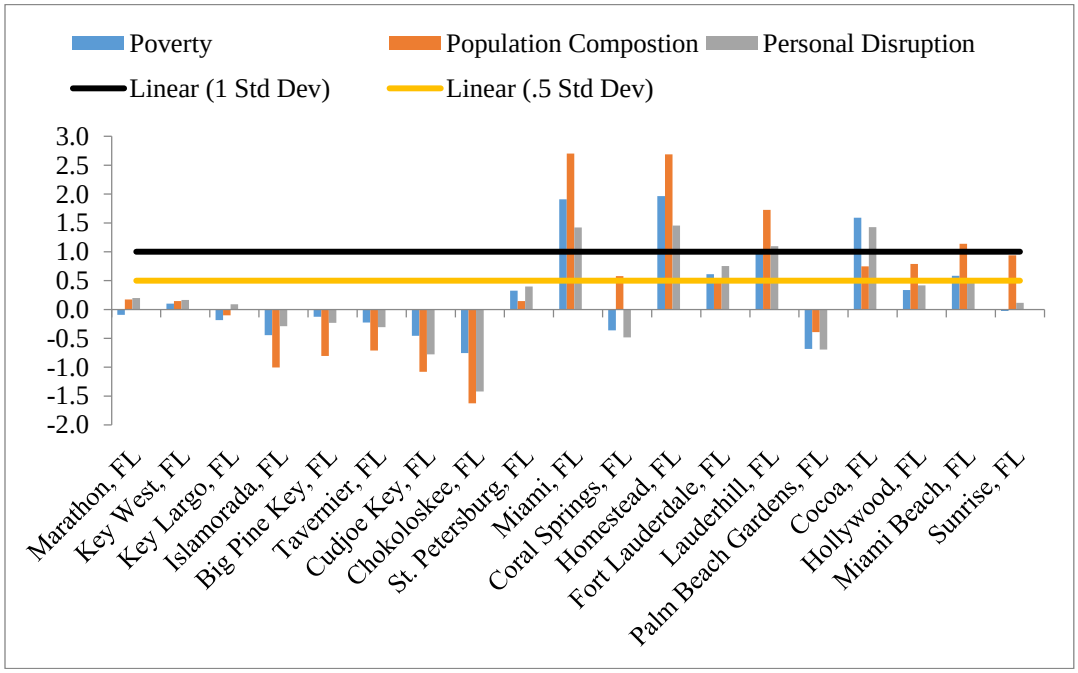

Figure 3.5.2.1. Social vulnerability indices for top spiny lobster commercial fishing communities.
Source: SERO, Social indicators database (2012).

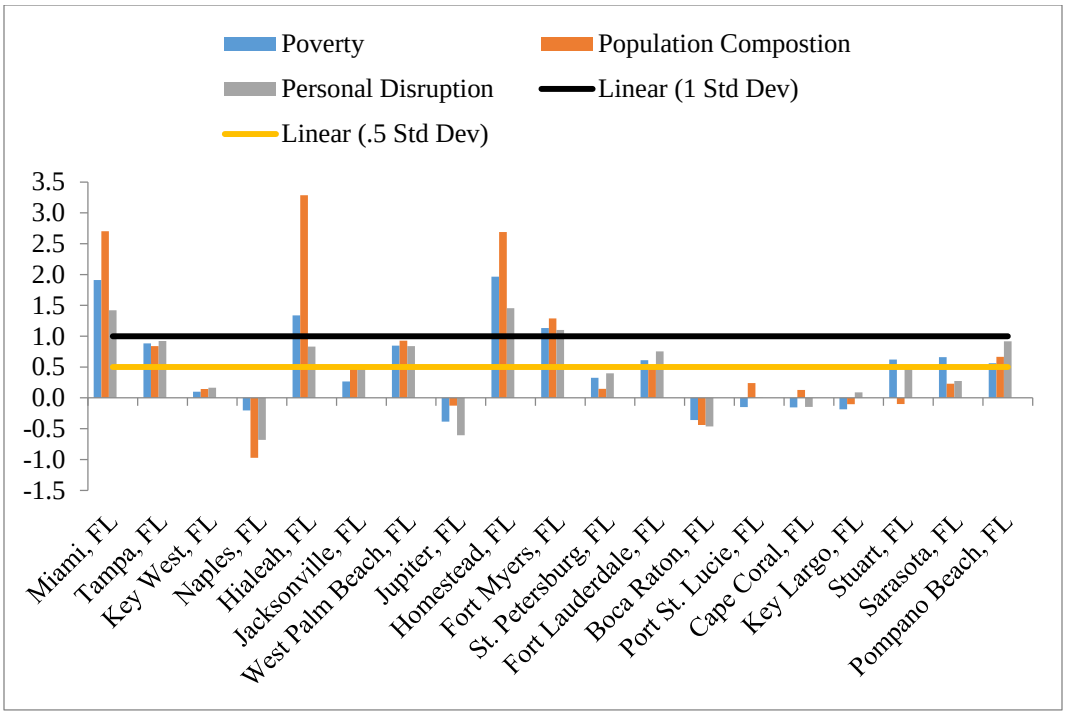

Figure 3.5.2.2. Social vulnerability indices for top spiny lobster recreational fishing communities.
Source: SERO, Social indicators database (2012).

People in these communities may be affected by fishing regulations in two ways: participation and employment. Although these communities may have the greatest potential for EJ concerns, no data are available on the race and income status for those involved in the local fishing industry (employment), or for their dependence on spiny lobster specifically (participation). Although no EJ issues have been identified, the absence of potential EJ concerns cannot be assumed.

3.6 Description of the Administrative Environment

3.6.1 Federal Fishery Management

Federal fishery management is conducted under the authority of the Magnuson-Stevens Act, originally enacted in 1976. 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 US anadromous species and continental shelf resources that occur beyond the EEZ.

Responsibility for federal fishery management decision-making is divided between the U.S. Secretary of Commerce (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 collecting and providing the data necessary for the councils to prepare fishery management plans, and 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. In most cases, the Secretary has delegated this authority to National Oceanic and Atmospheric Administration's (NOAA) NMFS.

The Gulf 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 the states of Florida and Texas, and the three-mile seaward boundary of the states of Alabama, Mississippi, and Louisiana. The Gulf Council consists of 17 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. Non-voting members include representatives of the U.S. Fish and Wildlife Service, U.S. Coast Guard (USCG), and Gulf States Marine Fisheries Commission (GSMFC).

The South Atlantic Council is responsible for conservation and management of fishery resources in federal waters of the U.S. South Atlantic. These waters extend from 3 to 200 miles offshore from the seaward boundary of the states of North Carolina, South Carolina, Georgia, and east Florida to Key West. The South Atlantic Council has 13 voting members: one from NMFS; one each from the state fishery agencies of North Carolina, South Carolina, Georgia, and Florida; and eight public members appointed by the Secretary. Non-voting members include representatives of the U.S. Fish and Wildlife Service, USCG, and Atlantic States Marine Fisheries Commission (ASMFC).

The Councils uses their Scientific and Statistical Committee to review data and science used in assessments and fishery management plans/amendments. Regulations contained within FMPs are enforced through actions of the NMFS' Office for Law Enforcement, the USCG, and various state authorities.

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 and litigation, are open to the public. The regulatory process is also in accordance with the Administrative Procedure 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 NMFS' Office for Law Enforcement, the USCG, and various state authorities. To better coordinate enforcement activities, federal and state enforcement agencies have developed cooperative agreements to enforce the Magnuson-Stevens Act.

3.6.2 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. Each of the states exercises legislative and regulatory authority over their state's

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.

The states are also involved through the GSMFC and ASMFC in management of marine fisheries. These commissions were created to coordinate state regulations and develop management plans for interstate fisheries. NMFS' 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 GSMFC and ASMFC to develop and implement cooperative State-Federal fisheries regulations.

More information about these 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
Georgia Department of Natural Resources, Coastal Resources Division http://crd.dnr.state.ga.us/
South Carolina Department of Natural Resources http://www.dnr.sc.gov/
North Carolina Department of Environmental and Natural Resources
http://portal.ncdenr.org/web/guest/

CHAPTER 4. ENVIRONMENTAL CONSEQUENCES

4.1 Action 1.1: Maximum Sustainable Yield (MSY) and Overfishing Threshold (Maximum Fishing Mortality Threshold [MFMT])

Alternative 1: No Action - The MSY proxy and MFMT are equal to the previous overfishing limit (OFL) as set by the Gulf and South Atlantic Councils' Scientific and Statistical Committees (SSCs) using the mean landings from the years 2000/2001-2009/2010 plus two standard deviations (7.9 million pounds (mp)).

Preferred Alternative 2: The MSY proxy and MFMT will be equal to the revised OFL as recommended by the Gulf and South Atlantic Councils' SSCs using the mean landings from the years 1991/1992- 2015/2016 plus two standard deviations (10.46 mp).

4.1.1 Direct and Indirect Effects on the Physical and Biological Environments

The primary gear used in commercial fishing for spiny lobster is trap gear. Additional commercial landings are from diving and bully net, but these landings only account for a small percentage of the overall harvest. Diving accounts for the majority of the recreational harvest. Marine mammals and sea turtles can become entangled in trap line. Studies have shown that buoys and lines, attached or separated, can present multiple entanglement issues with habitat or protected species (Adimey et al, 2014; Knowlton et al, 2012, 2016). Trap gear has the potential to become an entanglement issue or to ghost fish when a trap is "lost." Each individual gear has a small footprint, and thus only a small potential for impact, but the cumulative impact of the entire commercial fishing sector results in a large amount of gear being placed in the water, increasing the potential for impact. These negative biological impacts could increase (if effort increases) or decrease (if effort decreases).

Buoys and lines, attached or separated, can present multiple entanglement issues with habitat or protected species (Adimey et al, 2014; Knowlton et al, 2012, 2016). In a study from 1997-2009, trap pot gear accounted for 18.2% of fishery gear stranding interactions with bottlenose dolphins, Florida manatees, and sea turtles in Florida (Adimey et al. 2014). North Atlantic right whales may be found seasonally in the Councils' jurisdictions from November 1 through April 30 (NMFS 2008; SAFMC 2016). Currently, spiny lobster trap gear is allowed during the regular spiny lobster season from August 6 to March 31.

Traps can have negative effects on essential fish habitat due to them lying on the benthos while either in use or as derelict gear. While traps are typically weighted with cement, storms can carry them long distances thereby damaging important seagrass or coral reef habitat (Uhrin 2016). Over the next 60 years, if fishing effort remains as-is in the Florida Keys, hurricane intensification could generate over 6.5 million lost traps on the seafloor creating the potential for more than 3 million square meters of injured habitat (Uhrin 2016). Ghost traps in the Florida Keys are responsible for the loss of approximately 637,622 lobsters annually (Butler and

Matthews 2015). There are approximately 85,000 ghost traps believed to reside on the sea floor (Uhrin et al. 2014).

Traps impact species other than spiny lobsters. Fish, crabs, and other invertebrates may be captured as bycatch. However, in the recreational fishery bycatch primarily consists of undersized spiny lobsters. Because the gear types used by SCUBA divers and snorkelers targeting spiny lobster are considered highly selective, very little bycatch of non-target species is expected in the recreational sector of the spiny lobster fishery.

This action is not expected to change the manner in which the fishery is conducted, except to allow greater harvest by both the commercial and recreational sectors. A higher OFL is not likely to increase the overall effects to the physical environment as traps are currently under a passive reduction program, and the number of traps cannot increase. **Preferred Alternative 2**, considered in the context of the fishery as a whole, would not be expected to have an adverse impact on essential fish habitat (EFH) outside of existing impacts to EFH that are caused by the fishery.

Under **Alternative 1,** (No Action) the biological reference points for OFL, MSY, and MFMT would be set equal to each other and at a level that came close to being exceeded in the 2015/2016 fishing year and was exceeded in the 2013/2014 fishing year (OFL=MSY=MFMT=7.9 mp). Exceeding the OFL would lead the spiny lobster stock to be considered to be undergoing overfishing. This may happen even though juvenile spiny lobster that settle in south Florida have a high probability of recruiting from several spawning populations throughout the greater Caribbean and are not locally self-recruited.

Preferred Alternative 2 would modify the years in the calculation to include a larger time span, therefore incorporating high and low landings years and raising the OFL to 10.46 mp. The MSY proxy and MFMT would be set equal to the OFL, which is consistent with the method used to set these biological reference points in Amendment 10 (GMFMC/SAFMC 2011). By incorporating the longer time period and also including the most recent four years, the MSY proxy and MFMT are expected to better capture the dynamics of the fishery, which are based on factors beyond biology and harvest. Spiny lobster were not undergoing overfishing based on the MFMT proxy definition of $F_{20\%}$ static spawning potential ratio in either the benchmark or update assessments, but the overfished status could not be evaluated without a pan-Caribbean wide stock assessment (SEDAR 8 2005; 2010 Update Assessment).

Indirect effects of **Alternatives 1** and **Preferred Alternative 2** on the ecological environment are not well understood. Currently, the spiny lobster fishery has a seasonal closure during peak spawning time. If harvest increased under **Preferred Alternative 2**, there possibly would be less spawning females available locally. Because research indicates that most lobster in U.S. waters are not locally self-recruited (Hunt et al. 2009), it is unlikely that the change in management benchmarks under **Preferred Alternative 2** would have a negative biological effect on the spiny lobster stock. Implications for other areas where local spawning populations recruit to are unknown. Thus, the ecological effects on the spiny lobster stock under **Alternative 1** and **Preferred Alternative 2** are expected to be similar.

The effects of the currently authorized fishery were analyzed on August 27, 2009, when the Protected Resources Division issued a biological opinion, which concluded that the continued operation of the Gulf of Mexico/South Atlantic spiny lobster fishery is not likely to jeopardize the continued existence of green, hawksbill, Kemp's ridley, leatherback, or loggerhead sea turtles, nor the continued existence of smalltooth sawfish or *Acropora* species (NMFS 2009).

The proposed action relates to the harvest of an indigenous species in the Gulf of Mexico (Gulf) and South Atlantic, and the activity being altered does not itself introduce non-indigenous species, and is not reasonably expected to facilitate the spread of such species through depressing the populations of native species. Additionally, it does not propose any activity, such as increased ballast water discharge from foreign vessels, which is associated with the introduction or spread of non-indigenous species.

4.1.2 Direct and Indirect Effects on the Economic Environment

This action considers using a longer timeframe for the MSY proxy and MFMT for spiny lobster. **Alternative 1** (No Action) would continue to use a MSY proxy and MFMT based on the mean landings from the years 2000/2001-2009-2010 plus two standard deviations (7.9 mp), while **Preferred Alternative 2** would use a MSY proxy and MFMT based on the mean landings from 1991/1992-2015/2016 plus two standard deviations (10.46 mp). While the decision to use a longer time series for determining the MSY proxy and MFMT is not expected to result in direct economic effects, indirect economic effects would be anticipated. The longer time series is expected to provide a better overview of the dynamics of the spiny lobster fishery; if the OFL is a better reflection of the stock, then the possibility of a management response due to the OFL being exceeded would be reduced. Management responses could translate to economic losses to the fishing sectors. While the indirect economic effects from using a longer time frame cannot be quantified, **Preferred Alternative 2** is expected to yield greater economic benefits than **Alternative 1** (No Action).

4.1.3 Direct and Indirect Effects on the Social Environment

Social effects of management benchmarks such as MSY and MFMT for a stock would be associated with both the biological and economic effects of setting the values. If the reference point, which is OFL for spiny lobster, is not accurately representing the stock status using the most recent scientific recommendations, the outcomes of the "overfishing" designation when overfishing is not occurring can have negative long and short-term social effects associated with restricted or no access to the resource. Conversely, if an inaccurate proxy results in a stock designated as not experiencing overfishing when overfishing *is* occurring, the fishing fleets, associated businesses and communities could be negatively impacted in the long term due to decline in the stock and negative broader biological impacts of overfishing. Lastly, an inaccurate proxy that causes a status to fluctuate between "experiencing overfishing" and "not experiencing overfishing" could have negative effects on fishermen by requiring changes in harvest regulations. This could negatively affect stability and planning for fishing businesses, in

addition to fishing opportunities for recreational fishermen, due to inconsistent access to the resource. Although for some fishermen, any access to a stock would be beneficial, the positive effects of consistency in regulations (even if access is restricted) and stability the fishery would also be expected from a more fixed designation as overfished or not overfished.

Under all alternatives, fishermen could be affected by future restricted access to spiny lobster due to an overfishing designation, which could have negative effects on associated fishing businesses and communities. Setting the MSY and MFMT to incorporate the best scientific information available (**Preferred Alternative 2**) is expected to contribute to achieving management goals and minimizing the risk of overfishing, resulting in greater expected long-term benefits to the commercial fleet and recreational fishermen than under **Alternative 1** (No Action).

4.1.4 Direct and Indirect Effects on the Administrative Environment

Regulations needed to manage the spiny lobster fishery would remain unchanged regardless if the MSY proxy and MFMT are set equal to the revised OFL. **Preferred Alternative 2** is not expected to change the effects on the administrative environment from status quo, **Alternative 1** (No Action). National Marine Fisheries Service (NMFS) law enforcement, in cooperation with state agencies, would continue to monitor regulatory compliance with existing regulations and NMFS would continue to monitor both recreational and commercial landings to determine if landings are meeting or exceeding specified catch levels.

4.2 Action 1.2: Modify the Annual Catch Limit (ACL) and Annual Catch Target (ACT) for Spiny Lobster

Alternative 1: No Action – The current ACL is equal to the acceptable biological catch (ABC) recommended by the Gulf and South Atlantic Councils' SSCs using the mean landings from the years 2000/2001-2009/2010 plus 1.5 standard deviations (7.32 mp). The ACT is 90% of the ACL (6.59 mp).

Preferred Alternative 2: The ACL is equal to the ABC as recommended by the Gulf and South Atlantic Councils' SSCs using the mean landings from the years 1991/1992-2015/2016 plus 1.5 standard deviations (9.6 mp). The ACT is 90% of the new ACL (8.64 mp).

***Note: A review panel should be convened if there are two consecutive years of low landings, i.e., landings below 5.3 mp; this will *NOT* replace the existing accountability measure (AM).**

4.2.1 Direct and Indirect Effects on the Physical and Biological Environments

Alternative 1 (No Action) creates no additional direct or indirect effects on the physical or biological environments because it maintains the status quo. Commercial trap fishing is the primary fishing method of concern regarding impacts to the physical environment. Increasing the ACL/ACT based on a longer span of historical landing years (**Preferred Alternative 2**) is unlikely to have an impact on the physical environment because there is already a limit on the number of traps which continues to decrease through a passive reduction program managed by the state of Florida. Therefore, unless the state increases the number of trap tags it distributes, the number of traps could not increase even if more landings were allowed. The proposed ACT in **Preferred Alternative 2** is higher than the last 25-year average and has only been exceeded six times in the last 25 years (Figure 4.2.1.1). As with the physical environment, traps are the fishing method of greatest concern for the biological environment, and affect species other than lobsters. Fish, crabs, and other invertebrates may be captured as bycatch. Marine mammals and sea turtles can become entangled in trap line. Studies have shown that buoys and lines, attached or separated, can present multiple entanglement issues with habitat or protected species (Adimey et al. 2014; Knowlton et al. 2012, 2016). These negative biological impacts could increase (if effort increases) or decrease (if effort decreases); however, effort is not expected to increase. Current effort is limited by the number of trap tags issued by Florida, commercial and recreational bag limits, and the length of the fishing season. Although fishers could fish more often and fish during a longer part of the season to increase effort, they presumably are already fishing at the level they desire because regulations do not prohibit such increased effort.

This action does not change how the fishery is prosecuted; it is setting a management benchmark to best reflect the dynamics of the stock. **Preferred Alternative 2** extends the time series used to define the ACL/ACT more accurately captures what are likely normal fluctuations in stock

abundance and does not result in direct adverse impacts. If internal recruitment is occurring, increasing the ACL/ACT could have a negative impacts to the spiny lobster population and associated habitat if fishing effort increases or Florida issues more trap permits. Additionally, spiny lobster make their homes in sheltered regions of coral reefs; thus, if effort were to increase, there could be negative impacts to these habitats. However, negative effects on the spiny lobster are not expected as effort is not expected to increase, and Florida is not considering an increase to the number of allowable traps. As such, it is unlikely to change effort in the fishery from what it currently is experiencing under **Alternative 1** (No Action), and **Preferred Alternative 2** is, therefore, unlikely to have negative effects on the physical and ecological environment.

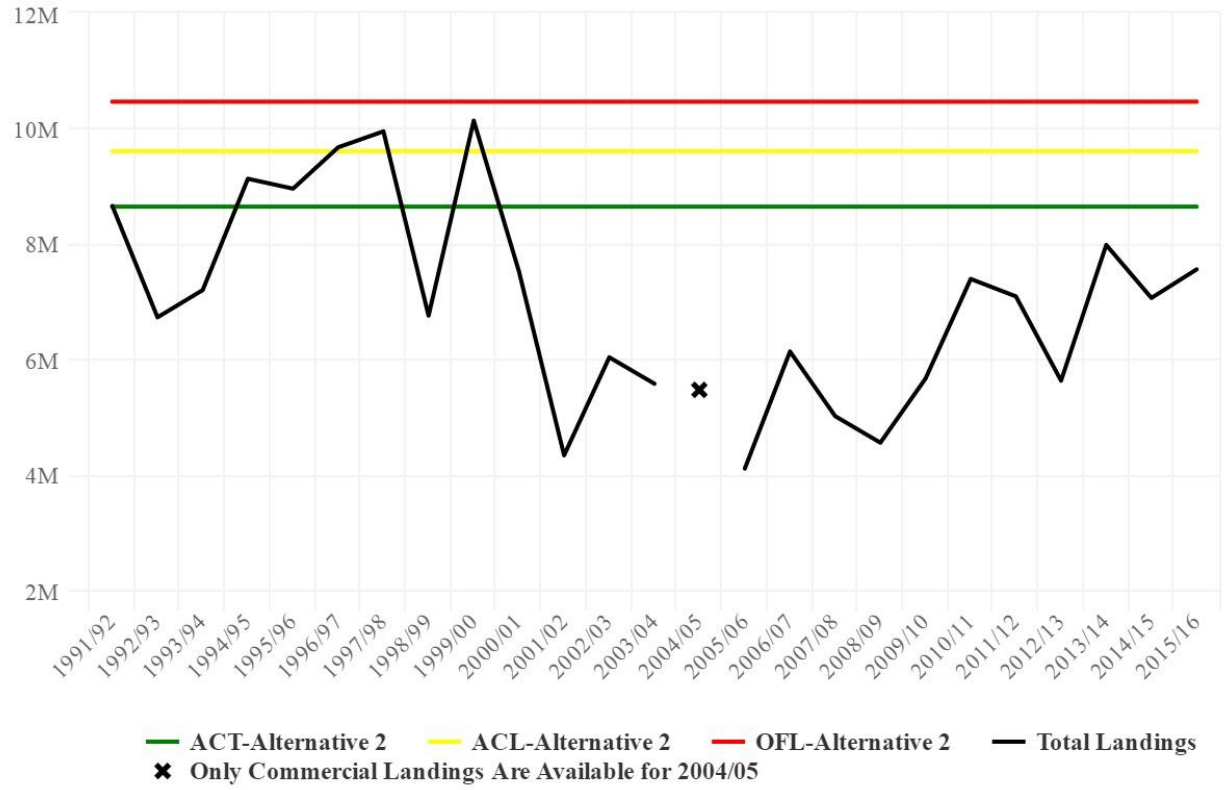

Figure 4.2.1.1 Caribbean spiny lobster landings from 1991/92 through 2015/16 with lines indicating green yellow and red lines indicating the ACT, ACL, and OFL calculated for **Preferred Alternative 2.** In the 2004/05 fishing year, no recreational surveys were conducted due to an active hurricane season; only the commercial landings are reflected in the graph for that year.

4.2.2 Direct and Indirect Effects on the Economic Environment

This action considers modifying the ACL for spiny lobster by expanding the timeframe on which it is based; this would, in turn, affect the ACT as it is calculated to be 90% of the ACL. **Alternative 1** (No Action) would retain the current ACL at 7.32 million pounds (mp), while

Preferred Alternative 2 would result in an increased ACL. The potential economic impacts of these alternatives are calculated for both the commercial and recreational sectors and are examined individually by sector. Table 4.2.3.1 displays the expected annual commercial and recreational sector landings under **Alternative 1** (No Action) and **Preferred Alternative 2**, with the commercial sector's landings additionally subdivided geographically into west and east Florida. This was calculated using a 21.59% recreational, 78.41% commercial split based on the landings by sector during the most recent five fishing years (2011/2012-2015/2016); a 91.4% west Florida/8.6% east Florida split was calculated based on landings during the same timeframe. These landings are those that would be expected if effort could increase; however, the number of traps is restricted.

Table 4.2.3.1. Expected annual recreational and commercial sector landings from the spiny lobster ACL under each alternative.

		Alt. 1 (6.59mp ACL)	Alt. 2 (8.64mp ACL)
Recreational sector		1.4225 mp	1.8650 mp
Commercial sector		5.1675 mp	6.7750 mp
	West Florida	4.7231 mp	6.1923 mp
	East Florida	0.4444 mp	0.5826 mp

Table 4.2.3.2 shows the expected annual ex-vessel commercial revenue for the industry between each alternative and **Alternative 1** (No Action), in nominal value, as well as the difference in expected annual revenue between **Alternatives 1** (No Action) and **Preferred Alternative 2**. The ex-vessel commercial revenue was calculated by multiplying the expected commercial landings for west and east Florida from Table 4.2.3.1 by $10.69 and $9.55[1] respectively, which are the average commercial dockside prices per pound of spiny lobster from 2014 updated to 2016 prices.

Alternative 1 (No Action) would maintain the current ACL of 7.32 mp and the current ACT of 6.59 mp, which is 90% of the ACL. **Alternative 1** (No Action) would not be expected to result in any additional direct economic effects to the commercial sector. **Preferred Alternative 2** would result in an increase to the ACL to 9.6 mp and would subsequently increase the ACT to 8.64 mp. If commercial landings increase to meet the new ACL, **Preferred Alternative 2** would be expected to result in an increased annual ex-vessel commercial revenue of $71,760,251. As displayed in Table 4.2.3.2, $66,195,965 would be the expected increase in west Florida, and $5,564,286 would be the expected increase in east Florida.

Table 4.2.3.2. Expected annual ex-vessel commercial revenue and difference in expected annual ex-vessel commercial revenue from spiny lobster ACL for Alternatives 1-2, in nominal value.

	Alt. 1 (No Action) (6.59mp ACL)	Alt. 2 (8.64mp ACL)	Difference in revenue (Alt. 2 – Alt. 1)
Commercial sector	$54,733,803	$71,760,251	$17,026,448

[1] Source: NMFS FEUS 2014

	West Florida	$50,489,747	$66,195,965	$15,706,219
	East Florida	$4,244,056	$5,564,286	$1,320,230

For the recreational sector, the consumer surplus (CS) is calculated by first converting the expected landings in Table 4.2.3.1 to a number of spiny lobster by dividing through by 1.1 pounds as the average weight in pounds for recreational spiny lobster (T. Matthews, Florida Wildlife Commission, pers. comm.). Then, the number of spiny lobster are multiplied by $20.00, the CS value for an additional spiny lobster kept on a trip in 2016 dollars (D. Carter, NOAA Fisheries, pers. comm.). Table 4.2.3.3 shows the expected CS with the two alternatives.

Table 4.2.3.3. Expected annual CS and difference in expected annual CS from spiny lobster ACL for Alternatives 1-2, in nominal value.

	Alt. 1 (No Action) **(6.59 mp ACL)**	**Alt. 2 (8.64 mp ACL)**	**Difference in revenue (Alt. 2 – Alt. 1)**
Recreational sector	$25,863,895	$33,909,568	$8,045,673

Alternative 1 (No Action) would maintain the current ACL of 7.32 mp and the current ACT of 6.59 mp, which is 90% of the ACL. **Alternative 1** (No Action) would not be expected to result in any additional direct economic effects to the recreational sector. **Preferred Alternative 2** would result in an increase to the ACL to 9.6 mp and would subsequently increase the ACT to 8.64 mp. If recreational landings increase to meet the new ACL, **Preferred Alternative 2** would be expected to result in an increased annual CS of $33,909,568. As displayed in Table 4.2.3.3, $8,045,673 would be the estimated additional annual CS from **Preferred Alternative 2** compared to **Alternative 1** (No Action).

4.2.3 Direct and Indirect Effects on the Social Environment

Section 3.3 describes communities that could be affected by changes to spiny lobster management, particularly in the Florida Keys. Spiny lobster is an important commercial species for Florida, and is also a popular recreational species.

In general, the effects on fishermen of changes to the ACL and ACT would be associated with the level of risk that landings would exceed the ACT and require corrective action by the Councils, which could affect access to spiny lobster. Currently, there is no accountability measure that directly restricts access to spiny lobster (e.g., an in-season closure when landings are expected to reach the ACL). However, if landings exceed the ACL for several years, the Councils could be required to consider actions to slow and reduce harvest. **Preferred Alternative 2** would result in a higher ACL and ACT than **Alternative 1** (No Action), and the higher ACL and ACT are expected to be more beneficial to fishermen and Florida Keys communities because this alternative would reduce the likelihood of exceeding the ACL and ACT, and triggering corrective action that would restrict access to spiny lobster.

4.2.4 Direct and Indirect Effects on the Administrative Environment

If **Alternative 1** (No Action) is selected, there could be additional administrative burdens because it would be more likely the ACT and ACL would be exceeded. Currently, if the ACT is met, a review panel is required to be convened. And if the ACL is exceeded twice in a four year period, the series of ACLs and accountability measures (AMs) needs to be reevaluated (thus the rationale for this amendment). The review panel and the Councils' scientific advisory bodies both determined that there was a need to reevaluate management benchmarks in the fishery based on new information.

Regulations needed to manage the spiny lobster fishery would remain unchanged regardless of the ACL. NMFS law enforcement, in cooperation with state agencies, would continue to monitor regulatory compliance with existing regulations and NMFS would continue to monitor both recreational and commercial landings to determine if landings are meeting or exceeding specified catch levels. Therefore **Alternative 1** (No Action) would have a greater burden to the administrative environment than **Preferred Alternative 2.**

4.3 Action 2: Prohibit the Use of Traps for Recreational Harvest of Spiny Lobster in the South Atlantic Exclusive Economic Zone (EEZ)

Alternative 1: No Action – Traps are prohibited gear for recreational harvest of spiny lobster in the EEZ off Florida waters, but are not prohibited for recreational harvest of spiny lobster in other parts of the South Atlantic EEZ. Traps must comply with requirements for vessel and gear identification, trap construction, and harvest limits as specified by 50 CFR Part 622.

Preferred Alternative 2: Prohibit the use of traps for recreational harvest of spiny lobster in the South Atlantic EEZ.

4.3.1 Direct and Indirect Effects on the Physical and Biological Environments

Alternative 1 (No Action) would continue to allow recreational harvest of spiny lobster using traps in the EEZ off North Carolina, South Carolina, and Georgia, as specified under the regulations at 50 CFR 622 (also summarized in Table 2.2.1). Included among these regulations is the current bag limit of two spiny lobsters per person and no limit to the number of traps that could be used for recreational harvest using traps. Recreational landings and effort data for spiny lobster north of Florida are not available. In the EEZ north of Florida, it is estimated that there is minimal recreational harvest of spiny lobster by divers. There has been one individual who expressed interest in using traps for recreational harvest, but at this time the individual has not deployed the traps. There are no other recreational fishermen known to be using traps to harvest spiny lobster. **Alternative 1** (No Action) traps would continue to be prohibited for recreational harvest in the EEZ off Florida. Recreational harvest in the EEZ off Florida is conducted by divers and nets.

As discussed in Section 4.1.1, trap gear has the potential to negatively affect the bottom substrate, entangle protected species, and continue ghost fishing when the trap is lost. **Preferred Alternative 2** would prohibit the use of traps for recreational harvest of spiny lobster in the entire EEZ off North Carolina, South Carolina, Georgia, in addition to Florida. Therefore, positive direct and indirect effects on the physical and biological environment could be expected under **Preferred Alternative 2** compared with **Alternative 1** (No Action) if recreational fishermen are currently using traps to harvest spiny lobster off the coasts of North Carolina, South Carolina, and Georgia. However, use of traps is considered to be very low in these areas.

Alternative 1 (No Action) would perpetuate the existing potential level of risk for interactions between Endangered Species Act (ESA)-listed species and the recreational fishery for spiny lobster. However, recreational fishing for spiny lobster in the EEZ off North Carolina, South Carolina, and Georgia is generally conducted by divers using SCUBA. **Preferred Alternative 2** would be unlikely to alter fishing behavior in a way that would cause new adverse effects to protected species. However, **Preferred Alternative 2** would ensure that no spiny lobster fishery trap gear is used anywhere in the U.S. EEZ (while fishers don't currently use the gear, under **Alternative 1** (No Action) they could potential decide to use it later unless **Preferred Alternative 2** is adopted). Furthermore, **Preferred Alternative 2** would potentially decrease the amount of vertical lines and buoys in the South Atlantic EEZ, and would therefore expected to be more biologically beneficial to ESA-listed sea turtles, fish, and marine mammals.

4.3.2 Direct and Indirect Effects on the Economic Environment

Recreational traps are not currently allowable gear to harvest spiny lobster in Florida state waters or in the EEZ off Florida (**Alternative 1** No Action). Therefore, prohibiting the use of traps for recreational harvest of spiny lobster would have no economic effect in this area (**Preferred Alternative 2**). In the EEZ north of Florida, there has been little interest expressed in using traps to recreationally harvest spiny lobster. While the actual effort is unknown, it is estimated that there is minimal or possibly no recreational use of traps to harvest spiny lobster currently in this section of the South Atlantic Region, with the exception of one person who expressed interest in using recreational traps but has not yet deployed the traps. As such, **Preferred Alternative 2** is expected to have negligible economic effects. If a limited number of traps are currently used recreationally, such a prohibition would render this gear unusable for spiny lobster, thereby, creating some costs for these fishery participants. Participants would still be able to access spiny lobster recreationally by hand-harvest while diving or occasionally by hook and line, thereby, preserving some of the potential consumer surplus obtained through the recreational harvest of spiny lobster in the South Atlantic EEZ.

Preferred Alternative 2 would potentially remove the potential for habitat damage and protected species interactions that may occur from the recreational use of lobster traps in the South Atlantic EEZ, thus producing some potential economic benefits. Protecting habitat that is important for fish species and their related fisheries helps preserve the economic benefits generated from those fisheries. Minimizing interactions with protected species not only reduces potential harm for the animals that may come into contact with the gear, but also may reduce the

likelihood of needing additional restrictive management measures in other related fisheries that can be implemented when such interactions are documented to occur. In doing so, this action may lower potential future costs to other fishery participants.

4.3.3 Direct and Indirect Effects on the Social Environment

The effects on fishermen of **Alternative 1** and **Preferred Alternative 2** are expected to be minimal or none. Although there was one individual from North Carolina interested in recreational traps in 2016, in general there has been little interest of fishermen in Georgia, South Carolina, and North Carolina to harvest spiny lobster with traps (commercial or recreational). It is likely that trap would not be an efficient gear type because spiny lobster are not common and very spread out in the area north of the Georgia/Florida line. The potential negative effects on habitat or protected species due to a trap, buoy or line would likely be greater than the benefits, because catch would probably be minimal. Spiny lobster landings from the EEZ off Georgia, South Carolina, and North Carolina are minimal, but most landings come from divers. Additionally, with the possession limit of two lobsters per person per trip, the trap gear would be inefficient for lobster harvest. There may be some social benefits associated with the biological benefits of reduced likelihood of habitat damage by traps under **Preferred Alternative 2.**

4.3.4 Direct and Indirect Effects on the Administrative Environment

Alternative 1 (No Action) would allow the use of unlimited traps for recreational harvest of spiny lobster in the EEZ off North Carolina, South Carolina, and Georgia. In 2016, interest was expressed from a recreational fisher to harvest spiny lobster using traps in the EEZ off North Carolina. This added to the administrative burden for management and law enforcement, such as assigning and enforcing a color code for the vessel and buoys, requirements for display of the state registration number on the vessel, traps, and buoys, etc. Under **Alternative 1** (No Action) these administrative burdens would continue to add to the logistical and economic costs of monitoring the EEZ off three states by law enforcement personnel for recreational trap compliance. Without a limit on the number of traps allowed recreationally, there would also be a higher chance for entanglement by protected species, which would further add to the administrative burden. **Preferred Alternative 2** would create a lower impact on the administrative environment than **Alternative 1** (No Action), because it would ease the burden on law enforcement officials to track compliance across the federal jurisdictional boundaries. **Preferred Alternative 2** would make regulations in the EEZ off North Carolina, South Carolina, and Georgia, consistent with current regulations in the EEZ off Florida. Therefore, the direct and indirect effects on the administrative environment under **Preferred Alternative 2** would be expected to be lower than **Alternative 1** (No Action).

4.4 Cumulative Effects

The cumulative effects to the spiny lobster fishery have been analyzed in Amendment 10 (GMFMC and SAFMC 2011) and are incorporated herein by reference. The analysis in Chapter 4 of this amendment concluded that the direct and indirect effects of these actions would be minimal. The impacts to the physical and biological environments are likely negligible for these actions. The impacts to the economic environment could be beneficial by increasing the allowable harvest. The impacts to the social environment would likely be minimal for these actions. The impacts to the administrative environment are also expected to be minimal. Cumulatively, the direct and indirect effects of these actions are likely to be minimal.

This framework action is not likely to result in significant effects when considered in combination with other relevant past, present, and reasonably foreseeable actions because it would not substantially alter the manner in which the spiny lobster fishery is prosecuted. Past actions are summarized in the History of Management in Section 1.3. Reasonably foreseeable regulatory actions are not expected to have significant cumulative effects.

There are several environmental considerations which may contribute to the cumulative effects including the PaV1 pathogenic virus, the Deepwater Horizon MC252 oil spill, tropical weather events, economic changes and potential climate change impacts. The impacts from these environmental influences are not necessarily quantifiable at this time; however, the potential effects are described below.

- A naturally occurring, pathogenic virus, PaV1, infects juvenile Caribbean spiny lobsters. This virus is lethal to lobsters. Infection is highest in smaller juveniles; mortality occurs after larval settlement but before recruitment to the fishery. PaV1 was first detected in the U.S. spiny lobster population around 1996. No evidence shows PaV1 has increased in prevalence or virulence since around 2000, so mortality from PaV1 may explain why landings declined beginning about that time while the post-larval recruitment index remained steady.

- The Deepwater Horizon MC252 oil spill affected more than one-third of the Gulf from western Louisiana east to the panhandle of Florida and south to the Campeche Bank in Mexico. The impacts of the oil spill on the physical and biological environment are expected to be significant and may be long-term. However, the oil remained outside most of the area where spiny lobsters are abundant. Oil on the surface has largely evaporated or been removed. Heavy use of dispersants resulted in oil suspended within the water column, in some cases even deeper than the location of the broken well head. Floating and suspended oil has washed onto shore in several areas of the Gulf as non-floating tar balls. Whereas suspended and floating oil degrade over time relatively quickly, tar balls are more persistent in the environment and can be transported hundreds of miles.
  It is unknown whether the impacts of the *Deepwater Horizon* MC252 oil spill affected south Florida where spiny lobster are harvested. Information on the

effects of the oil on the spiny lobster fishery is incomplete and unavailable at this time. Although not reported in the primary spiny lobster fishing area, there have been reports of increased incidences of diseased fish by some scientists that may be related to the spill; however, others have argued there is no baseline from which to judge the prevalence of disease, so no correlation can be conclusively determined. In a recent study, Weisberg et al. (2014) suggested the hydrocarbons associated with the *Deepwater Horizon* MC252 oil spill did transit onto the Florida shelf and may be associated with the occurrences of reef fish with lesions and other deformities. The Programmatic Damage Assessment and Restoration Plan (PDARP) for the Deepwater Horizon oil spill, outlines the extent and severity of injuries to the ecosystem and the toxicity impacts of exposure to various organisms (2016). The PDARP suggests that fish embryos and larvae were vulnerable to the exposure to oil causing developmental abnormalities, inhibited growth, decreased swimming ability, and additional negative impacts and increased mortality. The PDARP also assesses the effects of oil exposure on the benthic resources, water quality, nearshore marine ecosystem, benthic resources, birds, sea turtles, and marine mammals.

- The hurricane season is from June 1 to November 30, and accounts for 97% of all tropical activity affecting the Atlantic Basin (NOAA 2007). These storms, although unpredictable in their annual occurrence, can devastate areas when they occur. Direct losses to the fishing industry and businesses supporting fishing activities included: loss of vessels, loss of revenue due to cancelled fishing trips, and destruction of marinas and other fishery infrastructure (Walker et al. 2006). However, while these effects may be temporary, those fishing-related businesses whose profitability is marginal may go out of business if a hurricane strikes.

- The potential impacts of climate change affecting Gulf and South Atlantic fisheries are unclear. Climate change can impact marine ecosystems through ocean warming by increased thermal stratification, reduced upwelling, and 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 CO_2 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).

  There is a large and growing body of literature on past, present, and future impacts of global climate change induced by human activities. The Environmental Protection Agency's (EPA) climate change webpage (https://www.epa.gov/CLIMATECHANGE) provides basic background information on these and other measured or anticipated effects. In addition, the Intergovernmental Panel on Climate Change's Fourth Assessment Report (IPCC 2007) contains a compilation of scientific information on climate change and is incorporated herein by reference (http://www.ipcc.ch/publications_and_data/publications_and_data_reports.shtml).

Global climate change could have significant effects on Gulf and South Atlantic fisheries; however, the extent of these effects cannot be quantified at this time.

It is unclear how climate change would affect spiny lobster, and likely would affect species differently. Climate change can affect factors such as migration, range, larval and juvenile survival, prey availability, and susceptibility to predators. In addition, the distribution of native and exotic species may change with increased water temperature, along with the prevalence of disease in keystone animals such as corals and the occurrence and intensity of toxic algae blooms. Hollowed et al. (2013) provided a review of projected effects of climate change on marine fisheries and dependent communities. Integrating the potential effects of climate change into fisheries stock assessment is currently difficult due to differences in time scales (Hollowed et al. 2013). Fisheries stock assessments rarely project across a time period that would include detectable climate change effects.

The effects of the proposed actions are, and would continue to be, monitored through stock assessments and stock assessment updates, life history studies, economic and social analyses, and other scientific observations. In addition, monitoring and tracking the level of take of protected species by the spiny lobster fishery is imperative. The National Marine Fisheries Service (NMFS) must ensure that measures to monitor and report any sea turtle or smalltooth sawfish encounters, or any *Acropora* spp. interactions: 1) detect any adverse effects resulting from the spiny lobster fishery; 2) assess the actual level of incidental take in comparison with the anticipated incidental take; and 3) detect when the level of anticipated take is exceeded.

CHAPTER 5. REGULATORY IMPACT REVIEW

This section will be completed after the amendment is finalized

5.1 Introduction

5.2 Problems and Objectives

5.3 Description of the Fishery

5.4 Effects on Management Measures

5.5 Public and Private Costs of Regulations

5.6 Determination of Significant Regulatory Action

CHAPTER 6. REGULATORY FLEXIBILITY ACT 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 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 the alternatives contained in the fishery management plan (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 a regulatory flexibility analysis for each proposed rule. The regulatory flexibility analysis 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. The following regulatory flexibility analysis was conducted to determine if the proposed rule would have a significant economic impact on a substantial number of small entities or not.

6.2 Statement of the need for, objective of, and legal basis for the proposed rule.

The primary purpose and need, issues, problems, and objectives of the proposed action are presented in Section 1.2 and are incorporated herein by reference.

6.3 Identification of federal rules which may duplicate, overlap or conflict with the proposed rule.

No federal rules have been identified that duplicate, overlap or conflict with the proposed rule.

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

The rule concerns recreational and commercial fishing for spiny lobster in federal waters of the Gulf of Mexico (Gulf) and South Atlantic. Anglers are not considered small entities as that term is defined in 5 U.S.C. 601(6), whether fishing from for-hire, private, or leased vessels. Therefore, an estimate of the number of anglers directly affected by the rule is not provided here.

The rule would directly apply to businesses that operate in the commercial fishing industry (NAICS 11411) and particularly, those that operate commercial fishing vessels that harvest spiny lobster in federal waters of the Gulf and South Atlantic. Any commercial vessel that harvests spiny lobster in either the Gulf or South Atlantic exclusive economic zone (EEZ), except off Florida, must have a federal spiny lobster permit on board. In the EEZ off Florida, a commercial vessel must have either a federal spiny lobster permit or all required Florida licenses and certificates to harvest the species. Any vessel that harvests spiny lobster in the EEZ off Florida under the federal spiny lobster permit must land the species whole. Any vessel that separates the spiny lobster tail from a lobster caught in the EEZ must have a federal tailing permit on board, whether it has all required Florida licenses or not.

As of March 1, 2017, there are 185 spiny lobster and 210 spiny lobster tailing permits issued to a total of 272 vessels (Table 6.1). Approximately 45% of those vessels have both permits. These 272 vessels make up the federally permitted spiny lobster fleet. Approximately 75% of the permits are held by businesses in Florida, followed in turn by those in North Carolina with approximately 12%. Note that Florida businesses account for all but one of the vessels with only a tailing permit.

Table 6.1. Number of vessels with at least one federal spiny lobster permit by residence of business.

State	Number of vessels with 1 or more permits				Total Permits	Percent Permits
	Lobster only	Tailing only	Both	Total		
AL	6	1	3	10	13	3.3%
FL	41	86	85	212	297	75.2%
GA	1	0	2	3	5	1.3%
LA	2	0	0	2	2	0.5%
NC	7	0	20	27	47	11.9%
NJ	1	0	3	4	7	1.8%
NY	1	0	1	2	3	0.8%
SC	1	0	6	7	13	3.3%
TX	1	0	0	1	1	0.3%
VA	1	0	3	4	7	1.8%
Total	**62**	**87**	**123**	**272**	**395**	**100.0%**

Source: NMFS SERO Online List of Current Permit Holders as of March 1, 2017.

It is estimated that a total of 198 businesses hold all of the spiny lobster permits attached to the above 272 vessels. The individual businesses have from 1 to 11 vessels in the federally permit spiny lobster fleet (Table 6.2). Approximately 84% of the 198 businesses have only 1 vessel in the fleet, and collectively these businesses account for 61% of the 272 vessels that make up the fleet. Approximately 95% of the businesses have no more than 2 vessels in the fleet, while 3% have 6 or more vessels and collectively make up approximately 18% of the vessels in the fleet.

Table 6.2. Number of businesses by number of vessels with a federal spiny lobster permit.

Number		Percentage	
Vessels in Individual Fleet	**Businesses**	**All Vessels in Permitted Fleet**	**Businesses**
1	166	61.0%	83.8%
2	22	16.2%	11.1%
3	4	4.4%	2.0%
4	0	0.0%	0.0%
5	0	0.0%	0.0%
6 to 7	3	7.0%	1.5%
8 to 11	3	11.4%	1.5%
Total	**198**	**100.0%**	**100.0%**

Source: NMFS SERO Online List of Current Permit Holders as of March 1, 2017.

Many of the 198 businesses operate in multiple industries. Twenty of them have a dealer permit, which indicates those businesses operate in both the commercial fishing and fish/seafood merchant wholesalers (NAICS 424460) industries. Those 20 businesses have 48 of the vessels in the fleet. Also, it is expected that some of the businesses have at least one vessel with a federal for-hire fishing permit and operate in the for-hire fishing industry (NAICS 487210). It is expected that most to all of the businesses that harvest spiny lobster in the EEZ (with or without a federal permit) are small.

The affected small businesses can be differentiated by location. As stated in the Economic Description of the Fishery (section 3.3.3.2) and shown in Table 3.3.7, approximately 99% of commercial landings of spiny lobster occur in Florida. Hence, it is expected that almost all of the impacts of the rule will be on commercial fishing businesses located in Florida. Approximately 91% of Florida's landings are in Monroe County (Table 6.3).

Table 6.3. Pounds of spiny lobster landed in Florida and Monroe County.

Year	Pounds of Spiny Lobster Landed		
	FL	**Monroe County**	**Percent Monroe**
2010	5,764,712	5,213,953	90.4%
2011	5,815,019	5,291,541	91.0%
2012	4,106,666	3,757,977	91.5%
2013	6,094,446	5,585,684	91.7%
2014	5,582,553	5,026,016	90.0%
2015	5,930,768	5,439,742	91.7%
Average	**5,549,027**	**5,052,486**	**91.1%**

Source: FL FWCC, Commercial Fisheries Landings Summaries, March 7, 2017.

Three methods are primarily used to commercially harvest spiny lobster in coastal waters off Florida and they are trap-fishing, diving and bully-netting. Bully-netting is done in shallow waters, and therefore, those vessels and businesses that harvest the species solely by bully-netting are not expected to harvest the species in federal waters and be directly affected by the rule.

Approximately 26% of annual landings of spiny lobster derive from harvest of the species in federal waters (Table 3.3.16) and 99% of the harvest from federal waters is taken by traps (Table 3.3.17). Consequently, it is expected that the businesses that use traps to harvest spiny lobster in federal waters of the Gulf and/or South Atlantic would incur almost all to all of the impacts of the rule, and most operate in Monroe County.

Vessels without a federal permit that use traps to harvest spiny lobster in the EEZ off Florida are required to have a saltwater products license, restricted species endorsement, and a crawfish endorsement in addition to trap certificates and tags for each trap. Florida limits the number of spiny lobster traps to a maximum of 475,000, regardless of where the traps are set. In the most recent season, there were 650 crawfish endorsements in Monroe County. It is unknown how many of these endorsement holders also have a federal spiny lobster permit (whole or tailing).

In summary, it is expected that the small businesses that use traps to harvest spiny lobster in federal waters of the Gulf and/or South Atlantic would incur almost all to all of the economic impacts of the rule, if any, and most of these small businesses operate in Monroe County.

6.5 Description of the projected reporting, record-keeping and other compliance requirements of the proposed rule

The actions would not impose additional reporting or record-keeping requirements on small businesses.

Action 1.1 (**Preferred Alternative 2**) would revise the maximum sustainable yield (MSY) proxy and maximum fishing mortality threshold (MFMT). As such, Action 1 would have no direct impact on any small businesses, and any indirect impact is dependent on subsequent action.

Action 1.2 (**Preferred Alternative 2**) would revise the stock annual catch limit (ACL) and annual catch target (ACT). Since January 2012, the ACL and ACT for the entire stock has been 7.32 million and 6.59 million lbs ww, respectively (Amendment 10). Action 2 would increase the ACL to 9.60 million lbs and ACT to 8.64 million lbs. During the 2013/2014 and 2015/2016 seasons, combined commercial and recreational landings exceeded both the existing ACL and ACT (Table 3.3.18). Landings exceeded the ACT in 2014/2015, but not the ACL that season. In response to these overages, the Gulf and South Atlantic Councils, as required, convened a scientific panel to review the ACL and ACT, and determine if additional accountability measures (AMs) are needed. The panel determined no additional AMs were necessary, because Florida Fish and Wildlife Conservation Commission (FWC) largely limits landings by both restricting the maximum number of traps and imposing trip limits for the other primary gears.

Without AMs to either close the federal season early or otherwise limit commercial landings of spiny lobster taken from federal waters, **Preferred Alternative 2** and **Alternative 1** (No-Action Alternative) would have the same economic impacts on small businesses. Therefore, Action 1.2 would have no (additional) impact on small businesses.

Action 2 (**Preferred Alternative 2**) would prohibit the use of traps for recreational harvest of spiny lobster in the South Atlantic EEZ. As stated earlier, anglers are not considered small entities, and, as such, the impacts on them are neither described nor estimated for this analysis.

6.6 Significance of economic impacts on a substantial number of small entities

It is concluded that the rule would have no adverse or beneficial impacts on small businesses. Therefore, this rule would not have a significant economic impact on a substantial number of small entities under the RFA, 5 U.S.C. 601 et seq.

CHAPTER 7. LIST OF AGENCIES, ORGANIZATIONS, AND PERSONS CONSULTED

Preparers:

Name	Expertise	Responsibility	Agency
Morgan Kilgour	Fishery Biologist	Co-Team Lead – amendment development, analyses	GMFMC
Kari MacLauchlin	Anthropologist	Co-Team Lead – amendment development, analyses	SAFMC
Nikhil Mehta	Fishery Biologist	Co-Team Lead – amendment development, analyses, NEPA review	SERO
Cynthia Meyer	Fishery Biologist	Co-Team Lead – amendment development, analyses, NEPA review	SERO
Claire Roberts	Fishery Biologist	Physical environment, biological analyses	GMFMC
Kelli O'Donnell	Fishery Biologist	Description of the fishery, analyses	SERO
Matt Freeman	Economist	Economic analyses	GMFMC
John Hadley	Economist	Economic analyses	SAFMC
Denise Johnson	Economist	Economic environment, economic analyses, description of the fishery	SERO
Christina Package-Ward	Anthropologist	Social environment and environmental justice	SERO
Kenneth Blackburn	Law Enforcement	Reviewer	SERO
Scott Crosson	Economist	Reviewer	SEFSC
David Dale	Fishery Biologist	Habitat review	SERO
Rick Devictor	Fishery Biologist	Reviewer	SERO
Assane Diagne	Economist	Economic review	GMFMC
Mike Errigo	Fishery Biologist	Reviewer	SAFMC
Susan Gerhart	Fishery Biologist	Reviewer	SERO
Joelle Godwin	Technical writer	Regulatory writer	SERO
Frank Helies	Fishery Biologist	Reviewer	SERO
John Isley	Fishery Biologist	Reviewer	SEFSC
Mike Larkin	Data Analyst	Reviewer	SERO
Mara Levy	Attorney	Legal review	NOAA GC
Patrick Opay	Protected Resources Specialist	Protected resource reviewer	SERO
Scott Sandorf	Technical writer	Regulatory writer	SERO
Carrie Simmons	Fishery Biologist	Reviewer	GMFMC

GMFMC = Gulf of Mexico Fishery Management Council, SAFMC = South Atlantic Fishery Management Council, NMFS = National Marine Fisheries Service, SF = Sustainable Fisheries Division, PR = Protected Resources Division, HC = Habitat Conservation Division, GC = General Counsel

The following have been or will be consulted:

National Marine Fisheries Service
Southeast Fisheries Science Center
Southeast Regional Office
Protected Resources
Habitat Conservation
Sustainable Fisheries

NOAA General Counsel
Environmental Protection Agency
United States Coast Guard
Texas Parks and Wildlife Department
Alabama Department of Conservation and Natural Resources/Marine Resources Division
Louisiana Department of Wildlife and Fisheries
Mississippi Department of Marine Resources
Florida Fish and Wildlife Conservation Commission
Georgia Department of Natural Resources
South Carolina Department of Natural Resources
North Carolina Division of Marine Fisheries
Mid-Atlantic Fishery Management Council

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APPENDIX A. GULF COUNCIL ABC CONTROL RULE

Appendix Table 1. Gulf Council Acceptable Biological Catch Control Rule (GMFMC/SAFMC 2011).

Tier 1 Acceptable Biological Catch Control Rule	
Condition for Use	A quantitative assessment provides both an estimate of overfishing limit based on MSY or its proxy and a probability density function of overfishing limit that reflects scientific uncertainty. Specific components of scientific uncertainty can be evaluated through a risk determination table.
OFL	OFL = yield resulting from applying F_{MSY} or its proxy to estimated biomass.
ABC	The Council with advice from the SSC will set an appropriate level of risk (P*) using a risk determination table that calculates a P* based on the level of information and uncertainty in the stock assessment. ABC = yield at P*.
Tier 2 Acceptable Biological Catch Control Rule	
Condition for Use*	An assessment exists but does not provide an estimate of MSY or its proxy. Instead, the assessment provides a measure of overfishing limit based on alternative methodology. Additionally, a probability density function can be calculated to estimate scientific uncertainty in the model-derived overfishing limit measure. This density function can be used to approximate the probability of exceeding the overfishing limit, thus providing a buffer between the overfishing limit and acceptable biological catch.
OFL	An overfishing limit measure is available from alternative methodology.
ABC	Calculate a probability density function around the overfishing limit measure that accounts for scientific uncertainty. The buffer between the overfishing limit and acceptable biological catch will be based on that probability density function and the level of risk of exceeding the overfishing limit selected by the Council. Risk of exceeding OFL = 50% Risk of exceeding OFL = 40% Risk of exceeding OFL = 30% (default) Set ABC = OFL – buffer at risk of exceeding OFL
Tier 3a Acceptable Biological Catch Control Rule	
Condition for Use*	No assessment is available, but landings data exist. The probability of exceeding the overfishing limit in a given year can be approximated from the variance about the mean of recent landings to produce a buffer between the overfishing limit and acceptable biological catch. Based on expert evaluation of the best scientific information available, recent historical landings are without trend, landings are small relative to stock biomass, or the stock is unlikely to undergo overfishing if future landings are equal to or moderately higher than the mean of recent landings. For stock complexes, the determination of whether a stock complex is in Tier 3a or 3b will be made using all the information available, including stock specific catch trends.

OFL	Set the overfishing limit equal to the mean of recent landings plus two standard deviations. A time series of at least ten years is recommended to compute the mean of recent landings, but a different number of years may be used to attain a representative level of variance in the landings.
ABC	Set acceptable biological catch using a buffer from the overfishing limit that represents an acceptable level of risk due to scientific uncertainty. The buffer will be predetermined for each stock or stock complex by the Council with advice from the SSC as:
	ABC = mean of the landings plus 1.5 * standard deviation (risk of exceeding OFL = 31%) ABC = mean of the landings plus 1.0 * standard deviation (default)(risk of exceeding OFL = 16%) ABC = mean of the landings plus 0.5 * standard deviation (risk of exceeding OFL = 7%) ABC = mean of the landings (risk of exceeding OFL = 2.3%)
Tier 3b Acceptable Biological Catch Control Rule	
Condition for Use*	No assessment is available, but landings data exist. Based on expert evaluation of the best scientific information available, recent landings may be unsustainable.
OFL	Set the overfishing limit equal to the mean of landings. A time series of at least ten years is recommended to compute the mean of recent landings, but a different number of years may be used to attain a representative level of variance in the landings.
ABC	Set acceptable biological catch using a buffer from the overfishing limit that represents an acceptable level of risk due to scientific uncertainty. The buffer will be predetermined for each stock or stock complex by the Council with advice from its SSC as: ABC = 100% of OFL ABC = 85% of OFL ABC = 75% of OFL (default) ABC = 65% of OFL

Note 1: Changes in the trend of a stock's landings or a stock complex's landings in three consecutive years shall trigger a reevaluation of their acceptable biological catch control rule determination under Tiers 2, 3a, or 3b.

Note 2: There may be situations in which reliable landings estimates do not exist for a given data-poor stock. The approach and methodology for setting OFL and ABC will be determined on a case-by-case basis, based on expert opinion and the best scientific information available.

APPENDIX B. SUMMARIES OF PUBLIC COMMENTS RECEIVED

The Councils provided a summary document and presentation, in addition to an online form for public comments. The South Atlantic Council held a public hearing webinar on May 9, 2017. Overall, there were two email comments, two verbal comments on the webinar hearing, and one comment received on the online form. All comments were provided to both Councils.

Action 1-1
Two commenters, including the Florida Keys Commercial Fishermen's Association, support the Preferred Alternative.

Action 1-2
Two commenters, including the Florida Keys Commercial Fishermen's Association, support the Preferred Alternative.

Action 2
Two commenters, including the Florida Keys Commercial Fishermen's Association, support the Preferred Alternative. A prohibition on allowing commercial gear to be used for recreational harvest for spiny lobster would reduce the negative effects of abandoned gear and non-compliance.

Two commenters opposed the Preferred Alternative, and suggested a seasonal closure to address concerns with whales in place of a prohibition on recreational traps.

APPENDIX C. OTHER APPLICABLE LAW

The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act; 16 U.S.C. 1801 et seq.) provides the authority for U.S. fishery management. But 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. Major laws affecting federal fishery management decision making include the Endangered Species Act (Section 3.3), E.O. 12866 (Regulatory Planning and Review, Chapter 5) and E.O. 12898 (Environmental Justice, Section 3.5). Other applicable laws are summarized below.

Administrative Procedure Act (APA)
All federal rulemaking is governed under the provisions of the 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, the National Marine Fisheries Service (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. Proposed and final rules will be published before implementing the actions in this amendment.

Coastal Zone Management Act (CZMA)
The CZMA of 1972 (16 U.S.C. 1451 et seq.) 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.

Upon submission to the Secretary, NMFS will determine if this plan amendment is consistent with the Coastal Zone Management programs of the appropriate Gulf and Atlantic states to the maximum extent possible. The determination will then be submitted to the responsible state agencies under Section 307 of the CZMA administering approved Coastal Zone Management programs for these states.

Data Quality Act (DQA)
The DQA (Section 515 of Public Law 106-554), 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 DQA 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 fishery management plans (FMPs) and amendments and the use of the best scientific information available is the second national standard under the Magnuson-Stevens Act. 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.

National Marine Sanctuaries Act

Under the National Marine Sanctuaries Act (also known as Title III of the Marine Protection, Research and Sanctuaries Act of 1972), as amended, the Secretary of Commerce is authorized to designate National Marine Sanctuaries to protect distinctive natural and cultural resources whose protection and beneficial use requires comprehensive planning and management. The National Marine Sanctuaries are administered by NOAA's National Ocean Service. The Act provides authority for comprehensive and coordinated conservation and management of these marine areas. The National Marine Sanctuary System currently comprises 13 sanctuaries around the country, including sites in American Samoa and Hawaii. These sites include significant coral reef and kelp forest habitats, and breeding and feeding grounds of whales, sea lions, sharks, and sea turtles. A complete listing of the current sanctuaries and information about their location, size, characteristics, and affected fisheries can be found at: http://www.sanctuaries.nos.noaa.gov/oms/oms.html.

National Historic Preservation Act

The National Historic Preservation Act (NHPA) of 1966, (Public Law 89-665; 16 U.S.C. 470 *et seq.*) is intended to preserve historical and archaeological sites in the U.S. Section 106 of the NHPA requires federal agencies to evaluate the impact of all federally funded or permitted projects for sites on listed on, or eligible for listing on, the National Register of Historic Places (NRHP) and aims to minimize damage to such places.

Historical research indicates that over 2,000 ships have sunk on the Federal Outer Continental Shelf from 1625 to 1951; thousands more have sunk closer to shore in state waters during the same period. Only a handful of these have been scientifically excavated by archaeologists for the benefit of generations to come. Further information can be found at: http://www.boem.gov/Environmental-Stewardship/Archaeology/Shipwrecks.aspx.

The proposed action does not adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places nor is it expected to cause loss or destruction of significant scientific, cultural, or historical resources. In the Gulf,

the *U.S.S. Hatteras*, located in federal waters off Texas, is listed in the NRHP. Fishing activity for species other than spiny lobster already occurs in the vicinity of this site, but the proposed action would have no additional adverse impacts on listed historic resources, nor would they alter any regulations intended to protect them.

Paperwork Reduction Act (PRA)

The PRA 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 OMB before requesting most types of fishery information from the public. This action would not invoke the PRA.

Executive Orders

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. The National Oceanic and Atmospheric Administration Office of General Counsel will determine whether a Taking Implication Assessment is necessary for this amendment.

E.O. 13089: Coral Reef Protection

The Executive Order on Coral Reef Protection (June 11, 1998) requires federal agencies whose actions may affect U.S. coral reef ecosystems to identify those actions, utilize their programs and authorities to protect and enhance the conditions of such ecosystems; and, to the extent permitted by law, ensure that actions they authorize, fund or carry out not degrade the condition of that ecosystem. By definition, a U.S. coral reef ecosystem means those species, habitats, and other national resources associated with coral reefs in all maritime areas and zones subject to the jurisdiction or control of the United States (e.g., federal, state, territorial, or commonwealth waters).

E.O. 13112: Invasive Species

The Executive Order requires agencies to use authorities to prevent introduction of invasive species, respond to and control invasions in a cost effective and environmentally sound manner, and to provide for restoration of native species and habitat conditions in ecosystems that have been invaded. Further, agencies shall not authorize, fund, or carry out actions that are likely to cause or promote the introduction or spread of invasive species in the U.S. or elsewhere unless a determination is made that the benefits of such actions clearly outweigh the potential harm;

and that all feasible and prudent measures to minimize the risk of harm will be taken in conjunction with the actions. The actions undertaken in this amendment would not introduce, authorize, fund, or carry out actions that are likely to cause or promote the introduction or spread of invasive species in the U.S. or elsewhere.

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, and 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 and local entities (international too).

The proposed management measures in this amendment to the Spiny Lobster FMP have been developed with the local and federal officials.

E.O. 13158: Marine Protected Areas

Executive Order 13158 (May 26, 2000) requires federal agencies to consider whether their proposed action(s) will affect any area of the marine environment that has been reserved by federal, state, territorial, tribal, or local laws or regulations to provide lasting protection for part or all of the natural or cultural resource within the protected area.