Regulatory Amendment 1 to the Fishery Management Plan for the Dolphin and Wahoo Fishery of the Atlantic

Modify commercial trip limits for dolphin

Environmental Assessment Regulatory Impact Review Regulatory Flexibility Act Analysis

January 2016

A publication of the South Atlantic Fishery Management Council pursuant to
National Oceanic and Atmospheric Administration
Award Number FNA15NMF4410010

Definitions, Abbreviations, and Acronyms Used in the Document

ABC	acceptable biological catch
ACL	annual catch limits
AM	accountability measures
ACT	annual catch target
B	a measure of stock biomass in either weight or other appropriate unit
B_{MSY}	the stock biomass expected to exist under equilibrium conditions when fishing at F_{MSY}
B_{OY}	the stock biomass expected to exist under equilibrium conditions when fishing at F_{OY}
B_{CURR}	the current stock biomass
CPUE	catch per unit effort
DEIS	draft environmental impact statement
EA	environmental assessment
EEZ	exclusive economic zone
EFH	essential fish habitat
F	a measure of the instantaneous rate of fishing mortality
$F_{30\%SPR}$	fishing mortality that will produce a static SPR = 30%
F_{CURR}	the current instantaneous rate of fishing mortality
F_{MSY}	the rate of fishing mortality expected to achieve MSY under equilibrium conditions and a corresponding biomass of B_{MSY}
F_{OY}	the rate of fishing mortality expected to achieve OY under equilibrium conditions and a corresponding biomass of B_{OY}
FEIS	final environmental impact statement
FMP	fishery management plan
FMU	fishery management unit
HMS	highly migratory species
M	natural mortality rate
MARMAP	Marine Resources Monitoring Assessment and Prediction Program
MFMT	maximum fishing mortality threshold
MMPA	Marine Mammal Protection Act
MRFSS	Marine Recreational Fisheries Statistics Survey
MRIP	Marine Recreational Information Program
MSFCMA	Magnuson-Stevens Fishery Conservation and Management Act
MSST	minimum stock size threshold
MSY	maximum sustainable yield
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
OFL	overfishing limit
OY	optimum yield
PSE	proportional standard error
RIR	regulatory impact review
SAFMC	South Atlantic Fishery Management Council
SEDAR	Southeast Data, Assessment, and Review
SEFSC	Southeast Fisheries Science Center
SERO	Southeast Regional Office
SIA	social impact assessment
SPR	spawning potential ratio
SSC	Scientific and Statistical Committee

Regulatory Amendment 1 to the Fishery Management Plan for the Dolphin and Wahoo Fishery of the Atlantic

Including an Environmental Assessment (EA), Regulatory Impact Review (RIR), and Fishery Impact Statement (FIS)

Responsible Agencies and Contact Persons:

National Marine Fisheries Service
Southeast Regional Office
263 13th Avenue South
Saint Petersburg, Florida 33701
727-824-5305
727-824-5308 (fax)
http://sero.nmfs.noaa.gov
Contact: Karla Gore
karla.gore@noaa.gov

South Atlantic Fishery Management Council
4055 Faber Place Dr., Suite 201,
North Charleston, South Carolina 29405
843-571-4366
813-769-4520 (fax)
http://www.safmc.net
Contact: Brian Cheuvront
brian.cheuvront@safmc.net

Table of Contents

List of Appendices

List of Figures

List of Tables

SUMMARY

Regulatory Amendment 1 to the Fishery Management Plan for the Dolphin and Wahoo Fishery of the Atlantic

Why is the South Atlantic Council Taking Action?

The 2015 commercial Atlantic dolphin (dolphin) season closed on June 30, 2015, because the commercial annual catch limit (ACL) was met. This was the first time the commercial season has closed in the history of the Fishery Management Plan (FMP) for the Dolphin Wahoo Fishery of the Atlantic (Dolphin Wahoo FMP). The South Atlantic Fishery Management Council (South Atlantic Council) is considering taking action to establish a trip limit to prevent early closure of the commercial sector for dolphin so that all permitted gear users and consumer markets will have access to the resource for as long as is possible.

In 2014 and 2015, there was an increase in the number of longline trips targeting dolphin resulting in much higher than average landings. It is not entirely clear why the increase in the dolphin longline landings occurred. One possibility for the higher longline landings in 2015 is that vessels with federal highly migratory species (HMS) permits were reacting to the more stringent longline fishing regulations put in place for pelagic longline species in Amendment 7 to the 2006 Consolidated HMS Fishery Management Plan (NMFS 2014). However, these regulations did not go into effect until January 1, 2015. While the change in HMS longline regulations may have affected the 2015 dolphin season, that does not explain why dolphin longline landings were much higher in 2014.

Anecdotal information has suggested that the dolphin were further offshore earlier in the year in 2014 and 2015, perhaps because the water closer to the shore warmed up more quickly in those two years than was typical in previous years. Because the longline sector fishes further offshore, such conditions could have resulted in a greater availability for harvesting dolphin by the longline sector. This could also explain why there were lower than average recreational landings during those months when coastal waters were warmer than normal, since the recreational sector fishes closer to shore.

Commercial hook and line fishing for dolphin ended with the June 30, 2015 closure. As a result, after the closure the commercial dolphin permit holders who rely on this species as a substantial portion of their fishing income were no longer able to sell dolphin.

Amendment 8 to the Dolphin Wahoo FMP (SAFMC 2015) revised the allocation between the commercial and recreational sectors and increased the commercial sector ACL for dolphin from 7.54% (1,157,001 pounds whole weight [lbs ww]) to 10% (1,534,485 lbs ww). Amendment 8 was approved by the

Secretary of Commerce on October 14, 2015, and the final rule published on January 22, 2016 (81 FR 3781) and regulations were effective on February 22, 2016.

What would Regulatory Amendment 1 do?

Regulatory Amendment 1 to the Dolphin Wahoo FMP (Regulatory Amendment 1) would establish commercial trip limits after a certain percentage of the commercial sector ACL has been reached. The percentages of the commercial ACL considered by the South Atlantic Council to trigger a trip limit were 65%, 70%, and 75%. Trip limits considered were 1,000, 2,000, 3,000, or 4,000 lbs ww. Trip limits would be in effect until the end of the fishing year or until the entire commercial ACL is met and commercial harvest is closed, whichever comes first.

Purpose and need for Regulatory Amendment 1

Purpose for Action

The purpose of Dolphin Wahoo Regulatory Amendment 1 is to institute a commercial trip limit for the dolphin fishery.

Need for Action

The need for this amendment is to maintain a dolphin fishery that lasts throughout the year in order to reduce the severity of social impacts caused by an early closure of the commercial dolphin fishery.

Summary of Effects

Establish a commercial trip limit for dolphin in the exclusive economic zone (EEZ) in the South Atlantic Council's area of jurisdiction.

Biological Effects

The biological effects of **Alternative 1 (No Action)**, **Alternative 2** (and its sub-alternatives), and **Alternative 3** (and its sub-alternatives), and **Preferred Alternative 4** (and sub-alternatives) would be expected to be neutral because the annual catch limit (ACL) specifies a limit to the harvest amount, and accountability measures (AMs) take action to limit the harvest to that ACL amount and specify action if the ACL is exceeded. **Alternative 1 (No Action)** could present a greater biological risk to dolphin in terms of exceeding the ACL than the action alternatives since no trip limit would be in place to slow down the rate of harvest and help ensure the ACL is not exceeded. However, 2015 was the first year that the commercial ACL was met for dolphin. The recent approval of the Generic AM and Dolphin Allocation Amendment will establish a revised allocation for dolphin that increases the ACL for the commercial sector by 377,484 pounds whole weight (lbs ww) to 1,534,485 lbs ww. Although trip limits may be triggered under **Alternative 2**, **Alternative 3,** and **Preferred Alternative 4**, it is unlikely that the ACL would be reached if a trip limit is implemented under any of the proposed sub-alternatives (see Section 4 for analyses). Therefore, establishing a commercial trip limit is not expected to have any biological benefits or effects.

Economic Effects

Historical landings would suggest that **Alternative 1 (No Action)** would have the highest probability of getting closest to the commercial sector ACL, without going over it, when compared to all of the other alternatives, and assuming that future catch rates of dolphin do not exceed past landings rates because of the increase in the commercial sector ACL from Dolphin Wahoo Amendment 8 (SAFMC 2015) . The rate at which any alternative/sub-alternative combination restricts landings could needlessly increase the probability of direct negative economic effects by applying restrictions that may not be needed. However, if the rate of landing dolphin continues to increase as it did

***Alternatives*[1]**

*(preferred alternatives in **bold**)*

1. No Action. There is no commercial trip limit for dolphin in the South Atlantic portion of the Atlantic EEZ. For a commercially permitted vessel fishing north 39° N. latitude, that does not have a federal commercial vessel permit for dolphin or wahoo, there is a trip limit of 200 pounds of dolphin and wahoo, combined. The commercial fishery for dolphin will remain open until the entire commercial portion of the annual catch limit (ACL) is met or projected to be met.

2. A commercial trip limit for dolphin will be established once 65% of the commercial ACL is met.
   Sub-Alternative 2a: 1,000 lbs ww trip limit
   Sub-Alternative 2b: 2,000 lbs ww trip limit
   Sub-Alternative 2c: 3,000 lbs ww trip limit
   Sub-Alternative 2d: 4,000 lbs ww trip limit

3. A commercial trip limit for dolphin will be established once 70% of the commercial ACL is met.
   Sub-Alternative 3a: 1,000 lbs ww trip limit
   Sub-Alternative 3b: 2,000 lbs ww trip limit
   Sub-Alternative 3c: 3,000 lbs ww trip limit
   Sub-Alternative 3d: 4,000 lbs ww trip limit

4. **A commercial trip limit for dolphin will be established once 75% of the commercial ACL is met.**
   Sub-Alternative 4a: 1,000 lbs ww trip limit
   Sub-Alternative 4b: 2,000 lbs ww trip limit
   Sub-Alternative 4c: 3,000 lbs ww trip limit
   Sub-Alternative 4d: 4,000 lbs ww **trip limit**

[1]See Chapter 2 for a more detailed description of the alternatives.

in 2014 and 2015, having a commercial trip limit in place could slow down the landings and keep commercial dolphin harvest open longer.

Nonetheless, the rate at which dolphin was landed increased in 2014 and 2015 compared to previous years (**Table 4.1.1.1**). Whether or not that trend would continue is speculative. Establishing a trip limit at some point in the season that is not too restrictive might be precautionary in terms of increasing the length of the fishing season should it be likely that there would be an early closure otherwise. To that end, **Preferred Alternative 4,** which establishes a trip limit after 75% of the commercial sector ACL is taken, would be the least restrictive closure trigger, followed by **Alternative 3**, then **Alternative 2**. The sub-alternatives for **Alternatives 2-4 (Preferred)** are the same. The smallest proposed trip limit of 1,000 lbs ww (**Sub-Alternatives 2a**, **3a**, **4a**) would be less likely to result in an early closure of the commercial sector ACL. The largest proposed trip limit of 4,000 lbs ww (**Sub-Alternatives 2d**, **3d**, and **Preferred Sub-alternative 4d**) would be more likely to result in an earlier closure of the commercial sector ACL, if needed. The more restrictive the alternative/sub-alternative chosen as the preferred alternative/sub-alternative, the lower the expected landings resulting in larger expected negative, direct economic effects.

Social Effects

In general, the social effects of a trip limit are associated with the economic benefits and costs, as described in **Section 4.1.2**. Relative to **Alternative 1 (No Action)**, **Alternatives 2-4 (Preferred)** could reduce the risk of derby conditions and any associated negative effects that can occur due to an in-season closure or payback provision if the total (commercial + recreational) ACL is exceeded. The earlier trigger that implements the step-down in **Alternative 2** (65% of the ACL) would slow the rate of harvest and lengthen the season, followed by **Alternative 3** (70%) and **Preferred Alternative 4** (75%). As noted in **Section 4.1.1**, it is possible that implementation of a trip limit at any point during the season would result in commercial landings not reaching the commercial ACL.

Higher trip limits would slow the rate of harvest overall, but lower trip limits would affect trip efficiency, which may change job opportunities for crews if a captain or vessel owner chooses to forego a trip due to low trip limits. The lowest trip limit of 1,000 lbs ww (**Sub-Alternatives 2a**, **3a,** and **4a**) would be the most likely to affect trip efficiency, followed by the next two levels (2,000 lbs ww in **Sub-Alternatives 2b**, **3b**, and **4b**; and 3,000 lbs ww in **Sub-Alternatives 2c**, **3c**, and **4c**). The highest trip limit of 4,000 lbs ww in **Sub-Alternatives 2d**, **3d**, and **Preferred Sub-alternative 4d** would be the least restrictive for vessels, except for no commercial trip limit under **Alternative 1 (No Action)**.

Administrative Effects

Alternative 1 (No Action) would have less administrative impacts than **Alternatives 2**, **Alternative 3**, and **Preferred Alternative 4**. Administrative impacts associated with the alternatives would come in the form of rulemaking, outreach, education, monitoring, and enforcement. The National Marine Fisheries Service has implemented trip limits for other species and the impacts associated with **Alternative 2**, **Alternative 3**, or **Preferred Alternative 4** are expected to be minor.

South Atlantic Council Conclusions

The South Atlantic Council chose **Preferred Alternative 4**, **Preferred Sub-Alternative 4d** because they wanted to be precautionary and preclude an early closure of commercial harvest for dolphin. While the increase in the commercial sector ACL from Amendment 8 to the Dolphin Wahoo FMP would likely have kept the commercial harvest of dolphin open in 2015, had it been in place, it is not known whether the trend of sharply increased landings such as occurred in the 2014 and 2015 seasons would continue. The South Atlantic Council concluded that a 4,000 lbs ww trip limit once 75% of the ACL was reached would be sufficient to slow down landings enough to allow for harvest to last for the entire year.

Chapter 1. Introduction

1.1 What Actions Are Being Proposed in Regulatory Amendment 1?

Regulatory Amendment 1 considers one action that would establish a trip limit for the dolphin fishery.

1.2 Who is Proposing the Management Measures?

The South Atlantic Fishery Management Council (South Atlantic Council) is proposing these management measures. The South Atlantic Council recommends management measures and sends them to the National Marine Fisheries Service (NMFS) who ultimately implements the actions in a framework amendment through the development of regulations on behalf of the Secretary of Commerce. NMFS is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

South Atlantic Fishery Management Council

- Responsible for conservation and management of fish stocks
- Consists of 13 voting members: 8 appointed by the Secretary of Commerce, 1 representative from each of the 4 South Atlantic states, the Southeast Regional Director of NMFS; and 4 non-voting members
- Responsible for developing fishery management plans and amendments under the Magnuson-Stevens Act and recommends actions to NMFS for implementation
- Management area for most species is from 3 to 200 miles off the coasts of North Carolina, South Carolina, Georgia, and east Florida through Key West with the exception of Mackerel which is from New York to Florida, and Dolphin-Wahoo, which is from Maine to Florida

The South Atlantic Council is responsible for the Dolphin Wahoo Fishery Management Plan (FMP) and has designated one on the Dolphin Wahoo Committee for a member from each of the Mid-Atlantic and New England Councils. These members have full voting privileges at the Committee level, but not at the Full Council level. This ensures there is input from the Mid-Atlantic and New England Councils. In addition, public hearings are held for fishermen in these areas either through in-person hearings or webinar hearings.

The South Atlantic Council made versions of the document available during scoping and public hearings. The final amendment will be made available during the public comment period on the proposed rule. All versions of the document are or will be available on the South Atlantic Council's and NMFS's Web sites.

1.3 Where is the Project Located?

Management of the federal dolphin and wahoo fishery located off the eastern United States (Atlantic) from Florida through Maine in the 3-200 nautical miles U.S. exclusive economic zone (EEZ) is conducted under the Dolphin Wahoo FMP (SAFMC 2003) (**Figure 1-1**).

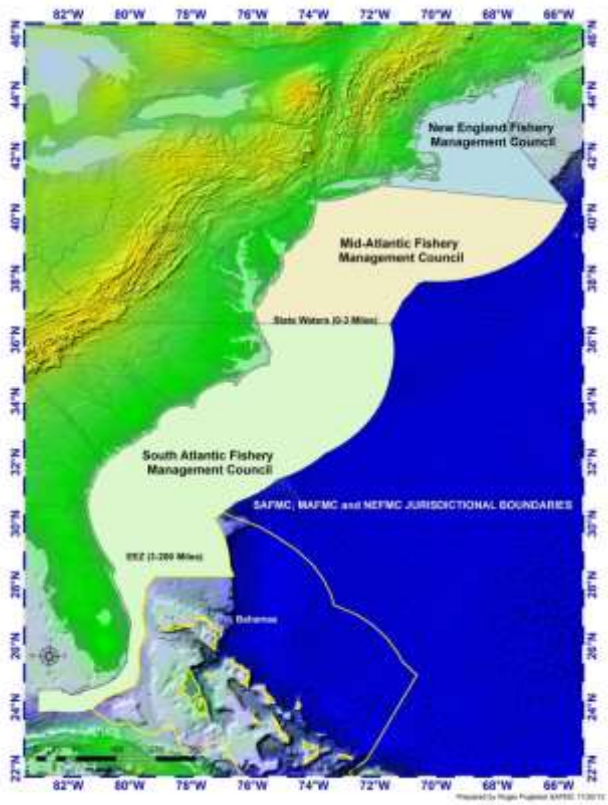

Figure 1.1. The U.S. EEZ and jurisdictional boundaries of the Dolphin and Wahoo Fishery Management Plan for the Atlantic as managed by the South Atlantic Fishery Management Council.

1.4 Why are the South Atlantic Council and NMFS Considering this Action?

The 2015 commercial dolphin season closed on June 30, 2015, because the commercial annual catch limit (ACL) was met. This is the first time the commercial season has closed in the history of the Dolphin Wahoo FMP. The South Atlantic Fishery Management Council (South Atlantic Council) is considering taking action to establish a trip limit to prevent early closure of the commercial sector for dolphin so that all permitted gear users and consumer markets would have access to the resource for as long as is possible.

In 2014 and 2015, there was an increase in the number of longline trips targeting dolphin resulting in much higher than average landings. It is not entirely clear why the increase in the dolphin longline landings occurred. One possibility for the higher longline landings in 2015 is that vessels with federal highly migratory species (HMS) permits were reacting to the more stringent longline fishing regulations put in place for pelagic longline species in Amendment 7 to the 2006 Consolidated HMS Fishery Management Plan (NMFS 2014). However, these regulations did not go into effect until January 1, 2015. While the change in HMS longline regulations may have affected the 2015 dolphin season, that does not explain why dolphin longline landings were much higher in 2014.

Anecdotal information has suggested that the dolphin were further offshore earlier in the year in 2014 and 2015, perhaps because the water closer to the shore warmed up more quickly in those two years than was typical in previous years. Because the longline sector fishes further offshore, such conditions could have resulted in a greater availability for harvesting dolphin by the longline sector. This could also explain why there were lower than average recreational landings during those months when coastal waters were warmer than normal, since the recreational sector fishes closer to shore.

Commercial hook and line fishing for dolphin ended with a commercial closure on June 30, 2015. As a result commercial dolphin permit holders who rely on this species as a substantial portion of their fishing income were no longer able to sell dolphin.

Amendment 8 to the Dolphin Wahoo FMP (SAFMC 2015) revised the allocation between the commercial and recreational sectors and increased the commercial sector ACL for dolphin from 7.54% (1,157,001 pounds whole weight [lbs ww]) to 10% (1,534,485 lbs ww). Amendment 8 was approved by the Secretary of Commerce on October 14, 2015, and the final rule was published on January 22, 2016 (81 FR 3781) and is effective on February 22, 2016.

Purpose for Action

The purpose of Dolphin Wahoo Regulatory Amendment 1 is to institute a commercial trip limit for the dolphin fishery.

Need for Action

The need for this amendment is to maintain a dolphin fishery that lasts throughout the year in order to reduce the severity of social impacts caused by an early closure of the commercial dolphin fishery.

1.5 What is the History of Management for Dolphin and Wahoo

The South Atlantic Council began managing dolphin and wahoo under the Dolphin Wahoo FMP in 2003 (SAFMC 2003), and the final rule to implement the FMP became effective in 2004. See **Appendix C** of this document for a detailed history of management for the dolphin wahoo fishery.

Chapter 2. Proposed Action

2.1 Action. Establish a commercial trip limit for dolphin in the exclusive economic zone (EEZ) in the South Atlantic Fishery Management Council's area of jurisdiction.

Alternative 1 (No Action). There is no commercial trip limit for dolphin in the South Atlantic portion of the Atlantic EEZ. For a commercially permitted vessel fishing north 39° N. latitude, that does not have a federal commercial vessel permit for dolphin or wahoo, there is a trip limit of 200 pounds of dolphin and wahoo, combined. The commercial fishery for dolphin will remain open until the entire commercial portion of the annual catch limit (ACL) is met or projected to be met.

Note: The commercial trip limit (200 lbs of dolphin and wahoo, combined) for a commercially permitted vessel fishing north of 39° N. latitude that does not have a federal commercial vessel permit for dolphin or wahoo is not affected by any of the alternatives/sub-alternatives in this amendment.

Alternative 2. A commercial trip limit for dolphin will be established once 65% of the commercial ACL is met.
Sub-Alternative 2a: 1,000 pounds whole weight (lbs ww) trip limit
Sub-Alternative 2b: 2,000 lbs ww trip limit
Sub-Alternative 2c: 3,000 lbs ww trip limit
Sub-Alternative 2d: 4,000 lbs ww trip limit

Alternative 3. A commercial trip limit for dolphin will be established once 70% of the commercial ACL is met.
Sub-Alternative 3a: 1,000 lbs ww trip limit
Sub-Alternative 3b: 2,000 lbs ww trip limit
Sub-Alternative 3c: 3,000 lbs ww trip limit
Sub-Alternative 3d: 4,000 lbs ww trip limit

Preferred Alternative 4. A commercial trip limit for dolphin will be established once 75% of the commercial ACL is met.
Sub-Alternative 4a: 1,000 lbs ww trip limit
Sub-Alternative 4b: 2,000 lbs ww trip limit
Sub-Alternative 4c: 3,000 lbs ww trip limit
Preferred Sub-Alternative 4d: 4,000 lbs ww trip limit

2.1.1 Comparison of Alternatives

The biological effects of **Alternatives 1 (No Action)**, **Alternative 2** (and its sub-alternatives), and **Alternative 3** (and its sub-alternatives), and **Preferred Alternative 4** (and sub-alternatives) would be expected to be neutral because ACLs and accountability measures (AMs) are in place to cap harvest, and take action if ACLs are exceeded. **Alternative 1 (No Action)** could present a greater biological risk to

dolphin in terms of exceeding the ACL than the action alternatives since no trip limit would be in place to slow down the rate of harvest and help ensure the ACL is not exceeded. However, 2015 was the first year that the commercial ACL was met for dolphin. The recent approval of the Amendment 8 to the Dolphin Wahoo FMP (SAFMC 2015) establishes a revised allocation for dolphin that increases the ACL for the commercial sector by 377,484 lbs ww from 1,157,001 lbs ww to 1,534,485 lbs ww. Although trip limits may be triggered under **Alternative 2**, **Alternative 3,** and **Preferred Alternative 4**, it is unlikely that the ACL would be reached under any trip limit proposed as sub-alternatives. Therefore, establishing a commercial trip limit is not expected to have any biological effects.

Historical landings would suggest that **Alternative 1 (No Action)** would have the highest probability of getting closest to the commercial sector ACL, without going over it when compared to all of the other alternatives. The rate at which any alternative/sub-alternative combination restricts landings could needlessly increase the probability of direct negative economic effects by applying restrictions that may not be needed.

Nonetheless, the rate at which dolphin was landed increased in 2014 and 2015 compared to previous years (**Table 4.1.1.1**). Whether or not that trend would continue is speculative. Establishing a trip limit at some point in the season that is not too restrictive might be precautionary in terms of increasing the length of the fishing season should it be likely that there would be an early closure otherwise. To that end, **Preferred Alternative 4,** which establishes a trip limit after 75% of the commercial sector ACL is taken, would be the least restrictive closure trigger, followed by **Alternative 3**, then **Alternative 2**. The sub-alternatives for **Alternatives 2 – 4 (Preferred)** are the same. The smallest proposed trip limit of 1,000 lbs ww (**Sub-Alternatives 2a**, **3a**, **4a**) would be less likely to result in an early closure of the commercial sector ACL. The largest proposed trip limit of 4,000 lbs ww (**Sub-Alternatives 2d**, **3d**, and **Preferred Sub-alternative 4d**) would be more likely to result in an earlier closure of the commercial sector ACL. The more restrictive the alternative/sub-alternative chosen as the preferred alternative/sub-alternative, the lower the expected landings resulting in lower expected positive, direct economic effects.

In general, the social effects of a trip limit are associated with the economic benefits and costs, as described in **Section 4.1.2**. Relative to **Alternative 1 (No Action)**, **Alternatives 2**, **3**, and **4 (preferred)** could reduce the risk of derby conditions and any associated negative effects that can occur due to an in-season closure or payback provision if the ACL is exceeded. The earlier trigger that implements the trip limit in **Alternative 2** (65% of the ACL) would slow the rate of harvest and lengthen the season, followed by **Alternative 3** (70% of the ACL) and **Preferred Alternative 4** (75% of the ACL). As noted in **Section 4.1.1**, it is possible that implementation of a trip limit at any point during the season would result in commercial landings not reaching the commercial ACL.

Higher trip limits would slow the rate of harvest overall, but low trip limits would affect trip efficiency, which may change job opportunities for crews if a captain or vessel owner chooses to forego a trip due to low trip limits. The lowest trip limit of 1,000 lbs ww (**Sub-Alternatives 2a**, **3a,** and **4a**) would be the most likely to affect trip efficiency, followed by the next two amounts (2,000 lbs ww in **Sub-Alternatives 2b**, **3b**, and **4b**; and 3,000 lbs ww in **Sub-Alternatives 2c**, **3c**, and **4c**). The highest trip limit of 4,000 lbs ww in **Sub-Alternatives 2d**, **3d**, and **Preferred Sub-Alternative 4d** would be the least restrictive for vessels, except for no commercial trip limit under **Alternative 1 (No Action)**.

Alternative 1 (No Action) would have less administrative impacts than **Alternatives 2**, **Alternative 3**, and **Preferred Alternative 4**. Administrative impacts associated with the alternatives would come in the form of rulemaking, outreach, education, monitoring, and enforcement. The National Marine Fisheries Service has implemented trip limits for other species and the impacts associated with **Alternative 2**, **Alternative 3**, or **Preferred Alternative 4** are expected to be minor.

Chapter 3. Affected Environment

Regulatory Amendment 1 would establish a trip limit for the commercial sector of the dolphin portion of the dolphin wahoo fishery. The reader is referred to Amendment 8 to the Dolphin Wahoo FMP (SAFMC 2015) and Amendment 5 to the Dolphin Wahoo FMP (SAFMC 2013) for additional information on the affected environment for these species in the Atlantic exclusive economic zone (EEZ). The affected environment sections from Amendments 5 and 8 to the Dolphin Wahoo FMP are incorporated by reference, and are summarized below.

3.1 Habitat Environment

Information on the habitat utilized by dolphin and wahoo is included in Volume II of the Fishery Ecosystem Plan (SAFMC 2009) and incorporated here by reference. The FEP can be found at: http://www.safmc.net/ecosystem/Home/EcosystemHome/tabid/435/Default.aspx.

The common dolphin (*Coryphaena hippurus*) is an oceanic pelagic fish found worldwide in tropical and subtropical waters. The range for dolphin in the western Atlantic is from George's Bank, Nova Scotia to Rio de Janeiro, Brazil. They are also found throughout the Caribbean Sea and the Gulf of Mexico, and they are generally restricted to waters warmer than 20°C (Oxenford 1999). Dolphin and wahoo utilize pelagic habitat in the Gulf Stream, Charleston Gyre, Florida Current, and pelagic *Sargassum*.

Dolphin do not use inshore/estuarine habitat.

3.1.1 Essential Fish Habitat (EFH)

EFH for dolphin and wahoo is the Gulf Stream, Charleston Gyre, Florida Current, and pelagic *Sargassum.*

This EFH definition for dolphin was approved by the Secretary of Commerce on June 3, 1999, as a part of the South Atlantic Fishery Management Council's (South Atlantic Council) Comprehensive Habitat Amendment (SAFMC 1998). Dolphin was included within the Fishery Management Plan for the Coastal Migratory Pelagic Resources in the Gulf of Mexico and Atlantic Region (Coastal Migratory Pelagics FMP). Dolphin was removed from Coastal Migratory Pelagics FMP, and the South Atlantic Council began managing dolphin and wahoo under the Dolphin Wahoo FMP in 2003, and EFH for dolphin was included in the Dolphin Wahoo FMP. This EFH definition does not apply to extra-jurisdictional areas.

3.1.2 Habitat Areas of Particular Concern

EFH-habitat of particular concern (EFH-HAPCs) for dolphin in the Atlantic include The Point, The Ten-Fathom Ledge, and Big Rock (North Carolina); The Charleston Bump and The Georgetown Hole (South Carolina); The Point off Jupiter Inlet (Florida); The Hump off Islamorada, Florida; The Marathon Hump off Marathon, Florida; The "Wall" off of the Florida Keys; and Pelagic *Sargassum*.

This EFH-HAPC definition for dolphin was approved by the Secretary of Commerce on June 3, 1999, as a part of the South Atlantic Council's Comprehensive Habitat Amendment (SAFMC 1998)(dolphin was included within the Coastal Migratory Pelagics FMP). The EFH-HAPCs for dolphin were included in the Dolphin Wahoo FMP.

See **Appendix G** for detailed information on EFH and EFH-HAPCs for all South Atlantic Council managed species.

3.2 Biological and Ecological Environment

The marine environment in the Atlantic management area affected by actions in this environmental assessment is defined by two components (**Figure 3.2.1**). Each component is described in detail in Chapter 3 of Dolphin Wahoo Amendment 5 (SAFMC 2013).

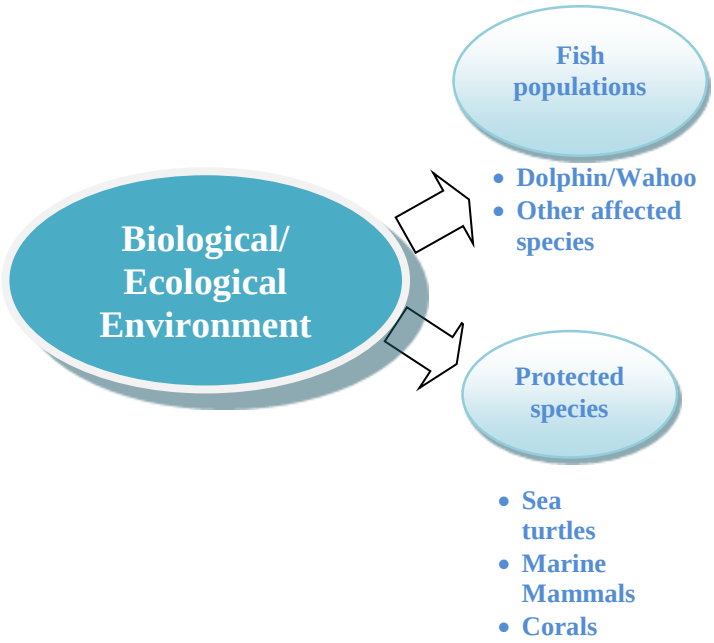

Figure 3.2.1. Two components of the biological environment described in this document.

3.2.1 Fish Populations

Dolphin are a highly migratory pelagic species occurring in tropical and subtropical waters worldwide. In the western Atlantic, dolphin are distributed from Nova Scotia to Brazil, including Bermuda and the

greater Caribbean region, and the Gulf of Mexico. They are found near the surface around natural and artificial floating objects, including *Sargassum* (in the Atlantic).

Dolphin eat a wide variety of species, including small pelagic fish, juvenile tuna, billfish, jacks, and pompano, and pelagic larvae of nearshore, bottom-living species. They also eat invertebrates such as cephalopods, mysids, and jellyfish. Large tuna, rough-toothed dolphin, marlin, sailfish, swordfish, and sharks feed on dolphin, particularly juveniles. Additional background information regarding the fish populations for dolphin can be found in the Dolphin Wahoo FMP (SAFMC 2003) at: safmc.net/Library/pdf/DolphinWahooFMP.pdf.

Dolphin Life History
An Overview

- Worldwide distribution; In the western Atlantic ocean, from Nova Scotia to Brazil (including Bermuda, The Bahamas, the Gulf of Mexico, and the Caribbean)
- Oceanic, adults in open water and juveniles with floating seagrass and marine debris
- Highly migratory
- Protracted multiple spawning behavior throughout the year, varying with region. Off North Carolina, peak spawning is during April through July
- Maximum age is 4 years (mean <2 years)

3.2.2 Dolphin, *Coryphaena hippurus*

In the western Atlantic ocean, dolphin are most common from North Carolina, throughout the Gulf of Mexico and Caribbean, to the northeast coast of Brazil (Oxenford 1999). Dolphin are highly migratory and pelagic with adults found in open water, and juveniles with floating seagrass and marine debris and occasionally found in estuaries and harbors (Palko et al. 1982; Johnson 1978).

In a study by Schwenke and Buckel (2008) off North Carolina, dolphin ranged from 3.5 in (89 mm) fork length (FL) to 57 in (1451 mm) FL. Mean dolphin weight ranged from 14.2 pounds (lbs) (6.44 kg) for males to 7.6 lbs (3.44 kg) for females. Estimated average growth rate was 0.15 in (3.78 mm)/day during the first six months, and maximum reported age was 3 years. Size at 50% maturity was slightly smaller for female dolphin (18.1 in FL; 460 mm), when compared with males (18.7 in FL; 475 mm); and peak spawning occurred from April through July off North Carolina (Schwenke and Buckel 2008). Prager (2000) estimated natural mortality for dolphin to be between 0.68 and 0.80.

For a more comprehensive record of the literature on the biology and ecology of dolphin, see **Section 3.0** in the Dolphin Wahoo FMP (SAFMC 2003) found at: safmc.net/Library/pdf/DolphinWahooFMP.pdf

3.2.3 Stock Status of Dolphin

The Report to Congress on the Status of U.S. Stocks indicates dolphin is not overfished, and is not undergoing overfishing (http://www.nmfs.noaa.gov/sfa/statusoffisheries/SOSmain.htm). Prager (2000) conducted an exploratory assessment of dolphin, but the results were not conclusive. A Southeast Data,

Assessment, and Review (SEDAR) stock assessment for dolphin and wahoo is expected within the next 5 years.

The SEDAR process, initiated in 2002, is a cooperative Fishery Management Council process intended to improve the quality, timeliness, and reliability of fishery stock assessments in the South Atlantic, Gulf of Mexico, and U.S. Caribbean. SEDAR is managed by the Caribbean, Gulf of Mexico, and South Atlantic Fishery Management Councils in coordination with National Marine Fisheries Service (NMFS) and the Atlantic and Gulf States Marine Fisheries Commissions.

Oxenford and Hunte (1986) suggested that there were at least two separate unit stocks of dolphin in the northeast and southeast Caribbean Sea. Oxenford (1999) suggested that it was very likely that additional stocks of dolphin existed in the Gulf of Mexico and central/western Caribbean.

Life-history characteristics of dolphin such as rapid growth rates, early maturity, batch spawning over an extended season, a short life span, and a varied diet could help sustain fishing pressures on these species (Schwenke and Buckel 2008; Prager 2000; and Oxenford 1999). Dolphin is listed as species of "least concern" under the International Union for Conservation of Nature Red List, i.e., species that have a low risk of extinction. See **Appendix C** for a history of recent management of dolphin.

3.2.4 Protected Species

There are 40 listed species protected by federal law that may occur in the EEZ of the South Atlantic Region and are under the purview of NMFS. Thirty-one of these species are marine mammals protected under the Marine Mammal Protection Act (MMPA). Six of these marine mammal species (sperm, sei, fin, blue, humpback, and North Atlantic right whales) are also listed as endangered under the Endangered Species Act (ESA). In addition to those six marine mammals, five species of sea turtles (green, hawksbill, Kemp's ridley, leatherback, and loggerhead); the smalltooth sawfish; five distinct population segments (DPSs) of Atlantic sturgeon; and two *Acropora* coral species (elkhorn [*Acropora palmata*] and staghorn [*A. cervicornis*]) are also protected under the ESA. Portions of designated critical habitat for North Atlantic right whales and *Acropora* corals occur within the South Atlantic Council's jurisdiction. Additionally, on September 10, 2014, NMFS listed 20 new coral species under the ESA, five of those species occur in the Caribbean (including Florida) and all of these are listed as threatened. The two previously listed *Acropora* coral species remain protected as threatened. The potential impacts from the continued authorization of the Atlantic dolphin wahoo fishery on currently listed protected species have been considered in previous ESA Section 7 consultations or subsequent memoranda. Those consultations indicate that of the species listed above, sea turtles and smalltooth sawfish are the most likely to interact with these fisheries and are therefore discussed further below.

Turtles

Green, hawksbill, Kemp's ridley, leatherback, and loggerhead sea turtles are all highly migratory and travel widely throughout the South Atlantic. The following sections are a brief overview of the general life history characteristics of the sea turtles found in the South Atlantic region. Several volumes exist that cover the biology and ecology of these species more thoroughly (i.e., Lutz and Musick (eds.) 1997, Lutz et al. (eds.) 2003).

Green sea turtle hatchlings are thought to occupy pelagic areas of the open ocean and are often associated with *Sargassum* rafts (Carr 1987, Walker 1994). Pelagic stage green sea turtles are thought

to be carnivorous. Stomach samples of these animals found ctenophores and pelagic snails (Frick 1976, Hughes 1974). At approximately 20 to 25 cm carapace length, juveniles migrate from pelagic habitats to benthic foraging areas (Bjorndal 1997). As juveniles move into benthic foraging areas a diet shift towards herbivory occurs. They consume primarily seagrasses and algae, but are also know to consume jellyfish, salps, and sponges (Bjorndal 1980, 1997; Paredes 1969; Mortimer 1981, 1982). The diving abilities of all sea turtles species vary by their life stages. The maximum diving range of green sea turtles is estimated at 110 m (360 ft) (Frick 1976), but they are most frequently making dives of less than 20 m (65 ft) (Walker 1994). The time of these dives also varies by life stage. The maximum dive length is estimated at 66 minutes with most dives lasting from 9 to 23 minutes (Walker 1994).

The **hawksbill's** pelagic stage lasts from the time they leave the nesting beach as hatchlings until they are approximately 22-25 cm in straight carapace length (Meylan 1988, Meylan and Donnelly 1999). The pelagic stage is followed by residency in developmental habitats (foraging areas where juveniles reside and grow) in coastal waters. Little is known about the diet of pelagic stage hawksbills. Adult foraging typically occurs over coral reefs, although other hard-bottom communities and mangrove-fringed areas are occupied occasionally. Hawksbills show fidelity to their foraging areas over several years (van Dam and Diéz 1998). The hawksbill's diet is highly specialized and consists primarily of sponges (Meylan 1988). Gravid females have been noted ingesting coralline substrate (Meylan 1984) and calcareous algae (Anderes Alvarez and Uchida 1994), which are believed to be possible sources of calcium to aid in eggshell production. The maximum diving depths of these animals are not known, but the maximum length of dives is estimated at 73.5 minutes. More routinely, dives last about 56 minutes (Hughes 1974).

Kemp's ridley hatchlings are also pelagic during the early stages of life and feed in surface waters (Carr 1987, Ogren 1989). Once the juveniles reach approximately 20 cm carapace length they move to relatively shallow (less than 50m) benthic foraging habitat over unconsolidated substrates (Márquez-M. 1994). They have also been observed transiting long distances between foraging habitats (Ogren 1989). Kemp's ridleys feeding in these nearshore areas primarily prey on crabs, though they are also known to ingest mollusks, fish, marine vegetation, and shrimp (Shaver 1991). The fish and shrimp Kemp's ridleys ingest are not thought to be a primary prey item but instead may be scavenged opportunistically from bycatch discards or from discarded bait (Shaver 1991). Given their predilection for shallower water, Kemp's ridleys most routinely make dives of 50 m or less (Soma 1985, Byles 1988). Their maximum diving range is unknown. Depending on the life stage, Kemp's ridleys may be able to stay submerged anywhere from 167 minutes to 300 minutes, though dives of 12.7 minutes to 16.7 minutes are much more common (Soma 1985, Mendonca and Pritchard 1986, Byles 1988). Kemp's ridleys may also spend as much as 96% of their time underwater (Soma 1985, Byles 1988).

Leatherbacks are the most pelagic of all ESA-listed sea turtles and spend most of their time in the open ocean. Although they will enter coastal waters and are seen over the continental shelf on a seasonal basis to feed in areas where jellyfish are concentrated. Leatherbacks feed primarily on cnidarians (medusae, siphonophores) and tunicates. Unlike other sea turtles, leatherbacks' diets does not shift during their life cycle. Because leatherbacks' ability to capture and eat jellyfish is not constrained by size or age, they continue to feed on these species regardless of life stage (Bjorndal 1997). Leatherbacks are the deepest diving of all sea turtles. It is estimated that these species can dive in excess of 1,000 m (Eckert et al. 1989) but more frequently dive to depths of 50 m to 84 m (Eckert et al. 1986). Dive times range from a maximum of 37 minutes to more routines dives of 4 to 14.5 minutes (Standora et al. 1984,

Eckert et al. 1986, Eckert et al. 1989, Keinath and Musick 1993). Leatherbacks may spend 74% to 91% of their time submerged (Standora et al. 1984).

Loggerhead hatchlings forage in the open ocean and are often associated with *Sargassum* rafts (Hughes 1974, Carr 1987, Walker 1994, Bolten and Balazs 1995). The pelagic stage of these sea turtles are known to eat a wide range of things including salps, jellyfish, amphipods, crabs, syngnathid fish, squid, and pelagic snails (Brongersma 1972). Stranding records indicate that when pelagic immature loggerheads reach 40-60 cm straight-line carapace length they begin to live in coastal inshore and nearshore waters of the continental shelf throughout the U.S. Atlantic (Witzell 2002). Here they forage over hard- and soft-bottom habitats (Carr 1986). Benthic foraging loggerheads eat a variety of invertebrates with crabs and mollusks being an important prey source (Burke et al. 1993). Estimates of the maximum diving depths of loggerheads range from 211 m to 233 m (692-764 ft) (Thayer et al. 1984, Limpus and Nichols 1988). The lengths of loggerhead dives are frequently between 17 and 30 minutes (Thayer et al. 1984, Limpus and Nichols 1988, Limpus and Nichols 1994, Lanyan et al. 1989) and they may spend anywhere from 80 to 94% of their time submerged (Limpus and Nichols 1994, Lanyan et al. 1989).

Fish

Historically the **smalltooth sawfish** in the U.S. ranged from New York to the Mexico border. Their current range is poorly understood but believed to have contracted from these historical areas. In the South Atlantic region, they are most commonly found in Florida, primarily off the Florida Keys (Simpfendorfer and Wiley 2004). Only two smalltooth sawfish have been recorded north of Florida since 1963 [the first was captured off North Carolina in 1963 and the other off Georgia in 2002 (National Smalltooth Sawfish Database, Florida Museum of Natural History)]. Historical accounts and recent encounter data suggest that immature individuals are most common in shallow coastal waters less than 25 m (Bigelow and Schroeder 1953, Adams and Wilson 1995), while mature animals occur in waters in excess of 100 m (Simpfendorfer pers. comm. 2006). Smalltooth sawfish feed primarily on fish. Mullet, jacks, and ladyfish are believed to be their primary food resources (Simpfendorfer 2001). Smalltooth sawfish also prey on crustaceans (mostly shrimp and crabs) by disturbing bottom sediment with their saw (Norman and Fraser 1938, Bigelow and Schroeder 1953).

3.3 Economic Environment

3.3.1 Commercial Sector

Commercial permits are required for commercial harvest of dolphin/wahoo. A commercial dolphin wahoo permit is an open access permit. **Table 3.3.1.1** shows the number of commercial dolphin wahoo permits from 2010 through 2014. As of October 28, 2015, there were 2,203 dolphin wahoo permits.

Table 3.3.1.1. Number of South Atlantic commercial dolphin wahoo permits.

	Number of Permits
2010	2,563
2011	2,614
2012	2,685
2013	2,684
2014	2,610
Average	2,631

Source: NMFS SERO PIMS, 2014.

Additional information on commercial landings and fishing for the dolphin wahoo fishery can be found Amendment 5 to the Dolphin Wahoo FMP (SAFMC 2013), and Comprehensive Annual Catch Limit (ACL) Amendment (SAFMC 2011)] and is incorporated herein by reference.

Total Landings and Dockside Revenues

Annual commercial landings of dolphin in the Atlantic ranged from approximately 617,000 lbs whole weight (ww) to 1.03 million lbs ww from 2010 through 2014 (**Figure 3.3.1.1**). Dockside revenues from those landings ranged from approximately $1.58 million to $2.59 million (2014 $) (**Figure 3.3.1.1**). The average dockside price during those five years was $2.50 per lb ww (2014$). Commercial landings increased in 2011 and subsequently fell through 2013. Dockside revenues, on the other hand, slightly rose from 2010 through 2012 but also fell in 2013. Both landings and revenues for dolphin surged in 2014, almost doubling those of 2013. In 2015 (not in the figure), landings and revenues were higher than those in 2014 despite the commercial harvest closure in the second half of the year; landings were 1,071,855 lb ww and revenues were $3,680,815 (current dollars).

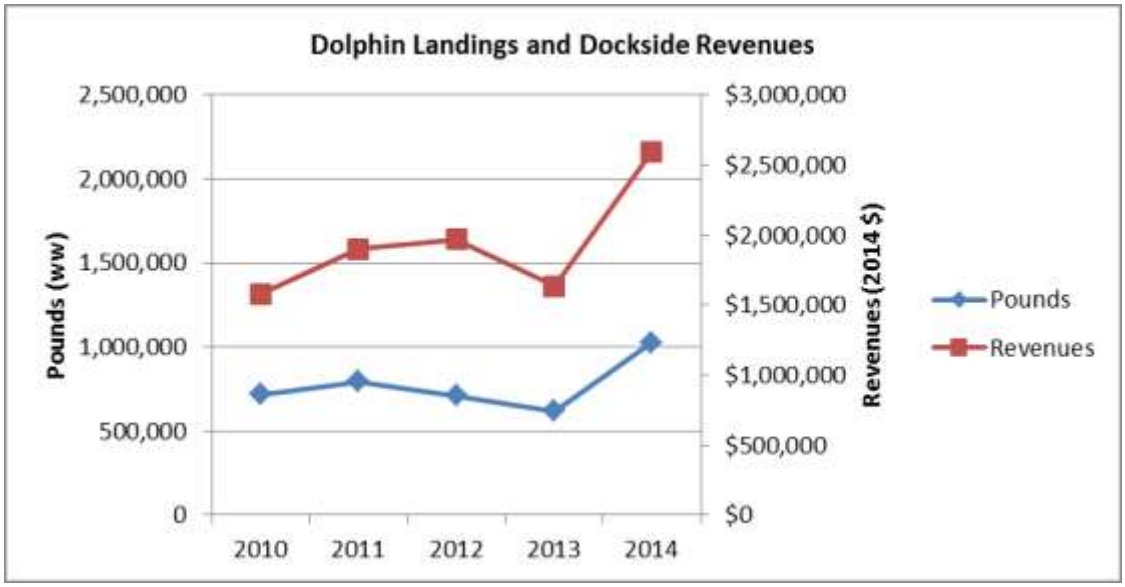

Figure 3.3.1.1. Annual commercial landings of dolphin by weight (lbs ww) and dockside revenues (2014 $).
Source: SEFSC Commercial ACL Dataset (August 2015).

The management area for dolphin extends from Florida through Maine. All states north of North Carolina are combined as one area denoted as Northeast (NE). Among the Atlantic states,

Florida/Georgia accounted for most of the dolphin landings both in weight and revenue for most years (**Figure 3.3.1.2** and **Figure 3.3.1.3**). North Carolina followed next, except in 2011 when South Carolina had a larger share than North Carolina. It is noted that North Carolina accounted for the highest landings and revenues in 2014. The Northeast region has accounted for less than 14% of landings by both weight and dockside revenues.

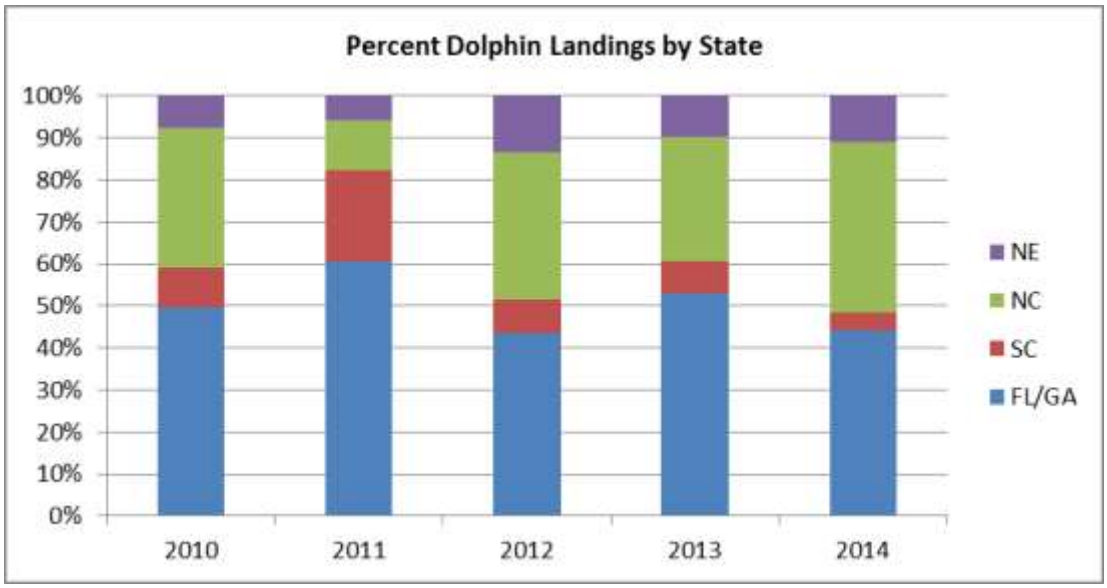

Figure 3.3.1.2. Percent of dolphin landings (lbs ww) by state, 2010–2014.
Source: SEFSC Commercial ACL Dataset (August 2015).

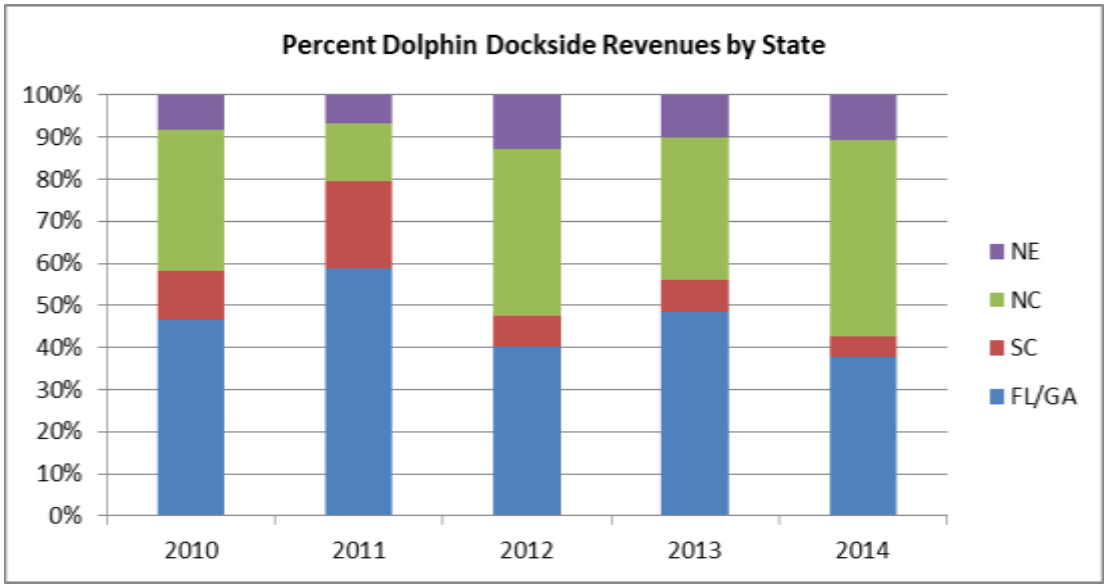

Figure 3.3.1.3. Percent of dolphin dockside revenues (2014 $) by state, 2010–2014.
Source: SEFSC Commercial ACL Dataset (August 2015).

Commercial fishermen harvest dolphin using various gear types, with hook and line and longline accounting for most of the landings and revenues. On average (2010-2014), longline accounted for the highest landings and revenues (**Table 3.3.1.2).** With the exception of 2011, longline has been the

dominant gear in both landings and revenues. Landings and revenues in 2011 were partly confounded by a relatively large amount of landings and revenues by "other gear." In every year inclusive of 2011, most of the landings by other gear were assigned to "unclassified gear." Longline accounted for most of the substantial increase in 2014 landings and revenues.

Table 3.3.1.2. Dolphin landings (lb ww) and revenues (2014$) by gear, 2010-2014.

	Hook and Line	Longline	Others	Total
	Pounds (ww)			
2010	228,669	422,785	63,880	715,334
2011	321,209	270,809	200,191	792,209
2012	210,782	450,286	47,784	708,852
2013	200,215	383,660	32,989	616,864
2014	195,633	803,134	28,427	1,027,194
Average	231,302	466,135	74,654	772,091
	Dockside Revenues (2014 $)			
2010	$471,101	$934,031	$174,558	$1,579,690
2011	$734,302	$680,953	$482,755	$1,898,009
2012	$544,651	$1,302,830	$118,803	$1,966,284
2013	$511,977	$1,035,313	$84,442	$1,631,731
2014	$454,740	$2,097,765	$39,370	$2,591,875
Average	$543,354	$1,210,178	$179,985	$1,933,518

"Hook and line" includes handline, power assisted line, and troll line; "others" include nets, traps, dredges/gigs/spears, and unclassified gear.
Source: SEFSC Commercial ACL Dataset (August 2015).

Average monthly distribution of landings and dockside revenues for the years 2010 through 2014 are shown in **Figure 3.3.1.4**. Average landings and revenues peaked in May and were relatively lower in the colder months. On average, May through July accounted for the highest landings and revenues.

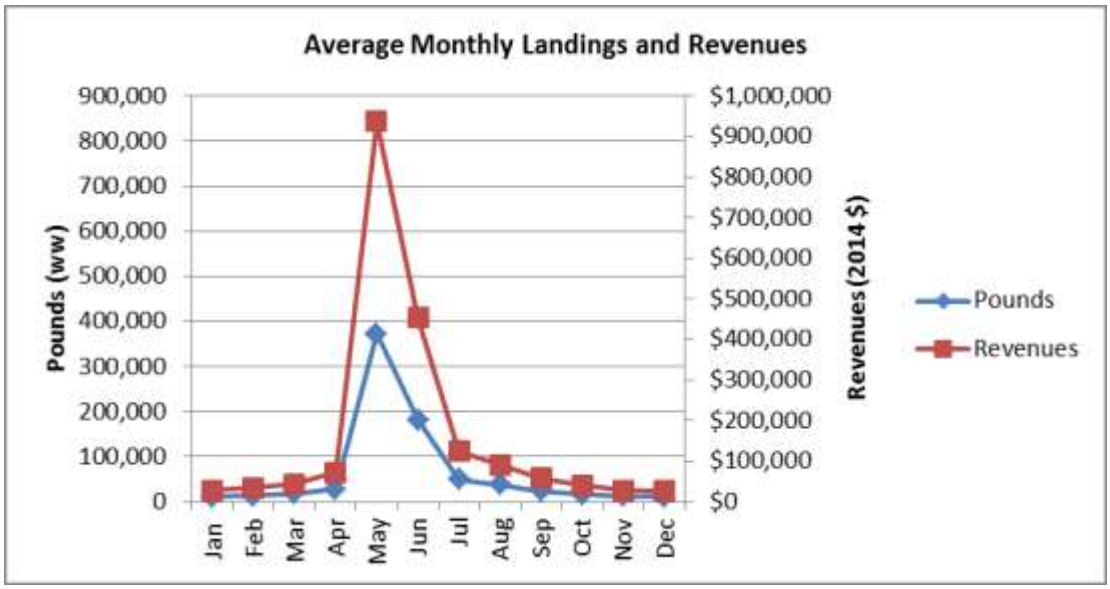

Figure 3.3.1.4. Average monthly dolphin landings (lbs ww) and revenues (2014 $), 2010–2014.
Source: SEFSC Commercial ACL Dataset (August 2015).

Vessel Trips, Landings, and Dockside Revenues

The following vessel trip level summary is based on logbook information for landings and NMFS Accumulated Landings System (ALS) for prices and so would not exactly match with the landings and revenues presented above. From 2010 through 2014, excluding the Northeast, an annual average of 531 vessels took 2,246 commercial trips that combined landed an average of 204,810 lbs gutted weight (gw) of dolphin annually with a dockside value (2014 dollars) of $599,927 (**Table 3.3.1.3**). Average annual dockside revenue from dolphin landings represented approximately 13% of total dockside revenue from trips that landed dolphin from 2010 through 2014.

Table 3.3.1.3. Vessels and trips with dolphin landings by weight (lb gw) and dockside revenue (2014 $), 2010–2014.

Year	Number vessels that landed dolphin	Number trips that landed dolphin	Dolphin landings (lb gw)	Dockside revenue from dolphin (2013 $)	'Other species' landed with dolphin (lb gw)	Dockside revenue from 'other species' landings (2013 $)	Total dockside revenue (2013 $) from trips with dolphin landings
2010	546	1,995	210,773	$547,819	1,404,061	$3,789,201	$4,337,021
2011	524	2,280	205,102	$584,258	1,275,811	$3,589,103	$4,173,360
2012	538	2,235	176,329	$566,230	1,354,130	$3,844,707	$4,410,937
2013	491	2,026	180,966	$554,488	1,308,726	$3,989,455	$4,543,944
2014	558	2,693	250,879	$746,841	1,355,189	$4,128,533	$4,875,374
Average	531	2,246	204,810	$599,927	1,339,583	$3,868,200	$4,468,127

Source: SEFSC Economic Panel Data, 2015.

On average, the vessels that harvested dolphin also took 17,949 trips per year without dolphin landings. Combining all sources of revenues, the average annual dockside revenues of vessels that landed dolphin was about $37,307 (2014 dollars) (**Table 3.3.1.4**). Annual dockside revenue from dolphin landings represented, on average, approximately 3% of the total dockside revenue from all commercial landings from 2010 through 2014. Average annual dockside revenue per vessel from all landings was $37,307 as compared to $1,128 per vessel from dolphin only.

Table 3.3.1.4. Dockside revenues (2014 $) from all sources for vessels that landed dolphin in trips with or without dolphin, 2010–2014.

Year	Number vessels that landed dolphin	Dockside revenue from dolphin (2013 $)	Dockside revenue from 'other species' jointly landed with dolphin (2013 $)	Dockside revenue from 'other species' landed on trips without dolphin (2013 $)	Total dockside revenue (2013 $)	Average total dockside revenue per vessel (2013 $)
2010	546	$547,819	$3,789,201	$14,869,256	$19,206,277	$35,176
2011	524	$584,258	$3,589,103	$14,295,593	$18,468,954	$35,246
2012	538	$566,230	$3,844,707	$14,176,707	$18,587,644	$34,550
2013	491	$554,488	$3,989,455	$13,253,219	$17,797,163	$36,247
2014	558	$746,841	$4,128,533	$20,409,793	$25,285,167	$45,314
Average	531	$599,927	$3,868,200	$15,400,914	$19,869,041	$37,307

Source: SEFSC Economic Panel Data, 2015.

3.3.2 Recreational Sector

This regulatory amendment directly affects only the commercial sector; therefore, an economic description of the recreational sector is not presented. Information on this sector is available in previous amendments [Amendment 5 to the Dolphin Wahoo FMP (SAFMC 2013), and Comprehensive ACL Amendment (SAFMC 2011)], and is incorporated herein by reference.

3.4 Social Environment

This Regulatory Amendment affects commercial management of dolphin. This section provides the background for the proposed actions evaluated in **Chapter 4**. Commercial dolphin landings and commercial Atlantic Dolphin-Wahoo permits are included by State to provide information on the geographic distribution of fishing involvement. Descriptions of fishing communities including the top communities involved in commercial dolphin fishing in the South Atlantic, Mid-Atlantic, and New England are included. Community level data are presented to meet the requirements of National Standard 8 of the Magnuson-Stevens Act. National Standard 8 requires the consideration of the importance of fishery resources to human communities when changes to fishing regulations are considered. And lastly, minority, poverty, and social vulnerability data are presented to assess the potential for environmental justice concerns.

3.4.1 Landings and Permits by State

The distribution of dolphin commercial landings has varied substantially by state for those states with the largest percentages of total landings (**Figure 3.3.1.3** and **Table 3.4.1.1**). The distribution of dolphin wahoo commercial permits by state has remained relatively stable over the last five years (**Table 3.3.1.1**).

Commercial Landings

The South Atlantic Council manages dolphin through the Mid-Atlantic and New England regions as well as in the South Atlantic region. Dolphin is landed commercially in most of the states along the Atlantic coast, ranging from Florida at the most southern point to Maine at the most northern point.

The majority of dolphin is landed in the South Atlantic region with the largest percentages of landings in Florida (range of 60.4% to 30.0% for years 2010-2015, **Table 3.4.1.1**) and North Carolina (range of 41.3% to 11.9%). A sizable amount of the total landings has also been landed in South Carolina during several recent years. Data for South Carolina are combined with Georgia in **Table 3.4.1.1**to maintain confidentially, but the majority of landings reported for the combined category occurred in South Carolina. States in the Mid-Atlantic and New England regions include a much smaller percentage of the total commercial landings. Some Mid-Atlantic and New England states (New Hampshire, Pennsylvania, and Delaware) did not report any commercial landings for dolphin.

Table 3.4.1.1. Percentage of total commercial dolphin landings by State for 2010-2015.

Region	State	2010	2011	2012	2013	2014	2015
South Atlantic							
	East FL	49.3%	60.4%	43.5%	54.0%	42.7%	30.0%
	*GA and SC	9.6%	21.8%	7.9%	7.3%	4.7%	35.4%
	NC	33.5%	11.9%	35.1%	28.9%	41.3%	30.2%
Mid-Atlantic							
	*VA and MD	1.0%	0.6%	1.1%	2.1%	2.2%	1.4%
	*NY and NJ	4.5%	1.9%	5.9%	4.7%	3.1%	0.8%
New England							
	*CT, RI, ME, MA	2.1%	3.4%	6.5%	3.0%	6.0%	2.2%

Source: SERO ACL Files (2010-2014) and Quota Monitoring Landings (2015).
*Georgia and South Carolina; Virginia and Maryland; New York and New Jersey; and Connecticut, Rhode Island, Maine, and Massachusetts have been combined to maintain confidentiality

Commercial Permits

Over the last five years, the total number of Atlantic Dolphin Wahoo commercial permits has ranged from 2,563 to 2,685 permits (**Table 3.3.1.1**). The majority of permits are held by individuals in three South Atlantic states: Florida (range of about 63% to 66% of total permits for years 2010-2014, **Table 3.4.1.2**), North Carolina (range of about 19% to 20%), and South Carolina (range of about 3.2% to 3.5%). A smaller number of permits are held by individuals in other states in the South Atlantic, Mid-Atlantic, and New England. Some permits are held by residents of other states and territories (Alabama, California, Idaho, Indiana, Louisiana, Michigan, Mississippi, Puerto Rico, Tennessee, Texas, Virgin Islands, and West Virginia).

Table 3.4.1.2. Number of Atlantic Dolphin-Wahoo commercial permits by State for 2010-2014.

Region	State	2010	2011	2012	2013	2014
South Atlantic						
	FL	1,609	1,684	1,773	1,774	1,717
	GA	12	10	11	11	12
	NC	524	510	504	507	488
	SC	90	87	86	88	86
Mid-Atlantic						
	VA	35	37	35	31	31
	MD	32	25	19	22	24
	DE	15	14	14	14	12
	PA	5	5	5	5	4
	NJ	63	58	62	68	68
	NY	49	45	40	38	39
New England						
	CT	4	2	2	3	3
	RI	19	15	15	19	21
	MA	29	29	28	22	27
	NH	1	3	3	2	
	ME	3	2	5	6	5
Other						
	Other	73	88	83	74	73

Source: SERO Permits Database.

3.4.2 Fishing Communities

Descriptions of the social and cultural environment of the dolphin portion of the Dolphin Wahoo Fishery are contained in Amendment 5 to the Dolphin Wahoo FMP (SAFMC 2013). The referenced description focuses on available geographic and demographic data to identify communities having a strong relationship with dolphin fishing using 2011 ALS data. A strong relationship is defined as having significant landings and revenue for these species. Thus, positive or negative impacts from regulatory change are expected to occur in places with greater landings. This section has been updated using 2013 ALS data, the most recent year available.

The descriptions of South Atlantic, Mid-Atlantic, and New England communities include information about the top communities based upon a "regional quotient" of commercial landings and value for dolphin. The regional quotient 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. These communities would be most likely to experience the effects of the proposed actions for dolphin and impact the participants and associated businesses and communities within the region. If a community is identified as a dolphin community based on the regional quotient, this does not necessarily mean that the community would experience significant impacts due to changes in management of dolphin 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 regional quotients can be found for South Atlantic communities on Southeast Regional Office's Community Snapshots website at http://sero.nmfs.noaa.gov/sustainable_fisheries/social/community_snapshot/ and can be found for Mid-Atlantic and New England communities on the Northeast Fisheries Science Center's Community Snapshots website at http://www.nefsc.noaa.gov/read/socialsci/communitySnapshots.php.

In addition to examining the regional quotients to understand how South Atlantic, Mid-Atlantic, and New England communities are engaged and reliant on fishing, indices were created using secondary data from permit and landings information for the commercial sector (Jepson and Colburn 2013; Jacob et al. 2013). Fishing engagement is primarily the absolute numbers of permits, landings, and value. 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. Fishing reliance includes the same variables as fishing engagement 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. Taking the communities with the highest regional quotients, factor scores of both engagement and reliance for both commercial and recreational fishing were plotted. Two thresholds of one and ½ standard deviation above the mean are plotted onto the graphs to help determine a threshold for significance. The factor scores are standardized therefore a score above 1 is also above one standard deviation. A score above ½ standard deviation is considered engaged or reliant with anything above 1 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 and positive scores are above the mean and negative scores are below the mean. Comparisons between scores are relative but one should bear in mind that, like a z-score, the factor score puts the community on a spot in the distribution. Objectively, they have a score related to the percent of communities with those 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 dependent 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.

In addition, top communities by the number of Atlantic Dolphin Wahoo commercial permits have been described.

South Atlantic Dolphin Fishing Communities

Commercial Communities

About 34% of dolphin is landed in the top four Florida communities (Palm Beach Gardens, Mayport, Margate, and Palm Beach Shores), representing about 31% of the South Atlantic-wide value (**Figure 3.4.2.1**). The top three North Carolina communities (Wanchese, Hatteras, and Beaufort) collectively include about 30% of South Atlantic landings and about 34% of South Atlantic value of dolphin.

Several Florida Keys communities (Key Largo, Islamorada, and Key West) are included in the top communities and collectively represent about 8.3% of landings and 6.2% of value. In addition, the top 20 communities include five other Florida communities, two other North Carolina communities, and three communities in South Carolina.

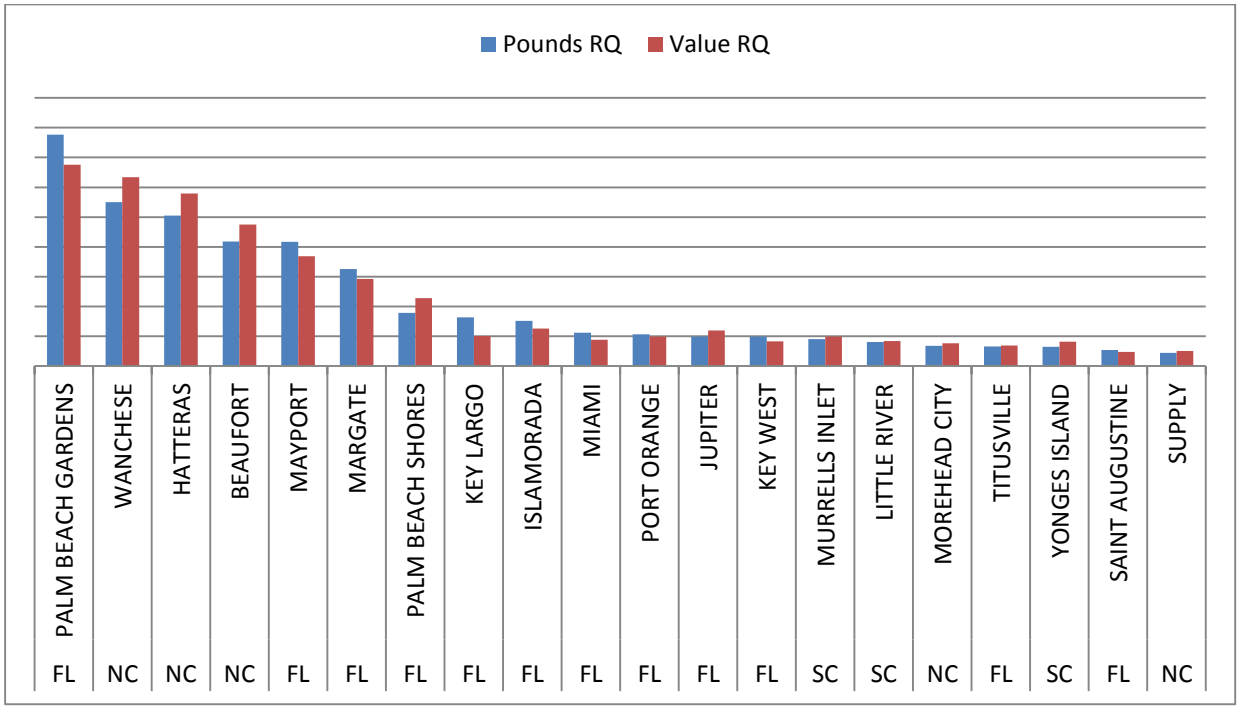

Figure 3.4.2.1. Top twenty South Atlantic communities ranked by pounds and value regional of quotient (RQ) of dolphin. The actual RQ values (y-axis) are omitted from the figure to maintain confidentiality.
Source: SERO, Community ALS 2013.

Reliance on and Engagement with Commercial Fishing

For dolphin (**Figure 3.4.2.2**), the primary communities that demonstrate high levels of commercial fishing engagement include Islamorada, Jupiter, Key Largo, Key West, Miami, and St. Augustine, Florida; Beaufort, Morehead City, and Wanchese, North Carolina; and Little River and Murrells Inlet, South Carolina. Communities with substantial commercial reliance include Key West, Florida and Beaufort, Morehead City, and Wanchese, North Carolina.

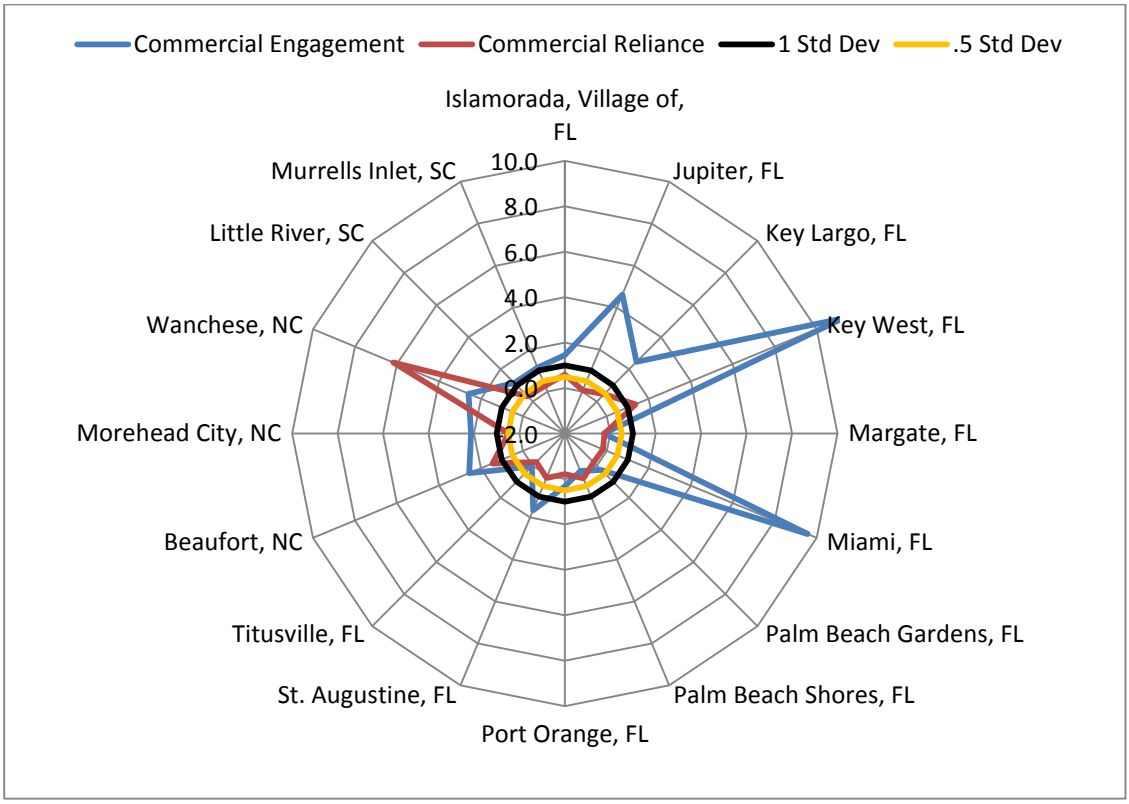

Figure 3.4.2.2. Commercial engagement for South Atlantic dolphin fishing communities.
Source: SERO Social Indicator Database 2012.

Mid-Atlantic and New England Dolphin Fishing Communities

Overall, landings of dolphin in the Mid-Atlantic and New England regions are low, except for in North Carolina, which is included in the South Atlantic portion of this narrative. For example, the top Mid-Atlantic community of Barnagat Light and Long Beach, New Jersey (**Figure 3.4.2.3**) landed less than the South Atlantic community of Islamorada, Florida, but more than the community of Miami, Florida in **Figure 3.4.2.1**.

Commercial Communities

For dolphin in the Mid-Atlantic and in New England (**Figure 3.4.2.3**), the relatively highest level of landings at the regional level occur in Barnagat Light Beach and Long Beach, New Jersey. Other top five communities include Fairhaven, Massachusetts; Newport News, Virginia; Point Judith, Rhode Island; and Ocean City, Maryland. In addition, the top 10 communities include two New York communities, one other New Jersey community, one other Massachusetts community, and one other Virginia community.

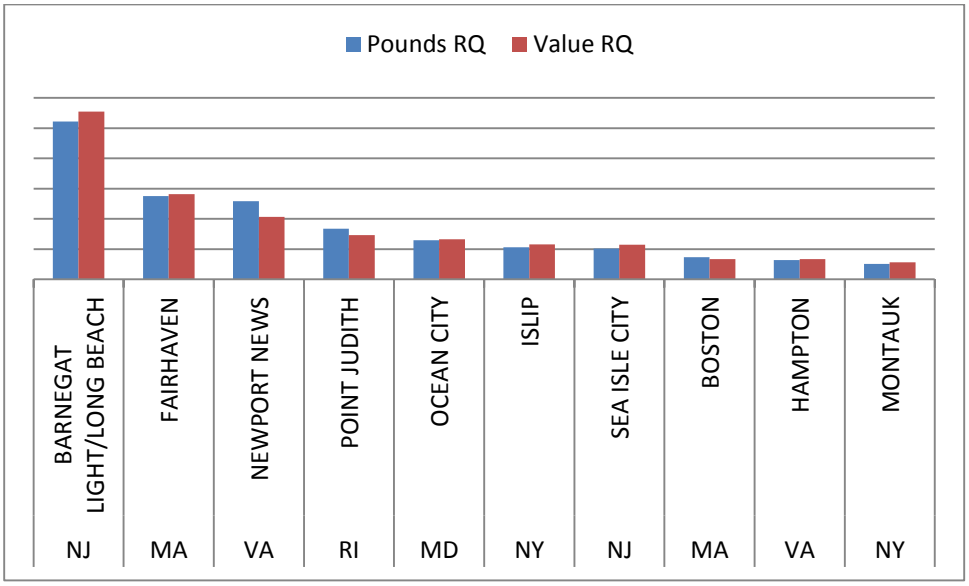

Figure 3.4.2.3. Top ten Mid-Atlantic and New England communities ranked by pounds and value (RQ) of dolphin. The actual RQ values (y-axis) are omitted from the figure to maintain confidentiality. Source: NEFSC, 2013.

Reliance on and Engagement with Commercial Fishing

For dolphin (**Figure 3.4.2.4**), the primary communities that demonstrate high levels of commercial fishing engagement include Sea Isle City, New Jersey and Montauk, New York. Communities with substantial commercial reliance include Hampton and Newport News, Virginia and Montauk, New York.

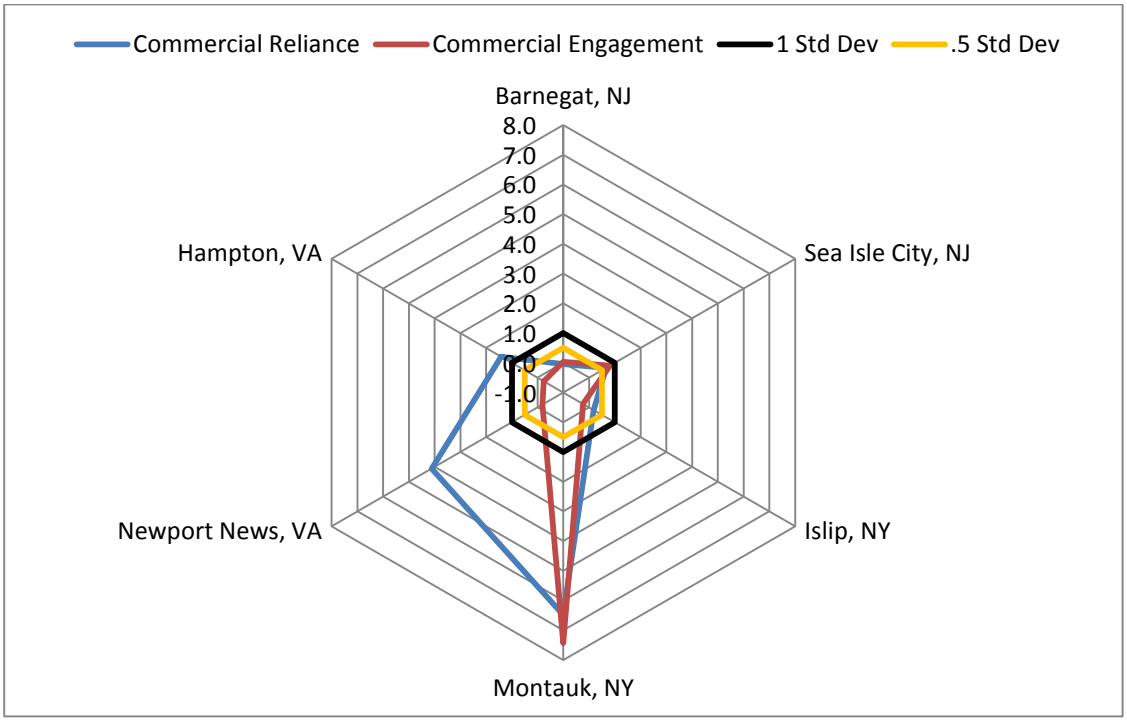

Figure 3.4.2.4. Commercial engagement for Mid-Atlantic and New England dolphin fishing communities.
Source: SERO/NEFSC Social Indicator Database 2012.

Atlantic Dolphin Wahoo Commercial Permit Communities

A total of 523 communities include vessels with a commercial permit for Atlantic Dolphin-Wahoo. Communities with the most permits are located in Florida and North Carolina (**Table 3.4.2.1**). Several communities in the Florida Keys (Key West, Marathon, Summerland Key, Islamorada, and Tavernier) and south Florida (such as Miami) include a large number of permits.

Table 3.4.2.1. Top communities by number of Atlantic Dolphin-Wahoo commercial permits.

State	Community	Permits
FL	Key West	126
FL	Miami	68
FL	Marathon	64
FL	Fort Pierce	53
FL	Jupiter	51
FL	Jacksonville	44
FL	Summerland Key	38
FL	Panama City	37
NC	Wilmington	33
FL	Sebastian	31
FL	Stuart	30
NC	Hatteras	30
FL	Hialeah	28
FL	Islamorada	28
FL	Tavernier	26
FL	West Palm Beach	26

Source: SERO FOIA Request, October 26, 2015.

3.4.3 Environmental Justice Considerations

Executive Order 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 fishermen could be impacted by the proposed actions in the South Atlantic, Mid-Atlantic, and New England regions. 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 framework, 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.

Figure 3.4.3.1 and **3.4.3.2** provide the social vulnerability of commercially engaged and reliant communities. Several South Atlantic, Mid-Atlantic, and New England communities exceed the threshold of 0.5 standard deviation for at least one of the social vulnerability indices: Margate and Miami, Florida; Beaufort, Morehead City, and Wanchese, North Carolina; Barnegat, New Jersey; and Newport News and Hampton, Virginia. The community of Miami, Florida exceeds the threshold for all three social vulnerability indices. This community has substantial vulnerabilities and may be susceptible to further effects from any regulatory changes depending upon the direction and extent of that change.

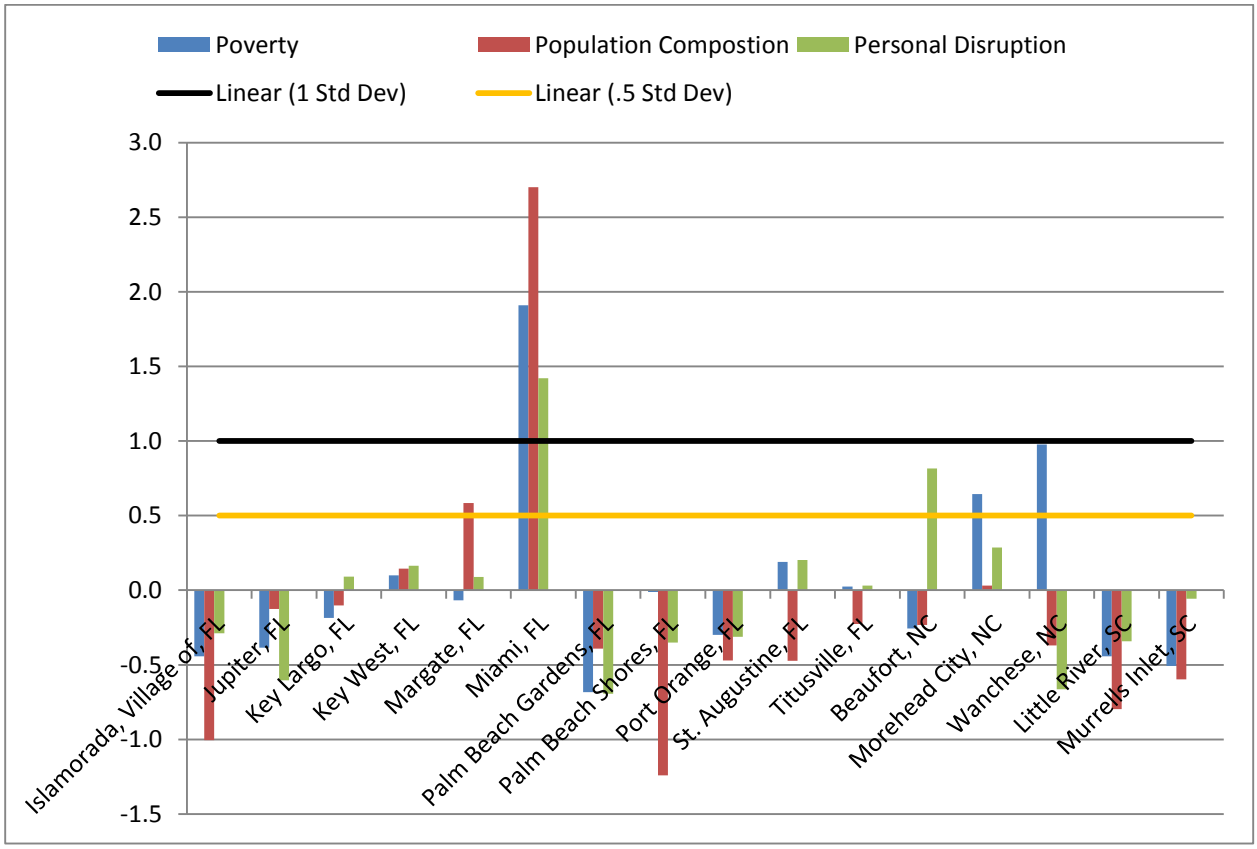

Figure 3.4.3.1. Social vulnerability indices for South Atlantic communities with top regional quotients for dolphin.
Source: SERO, Social Indicator Database 2012.

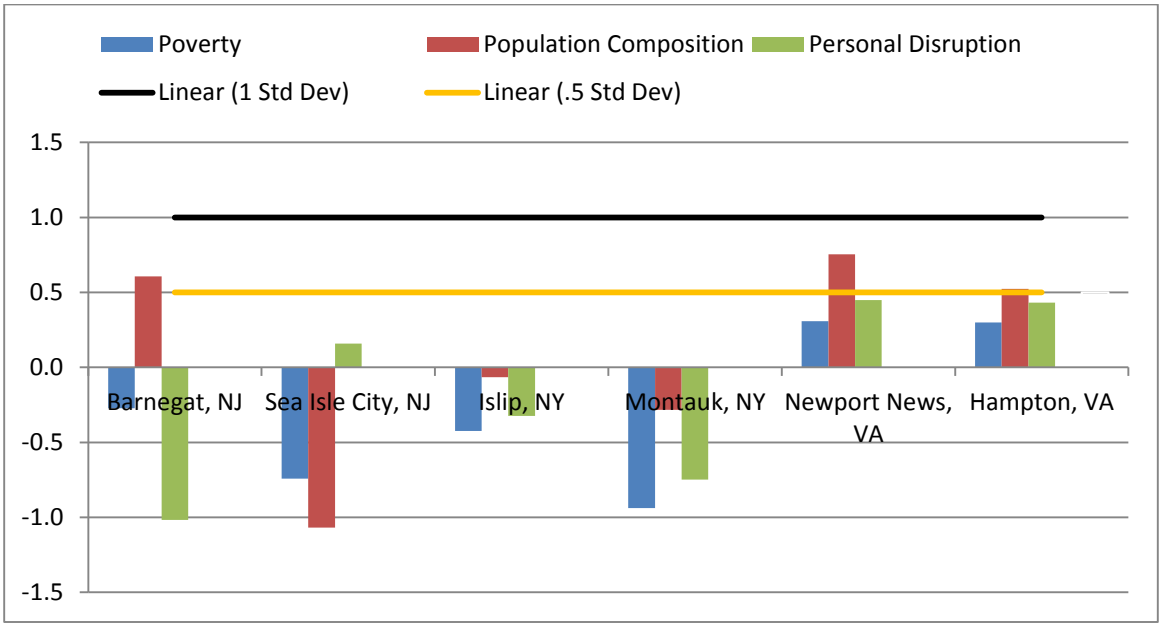

Figure 3.4.3.2. Social vulnerability indices for Mid-Atlantic and New England communities with top regional quotients for dolphin.
Source: SERO and NEFSC, Social Indicator Database 2012.

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 dolphin specifically (participation). Although no EJ issues have been identified, the absence of potential EJ concerns cannot be assumed.

3.5 Administrative Environment

3.5.1 The Fishery Management Process and Applicable Laws

3.5.1.1 Federal Fishery Management

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

The South Atlantic Council, in cooperation with the Mid-Atlantic Fishery Management Council and the New England Fishery Management Council, is responsible for conservation and management of dolphin and wahoo in federal waters off the Atlantic states. These waters extend from 3 to 200 nm offshore from the seaward boundary of Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, North Carolina, South Carolina, Georgia, and east Florida to Key West. The South Atlantic Council has thirteen 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. On the South Atlantic Council, there are two public members from each of the four South Atlantic States. Non-voting members include representatives of the U.S. Fish and Wildlife Service, U.S. Coast Guard, State Department, and Atlantic States Marine Fisheries Commission (ASMFC). The South Atlantic Council has adopted procedures whereby the non-voting members serving on the South Atlantic Council Committees have full voting rights at the Committee level but not at the full South Atlantic Council level. South Atlantic Council members serve three-year terms and are recommended by state governors and appointed by the Secretary from lists of nominees submitted by state governors. Appointed members may serve a maximum of three consecutive terms.

Public interests also are involved in the fishery management process through participation on Advisory Panels and through council meetings, which, with few exceptions for discussing personnel matters and litigation, are open to the public. The South Atlantic Council uses its Scientific and Statistical Committee to review the data and science being used in assessments and fishery management plans/amendments. In addition, the regulatory process is in accordance with the Administrative Procedure Act, in the form of "notice and comment" rulemaking.

3.5.1.2 State Fishery Management

The state governments of Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia North Carolina, South Carolina, Georgia, and Florida have the authority to manage fisheries that occur in waters extending three nautical miles from their respective shorelines. The Department of Marine Fisheries is responsible for marine fisheries in Maine's state waters. In New Hampshire, marine fisheries are managed by the Marine Fisheries Division of the New Hampshire Fish and Game Department. Massachusetts's marine fisheries are managed by the Division of Marine Fisheries of the Massachusetts Department of Fish and Game. Rhode Island's marine fisheries are managed by the Division of Fish and Wildlife of Rhode Island's Department of Environmental Management. Connecticut manages its marine fisheries through the Department of Energy and Environmental Protection. New York's marine fisheries are managed by the Division of Fish, Wildlife and Marine Resources of the Department of Environmental Conservation. New Jersey manages its marine fisheries through the Division of Fish and Wildlife of the Department of Environmental Protection. Pennsylvania manages its fisheries through the Pennsylvania Fish and Boat Commission. Marine fisheries in Delaware are managed by the Fisheries Section of the Division of Fish and Wildlife. Maryland's Department of Natural Resources manages its marine fisheries. Marine fisheries in Virginia are managed by the Virginia Marine Resources Commission. North Carolina's marine fisheries are managed by the Marine Fisheries Division of the North Carolina Department of Environmental Quality. The Marine Resources Division of the South Carolina Department of Natural Resources regulates South Carolina's marine fisheries. Georgia's marine fisheries are managed by the

Coastal Resources Division of the Department of Natural Resources. The Marine Fisheries Management Division of the Florida Fish and Wildlife Conservation Commission is responsible for managing Florida's marine fisheries. Each state fishery management agency has a designated seat on the South Atlantic Council. The purpose of state representation at the South Atlantic 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 Atlantic States are also involved through the ASMFC in management of marine fisheries. This commission was created to coordinate state regulations and develop management plans for interstate fisheries. It has significant authority, through the Atlantic Striped Bass Conservation Act and the Atlantic Coastal Fisheries Cooperative Management Act, to compel adoption of consistent state regulations to conserve coastal species. The ASFMC is also represented at the South Atlantic Council level, but does not have voting authority at the South Atlantic Council level.

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 ASMFC to develop and implement cooperative State-Federal fisheries regulations.

3.5.1.3 Enforcement

Both the National Oceanic and Atmospheric Administration's (NOAA) NMFS Office for Law Enforcement (NOAA/OLE) and the United States Coast Guard (USCG) have the authority and the responsibility to enforce South Atlantic Council regulations. NOAA/OLE agents, who specialize in living marine resource violations, provide fisheries expertise and investigative support for the overall fisheries mission. The USCG is a multi-mission agency, which provides at sea patrol services for the fisheries mission.

Neither NOAA/OLE nor the USCG can provide a continuous law enforcement presence in all areas due to the limited resources of NOAA/OLE and the priority tasking of the USCG. To supplement at sea and dockside inspections of fishing vessels, NOAA entered into Cooperative Enforcement Agreements with all but one of the states in the Southeast Region (North Carolina), which granted authority to state officers to enforce the laws for which NOAA/OLE has jurisdiction. In recent years, the level of involvement by the states has increased through Joint Enforcement Agreements, whereby states conduct patrols that focus on federal priorities and, in some circumstances, prosecute resultant violators through the state when a state violation has occurred.

The NOAA Office of General Counsel Penalty Policy and Penalty Schedules can be found at www.gc.noaa.gov/enforce-office3.html.

Chapter 4. Environmental Consequences

4.1 Action. Establish a commercial trip limit for dolphin in the exclusive economic zone (EEZ) in the South Atlantic Council's area of jurisdiction.

4.1.1 Physical and Biological Effects

The South Atlantic Council is considering a commercial trip limit when a specific percentage of the annual catch limit (ACL) for dolphin is met or projected to be met. The commercial dolphin season for 2015 closed for the first time in the history of Dolphin Wahoo FMP on June 30, 2015, due to the commercial sector ACL of 1,157,001 pounds whole weight (lbs ww) for dolphin being reached. In both 2014 and 2015 there was an increase in the number of longline trips targeting dolphin resulting in much higher than average landings in May and June (**Table 4.1.1.1**).

Table 4.1.1.1. Atlantic dolphin commercial landings (lbs ww) by gear type. "Other" gear comes from landings reported with the gear types of dredges, spear, nets, diving, and unclassified gear.

	Hook and Line	Longline	Other	Total
2010	228,669	422,785	63,880	715,334
2011	321,209	270,809	200,191	792,209
2012	210,782	450,286	47,784	708,852
2013	200,215	383,660	32,989	616,864
2014	251,114	726,337	45,436	1,022,887

Source: ACL_Files_10022015

Changes in the Highly Migratory Species (HMS) regulations may have also prompted a change in fishing patterns for dolphin or effort may be increasing for the species. Anecdotal information suggests that the water was warmer closer to shore in 2015 and the dolphin may have been an easier target for both longline and non-longline vessels.

***Alternatives*[1]**

*(preferred alternatives in **bold**)*

1. No Action. There is no commercial trip limit for dolphin in the South Atlantic portion of the Atlantic EEZ. For a commercially permitted vessel fishing north 39° N. latitude, that does not have a federal commercial vessel permit for dolphin or wahoo, there is a trip limit of 200 pounds of dolphin and wahoo, combined. The commercial fishery for dolphin will remain open until the entire commercial portion of the annual catch limit (ACL) is met or projected to be met.

2. A commercial trip limit for dolphin will be established once 65% of the commercial ACL is met.
   Sub-Alternative 2a: 1,000 lbs ww trip limit
   Sub-Alternative 2b: 2,000 lbs ww trip limit
   Sub-Alternative 2c: 3,000 lbs ww trip limit
   Sub-Alternative 2d: 4,000 lbs ww trip limit

3. A commercial trip limit for dolphin will be established once 70% of the commercial ACL is met.
   Sub-Alternative 3a: 1,000 lbs ww trip limit
   Sub-Alternative 3b: 2,000 lbs ww trip limit
   Sub-Alternative 3c: 3,000 lbs ww trip limit
   Sub-Alternative 3d: 4,000 lbs ww trip limit

4. **A commercial trip limit for dolphin will be established once 75% of the commercial ACL is met.**
   Sub-Alternative 4a: 1,000 lbs ww trip limit
   Sub-Alternative 4b: 2,000 lbs ww trip limit
   Sub-Alternative 4c: 3,000 lbs ww trip limit
   Sub-Alternative 4d: 4,000 lbs ww trip limit

[1]See Chapter 2 for a more detailed description of the alternatives.

The landings from 2010 through 2015 are plotted in **Figure 4.1.1.1**. Total annual landings increased in 2014 and then increased even more in 2015, triggering a season closure on June 30, 2015, as a result of meeting the commercial sector ACL of 1,157,001 lbs ww.

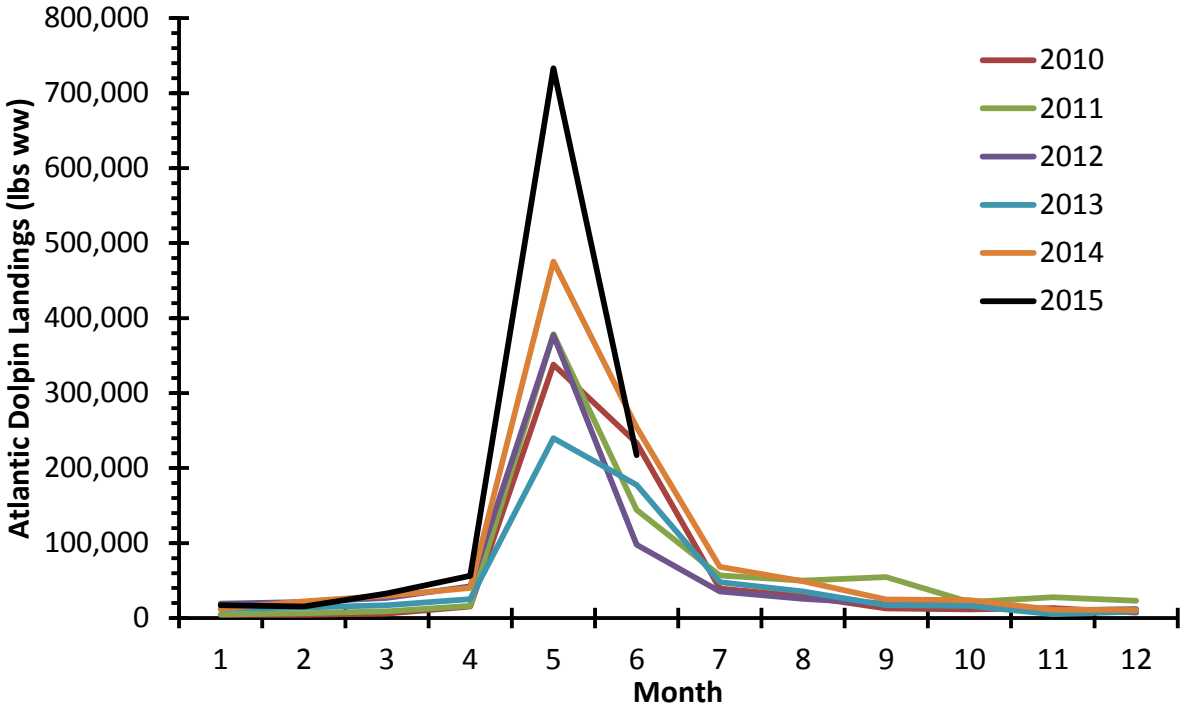

Figure 4.1.1.1. Atlantic dolphin commercial landings (lbs ww) by month from 2010 through 2015. Atlantic dolphin commercial landings were obtained from the Southeast Fisheries Science Center. These landings include all commercial dolphin landings (this includes landings from those HMS permit holders who also have a dolphin permit) from Maine to Florida.

Alternative 1 (no action) would not implement a commercial trip limit and the commercial harvest of dolphin would continue until the commercial sector ACL was met. Currently, the commercial ACL for dolphin is 1,157,001 lbs ww. However, the Generic Accountability Measures (AM) and Dolphin Allocation Amendment (Generic AM Amendment), which includes Amendment 8 to the Dolphin Wahoo FMP (SAFMC 2015) modifies the sector allocations for dolphin from 7.54% commercial and 92.46% recreational to 10% commercial and 90% recreational. This allocation change will increase the commercial sector ACL from 1,157,001 lbs ww to 1,534,485 lbs ww. The Generic AM Amendment was approved by the Secretary of Commerce on October 14, 2015. The proposed rule was published on September 29, 2015 (80 FR 58448), and a final rule published on January 22, 2016, and is effective on February 22, 2016. Because the Generic AM Amendment (SAFMC 2015) was approved by the Secretary of Commerce and the final rule is effective for the 2016 fishing year, the analysis of the action alternatives is based on the revised commercial ACL of 1,534,485 lbs ww.

Alternative 2 would establish a trip limit when 65% of the commercial sector ACL (revised ACL established in Generic AM Amendment) is met (997,415 lbs ww), **Alternative 3** would establish a trip limit when 70% of the commercial sector ACL is met (1,074,140 lbs ww), and **Preferred Alternative 4** would trigger a trip limit when 75% of the commercial ACL is met (1,150,864 lbs ww). Under each alternative, there are sub-alternatives for trip limits of 1,000, 2,000, 3,000, or 4,000 lbs ww.

Assuming future landings would reflect average monthly landings, data from 2010 through 2014 were analyzed to predict how the commercial trip limits might impact commercial harvest of dolphin. Data from 2015 were also analyzed to predict how the commercial trip limits might affect harvest of dolphin if the high landings that were seen in 2015 persisted in the future. However, because the season was closed in June, the 2015 scenario uses 2015 landings from January-June and 2010-2014 landings for the remainder of the year.

Based on data from 2010-2014 fishing years to predict future landings, the landings would be well below both the 2015 commercial sector ACL (1,157,001 lbs ww) and the revised commercial sector ACL that is expected to be effective for the 2016 fishing year (1,534,485 lbs ww). Under this scenario, the trip limits proposed by **Alternative 2**, **Alternative 3,** and **Preferred Alternative 4** would not be triggered (**Figure 4.1.2**) and the ACL would not be met.

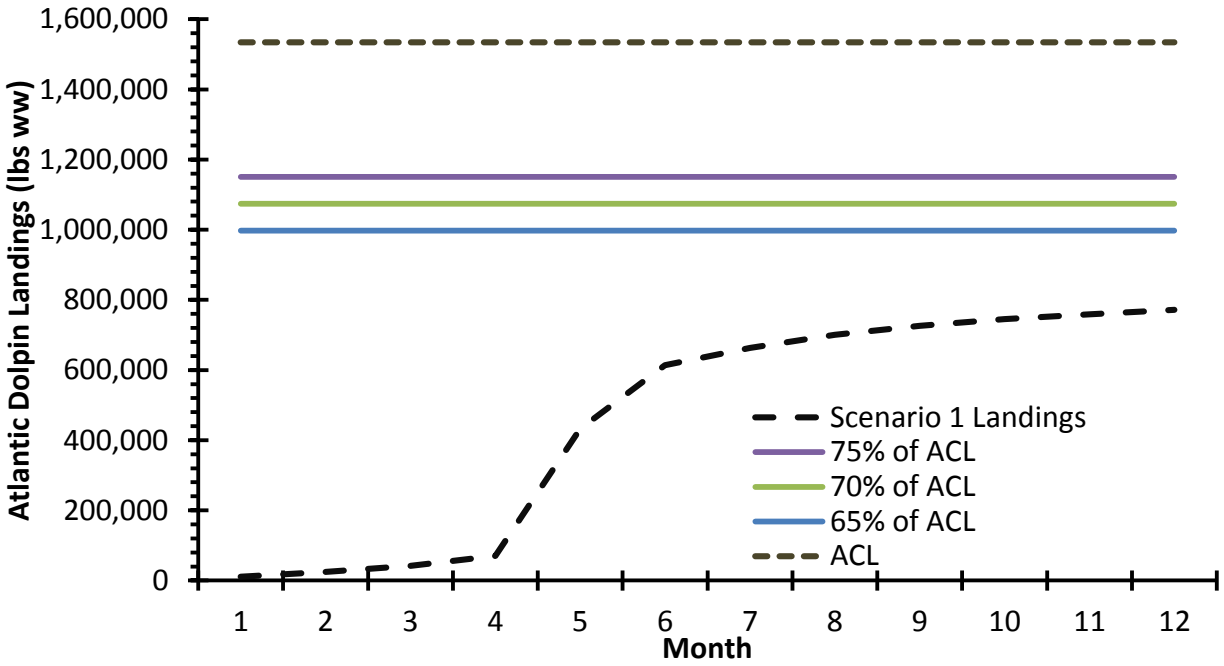

Figure 4.1.1.2. Cumulative landings plotted with the different percentages of the ACL that would trigger a trip limit (average 2010-2014 landings, based on revised ACL of 1,534,485 lbs ww).

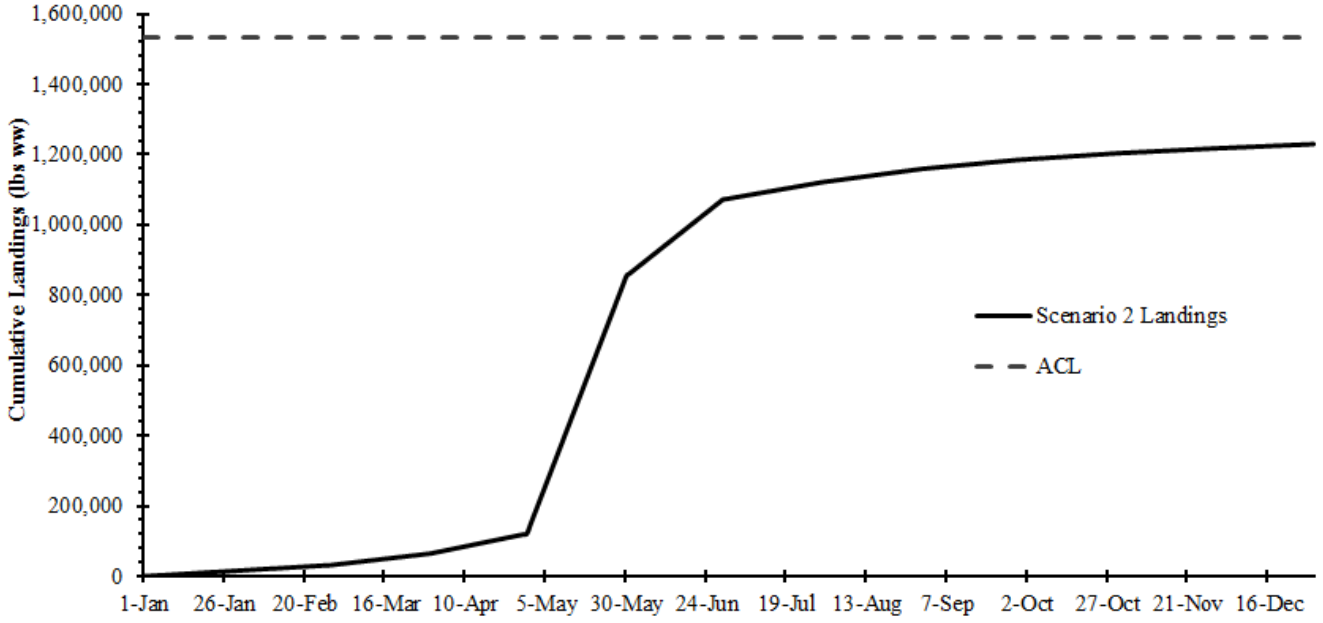

Figure 4.1.1.3. Cumulative landings plotted with the different percentages of the ACL that would trigger a trip limit (2015 landings for January-June, average landings July-December, based on revised ACL of 1,534,485 lbs ww).

Based on 2015 landings from January-June and 2010-2014 landings from July-December, the sector would not reach the revised commercial ACL, even if the trip limits are implemented (**Figure 4.1.1.3**). Historically, the bulk of the fishing takes place in May and June and fishing effort drops off considerably after June. Under the 2015 landings scenario, the landings for the year would be about 1,229,669 lbs ww, considerably lower than the revised ACL of 1,534,485 lbs ww. This assumes that effort will continue in the pattern shown in **Figure 4.1.1.1** with landings peaking in May and June and then declining sharply. There is the possibility that effort might shift to target dolphin in the late summer months due to the increase in the ACL.

Future landings could be much higher than the average landings from 2010-2014 and could result in the trip limits being triggered under **Alternative 2** (65%), **Alternative 3** (70%), and **Preferred Alternative 4** (75%). **Table 4.1.1.2** provides estimates of when the when the trip limit triggers are predicted to be met. (Note that the fishing year begins on January 1.)

Table 4.1.1.2. Predicted trip limit trigger dates (based 2015 landings data and the revised commercial sector ACL of 1,534,485 lbs ww).

Percent of ACL	Trigger Date
65%	20-Jun
70%	2-Jul
75%	25-Aug

Once the trip limits are triggered, the predicted landings are reduced by a trip limit. Percentage reductions in landings for each month were calculated for the trip limits of 1000, 2000, 3000, and 4000 lbs ww. These trip limits are included as sub-alternatives under each action alternative. **Table 4.1.1.3** provides the calculated percentage reductions in landings by month for the range of trip limits.

Table 4.1.1.3. Percentage reduction in landings under commercial trip limit sub-alternatives by month. Note: The analysis used 2015 trip level landings for June and 2010-2014 trip level landings for July to December.

Month	**Trip Limit**			
	1,000 *Sub-Alt 2a* *Sub-Alt 3a* *Sub-Alt 4a*	**2,000** *Sub-Alt 2b* *Sub-Alt 3b* *Sub-Alt 4b*	**3,000** *Sub-Alt 2c* *Sub-Alt 3c* *Sub-Alt 4c*	**4,000** *Sub-Alt 2d* *Sub-Alt 3d* ***Preferred Sub-Alt 4d***
June	59.0	41.1	28.6	20.4
July	5.1	0.1	0	0
August	10.4	7.9	7.3	6.7
September	4.4	0	0	0
October	1.0	0	0	0
November	2.6	0.8	0	0
December	1.5	0	0	0

Under **Alternative 2**, 65% of the commercial sector ACL would be met by June 20, triggering a trip limit. Based on the percent reductions (**Table 4.1.1.3**) applied to the predicted landings, none of the trip limit options (**Sub-alternative 2a**, **Sub-alternative 2b**, **Sub-alternative 2c**, and **Sub-alternative 2d**) would result in meeting the revised ACL. All of the trip limit sub-alternatives would result in landings well below the revised ACL. This assumes that fishing would continue at levels seen in 2015 (**Figure 4.1.1.4**). Fishing effort may continue to increase as it has in 2014 and 2015 (**Figure 4.1.1.1**).

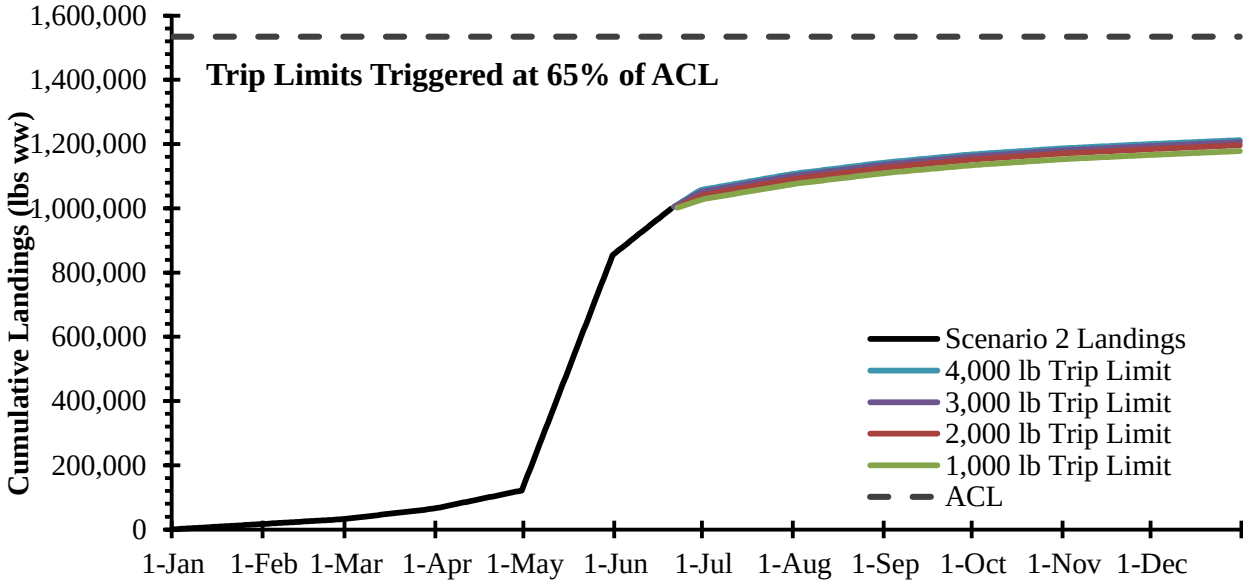

Figure 4.1.1.4. Cumulative landings with the proposed trip limits implemented plotted for 65% of the ACL that would trigger the trip limits (based on 2015 landings January to June, average 2010-2014 landings for July to December, and revised ACL as implemented through the Generic AM Amendment).

Under **Alternative 3**, 70% of the commercial sector ACL would be met by July 2, triggering a trip limit. Based on the percentage reductions (**Table 4.1.1.3**) applied to the predicted landings, none of the trip limit options (**Sub-alternative 3a**, **Sub-alternative 3b**, **Sub-alternative 3c**, and **Sub-alternative 3d**) would result in meeting the revised ACL (**Figure 4.1.1.5**). The highest commercial landings for dolphin tend to be during May and June, so by the time the trip limits are implemented, the highest landings would have already occurred. All of the trip limit sub-alternatives would result in landings well below the revised ACL.

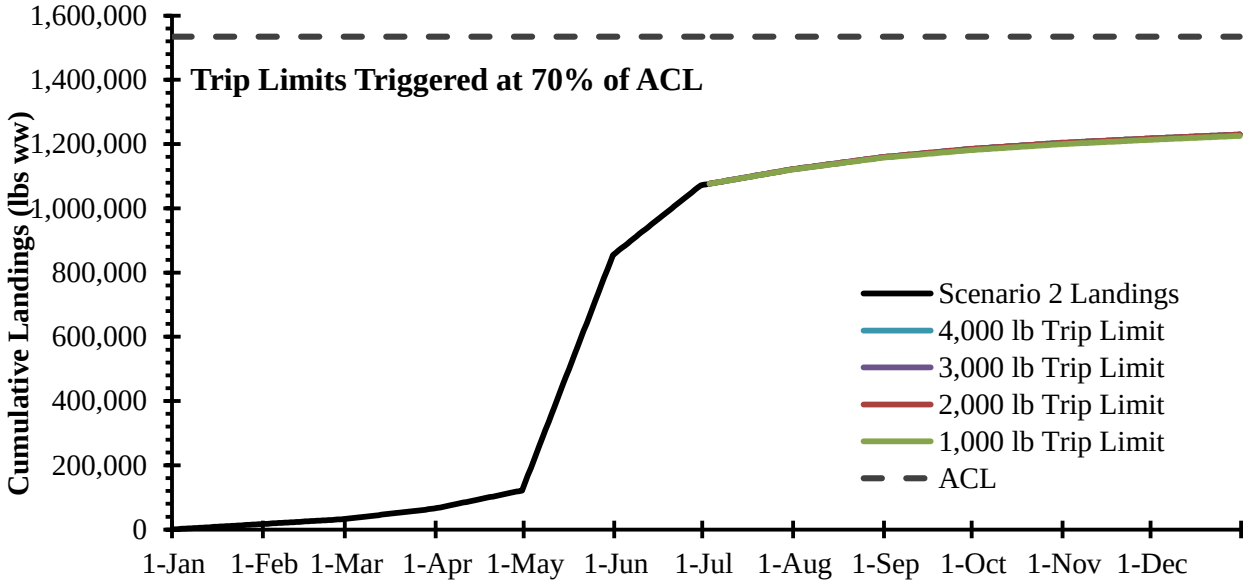

Figure 4.1.1.5. Cumulative landings (2015 landings January to June, average 2010-2014 landings for July to December) with the proposed trip limits implemented plotted for 70% of the ACL that would trigger the trip limits.

Under **Preferred Alternative 4**, 75% of the commercial sector ACL would be met by August 25th, triggering a trip limit. The highest commercial landings for dolphin tend to be during May and June so by the time the trip limits are implemented, the highest landings would have already occurred. Based on the percent reductions (**Table 4.1.1.3**) applied to the predicted landings, none of the trip limit options (**Sub-alternative 4a**, **Sub-alternative 4b**, **Sub-alternative 4c**, and **Preferred Sub-alternative 4d**) would result in meeting the revised ACL (**Figure 4.1.1.6**). All of the trip limit sub-alternatives would result in landings well below the revised ACL.

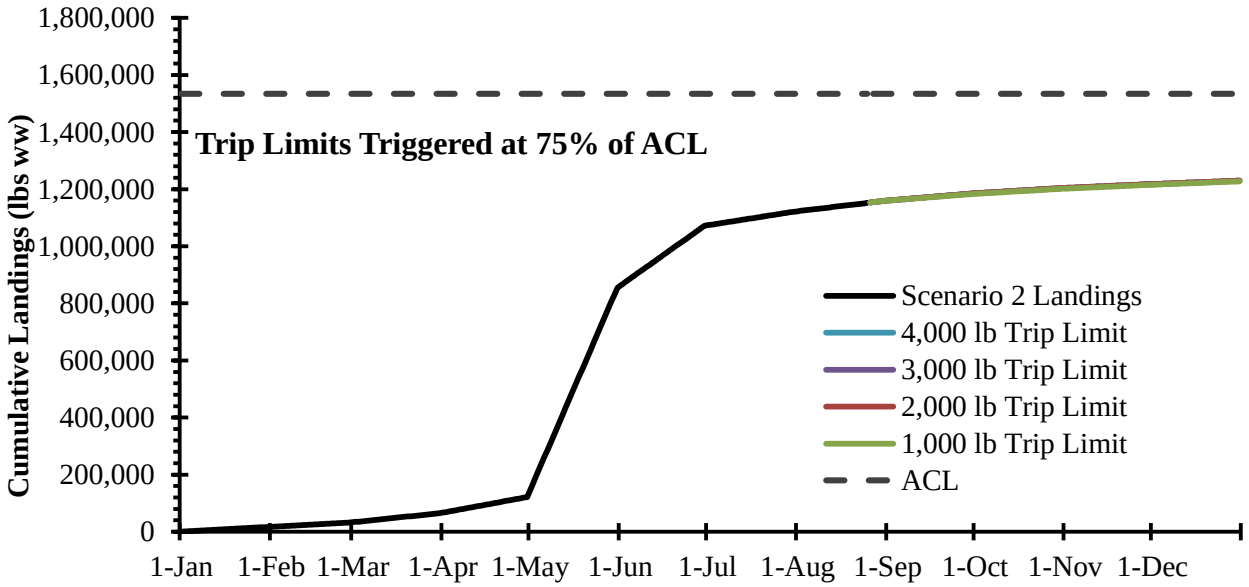

Figure 4.1.1.6. Cumulative landings with the proposed trip limits implemented plotted for 75% of the ACL that would trigger the trip limits (2015 landings January to June, average 2010-2014 landings for July to December)

The biological effects of **Alternatives 1 (No Action)**, **Alternative 2** (and its sub-alternatives), and **Alternative 3** (and its sub-alternatives), and **Preferred Alternative 4** (and sub-alternatives) would be expected to be neutral because the ACL specifies a limit to the harvest amount, and AMs take action to limit the harvest to that ACL amount and specify action if the ACL is exceeded. **Alternative 1 (No Action)** could present a greater biological risk to dolphin in terms of exceeding the ACL than the action alternatives since no trip limit would be in place to slow down the rate of harvest and help ensure the ACL is not exceeded. However, 2015 was the first year that the ACL was met for the dolphin commercial sector. The recent approval of the Generic AM Amendment establishes a revised ACL that increases the ACL for the commercial sector by 377,484 lbs ww to 1,534,485 lbs ww. Although trip limits may be triggered under **Alternative 2**, **Alternative 3,** and **Preferred Alternative 4**, it is unlikely that the ACL would be reached under any trip limit proposed as sub-alternatives. Therefore, establishing a commercial trip limit is not expected to have any biological effects.

None of the alternatives considered under this action would significantly alter the way in which the dolphin wahoo fishery is prosecuted in the U.S. exclusive economic zone. No significant adverse impacts on endangered or threatened species are anticipated because of this action; nor are any adverse impacts on essential fish habitats or habitat areas of particular concern including corals, sea grasses, or other habitat types expected because of this action.

4.1.2 Economic Effects

The commercial sector has been allocated a relatively small portion (10%) of the total dolphin ACL, and while commercial landings of this species have been relatively low, they have been highly variable from year to year. Recreational landings of dolphin, on the other hand, have been relatively high and stable, but have remained well below the recreational ACL. In the Generic AM and Dolphin Allocation Amendment (SAFMC 2015), the Council recognized the variability in commercial landings, and stable, but relatively low, recreational landings of dolphin, and decided to slightly increase the commercial allocation of dolphin. This reallocation was expected to accommodate the variability in commercial landings so as to lessen the likelihood of meeting or exceeding the sector's allocation, thereby avoiding the application of AMs that would have disruptive economic impacts on the commercial sector. The analysis for the Generic AM and Dolphin Allocation Amendment, based on data through 2014, concluded that the commercial sector ACL would not be reached due to the increase in the commercial sector allocation. In 2015, however, the commercial ACL was reached (prior to implementation of the Generic AM and Dolphin Allocation Amendment) and a commercial harvest closure was imposed. This current amendment considers trip limits to prevent early closures.

Trip limits are generally expected to lengthen the fishing season but there are several issues with trip limits as applied to the commercial dolphin sector. The biological effects analysis from **Section 4.1.1** indicates that given the past history of commercial landings of dolphin, it is not likely that the commercial ACL for dolphin would be exceeded in the future, given the allocation increase for the commercial sector from the Generic AM and Dolphin Allocation Amendment. The estimated commercial landings of dolphin would be approximately 1.28 million pounds (mp) without trip limits, and much lower with trip limits. In contrast, the commercial ACL is approximately 1.53 mp. However, commercial landings of dolphin significantly increased in 2014 (**Table 4.1.1.1**) and further increased in 2015 resulting in closure on June 30, 2015. Most of the landings increase in 2014 was accounted for by vessels using longline gear. It is possible that the increase in 2015 could be attributed to further increases in landings using

longline gear, due to the more stringent longline fishing regulations put in place for pelagic longline species as a result of Amendment 7 to the 2006 Consolidated Highly Migratory Species (HMS) Fishery Management Plan (NMFS 2014). Whether commercial landings of dolphin would continue to increase in the future is not known. If future landings were at most relatively close to the estimated 2015 dolphin landings as presented in **Section 4.1.1**, trip limits would not be needed to lengthen the season, and thus would only result in negative economic effects. Otherwise, trip limits could potentially lengthen the fishing season.

Establishing a trip limit at the start of the fishing season may not be prudent. If trip limits are not needed, as noted above, only negative economic effects would ensue, as it is very difficult to change a trip limit later in the season when the ACL is not expected to be reached. Trip limits have disproportional effects on fishing participants, with the high-volume fishermen, such as those who fish with longline gear, generally adversely affected more than others. In addition, **Figure 4.1.1.1** shows that the majority of annual landings occur from April through June, which is when the majority of longline harvest occurs. Many HMS Permit holders also have commercial dolphin wahoo permits and have trips with very high dolphin landings, some as high as 20,000 lbs ww. Lower trip limits starting at the beginning of the fishing year would result in a high number of dead discards of dolphin as well, because the trips with the highest longline landings typically occur between late April and early July. Thus, a trip limit at the beginning of the fishing season would result in forgoing the economic value of dead discards and penalizing the high-volume fishermen. Therefore, to accommodate the possibility that trip limits may not be needed to lengthen the season and to lessen the occurrence of dead discards, trip limits at the start of the fishing season are not considered in this amendment.

Historical landings would suggest that **Alternative 1 (No Action)** would have the highest probability of getting close to the commercial sector ACL, without going over it when compared to all of the other alternatives (see **Figure 4.1.1.2**). Because the 2015 commercial dolphin ACL was met on June 30, 2015, it is not known for certain if landings would have exceeded the new 2016 commercial ACL established by the Generic AM and Dolphin Allocation Amendment (SAFMC 2015). The rate at which any alternative/sub-alternative combination restricts landings could needlessly increase the probability of direct negative economic effects by applying restrictions that might not be needed.

Establishing a trip limit at some point in the season that is not too restrictive might be precautionary in terms of increasing the length of the fishing season, should it be likely that there would be an early closure in spite of the commercial sector ACL increase established by the Generic AM and Dolphin Allocation Amendment (SAFMC 2015). To that end, **Preferred Alternative 4,** which establishes a trip limit after 75% of the commercial sector ACL is taken, would be the least restrictive closure trigger, followed by **Alternative 3**, then **Alternative 2**. The sub-alternatives for **Alternatives 2 – 4 (Preferred)** are the same. The smallest proposed trip limit of 1,000 lbs ww (**Sub-Alternatives 2a**, **3a**, **4a**) would be less likely to result in an early closure of the commercial sector ACL. The largest proposed trip limit of 4,000 lbs ww (**Sub-Alternatives 2d**, **3d**, and **Preferred Sub-alternative 4d**) would be more likely to result in an earlier closure of the commercial sector ACL.

Table 4.1.2.1 estimates the future landings in pounds and value (in 2014 dollars) of dolphin assuming the 2015 catch rate from January through June and then the average landings from 2010 through 2014 for July through December for each of the alternative/sub-alternative combination. **Alternative 1 (No Action)** is expected to have the highest overall landings and value. The last column estimates the difference between **Alternative 1 (No Action)** and all of the other alternative/sub-alternative

combinations. In each case, every alternative/sub-alternative combination was expected to result in lower landings and subsequent lower economic value. The differences range from $324,261 to $169,539 less than the economic value estimated for **Alternative 1 (No Action)**. As these are estimates based on past landings history, the least direct negative economic effects would be expected from **Alternative 3, Sub-Alternatives 3b - 3d** and **Preferred Alternative 4**, **Sub-Alternatives 4b - 4d (Preferred)**.

Table 4.1.2.1. Estimated annual pounds landed and value (in 2014 dollars) for dolphin for the alternative/sub-alternative combinations for the action.

		Estimated Pounds	Estimated Value	Estimated Difference in Value from 2015
Alternative 1	Estimated 2015	1,285,622	$3,895,436	
Alternative 2 - 65% trigger	Sub-Alternative 2a (1,000 lbs ww)	1,178,605	$3,571,175	$324,261
	Sub-Alternative 2b (2,000 lbs ww)	1,196,808	$3,626,329	$269,107
	Sub-Alternative 2c (3,000 lbs ww)	1,206,196	$3,654,774	$240,662
	Sub-Alternative 2d (4,000 lbs ww)	1,212,362	$3,673,455	$221,980
Alternative 3 - 70% trigger	Sub-Alternative 3a (1,000 lbs ww)	1,225,309	$3,712,686	$182,750
	Sub-Alternative 3b (2,000 lbs ww)	1,229,622	$3,725,756	$169,680
	Sub-Alternative 3c (3,000 lbs ww)	1,229,669	$3,725,896	$169,539
	Sub-Alternative 3d (4,000 lbs ww)	1,229,669	$3,725,896	$169,539
Preferred Alternative 4 - 75% trigger	Sub-Alternative 4a (1,000 lbs ww)	1,227,200	$3,718,417	$177,019
	Sub-Alternative 4b (2,000 lbs ww)	1,229,669	$3,725,896	$169,539
	Sub-Alternative 4c (3,000 lbs ww)	1,229,669	$3,725,896	$169,539
	Preferred Sub-Alternative 4d (4,000 lbs ww)	1,229,669	$3,725,896	$169,539

Source: Southeast Fisheries Science Center (SEFSC)/Social Science Research Group (SSRG) Economic Panel Data.

As shown in **Table 4.1.2.1**, a drop in overall landings would generate a negative economic effect as revenues fall. The expectations are, however, that a trip limit imposed on the commercial vessels would make more dolphin available to commercial fishermen and consumers throughout the year with the result of stabilizing both the price of dolphin and fishermen's revenues.

In terms of the order of alternatives/sub-alternatives from lowest to highest direct negative economic effects would be **Alternative 1 (No Action)**, then tied are **Alternative 3/Sub-alternative 3c-3d**, and **Preferred Alternative 4/Sub-alternative 4b-4d (Preferred)**, followed by **Alternative 3/Sub-alternative 3b**, **Preferred Alternative 4/Sub-alternative 4a**, **Alternative 3/Sub-alternative 3**, **Alternative 2/Sub-alternative 2d**, **Alternative 2/Sub-alternative 2c**, **Alternative 2/Sub-alternative 2b**, and then **Alternative 2/Sub-alternative 2a**.

4.1.3 Social Effects

Dolphin is an important commercial species in some areas, and effort or market demand may be associated with closures for other species. In the South Atlantic, the highest levels of commercial landings in recent years are in the communities of West Palm Beach Gardens, Palm Beach Shores, Mayport, and Margate in Florida; and the North Carolina communities of Wanchese, Hatteras, and Beaufort (**Section 3.4.2**). In the Mid-Atlantic and New England regions, the top five communities with the regions' highest levels of commercial dolphin landings are Barnegat Light/Long Beach, New Jersey; Newport News, Virginia; Fairhaven, Massachusetts; Point Judith, Rhode Island; and Ocean City, Maryland (**Section 3.4.2**). Although commercial fishermen in these communities are likely not to depend completely on dolphin to maintain their operations, the species may be an important part of the catch combination for fishing trips, particularly those fishing trips targeting HMS species. Any management changes that affect the commercial sector could affect crew and vessel owners, and associated businesses in the communities.

Communities identified in **Section 3.4.2** would be expected to experience a combination of positive and negative effects if a commercial trip limit is established. In general, a commercial trip limit may help slow the rate of harvest, lengthen a season, and prevent the ACL from being exceeded, but trip limits that are too low may make fishing trips inefficient and too costly if fishing grounds are too far away. Additionally, low trip limits may affect the ability of the fleet to land enough dolphin to reach the commercial ACL.

In general, the social effects of a trip limit are associated with the economic benefits and costs, as described in **Section 4.1.2**. Relative to **Alternative 1 (No Action)**, **Alternatives 2-4 (Preferred)** could reduce the risk of derby conditions and any associated negative effects that can occur due to an in-season closure or payback provision if the ACL is exceeded. The earlier trigger that implements the step-down in **Alternative 2** (65% of the ACL) would slow the rate of harvest and lengthen the season soonest among the alternatives, followed by **Alternative 3** (70%) and **Preferred Alternative 4** (75%). As noted in **Section 4.1.1**, it is possible that implementation of a trip limit at any point during the season would result in commercial landings not reaching the commercial ACL.

Higher trip limits would slow the rate of harvest overall, but low trip limits would affect trip efficiency, which may change job opportunities for crews if a captain or vessel owner chooses to forego a trip due to low trip limits. The lowest trip limit of 1,000 lbs ww (**Sub-Alternatives 2a**, **3a** and **4a**) would be the most likely to affect trip efficiency, followed by the next two levels (2,000 lbs ww in **Sub-Alternatives 2b**, **3b**, and **4b**; and 3,000 lbs ww in **Sub-Alternatives 2c**, **3c**, and **4c**). The highest trip limit of 4,000 lbs ww in **Sub-Alternatives 2d**, **3d**, and **Preferred Sub-alternative 4d** would be the least restrictive for vessels, except for no commercial trip limit under **Alternative 1 (No Action)**.

4.1.4 Administrative Effects

Alternative 1 (No Action) would have less administrative impacts than **Alternatives 2**, **Alternative 3**, and **Preferred Alternative 4**. The administrative impacts of **Alternative 2, Alternative 3,** and **Preferred Alternative 4** would be similar and would be associated with rulemaking, outreach, education, monitoring, and enforcement. The National Marine Fisheries Service has implemented trip limits for other species and expects the impacts associated with **Alternative 2**, **Alternative 3**, or **Preferred Alternative 4** to be minor.

Chapter 5. Council's Choice for the Preferred Alternative

5.1 Establish a commercial trip limit provision for dolphin.

5.1.1 Dolphin Wahoo Advisory Panel Comments and Recommendations

The Dolphin Wahoo Advisory Panel (DWAP) did not meet between September and December 2015 when the South Atlantic Council directed staff to develop the amendment. The DWAP had deliberated on developing a commercial trip limit in the past when it had been proposed in other amendments (e.g. Amendment 5 to the Dolphin Wahoo FMP (Amendment 5); SAFMC 2013). At that time, the DWAP recommended not having a commercial trip limit, as it was not biologically necessary.

The DWAP was sent a copy of the Public Hearing draft of Regulatory Amendment 1 and one comment was received. That DWAP member supported **Alternative 2, Sub-alternative 2a** stating that it would allow the longline fleet to harvest over half the quota and leave the remainder for the hook and line group to fish the rest of the season.

5.1.2 Law Enforcement Advisory Panel Comments and Recommendations

The Law Enforcement Advisory Panel (LEAP) did not meet between September and December 2015 when the South Atlantic Council directed staff to develop the amendment. The LEAP had deliberated on developing a commercial trip limit in the past when it had been proposed in other amendments (e.g. Amendment 5; SAFMC 2013). At that time the LEAP did not comment on the proposed commercial trip limit for dolphin as they decided it would not have an impact on enforcement.

***Alternatives*[1]**

*(preferred alternatives in **bold**)*

1. No Action. There is no commercial trip limit for dolphin in the South Atlantic portion of the Atlantic EEZ. For a commercially permitted vessel fishing north 39° N. latitude, that does not have a federal commercial vessel permit for dolphin or wahoo, there is a trip limit of 200 pounds of dolphin and wahoo, combined. The commercial fishery for dolphin will remain open until the entire commercial portion of the annual catch limit (ACL) is met or projected to be met.

2. A commercial trip limit for dolphin will be established once 65% of the commercial ACL is met.
   Sub-Alternative 2a: 1,000 lbs trip limit
   Sub-Alternative 2b: 2,000 lbs trip limit
   Sub-Alternative 2c: 3,000 lbs trip limit
   Sub-Alternative 2d: 4,000 lbs trip limit

3. A commercial trip limit for dolphin will be established once 70% of the commercial ACL is met.
   Sub-Alternative 3a: 1,000 lbs trip limit
   Sub-Alternative 3b: 2,000 lbs trip limit
   Sub-Alternative 3c: 3,000 lbs trip limit
   Sub-Alternative 3d: 4,000 lbs trip limit

4. **A commercial trip limit for dolphin will be established once 75% of the commercial ACL is met.**
   Sub-Alternative 4a: 1,000 lbs trip limit
   Sub-Alternative 4b: 2,000 lbs trip limit
   Sub-Alternative 4c: 3,000 lbs trip limit
   Sub-Alternative 4d: 4,000 lbs trip limit

[1]See Chapter 2 for a more detailed description of the alternatives.

The LEAP was sent a copy of the Public Hearing draft of Dolphin Wahoo Regulatory Amendment 1 and one comment was received. The comment reported knowledge of a fisherman who was at sea when the closure was announced and was not going to make it back to port in time prior to the closure going into effect, resulting in the fisherman dumping the dolphin catch at sea. This LEAP member would like his concerns to be addressed regarding how dolphin wahoo permit holders are notified when the closure is met. The LEAP member suggested vessel monitoring system messaging, applying overages to the next year's ACL, allowing for transit time, etc.

5.1.3 Scientific and Statistical Committee Comments and Recommendations

The Scientific and Statistical Committee (SSC) met in October 2015, however, a draft of the amendment was not available for review. The SSC had an opportunity to review Amendment 5 (SAFMC 2013), which included a draft action that considered a commercial trip limit, and the SSC did not specifically comment on the trip limit action.

5.1.4 Public Comments and Recommendations

The South Atlantic Council accepted written public comments from November 1 – 16, 2015. Formal public hearings were held on November 12, 2015, in St. Augustine, Florida, and Manteo, North Carolina. Four comments were received at the public hearing webinar/comment stations and two written comments were received. Of the four comments that expressed an opinion specifically related to the action in this regulatory amendment, all supported **Preferred Alternative 4, Preferred Sub-alternative 4d**.

Several HMS permit holders from the Mid-Atlantic region spoke on this issue at the South Atlantic Council's September meeting in Hilton Head, South Carolina. All spoke against the idea of a trip limit, but if one was to be imposed, they wanted the highest level trip limit possible.

The South Atlantic Council also gave opportunity for the public to comment on this amendment at its December 2015 meeting in Atlantic Beach, North Carolina. Two comments regarding dolphin were received. One recommended shifting more allocation from the recreational sector to the commercial sector. The other commenter was in favor of the 75% trigger before a stepdown.

5.1.5 South Atlantic Council Choice for Preferred Alternative

The South Atlantic Council chose **Preferred Alternative 4**, **Preferred Sub-Alternative 4d** because they wanted to be precautionary and preclude another early closure of the commercial sector for dolphin. While the increase in the commercial sector ACL from Amendment 8 to the Dolphin Wahoo FMP would likely have kept commercial harvest for dolphin open in 2015, had it been in place, it is not known if the trend of sharply increased landings, as occurred in the 2014 and 2015 seasons, would continue. The South Atlantic Council determined that a 4,000 lbs ww trip limit once 75% of the ACL was met would be sufficient to slow down landings enough to allow for commercial dolphin to be open for the entire year.

The South Atlantic Council concluded **Preferred Alternative 4**, **Preferred Sub-alternative 4d** best meets the objective of the Dolphin Wahoo FMP , as amended, while complying with the requirements of the Magnuson-Stevens Fishery Conservation and Management Act and other applicable law.

Chapter 6. Cumulative Effects

As directed by the Council on Environmental Quality (CEQ) regulations, federal agencies are mandated to assess not only the indirect and direct impacts, but the cumulative impacts of proposed actions as well. The CEQ regulations define a cumulative impact as *"the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time"* (40 C.F.R. 1508.7). Cumulative effects can either be additive or synergistic. A synergistic effect is when the combined effects are greater than the sum of the individual effects.

Various approaches for assessing cumulative effects have been identified, including checklists, matrices, indices, and detailed models. The Council on Environmental Quality (CEQ) offers guidance on conducting a Cumulative Effects Analysis (CEA) in a report titled "Considering Cumulative Effects under the National Environmental Policy Act" (CEQ 1997). The report outlines 11 items for consideration in drafting a CEA for a proposed action.

6.1 Affected Area

The South Atlantic Council, in cooperation with the Mid-Atlantic Fishery Management Council, and the New England Fishery Management Council, is responsible for conservation and management of dolphin and wahoo in federal waters off the Atlantic states. The immediate impact area for dolphin and wahoo is the federal 200-mile limit of the Atlantic off the coasts of Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, North Carolina, South Carolina, Georgia, and east Florida to Key West. In light of the available information, the extent of the geographical boundaries for this analysis would depend upon the degree of fish immigration/emigration and larval transport, whichever has the greatest geographical range. The range of the affected species is described in **Section 3.2.2**. **Section 3.1.1** describes the essential fish habitat designation and requirements for dolphin; additional details are included in **Appendix G**. The most measurable and substantial effects would be limited to the Atlantic region.

6.2 Past, Present, and Reasonably Foreseeable Actions Impacting the Affected Area

For this action, the cumulative effects analysis (CEA) includes an analysis of actions and events dating back to 2003 when the original dolphin wahoo fishery management plan (FMP) was implemented, and through what is expected to take place approximately before or within 2015-2016.

Past Actions

The reader is referred to **Appendix C** (History of Management**)** of this document for past regulatory activity for dolphin.

The Comprehensive Annual Catch Limit (ACL) Amendment and its integrated Final Environmental Impact Statement (FEIS) (SAFMC 2011), which includes Amendment 2 to the Dolphin Wahoo FMP, fulfilled the 2011 mandate of the Magnuson-Stevens Fishery Conservation and Management Act to establish ACLs and accountability measures (AMs) for species managed by the South Atlantic Council that are not undergoing overfishing. The amendment addressed dolphin and wahoo, and other species. The Comprehensive ACL Amendment (SAFMC 2011) established the acceptable biological catch (ABC) control rule, ABC, ACL, optimal yield, and AMs in the dolphin and wahoo fishery for both the commercial and recreational sectors. The amendment also set an annual catch target for the recreational sector for dolphin and wahoo. The Comprehensive ACL Amendment was implemented on April 16, 2012.

The South Atlantic Headboat Reporting Amendment, which includes Amendment 4 to the Dolphin Wahoo FMP, was implemented on January 27, 2014, and requires that all federally-permitted headboats on the South Atlantic report their landings information electronically, and on a weekly basis to improve the timeliness and accuracy of harvest data.

The final rule for Amendment 5 to Dolphin Wahoo FMP published on June 9, 2014 (79 FR 32878), and regulations were effective on July 9, 2014. Amendment 5 revised the ABC estimates, ACLs, and recreational ACTs for dolphin and wahoo using the new Marine Recreational Information Program data. Additionally, Amendment 5 revised the AMs and updated the framework procedure for dolphin and wahoo.

The Joint Generic Dealer Reporting Amendment, which includes Amendment 3 to the Dolphin Wahoo FMP, was approved by the Secretary of Commerce and requires that all dealers report landings information electronically on a weekly basis to improve the timeliness and accuracy of landings data. This amendment applies to fishery management plans for dolphin and wahoo and other species. The final rule published on April 9, 2014, and regulations became effective on August 7, 2014.

P**resent Actions**

The Generic AM and Dolphin Allocation Amendment, which includes Amendment 8 to the Dolphin Wahoo FMP, considers modifications to the AMs for snapper grouper species and golden crab to bring consistency across species managed by the South Atlantic Council. This amendment, which was approved by the Secretary of Commerce in October 2015, modifies the existing commercial and recreational sector allocations for dolphin. The final rule published on January 22, 2016, and regulations are effective on February 22, 2016.

Reasonably Foreseeable Actions

The For-Hire Reporting Amendment (Amendment 9 to the Dolphin Wahoo FMP) would require charter vessels to report their landings information electronically each week. Including charter vessels in the recreational harvest reporting system would further improve the agency's ability to monitor recreational catch rates in-season.

The Joint Commercial Logbook Reporting Amendment, which would include the Dolphin Wahoo fishery, would require electronic reporting of landings information by federally-permitted commercial vessels, which would increase the timeliness and accuracy of landings data; currently, fishermen report using paper logbooks.

6.3 Consideration of Climate Change and Other Non-Fishery Related Issues

Climate Change

Global climate changes could have significant effects on Atlantic fisheries. However, the extent of these effects is not known at this time. Possible impacts include temperature changes in coastal and marine ecosystems that can influence organism metabolism and alter ecological processes such as productivity and species interactions; changes in precipitation patterns and a rise in sea level which could change the water balance of coastal ecosystems; altering patterns of wind and water circulation in the ocean environment; and influencing the productivity of critical coastal ecosystems such as wetlands, estuaries, and coral reefs (IPCC 2007; Link et al. 2002).

It is unclear how climate change would affect dolphin in the Atlantic. 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, as may the prevalence of disease in keystone animals such as corals and the occurrence and intensity of toxic algae blooms. Climate change may significantly impact dolphin in the future, but the level of impacts cannot be quantified at this time, nor is the time frame known in which these impacts will occur.

Weather Variables

Hurricane season is from June 1 to November 30, and accounts for 97% of all tropical activity affecting the Atlantic basin. These storms, although unpredictable in their annual occurrence, can devastate areas when they occur. Although these effects may be temporary, those fishing-related businesses whose profitability is marginal may go out of business if a hurricane strikes.

Deepwater-Horizon Oil Spill

On April 20, 2010, an explosion occurred on the Deepwater Horizon MC252 oil rig, resulting in the release of an estimated 4.9 million barrels of oil into the Gulf. In addition, 1.84 million gallons of Corexit 9500A dispersant were applied as part of the effort to constrain the spill. The

cumulative effects from the oil spill and response may not be known for several years. The oil spill 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 Deepwater Horizon MC252 oil spill on the physical environment are expected to be significant and may be long-term. Oil is dispersed on the surface, and because of the heavy use of dispersants, oil is also documented as being suspended within the water column, some even deeper than the location of the broken well head. Floating and suspended oil washed onto shore in several areas of the Gulf, as well as non-floating tar balls. Whereas suspended and floating oil degrades over time, tar balls are more persistent in the environment and can be transported hundreds of miles. Oil on the surface of the water could restrict the normal process of atmospheric oxygen mixing into and replenishing oxygen concentrations in the water column. In addition, microbes in the water that break down oil and dispersant also consume oxygen; this could lead to further oxygen depletion. Zooplankton that feed on algae could also be negatively impacted, thus allowing more of the hypoxia-fueling algae to grow. The highest concern is that the oil spill may have impacted spawning success of species that spawn in the summer months, either by reducing spawning activity or by reducing survival of the eggs and larvae. Effects on the physical environment, such as low oxygen, could lead to impacts on the ability of larvae and post-larvae to survive, even if they never encounter oil. In addition, effects of oil exposure may create sub-lethal effects on the eggs, larva, and early life stages. The stressors could potentially be additive, and each stressor may increase the susceptibility to the harmful effects of the other. The oil from the spill site was not detected in the South Atlantic region, and does not likely pose a threat to the South Atlantic species addressed in this amendment. However, the effects of the oil spill on dolphin would be taken into consideration in a future Southeast Data Assessment and Review assessment. Indirect and inter-related effects on the biological and ecological environment of the dolphin fishery in concert with the Deepwater Horizon MC252 oil spill are not well understood. Changes in the population size structure could result from shifting fishing effort to specific geographic segments of populations, combined with any anthropogenically induced natural mortality that may occur from the impacts of the oil spill. The impacts on the food web from phytoplankton, to zooplankton, to mollusks, to top predators may be significant in the future.

6.4 Overall Impacts Expected from Past, Present, and Future Actions

Regulatory Amendment 1 to the Dolphin Wahoo FMP considers commercial trip limits for dolphin after a certain percentage of commercial sector ACL has been reached. The percentages considered to trigger the trip limit are 65%, 70%, and 75% of the commercial ACL. Trip limits considered by the South Atlantic Council are 1,000, 2,000, 3,000, or 4,000 pounds whole weight (lbs ww). The South Atlantic Council's preferred alternative is a 4,000 lbs gw trip limit that would be triggered when 75% of the commercial ACL had been met. The trip limit would be in effect until the end of the fishing year or until the commercial ACL is met and commercial harvest is closed, whichever comes first.

Dolphin was assessed by Prager (2000), and SEDAR stock assessments for dolphin and wahoo are anticipated within the next five years. When the SEDAR stock assessments are completed, changes to regulations may be required. In addition, changes in management regulations, fishing techniques, social/economic structure, etc. can result in shifts in the percentage of harvest between user groups over time. **Chapters 2** and **4** of this document describe in detail the

magnitude and significance of effects of the trip limit alternatives for the commercial dolphin sector and none of the impacts have been determined to be significant.

The cumulative effects of the actions proposed in combined with effects of other past, present, and future actions, are not expected to affect the magnitude of bycatch, diversity, and ecosystem structure of fish communities, or safety at sea of fishermen targeting dolphin. The actions in this amendment would implement trip limits to constrain catch of dolphin during the fishing year and combined with past, present, and foreseeable actions would not cause significant impacts.

This action is not likely to result in direct, indirect, or cumulative effects to unique areas, such as significant scientific cultural or historical resources, park land, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas as the proposed action is not expected to substantially increase fishing effort or the spatial and/or temporal distribution of current fishing effort within the Atlantic region. The Stellwagen Bank off the Northeastern U.S., USS Monitor, Gray's Reef, and Florida Keys National Marine Sanctuaries are within the boundaries of the Atlantic exclusive economic zone.

6.5 Monitoring and Mitigation

The effects of the proposed actions are, and will continue to be, monitored through collection of landings data by the National Marine Fisheries Service, stock assessments and stock assessment updates, life history studies, economic and social analyses, and other scientific observations. The proposed actions relate to the harvest of dolphin, an indigenous species in the 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 on nonindigenous species. None of the beneficial or adverse impacts from the proposed management action (as summarized in **Chapter 2** of this document) have been determined to be significant.

See **Chapter 4** for the detailed discussions of the magnitude of the impacts of the preferred alternatives on the human environment. The action in Regulatory Amendment 1 would not have significant biological, social, or economic effects because the harvest of dolphin is constrained by the ACL to prevent overfishing. Therefore, the cumulative effects of the action proposed in Regulatory Amendment 1 are not expected to affect the magnitude bycatch, diversity and ecosystem structure of fish communities, or safety at sea of fishermen targeting dolphin. Based on the cumulative effects analysis presented herein, the proposed action would not have any significant adverse cumulative impacts compared to, or combined with, other past, present, and foreseeable future actions.

Chapter 7. List of Preparers

Table 7.1. List of preparers of the document.

Name	SAFMC	Title
Brian Cheuvront	SAFMC	IPT Lead/Fishery Economist
David Dale	NMFS/HC	EFH Specialist
Karla Gore	NMFS/SF	IPT Lead/Fishery Biologist
Tony Lamberte	NMFS/SF	Fishery Economist
Michael Larkin	NMFS/SF	Data Analyst
Jennifer Lee	NMFS/PR	Fishery Biologist
Roger Pugliese	SAFMC	Senior Biologist
Monica Smit-Brunello	NMFS/GC	Attorney
Kari MacLauchlin	SAFMC	Social Scientist
Scott Sandorf	NMFS/SF	Technical Writer Editor
Christina Package-Ward	NMFS/SF	Anthropologist

NMFS = National Marine Fisheries Service, SAFMC = South Atlantic Fishery Management Council, SF = Sustainable Fisheries Division, PR = Protected Resources Division, SERO = Southeast Regional Office, HC = Habitat Conservation Division, GC = General Counsel, Eco=Economics

Table 7.2. List of interdisciplinary plan team members for the document.

Name	Organization	Title
Brian Cheuvront	SAFMC	IPT Lead/Economist
Scott Sandorf	NMFS/SF	Technical Writer Editor
Akbar Marvasti	NMFS/SEFSC	Social Scientist
David Dale	NMFS/HC	EFH Specialist
Karla Gore	NMFS/SF	IPT Lead/Fishery Biologist
Michael Larkin	NMFS/SF	Data Analyst
Jennifer Lee	NMFS/PR	Fishery Biologist (Protected Resources)
Akbar Marvasti	NMFS/SEFSC	Fishery Economist
Noah Silverman	NMFS/SER	Regional NEPA Coordinator
Roger Pugliese	SAFMC	Senior Biologist
Tony Lamberte	NMFS/SF	Fishery Economist
Kari MacLauchlin	SAFMC	Fishery Social Scientist
Gregg Waugh	SAFMC	Deputy Executive Director
Monica Smit- Brunello	NOAA/GC	Attorney
Christina Ward-Package	NMFS/SF	Anthropologist
Kate Siegfred	NMFS/SEFSC	Fishery Biologist

NMFS = National Marine Fisheries Service, SAFMC = South Atlantic Fishery Management Council, SF = Sustainable Fisheries Division, PR = Protected Resources Division, SERO = Southeast Regional Office, HC = Habitat Conservation Division, GC = General Counsel, Eco=Economics

Chapter 8. Agencies and Persons Consulted

Responsible Agency for CE
NMFS, Southeast Region
263 13th Avenue South
St. Petersburg, Florida 33701
(727) 824-5301 (TEL)
(727) 824-5320 (FAX)

List of Agencies, Organizations, and Persons Consulted
SAFMC Law Enforcement Advisory Panel
SAFMC Dolphin Wahoo Advisory Panel
SAFMC Scientific and Statistical Committee
SAFMC Information and Education Advisory Panel
Florida Fish and Wildlife Conservation Commission
Georgia Department of Natural Resources
South Carolina Department of Natural Resources
North Carolina Division of Marine Fisheries
Atlantic States Marine Fisheries Commission
Gulf of Mexico Fishery Management Council
Mid Atlantic Fishery Management Council
New England Fishery Management Council
National Marine Fisheries Service
- Washington Office
- Office of Ecology and Conservation
- Southeast Regional Office
- Southeast Fisheries Science Center

Chapter 9. References

Adams, W.F. and C. Wilson. 1995. The status of the smalltooth sawfish, *Pristis pectinata* Latham 1794 (Pristiformes: Pristidae) in the United States. Chondros 6(4):1-5.

Anderes Alvarez, B. L. and I. Uchida. 1994. Study of hawksbill turtle (*Eretmochelys imbricata*) stomach content in Cuban waters. Pages 27-40 *in* Study of the Hawksbill Turtle in Cuba (I). Ministry of Fishing Industry, CUBA. Ministry of Fishing Industry, Cuba.

Bigelow, H.B. and W.C. Schroeder. 1953. Sawfishes, guitarfishes, skates and rays, pp. 1-514. *In:* Tee-Van, J., C.M Breder, A.E. Parr, W.C. Schroeder and L.P. Schultz (eds). Fishes of the Western North Atlantic, Part Two. Mem. Sears Found. Mar. Res. I.

Bjorndal, K. A. 1980. Nutrition and grazing behavior of the green turtle, *Chelonia mydas*. Marine Biology 56:147-154.

Bjorndal, K. A. 1997. Foraging ecology and nutrition of sea turtles. P. L. Lutz, and J. A. Musick, editors. The Biology of Sea Turtles. CRC Press, Boca Raton.

Bolten, A. B. and G. H. Balazs. 1995. Biology of the early pelagic stage - the 'lost year'. Pages 579-581 *in* K. A. Bjorndal, editor. Biology and Conservation of Sea Turtles. Smithsonian Institution Press, Washington, DC.

Brongersma, L. D. 1972. European Atlantic turtles. Zoologische Verhandelingen (121):1-318.

Burke, V. J., S. J. Morreale, and A. G. J. Rhodin. 1993. *Lepidochelys kempii* (Kemp's ridley sea turtle) and *Caretta caretta* (loggerhead sea turtle): diet. Herpetological Review 24(1):31-32.

Byles, R. 1988. Satellite Telemetry of Kemp's Ridley Sea Turtle, *Lepidochelys kempi*, in the Gulf of Mexico. Report to the National Fish and Wildlife Foundation:40 pp.

Carr, A. F. 1986. RIPS, FADS, and little loggerheads. BioScience 36(2):92-100.

Carr, A. 1987. New perspectives on the pelagic stage of sea turtle development. Conservation Biology 1(2):103-121.

CEQ (Council on Environmental Quality). 1997. Considering Cumulative Effects Under the National Environmental Policy Act. U.S. Council on Environmental Quality, Washington, DC. 64 pp.

Eckert, S. A., K. L. Eckert, P. Ponganis, and G. L. Kooyman. 1989. Diving and foraging behavior of leatherback sea turtles (*Dermochelys coriacea*). Canadian Journal of Zoology 67(11):2834-2840.

Eckert, S. A., D. W. Nellis, K. L. Eckert, and G. L. Kooyman. 1986. Diving patterns of two leatherback sea turtles (*Dermochelys coriacea*) during internesting intervals at Sandy Point, St. Croix, U.S. Virgin Islands. Herpetologica 42(3):381-388.

Frick, J. 1976. Orientation and behavior of hatchling green turtles *Chelonia mydas* in the sea. Animal Behavior 24(4):849-857.

Hughes, G. R. 1974. Is a sea turtle no more than an armored stomach? Bulletin of the South African Association for Marine Biological Research 11:12-14.

IPCC. 2007. Climate Change The Physical Science Basis. *AGU Fall Meeting Abstracts*. Vol. 1. 2007.

Jacob, S., P. Weeks, B. Blount, and M. Jepson. 2013. Development and evaluation of social indicators of vulnerability and resiliency for fishing communities in the Gulf of Mexico. Marine Policy 37:86-95.

Jepson, M. and L. L. Colburn. 2013. Development of social indicators of fishing community vulnerability and resilience in the U.S. Southeast and Northeast Regions. U.S. Dept. of Commerce, NOAA Technical Memorandum NMFS-F/SPO-129, 64 p.

Johnson, G. D. 1978. Development of fishes of the Mid-Atlantic Bight. An atlas of egg, larval, and juvenile stages. Vol. IV Carangidae through Epruppidae. U.S. Dep. Inter., Fish Wildl. Serv., BioI. Serv. Prog. *FWS/OBS-78!12,* Jan. 1978: 123-128.

Keinath, J. A. and J. A. Musick. 1993. Movements and diving behavior of leatherback turtle. Copeia 1993(4):1010-1017.

Lanyon, J.M., C.J. Limpus, and H. Marsh. 1989. Dugongs and turtles: grazers in the seagrass system. *In:* Larkum, A.W.D, A.J. McComb, and S.A. Shepard (eds.) Biology of Seagrasses. Elsevier, Amsterdam, 610.

Limpus, C.J. and N. Nichols. 1988. The southern oscillation regulates the annual numbers of green turtles (*Chelonia mydas*) breeding around northern Australia. Australian Journal of Wildlife Research 15:157.

Limpus, C.J. and N. Nichols. 1994. Progress report on the study of the interaction of El Niño Southern Oscillation on annual *Chelonia mydas* numbers at the southern Great Barrier Reef rookeries. *In:* Proceedings of the Australian Marine Turtle Conservation Workshop, Queensland Australia.

Link, J.S., R. Griffis, S. Busch (Editors). 2015. NOAA Fisheries Climate Science Strategy. U.S. Dept. of Commerce, NOAA Technical Memorandum NMFS-F/SPO-155, 70p.

Lutz, P. L. and J. A. Musick, editors. 1997. The biology of sea turtles. CRC Press, Boca Raton, Florida.

Lutz, P. L., J. A. Musick, and J. Wyneken. 2003. The Biology of Sea Turtles. Volume II. CRC Press, Inc., Washington, D.C.

Márquez M. R. 1994. Synopsis of biological data on the Kemp's ridley turtle, *Lepidochelys kempii* (Garman 1880). U. S. Dept. of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southeast Fisheries Science Center, Miami, Florida.

Mendonca, M. T. and P. C. H. Pritchard. 1986. Offshore movements of post-nesting Kemp's ridley sea turtles (*Lepidochelys kempii*). Herpetologica 42:373-380.

Meylan, A. 1984. Feeding ecology of the hawksbill turtle (*Eretmochelys imbricata*) spongivory as a feeding niche in the coral reef community. University of Florida.

Meylan, A. 1988. Spongivory in hawksbill turtles: a diet of glass. Science 239:393-395.

Meylan, A. B. and M. Donnelly. 1999. Status justification for listing the hawksbill turtle (*Eretmochelys imbricata*) as critically endangered on the 1996 IUCN Red List of Threatened Animals. Chelonian Conservation and Biology 3(2):200-204.

Mortimer, J. A. 1981. The feeding ecology of the west Caribbean green turtle (*Chelonia mydas*) in Nicaragua. Biotropica 13(1):49-58.

Mortimer, J. A. 1982. Feeding ecology of sea turtles. Pages 103-109 *in* K. A. Bjorndal, editor. Biology and Conservation of Sea Turtles. Smithsonian Institution Press, Washington D.C.

NMFS. 2003. Biological Opinion Endangered Species Act (ESA) Section 7 Consultation on the Continued Authorization of the Fishery Management Plan (FMP) for the Dolphin Wahoo Fishery in the Atlantic under the Magnuson-Stevens Fishery Management and Conservation Act (MSFMCA).

NMFS (National Marine Fisheries Service). 2014. Final Amendment 7 to the 2006 Consolidated Atlantic Highly Migratory Species Fishery Management Plan. Highly Migratory Species Management Division, Office of Sustainable Fisheries, National Marine Fisheries Service, 1315 East-West Highway, Silver Spring, Maryland 20910.

Norman, J. R. and F. C. Fraser. 1938. Giant Fishes, Whales and Dolphins. W. W. Norton and Company, Inc., New York, NY. 361 pp.

Ogren, L. H. 1989. Distribution of juvenile and subadult Kemp's ridley sea turtles: preliminary results from 1984-1987 surveys. Pages 116-123 *in* C. W. Caillouet Jr., and J. A.M. Landry, editors. Proceedings of the First International Symposium on Kemp's Ridley Sea Turtle Biology, Conservation, and Management. Texas A&M University Sea Grant College, Galveston, Texas.

Oxenford, H. A. 1999. Biology of the dolphinfish (*Coryphaena hippurus*) in the western central Atlantic: a review. Scientia Marina 63 (3-4): 277-301.

Oxenford, H. A. and W. Hunte. 1986. A preliminary investigation of the stock structure of the dolphin, *Coryphaena hippurus*, in the western central Atlantic. U.S. Fishery Bulletin 84: 451-460.

Palko, B. J., G. L. Beardsley, and W. J. Richards. 1982. Synopsis of the biological data on dolphin fishes, *Coryphaena hippurus* Linnaeus and *Coryphaena equiselis* Linnaeus. U.S. Dept. Commer., NOAA Tech. Rept. NMFS Circ. 443, 28 p.

Paredes, R.P. 1969. Introduccion al Estudio Biologico de *Chelonia mydas agassizi* en el Perfil de Pisco, Master's thesis, Universidad Nacional Federico Villareal, Lima, Peru.

Prager, M. H. 2000. Exploratory Assessment of Dolphinfish, *Coryphaena hippurus*, based on U.S. landings from the Atlantic Ocean and Gulf of Mexico. NMFS, SEFSC 18pp.

SAFMC (South Atlantic Fishery Management Council). 1998. Comprehensive Amendment Addressing Essential Fish Habitat in Fishery Management Plans of the South Atlantic Region (Amendment 10 to the Snapper Grouper Fishery Management Plan). South Atlantic Fishery Management Council, 1 Southpark Cir., Suite 306, Charleston, S.C. 29407-4699.

SAFMC (South Atlantic Fishery Management Council). 2003. Fishery Management Plan for the Dolphin and Wahoo Fishery of the Atlantic, Including a Final Environmental Impact Statement, Regulatory Impact Review, Initial Flexibility Analysis, & Social Impact Assessment/Fishery Impact Statement. South Atlantic Fishery Management Council, 1 Southpark Circle, Suite 306, Charleston, South Carolina, 29407-4699.

SAFMC (South Atlantic Fishery Management Council). 2009. Fishery Ecosystem Plan for the South Atlantic Region. South Atlantic Fishery Management Council, 4055 Faber Place, Ste 201, North Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2011. Comprehensive Annual Catch Limit Amendment for the South Atlantic Region with Final Environmental Impact Statement, Regulatory Flexibility Analysis, Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405. 755 pp. plus appendices.

SAFMC (South Atlantic Fishery Management Council). 2013. Amendment 5 to the Fishery Management Plan for the Dolphin and Wahoo Fishery for the Atlantic with Final Environmental Assessment, Regulatory Flexibility Analysis, Regulatory Impact Review, and Fishery Impact Statement. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2015. Amendment 34 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region, Amendment 9 to the Fishery Management Plan for the Golden Crab of the South Atlantic Region, and Amendment 8 to the Fishery Management Plan for the Dolphin Wahoo Fishery of the Atlantic. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405.

Schwenke, K. L. and J.A. Buckel. 2008. Age, growth, and reproduction of dolphinfish (*Coryphaena hippurus*) caught off the coast of North Carolina. Fishery Bulletin 106: 82–92.

Shaver, D. J. 1991. Feeding Ecology of Wild and Head-Started Kemp's Ridley Sea Turtles in South Texas Waters. Journal of Herpetology 25(3):327-334.

Simpfendorfer, CA. 2001. Essential habitat of the smalltooth sawfish, *Pristis pectinata*. Report to the National Fisheries Service's Protected Resources Division. Mote Marine Laboratory, Technical Report (786) 21pp.

Simpfendorfer, C.A. and T.R. Wiley. 2004. Determination of the distribution of Florida's remnant sawfish population, and identification of areas critical to their conservation. Mote Marine Laboratory, Technical Report July 2, 2004, 37 pp.

Soma, M. 1985. Radio biotelemetry system applied to migratory study of turtle. Journal of the Faculty of Marine Science and Technology, Tokai University, Japan, 21:47.

Standora, E. A., J. R. Spotila, J. A. Keinath, and C. R. Shoop. 1984. Body temperatures, diving cycles, and movement of a subadult leatherback turtle, *Dermochelys coriacea*. Herpetologica 40:169-176.

Thayer, G.W., K.A. Bjorndal, J.C. Ogden, S.L. Williams, and J.C. Zieman. 1984. Role of large herbivores in seagrass communities. Estuaries 7:351.

van Dam, R. P. and C. E. Díez. 1998. Home range of immature hawksbill turtles (*Eretmochelys imbricata* (Linnaeus) at two Caribbean islands. Journal of Experimental Marine Biology and Ecology 220(1):15-24.

Walker, T. 1994. Post-hatchling dispersal of sea turtles. Proceedings of the Australian Marine Turtle Conservation Workshop 1994:79-94.

Witzell, W. N. 2002. Immature Atlantic loggerhead turtles (*Caretta caretta*): suggested changes to the life history model. Herpetological Review 33(4):266-269.

Appendix A. Glossary

Acceptable Biological Catch (ABC Acceptable Biological Catch (ABC): Maximum amount of fish stock than can be harvested without adversely affecting recruitment of other components of the stock. The ABC level is typically higher than the total allowable catch, leaving a buffer between the two.

Accountability measure (AM): AMs are fishery management rules that prevent annual catch limits from being exceeded (i.e. prevent overfishing) and make corrections when fishing goes over the annual catch limit.

ALS: Accumulative Landings System. NMFS database which contains commercial landings reported by dealers.

Annual Catch Limit (ACL): The amount of a particular fish species, stock or stock complex that can be caught in a given year.

Annual Catch Target (ACT): An annual catch target is an amount of annual catch that serves as the management target, set below the annual catch limit to account for management uncertainty.

Biomass: Amount or mass of some organism, such as fish.

B_{MSY}: Biomass of population achieved in long-term by fishing at F_{MSY}.

Bycatch: Fish harvested in a fishery, but not sold or kept for personal use. Bycatch includes economic discards and regulatory discards, but not fish released alive under a recreational catch and release fishery management program.

Caribbean Fishery Management Council (CFMC): One of eight regional councils mandated in the Magnuson-Stevens Fishery Conservation and Management Act to develop management plans for fisheries in federal waters. The CFMC develops fishery management plans for fisheries off the coast of the U.S. Virgin Islands and the Commonwealth of Puerto Rico.

Catch Per Unit Effort (CPUE): The amount of fish captured with an amount of effort. CPUE can be expressed as weight of fish captured per fishing trip, per hour spent at sea, or through other standardized measures.

Charter Boat: A fishing boat available for hire by recreational anglers, normally by a group of anglers for a short time period.

Cohort: Fish born in a given year. (See year class.)

Control Date: Date established for defining the pool of potential participants in a given management program. Control dates can establish a range of years during which a potential participant must have been active in a fishery to qualify for a quota share.

Constant Catch Rebuilding Strategy: A rebuilding strategy where the allowable biological catch of an overfished species is held constant until stock biomass reaches B_{MSY} at the end of the rebuilding period.

Constant F Rebuilding Strategy: A rebuilding strategy where the fishing mortality of an overfished species is held constant until stock biomass reached BMSY at the end of the rebuilding period.

Directed Fishery: Fishing directed at a certain species or species group.

Discards: Fish captured, but released at sea.

Discard Mortality Rate: The percent of total fish discarded that do not survive being captured and released at sea.

Derby: Fishery in which the TAC is fixed and participants in the fishery do not have individual quotas. The fishery is closed once the TAC is reached, and participants attempt to maximize their harvests as quickly as possible. Derby fisheries can result in capital stuffing and a race for fish.

Effort: The amount of time and fishing power (i.e., gear size, boat size, horsepower) used to harvest fish.

Exclusive Economic Zone (EEZ): Zone extending from the shoreline out to 200 nautical miles in which the country owning the shoreline has the exclusive right to conduct certain activities such as fishing. In the United States, the EEZ is split into state waters (typically from the shoreline out to 3 nautical miles) and federal waters (typically from 3 to 200 nautical miles).

Exploitation Rate: Amount of fish harvested from a stock relative to the size of the stock, often expressed as a percentage.

F: Fishing mortality**.**

Fecundity: A measurement of the egg-producing ability of fish at certain sizes and ages.

Fishery Dependent Data: Fishery data collected and reported by fishermen and dealers.

Fishery Independent Data: Fishery data collected and reported by scientists who catch the fish themselves.

Fishery Management Plan: Management plan for fisheries operating in federal waters. Produced by regional fishery management councils and submitted to the Secretary of Commerce for approval.

Fishing Effort: Usually refers to the amount of fishing. May refer to the number of fishing vessels, amount of fishing gear (nets, traps, hooks), or total amount of time vessels and gear are actively engaged in fishing.

Fishing Mortality: A measurement of the rate at which fish are removed from a population by fishing. Fishing mortality can be reported as either annual or instantaneous. Annual mortality is the percentage of fish dying in one year. Instantaneous is that percentage of fish dying at any one time.

Fishing Power: Measure of the relative ability of a fishing vessel, its gear, and its crew to catch fishes, in reference to some standard vessel, given both vessels are under identical conditions.

$F_{30\%SPR}$: Fishing mortality that will produce a static SPR = 30%.

$F_{45\%SPR}$: Fishing mortality that will produce a static SPR = 45%.

F_{OY}: Fishing mortality that will produce OY under equilibrium conditions and a corresponding biomass of B_{OY}. Usually expressed as the yield at 85% of F_{MSY}, yield at 75% of F_{MSY}, or yield at 65% of F_{MSY}.

F_{MSY}: Fishing mortality that if applied constantly, would achieve MSY under equilibrium conditions and a corresponding biomass of B_{MSY}

Fork Length (FL): The length of a fish as measured from the tip of its snout to the fork in its tail.

Gear restrictions: Limits placed on the type, amount, number, or techniques allowed for a given type of fishing gear.

Growth Overfishing: When fishing pressure on small fish prevents the fishery from producing the maximum poundage. Condition in which the total weight of the harvest from a fishery is improved when fishing effort is reduced, due to an increase in the average weight of fishes.

Gulf of Mexico Fishery Management Council (GFMC): One of eight regional councils mandated in the Magnuson-Stevens Fishery Conservation and Management Act to develop management plans for fisheries in federal waters. The GFMC develops fishery management plans for fisheries off the coast of Texas, Louisiana, Mississippi, Alabama, and the west coast of Florida.

Head Boat: A fishing boat that charges individual fees per recreational angler onboard.

High grading: Form of selective sorting of fishes in which higher value, more marketable fishes are retained, and less marketable fishes, which could legally be retained are discarded.

Individual Fishing Quota (IFQ): Fishery management tool that allocates a certain portion of the TAC to individual vessels, fishermen, or other eligible recipients.

Longline: Fishing method using a horizontal mainline to which weights and baited hooks are attached at regular intervals. Gear is either fished on the bottom or in the water column.

Magnuson-Stevens Fishery Conservation and Management Act: Federal legislation responsible for establishing the fishery management councils and the mandatory and discretionary guidelines for federal fishery management plans.

Marine Recreational Fisheries Statistics Survey (MRFSS): Survey operated by NMFS in cooperation with states that collects marine recreational fisheries data.

Marine Recreational Information Program (MRIP): Survey operated by NMFS in cooperation with states that collects marine recreational fisheries data.

Maximum Fishing Mortality Threshold (MFMT): The rate of fishing mortality above which a stock's capacity to produce MSY would be jeopardized.

Maximum Sustainable Yield (MSY): The largest long-term average catch that can be taken continuously (sustained) from a stock or stock complex under average environmental conditions.

Minimum Stock Size Threshold (MSST): The biomass level below which a stock would be considered overfished.

Modified F Rebuilding Strategy: A rebuilding strategy where fishing mortality is changed as stock biomass increases during the rebuilding period.

Multispecies fishery: Fishery in which more than one species is caught at the same time and location with a particular gear type.

National Marine Fisheries Service (NMFS): Federal agency within NOAA responsible for overseeing fisheries science and regulation.

National Oceanic and Atmospheric Administration: Agency within the Department of Commerce responsible for ocean and coastal management.

Natural Mortality (M): A measurement of the rate at which fish are removed from a population by natural causes. Natural mortality can be reported as either annual or instantaneous. Annual mortality is the percentage of fish dying in one year. Instantaneous is that percentage of fish dying at any one time.

Optimum Yield (OY): The amount of catch that will provide the greatest overall benefit to the nation, particularly with respect to food production and recreational opportunities and taking into account the protection of marine ecosystems.

Overfished: A stock or stock complex is considered overfished when stock biomass falls below the minimum stock size threshold (MSST) (e.g., current biomass < MSST = overfished).

Overfishing: Overfishing occurs when a stock or stock complex is subjected to a rate of fishing mortality that exceeds the maximum fishing mortality threshold (e.g., current fishing mortality rate > MFMT = overfishing).

Quota: Percent or annual amount of fish that can be harvested.

Recruitment (R): Number or percentage of fish that survives from hatching to a specific size or age.

Recruitment Overfishing: The rate of fishing above which the recruitment to the exploitable stock becomes significantly reduced. This is characterized by a greatly reduced spawning stock, a decreasing proportion of older fish in the catch, and generally very low recruitment year after year.

Scientific and Statistical Committee (SSC): Fishery management advisory body composed of federal, state, and academic scientists, which provides scientific advice to a fishery management council.

Selectivity: The ability of a type of gear to catch a certain size or species of fish.

South Atlantic Fisheries Management Council (SAFMC): One of eight regional councils mandated in the Magnuson-Stevens Fishery Conservation and Management Act to develop management plans for fisheries in federal waters. The SAFMC develops fishery management plans for fisheries off North Carolina, South Carolina, Georgia, and the east coast of Florida.

Spawning Potential Ratio (Transitional SPR): Formerly used in overfished definition. The number of eggs that could be produced by an average recruit in a fished stock divided by the number of eggs that could be produced by an average recruit in an unfished stock. SPR can also be expressed as the spawning stock biomass per recruit (SSBR) of a fished stock divided by the SSBR of the stock before it was fished.

% Spawning Per Recruit (Static SPR): Formerly used in overfishing determination. The maximum spawning per recruit produced in a fished stock divided by the maximum spawning per recruit, which occurs under the conditions of no fishing. Commonly abbreviated as %SPR.

Spawning Stock Biomass (SSB): The total weight of those fish in a stock which are old enough to spawn.

Spawning Stock Biomass Per Recruit (SSBR): The spawning stock biomass divided by the number of recruits to the stock or how much spawning biomass an average recruit would be expected to produce.

Total Allowable Catch (TAC): The total amount of fish to be taken annually from a stock or stock complex. This may be a portion of the Allowable Biological Catch (ABC) that takes into consideration factors such as bycatch.

Total Length (TL): The length of a fish as measured from the tip of the snout to the tip of the tail.

Appendix B. Other Applicable Law

1.1 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 usually 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, with some exceptions. Regulatory Amendment 1 to the Fishery Management Plan for the Dolphin and Wahoo Fishery (Dolphin Wahoo 1) of the Atlantic is consistent with the provisions of the APA through the South Atlantic Fishery Management Council's (South Atlantic Council) extensive use of public meetings, requests for comments, and consideration of comments, including those covering the Mid-Atlantic and New England Fishery Management Councils. The proposed rule associated with this amendment will have a request for public comments which complies with the APA, and upon publication of the final rule, there will be a 30-day wait period before the regulations are effective unless an exception applies.

1.2 Information Quality Act (IQA)

The IQA (Section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001 (Public Law 106-443)) which took effect October 1, 2002, directed the Office of Management and Budget (OMB) to issue government-wide guidelines that "provide policy and procedural guidelines to federal agencies for ensuring and maximizing the quality, objectivity, utility, and integrity of information disseminated by federal agencies." OMB directed each federal agency to issue its own guidelines, establish administrative mechanisms allowing affected persons to seek and obtain correction of information that does not comply with OMB guidelines, and report periodically to OMB on the number and nature of complaints. The NOAA Section 515 Information Quality Guidelines require a series of actions for each new information product subject to the IQA. Regulatory Amendment 1 has used the best available information and made a broad presentation thereof. The information contained in this document was developed using the best available scientific information. Therefore, this document is in compliance with the IQA.

1.3 Coastal Zone Management Act (CZMA)

Section 307(c)(1) of the federal CZMA of 1972 requires that all federal activities that directly affect the coastal zone be consistent with approved state coastal zone management programs to the maximum extent practicable. The South Atlantic Council, in cooperation with the Mid-Atlantic Fishery Management Council and the New England Fishery Management Council, is responsible for conservation and management of dolphin and wahoo in federal waters off the Atlantic states. While it is the goal of the South Atlantic Council to have management measures that complement those of the states, federal and state administrative procedures vary and regulatory changes are unlikely to be fully instituted at the same time. Based on the analysis of the environmental consequences of the proposed actions in **Section 4**, the South Atlantic Council believes this document is consistent to the maximum extent practicable with the Coastal Zone Management Plans of Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, North Carolina, South

Carolina, Georgia, and east Florida to Key West. This determination will be submitted to the responsible state agencies under Section 307 of the CZMA administering approved Coastal Zone Management Programs in the states mentioned above.

1.4 Endangered Species Act (ESA)

The ESA of 1973 (16 U.S.C. Section 1531 et seq.) requires that federal agencies must ensure actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of threatened or endangered species or the habitat designated as critical to their survival and recovery. The ESA requires NMFS to consult with the appropriate administrative agency (itself for most marine species, and the U.S. Fish and Wildlife Service for all remaining species) when proposing an action that may affect threatened or endangered species or adversely modify critical habitat. Consultations are necessary to determine the potential impacts of the proposed action. They conclude informally when proposed actions may affect but are "not likely to adversely affect" threatened or endangered species or designated critical habitat. Formal consultations, resulting in a biological opinion, are required when proposed actions may affect and are "likely to adversely affect" threatened or endangered species or adversely modify designated critical habitat.

NMFS completed a biological opinion that evaluated the impacts of the Atlantic dolphin and wahoo fishery on ESA-listed species on August 27, 2003 (NMFS 2003). The opinion for the dolphin and wahoo fishery concluded the fishery would not affect ESA-listed marine mammals or smalltooth sawfish, and is not likely to jeopardize the continued existence of any listed sea turtle species (see NMFS 2003 for discussion on these species). However, the opinion did state that the dolphin and wahoo fishery would adversely affect sea turtles. In the opinion, NMFS issued an Incidental Take Statements for species that were likely to be adversely affected by actions associated with the fisheries (i.e., sea turtles and smalltooth sawfish). Reasonable and Prudent Measures to minimize the impact of these incidental takes were specified, along with Terms and Conditions to implement them.

Subsequent to the biological opinion, NMFS made several modifications to the list of protected species for which they are responsible. These changes included: (1) the listing of two species of *Acropora* coral, (2) the designation of *Acropora* critical habitat, (3) the determination that the loggerhead sea turtle population consists of nine distinct population segments (DPSs; 76 FR 58868) and, (4) the listing of five DPSs of Atlantic sturgeon.

NMFS addressed how these ESA changes could impact the determinations of the 2003 biological opinion in a series of consultation memoranda. In separate memoranda, NMFS concluded the continued authorization of the Atlantic dolphin wahoo fishery, is not likely to adversely affect *Acropora* or *Acropora* critical habitat (May 18, 2010), and Atlantic sturgeon (February 15, 2012). The February 15, 2012, memorandum also stated that because the 2003 biological opinion had evaluated the impacts of the fishery on the loggerhead subpopulations now wholly contained within the Northwest Atlantic DPS, the opinion's conclusion that the fishery is not likely to jeopardize the continued existence of loggerhead sea turtles remains valid. In a memorandum dated February 13, 2013, NMFS concluded new information provided in the proposed reclassification (uplisting) of *Acropora* did not change the previous effects determination that the fishery was not likely to adversely affect *Acropora*.

On September 10, 2014, NMFS listed 20 new coral species under the ESA, five of those species occur in the Caribbean (including Florida) and all of these are listed as threatened. The two previously listed

Acropora coral species remain protected as threatened. In a memorandum dated September 11, 2014, NMFS indicated that the previous determination remains valid and the South Atlantic snapper grouper and dolphin wahoo fisheries are still not likely to adversely affect *Acropora* corals.

On July 10, 2014, NMFS published a final rule designating critical habitat for the Northwest Atlantic Ocean (NWA) Loggerhead Sea Turtle DPS in the *Federal Register* (79 FR 39856). The final rule, effective August 11, 2014, designates 38 marine areas within the Atlantic Ocean and Gulf of Mexico, which contain the physical or biological features essential for the conservation of the loggerhead sea turtle. A memorandum dated September 16, 2014, evaluated the effects of continued authorization of federal fisheries, including dolphin and wahoo, on the newly-designated critical habitat. The memo concluded that activities associated with the dolphin wahoo fisheries would not adversely affect any of the NWA loggerhead DPS critical habitat units. This fishery will have insignificant effects that will not adversely affect the habitat's ability to perform its function.

Therefore, the actions proposed in Regulatory Amendment 1 would fall within the level of effort and scope of the actions analyzed in the above mentioned biological opinion and subsequent memoranda.

1.5 Executive Order 13132: Federalism

E.O. 13132 requires agencies to be guided by the fundamental federalism principles when formulating and implementing policies that have federalism implications. The purpose of the Order is to guarantee the division of governmental responsibilities between the federal government and the states, as intended by the framers of the Constitution. No federalism issues have been identified relative to the action proposed in this document and associated regulations. Regulatory Amendment 1 would establish a trip limit once a certain threshold is reached and no federalism issues have been identified. Therefore, preparation of a Federalism assessment under E.O. 13132 is not necessary.

1.6 Executive Order 12866: Regulatory Planning and Review

E.O. 12866, signed in 1993, requires federal agencies to assess the costs and benefits of their proposed regulations, including distributional impacts, and to select alternatives that maximize net benefits to society. To comply with E.O. 12866, NMFS prepares a Regulatory Impact Review (RIR) for all fishery regulatory actions that implement a new fishery management plan (FMP) or that significantly amend an existing plan. RIRs provide a comprehensive analysis of the costs and benefits to society associated with proposed regulatory actions, the problems and policy objectives prompting the regulatory proposals, and the major alternatives that could be used to solve the problems. The reviews also serve as the basis for the agency's determinations as to whether proposed regulations are a "significant regulatory action" under the criteria provided in E.O. 12866 and whether proposed regulations will have a significant economic impact on a substantial number of small entities in compliance with the Regulatory Flexibility Act (RFA). A regulation is significant if it is likely to result in an annual effect on the economy of at least $100,000,000 or if it has other major economic effects.

In accordance with E.O. 12866, the following is set forth by the South Atlantic Council: (1) this rule is not likely to have an annual effect on the economy of more than $100 million or to adversely affect in a material way the economy, a sector of the economy, productivity, jobs, the environment, public health or safety, or state, local, or tribal governments or communities; (2) this rule is not likely to create any serious inconsistencies or otherwise interfere with any action taken or planned by another agency; (3) this

rule is not likely to materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights or obligations of recipients thereof; (4) this rule is not likely to raise novel or policy issues arising out of legal mandates, or the principles set forth in the Executive Order; and (5) this rule is not controversial.

This amendment includes the RIR as **Appendix E**.

1.7 Executive Order 12898: Environmental Justice

E.O. 12898 requires that "to the greatest extent practicable and permitted by law…each federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, 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 and possessions…"

The actions considered in this amendment are not expected to result in any disproportionate adverse human health or environmental effects to minority populations or low-income populations of Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, North Carolina, South Carolina, Georgia, and east Florida to Key West. A description of the communities impacted by the actions contained in this document and potential socioeconomic impacts of those actions are contained in **Chapters 3** and **4** of this amendment.

1.8 Executive Order 12962: Recreational Fisheries

E.O. 12962 requires federal agencies, in cooperation with states and tribes, to improve the quantity, function, sustainable productivity, and distribution of U.S. aquatic resources for increased recreational fishing opportunities through a variety of methods including but not limited to developing joint partnerships; promoting the restoration of recreational fishing areas that are limited by water quality and habitat degradation; fostering sound aquatic conservation and restoration endeavors; and evaluating the effects of federally-funded, permitted, or authorized actions on aquatic systems and recreational fisheries, and documenting those effects. Additionally, the Order establishes a seven-member National Recreational Fisheries Coordination Council responsible for, among other things, ensuring that social and economic values of healthy aquatic systems that support recreational fisheries are considered by federal agencies in the course of their actions, sharing the latest resource information and management technologies, and reducing duplicative and cost-inefficient programs among federal agencies involved in conserving or managing recreational fisheries. The National Recreational Fisheries Coordination Council also is responsible for developing, in cooperation with federal agencies, states and tribes, a Recreational Fishery Resource Conservation Plan - to include a five-year agenda. Finally, the Order requires NMFS and the U.S. Fish and Wildlife Service to develop a joint agency policy for administering the ESA.

The actions considered in this amendment are consistent with the directives of E.O. 12962.

1.9 Executive Order 13089: Coral Reef Protection

E.O. 13089, signed by President William Clinton on June 11, 1998, recognizes the ecological, social, and economic values provided by the Nation's coral reefs and ensures that federal agencies are protecting these ecosystems. More specifically, the Order requires federal agencies to identify actions that may

harm U.S. coral reef ecosystems, to utilize their program and authorities to protect and enhance the conditions of such ecosystems, and to ensure that their actions do not degrade the condition of the coral reef ecosystem.

The actions considered in this amendment are consistent with the directives of E.O. 13089.

1.10 Executive Order 13158: Marine Protected Areas (MPAs)

E.O. 13158 was signed on May 26, 2000, to strengthen the protection of U.S. ocean and coastal resources through the use of MPAs. The E.O. defined MPAs as "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 and cultural resources therein". It directs federal agencies to work closely with state, local, and non-governmental partners to create a comprehensive network of MPAs "representing diverse U.S. marine ecosystems, and the Nation's natural and cultural resources".

The actions considered in this amendment are consistent with the directives of E.O. 13158.

1.11 Marine Mammal Protection Act (MMPA)

The MMPA established a moratorium, with certain exceptions, on the taking of marine mammals in U.S. waters and by U.S. citizens on the high seas. It also prohibits the importing of marine mammals and marine mammal products into the United States. Under the MMPA, the Secretary of Commerce (authority delegated to NMFS) is responsible for the conservation and management of cetaceans and pinnipeds (other than walruses). The Secretary of the Interior is responsible for walruses, sea otters, polar bears, manatees, and dugongs. Part of the responsibility that NMFS has under the MMPA involves monitoring populations of marine mammals to make sure that they stay at optimum levels. If a population falls below its optimum level, it is designated as "depleted". A conservation plan is then developed to guide research and management actions to restore the population to healthy levels.

In 1994, Congress amended the MMPA, to govern the taking of marine mammals incidental to commercial fishing operations. This amendment required the preparation of stock assessments for all marine mammal stocks in waters under U.S. jurisdiction; development and implementation of take-reduction plans for stocks that may be reduced or are being maintained below their optimum sustainable population levels due to interactions with commercial fisheries; and studies of pinniped-fishery interactions. The MMPA requires a commercial fishery to be placed in one of three categories, based on the relative frequency of incidental serious injuries and mortalities of marine mammals. Category I designates fisheries with frequent serious injuries and mortalities incidental to commercial fishing; Category II designates fisheries with occasional serious injuries and mortalities; and Category III designates fisheries with a remote likelihood or no known serious injuries or mortalities.

Under the MMPA, to legally fish in a Category I and/or II fishery, a fisherman must take certain steps. For example, owners of vessels or gear engaging in a Category I or II fishery, are automatically registered for the Marine Mammal Authorization Program and are required by law to carry a current Authorization Certificate on board their vessel or person when participating in the listed fishery. Fishermen are also required to accommodate an observer if requested (50 CFR 229.7(c)) and must comply with any applicable take reduction plans. Furthermore, all fishermen (regardless of fishery category) must report

any incidental mortality or injury to a marine mammal during commercial fishing activities within 48 hours of the fishing trip.

The dolphin wahoo fishery of the Atlantic is part of the Southeastern U.S. Atlantic, Gulf of Mexico, and Caribbean pelagic hook-and-line/harpoon fishery and is designated as Category III in the final list of fisheries (79 FR 77919, December 29, 2014) because there have been no known documented interactions between these gear and marine mammals. The actions in this amendment/EA are not expected to negatively impact the provisions of the MMPA.

1.12 Migratory Bird Treaty Act (MBTA) and Executive Order 13186

The MBTA implemented several bilateral treaties for bird conservation between the United States and Great Britain, the United States and Mexico, the United States and Japan, and the United States and the former Union of Soviet Socialists Republics. Under the MBTA, it is unlawful to pursue, hunt, take, capture, kill, possess, trade, or transport any migratory bird, or any part, nest, or egg of a migratory bird, included in bilateral treaties, except as permitted by regulations issued by the Department of the Interior (16 U.S.C. 703-712). Violations of the MBTA carry criminal penalties. Any equipment and means of transportation used in activities in violation of the MBTA may be seized by the United States government and, upon conviction, must be forfeited to it.

Executive Order 13186 directs each federal agency taking actions that have, or are likely to have, a measurable negative effect on migratory bird populations to develop and implement a memorandum of understanding (MOU) with the U.S. Fish and Wildlife Service (USFWS) to conserve those bird populations. In the instance of unintentional take of migratory birds, NMFS would develop and use principles, standards, and practices that will lessen the amount of unintentional take in cooperation with the USFWS. Additionally, the MOU would ensure that NEPA analyses evaluate the effects of actions and agency plans on migratory birds, with emphasis on species of concern.

An MOU was signed on August 15, 2012, which addresses the incidental take of migratory birds in commercial fisheries under the jurisdiction of NMFS. NMFS must monitor, report, and take steps to reduce the incidental take of seabirds that occurs in fishing operations. The United States has already developed the U.S. National Plan of Action for Reducing Incidental Catch of Seabirds in Longline Fisheries. Under that plan many potential MOU components are already being implemented.

The actions considered in this amendment are consistent with the directives of E.O. 13186.

1.13 National Environmental Policy Act (NEPA)

This document has been written and organized in a manner that meets NEPA requirements, and includes an Environmental Assessment, as described in NOAA Administrative Order (NAO) 216-6, Section 6.03.a.2.

Proposed Actions

The proposed actions are described in **Chapter 2.**

Affected Environment

The affected environment is described in **Chapter 3**.

Impacts of the Action

The impacts of the actions on the environment are described in **Chapter 4.**

1.14 National Marine Sanctuaries Act (NMSA)

Under the NMSA (also known as Title III of the Marine Protection, Research and Sanctuaries Act of 1972), as amended, the U.S. 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 Sanctuary Program is administered by the Sanctuaries and Reserves Division of NOAA. The NMSA provides authority for comprehensive and coordinated conservation and management of these marine areas. The National Marine Sanctuary Program 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. The sanctuaries in the Atlantic exclusive economic zone are the Stellwagen Bank, USS Monitor, Gray's Reef, and Florida Keys National Marine Sanctuaries.

The actions considered in this amendment are not expected to have any adverse impacts on the resources managed by the National Marine Sanctuaries.

1.15 Paperwork Reduction Act (PRA)

The purpose of the PRA is to minimize the burden on the public. The PRA is intended to ensure that the information collected under the proposed action is needed and is collected in an efficient manner (44 U.S.C. 3501 (1)). The authority to manage information collection and record keeping requirements is vested with the Director of the Office of Management and Budget (OMB). This authority encompasses establishment of guidelines and policies, approval of information collection requests, and reduction of paperwork burdens and duplications. The PRA requires NMFS to obtain approval from the OMB before requesting most types of fishery information from the public.

The actions considered in this amendment are not expected to affect PRA since no data collection program is included.

1.16 Regulatory Flexibility Act (RFA)

The RFA of 1980 (5 U.S.C. 601 et seq.) requires federal agencies to assess the impacts of regulatory actions implemented through notice and comment rulemaking procedures on small businesses, small organizations, and small governmental entities, with the goal of minimizing adverse impacts of burdensome regulations and record-keeping requirements on those entities. Under the RFA, NMFS must determine whether a proposed fishery regulation would have a significant economic impact on a substantial number of small entities. If not, a certification to this effect must be prepared and submitted to the Chief Counsel for Advocacy of the Small Business Administration. Alternatively, if a regulation is

determined to significantly impact a substantial number of small entities, the RFA requires the agency to prepare an initial and final Regulatory Flexibility Analysis to accompany the proposed and final rule, respectively. These analyses, which describe the type and number of small businesses affected, the nature and size of the impacts, and alternatives that minimize these impacts while accomplishing stated objectives, must be published in the *Federal Register* in full or in summary for public comment and submitted to the chief counsel for advocacy of the Small Business Administration. Changes to the RFA in June 1996 enable small entities to seek court review of an agency's compliance with the RFA's provisions.

As NMFS has determined the a proposed fishery regulation would not have a significant economic impact on a substantial number of small entities, a certification to this effect will be prepared and submitted to the Chief Counsel for Advocacy of the Small Business Administration.

This amendment includes the RFA as **Appendix F**.

1.17 Small Business Act (SBA)

Enacted in 1953, the SBA requires that agencies assist and protect small-business interests to the extent possible to preserve free competitive enterprise. The objectives of the SBA are to foster business ownership by individuals who are both socially and economically disadvantaged; and to promote the competitive viability of such firms by providing business development assistance including, but not limited to, management and technical assistance, access to capital and other forms of financial assistance, business training, and counseling, and access to sole source and limited competition federal contract opportunities, to help firms achieve competitive viability. Because most businesses associated with fishing are considered small businesses, NMFS, in implementing regulations, must make an assessment of how those regulations will affect small businesses.

1.18 Public Law 99-659: Vessel Safety

Public Law 99-659 amended the Magnuson-Stevens Fishery Conservation and Management Act to require that a fishery management plan (FMP) or FMP amendment must consider, and may provide for, temporary adjustments (after consultation with the U.S. Coast Guard and persons utilizing the fishery) regarding access to a fishery for vessels that would be otherwise prevented from participating in the fishery because of safety concerns related to weather or to other ocean conditions.

No vessel would be forced to participate in Atlantic fisheries under adverse weather or ocean conditions as a result of the imposition of management regulations proposed in this amendment. No concerns have been raised by fishermen or by the U.S. Coast Guard that the proposed management measures directly or indirectly pose a hazard to crew or vessel safety under adverse weather or ocean conditions.

Appendix C. History of Management

History of Management of the Atlantic Dolphin and Wahoo Fisheries

The dolphin and wahoo fisheries are highly regulated and have been regulated since 2004. The following table summarizes actions in each of the amendments to the original FMP.

Time period/dates	Cause	Observed and/or Expected Effects
Effective June 28, 2004	Fishery Management Plan for the Dolphin Wahoo Fishery off the Atlantic states (Dolphin Wahoo FMP).	1) A 20-inch fork length minimum size limit for dolphin off the coasts of Georgia and Florida with no size restrictions elsewhere; (2) prohibition of longline fishing for dolphin and wahoo in areas closed to the use of such gear for highly migratory pelagic species; and (3) allowable gear to be used in the fishery (hook-and-line gear including manual, electric, and hydraulic rods and reels; bandit gear; handlines; longlines; and spearfishing (including powerheads) gear. In addition, other approved portions of the FMP were also effective on this date, including (1) the management unit and designations of stock status criteria for the unit; (2) a fishing year of January 1 through December 31; (3) a 1.5 million pound (or 13% of the total harvest) cap on commercial landings; (4) establishment of a framework procedure by which the SAFMC may modify its management measures; and (5) designations of Essential Fish Habitat (EFH) and EFH-Habitat Areas of Particular Concern (HAPC).
Effective September 24, 2004	Dolphin Wahoo FMP	1) owners of commercial vessels and/or charter vessels/headboats must have vessel permits and, if selected, submit reports; (2) dealers must have permits and, if selected, submit reports; (3) longline vessels must comply with sea turtle protection measures; (4) a recreational bag limit of 10 dolphin and 2 wahoo per person per day, with a limit of 60 dolphin per boat per day (headboats are excluded from the boat limit); (5) prohibition on recreational sale of dolphin and wahoo caught under a bag limit unless the seller holds the necessary commercial permits; and (6) a commercial trip limit of 500 pounds for wahoo.
Effective November 23,	Dolphin Wahoo FMP	Operators of commercial vessels,

Time period/dates	Cause	Observed and/or Expected Effects
2004		charter vessels and headboats that are required to have a federal vessel permit for dolphin and wahoo must display operator permits.
Effective Date July 22, 2010	Amendment 1 to the Dolphin Wahoo FMP (Comprehensive Ecosystem Based Amendment (CE-BA) 1)	Updated spatial information of Council-designated EFH and EFH-HAPCS.
Effective Date April 16, 2012	Amendment 2 to the Dolphin Wahoo FMP (Comprehensive ACL Amendment SAFMC 2011)	Set ABC, ACL, ACT and AMs
Effective Date August 7, 2014	Amendment 3 to the Dolphin Wahoo FMP (Joint Generic Dealer Amendment)	Required a single federal dealer permits, electronic reporting by dealers, and changed the frequency and method of reporting.
TBD	Amendment 4 to the Dolphin Wahoo FMP (Joint Generic Commercial Logbook Reporting Amendment)	Would change the method of reporting commercial catches by logbook.
Effective Date July 9, 2014	Amendment 5 to the Dolphin Wahoo FMP	Revisions to acceptable biological catch estimates (ABCs), annual catch limits (ACLs) (including sector ACLs), recreational annual catch targets (ACTs), and accountability measures (AMs) implemented through the Comprehensive ACL Amendment; modifications to the sector allocations for dolphin; and revisions to the framework procedure in the Dolphin Wahoo FMP.
Effective Date January 27, 2014	Amendment 6 to the Dolphin Wahoo FMP (Joint South Atlantic and Gulf of Mexico Generic Head boat Reporting Amendment)	Included under the Generic charter/headboat reporting amendment, that modified required logbook reporting for headboat vessels to require electronic reporting, regarding dolphin wahoo landings.
Effective Date January 27, 2016	Amendment 7 to the Dolphin Wahoo FMP	Exempt dolphin and wahoo harvested in the Bahamas from regulations that require head and fins to be intact; two fillets would be equal to one fish; require skin to be intact on dolphin, wahoo, and snapper grouper species harvested in the Bahamas.
Effective Date February 22, 2016	Amendment 8 to the Dolphin Wahoo FMP	Changed the allocations for dolphin to 10% commercial sector and 90% recreational sector.

Appendix D. Bycatch Practicability Analysis

1 Population Effects for the Bycatch Species

1.1 Background

If implemented, Regulatory Amendment 1 to the Fishery Management Plan for the Dolphin and Wahoo in the Atlantic (Regulatory Amendment 1) would establish a commercial trip limit for dolphin after a certain percentage of the total commercial sector annual catch limit (ACL) has been reached. The percentages of the ACL considered by the South Atlantic Fishery Management Council (South Atlantic Council) for triggering a trip limit are 65%, 70%, and 75% of the entire ACL. The trip limits considered are 1,000, 2,000, 3,000, or 4,000 pounds whole weight (lbs ww). After a trip limit is triggered, it would remain in place until the end of the fishing year or until the entire commercial ACL is met and harvest is closed, whichever comes first. The South Atlantic Council's preferred alternative is a 75% of the commercial sector ACL trigger with a 4,000 lbs ww trip limit.

1.2 Bycatch Mortality

Prager (2000) conducted an assessment of dolphin and indicated the species can withstand a high level of exploitation. Prager (2000) stated the biomass of the U.S. stock of dolphin appeared to be higher than needed to produce the maximum sustainable yield, but the results were not conclusive. The 2013 Report to Congress (NMFS 2013) indicates dolphin are neither overfished nor undergoing overfishing. Furthermore, dolphin are listed as species of "least concern" under the International Union for Conservation of Nature Red List, i.e. species that have a low risk of extinction (IUCN 2013). A Southeast Data, Assessment, and Review (SEDAR) stock assessment for dolphin is scheduled within the next five years.

Regulations (50 C.F.R. § 622.271) require commercial dolphin fishermen who are selected by the Science and Research Director (SRD) to maintain and submit a fishing record on forms provided by the SRD. Commercial dolphin fishermen are also required to submit logbooks with trip and effort information. Currently, discard data are collected using a supplemental form that is sent to a 20% stratified random sample of the active permit holders in the dolphin wahoo fishery. For the recreational sector, estimates of the number of recreational discards are available from Marine Recreational Information Program (MRIP) and the National Marine Fisheries Service (NMFS) Southeast Headboat Survey. Commercial discards for dolphin are very low, but discards were disproportionately higher in the recreational sector (**Table 1**). During 2009-2013, mean private recreational landings and discards for dolphin were higher than the headboat and charterboat category (**Table 1**).

Table 1. Mean headboat, MRIP charter, MRIP private, and commercial landings of dolphin and estimates of discards in the U.S. Atlantic Ocean (2009-2013). Headboat, and MRIP (charter and private) landings are in numbers of fish (N); commercial landings are in pounds whole weight (lbs ww). Discards represent numbers of fish that were caught and released alive.

Species	HEADBOAT			MRIP CHARTER			MRIP PRIVATE			COMMERCIAL		ALL SECTORS
	Catch (N)	Landings (N)	Discards (N)	Catch (N)	Landings (N)	Discards (N)	Catch (N)	Landings (N)	Discards (N)	Landings (lbs ww)	Discards (N)	Discards (N)
Dolphin	3,809	3,453	355	10%	259,864	253,320	6,544	3%	722,291	543,694	178,596	33%

Sources: MRIP data from SEFSC Recreational ACL Dataset, Headboat data from SEFSC Headboat Logbook CRNF files (expanded), Commercial landings data from SEFSC Commercial ACL Dataset with discard estimates from expanded SEFSC Commercial Discard Logbook.
Note: Dolphin and wahoo landings include all east coast (NY-FL), but discard estimates for headboat and commercial are highly uncertain and only include NC-FL. Estimates of commercial discards are for vertical line gear only.

Release mortality rates are unknown for dolphin. Hook-and-line gear is the predominant gear used to harvest dolphin in the Atlantic (SAFMC 2003). It is likely that most mortality is a function of hooking and handling of the fish when the hook is being removed. However, sustainable seafood guides recommend dolphin harvested by hook-and-line gear in the U.S. as a "best choice" or "good alternative" since this gear has minimal bycatch issues (Blue Ocean 2010; Seafood Watch 2010). A portion of dolphin is harvested using pelagic longlines, with sea turtles, sharks, and rays commonly caught as bycatch, but survival rates of hooked sea turtles was over 94% (Whoriskey et al. 2011).

1.3 Practicability of Management Measures in Directed Fisheries Relative to their Impact on Bycatch and Bycatch Mortality

None of the trip limit alternatives in Regulatory Amendment 1 are likely to change the current level of bycatch of target or non-target species in the Atlantic. The actions in this amendment would implement a trip limit once a certain threshold is reached, effectively slowing the rate of harvest.

The action to establish trip limits for dolphin is not expected to substantially change the level of bycatch of target and non-target species.

1.4 Past, Current, and Future Actions to Prevent Bycatch and Improve Monitoring of Harvest, Discards, and Discard Mortality.

The magnitude of discards in the dolphin and wahoo fishery are small in comparison to other fisheries, and bycatch is believed to be minimal in the commercial, recreational, charter, and headboat sectors (**Table 1**). Action was taken in the Fishery Management Plan for the Dolphin and Wahoo Fishery of the Atlantic (Dolphin Wahoo FMP) to reduce bycatch by prohibiting the use of surface and pelagic longline gear for dolphin and wahoo within any "time or area closure" closed to the use of pelagic gear for highly migratory pelagic species in the South Atlantic

Council's area of jurisdiction (Atlantic Coast). The South Atlantic Council's For-Hire Reporting Amendment has changed the reporting frequency by headboats from monthly to weekly, and requires that reports be submitted electronically. More timely and accurate information is expected to provide a better understanding of the composition and magnitude of catch and bycatch, enhance the quality of data provided for stock assessments, increase the quality of assessment output, and lead to better decisions regarding additional measures to reduce bycatch. Management measures that affect gear and effort for a target species can influence fishing mortality in other species. Therefore, enhanced catch and bycatch monitoring would provide better data that could be used in multi-species assessments.

Additional information on fishery related actions from the past, present, and future considerations can be found in **Chapter 6** (Cumulative effects).

1.5 Ecological Effects Due to Changes in the Bycatch

Dolphin are pelagic and migratory, interacting with various combinations of species groups at different levels on a seasonal basis. Blue Ocean (2010) reported that the fishing method used to harvest dolphin in the Atlantic does little damage to physical or biogenic habitats, and that the habitat for this species remains robust and viable. Regulatory Amendment 1 would not modify the gear types or fishing techniques in the dolphin segment of the dolphin wahoo fishery. Therefore, ecological effects due to changes in bycatch in this fishery are likely to be negligible if actions in this amendment are implemented. For more details on ecological effects, see **Chapters 3** and **4**.

As mentioned in the above section, the South Atlantic For-Hire Reporting Amendment included an action which required weekly electronic reporting to enhance landings data reporting in the headboat sector. Better bycatch and discard data will provide a better understanding of the composition and magnitude of catch and bycatch, enhance the quality of data provided for stock assessments, increase the quality of assessment output, and lead to better decisions regarding additional measures to reduce bycatch. Management measures that affect gear and effort for a target species can influence fishing mortality in other species. Therefore, enhanced catch and bycatch monitoring is expected to provide better data that could be used in multi-species assessments. These improvements in harvest monitoring efforts in the headboat sector, will also be extended to the charter and commercial sectors of all fisheries in the southeast region.

1.6 Changes in the Bycatch of Other Fish Species and Resulting Population and Ecosystem Effects

Regulatory Amendment 1 is not expected to result in major changes in bycatch of other fish species. The alternatives in this regulatory amendment would establish a trip limit and would result in a reduction in the rate of harvest if and when a threshold was reached. These actions are not expected to result in a significant increase in the use of longline gear in the dolphin wahoo fishery, or associated incidental takes of protected and HMS species.

Effects on Marine Mammals and Birds

Under Section 118 of the Marine Mammal Protection Act (MMPA), the NMFS must publish, at least annually, a List of Fisheries (LOF) that places all U.S. commercial fisheries into one of three categories based on the level of incidental serious injury and mortality of marine mammals that occurs in each fishery.

The dolphin wahoo fishery of the Atlantic is part of the Southeastern U.S. Atlantic, Gulf of Mexico, and Caribbean pelagic hook-and-line/harpoon fishery is designated as a Category III fishery (79 FR 77919, December 29, 2014), because there have been no known documented interactions between these gear and marine mammals. The actions in this Regulatory Amendment are not expected to violate the provisions of the Marine Mammal Protection Act.

NMFS completed a biological opinion on August 27, 2003, evaluating the impacts of the Atlantic dolphin wahoo fishery on Endangered Species Act (ESA)-listed species. The opinion concluded the fishery would not affect ESA-listed marine mammals.

The Bermuda petrel and roseate tern occur within the action area. Bermuda petrels are occasionally seen in the waters of the Gulf Stream off the coasts of North Carolina and South Carolina during the summer. Sightings are considered rare and only occurring in low numbers (Alsop 2001). Roseate terns occur widely along the Atlantic coast during the summer but in the southeast region, they are found mainly off the Florida Keys (unpublished US Fish and Wildlife Service data). Interaction with fisheries has not been reported as a concern for either of these species.

1.8 Changes in Fishing, Processing, Disposal, and Marketing Costs

Implementing a trip limit for dolphin is not expected to significantly alter fishing practices, processing, disposal, or marketing costs in the near or short term. In the long term, it is more likely that current fishing, processing, disposal, and marketing costs would be maintained at or near their status quo levels.

Changes in Fishing Practices and Behavior of Fishermen

The alternatives proposed in the Regulatory Amendment 1 are not expected to change fishing practices or fishing behavior, and are likely to have little effect on the overall magnitude of discards. As stated previously, any changes to fishing behavior and subsequent changes in the level of discards or discard mortality that may result from the actions in the amendment are expected to be small, and would not jeopardize the sustainability of any target or non-target species.

1.8 Social effects

Social effects of the actions proposed in the Regulatory Amendment 1 are addressed in Chapter 4 of the amendment.

1.9 Changes in Research, Administration, and Enforcement Costs and Management Effectiveness

The action to establish a trip limit for dolphin in Regulatory Amendment 1 is not likely to change the current level of bycatch of target or non-target species in the Atlantic. Research and monitoring is ongoing to understand the effectiveness of implemented management measures from other dolphin wahoo amendments and their effect on bycatch. Recreational discards are obtained from the MRIP and logbooks from the NMFS headboat program. The actions in the Regulatory Amendment 1 would not change any ongoing or require any new research, administrative, or enforcement costs.

Stranding networks have been established in the Southeast Region. The NMFS Southeast Fisheries Science Center (SEFSC) is the base for the Southeast United States Marine Mammal Stranding Program (http://sero.nmfs.noaa.gov/pr/strandings.htm). NMFS authorizes organizations and volunteers under the MMPA to respond to marine mammal strandings throughout the United States. These organizations form the stranding network whose participants are trained to respond to, and collect samples from live and dead marine mammals that strand along southeastern United State beaches. The SEFSC is responsible for: coordinating stranding events; monitoring stranding rates; monitoring human caused mortalities; maintaining a stranding database for the southeast region; and conducting investigations to determine the cause of unusual stranding events including mass strandings and mass mortalities (http://www.sefsc.noaa.gov/species/mammals/strandings.htm).

The Southeast Regional Office and the SEFSC participate in a wide range of training and outreach activities to communicate bycatch related issues. The NMFS Southeast Regional Office issues public announcements, Southeast Fishery Bulletins, or News Releases on different topics, including use of turtle exclusion devices, bycatch reduction devices, use of methods and devices to minimize harm to turtles and sawfish, information intended to reduce harm and interactions with marine mammals, and other methods to reduce bycatch for the convenience of constituents in the southern United States. These are mailed out to various organizations, government entities, commercial interests, and recreational groups. This information is also included in newsletters and publications that are produced by NMFS and the various regional fishery management councils. Announcements and news releases are also available on the internet and broadcasted over NOAA weather radio.

NMFS established the South East Fishery-Independent Survey in 2010 to strengthen fishery-independent sampling efforts in southeast U.S. waters, addressing both immediate and long-term fishery-independent data needs, with an overarching goal of improving fishery-independent data utility for stock assessments. Meeting these data needs is critical to improving scientific advice

to the management process, ensuring overfishing does not occur, and successfully rebuilding overfished stocks on schedule.

1.10 Changes in the Economic, Social, or Cultural Value of Fishing Activities and Non-Consumptive Uses of Fishery Resources

Any changes in economic, social, or cultural values are discussed in Chapter 4 of Regulatory Amendment 1.

Changes in the Distribution of Benefits and Costs

The distribution of benefits and costs expected from actions in Regulatory Amendment 1 are discussed in Chapter 3. Economic and social effects of the action proposed in the amendment are addressed in Chapter 4 of this document, and these effects are discussed in relation to the baseline conditions of the fishery and fishing communities outlined in Chapter 3 of the document.

1.12 Conclusion

This section evaluates the practicability of taking additional action to minimize bycatch and bycatch mortality using the ten factors provided at 50 CFR section § 600.350(d)(3)(i). In summary, the trip limit action in Regulatory Amendment 1 is not likely to significantly contribute to or detract from the current level of bycatch in the dolphin wahoo fishery.

1.13 References

Alsop, III, F. J. 2001. Smithsonian Handbooks: Birds of North America eastern region. DK Publishing, Inc. New York, NY.

Blue Ocean Seafood Guide. 2010. Blue Ocean Institute. <http://www.blueocean.org/seafood/seafood-guide>

IUCN, 2013. IUCN Red List of Threatened Species. <www.iucnredlist.org>

NMFS. 2013. Status of Stocks 2013 Annual Report to Congress on the Status of U.S. Fisheries. http://www.nmfs.noaa.gov/sfa/fisheries_eco/status_of_fisheries/

Prager, M. H. 2000. Exploratory Assessment of Dolphinfish, *Coryphaena hippurus*, based on U.S. landings from the Atlantic Ocean and Gulf of Mexico. NMFS, SEFSC 18pp.

SAFMC (South Atlantic Fishery Management Council). 2003. Final Environmental Assessment, Initial Regulatory Flexibility Analysis/Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement for the Fishery Management Plan for the Dolphin and Wahoo Fishery of the Atlantic. South Atlantic Fishery Management Council, 1 Southpark Cir., Ste 306, Charleston, S.C. 29407-4699. 386 pp.

Seafood Watch Program. 2010. Monterey Bay Aquarium. <http://www.montereybayaquarium.org/cr/cr_seafoodwatch/sfw_recommendations.aspx>

Whoriskey, S., R. Arauz, and J. K. Baum. 2011. Potential impacts of emerging mahi-mahi fisheries on sea turtle and elasmobranch bycatch species. Biological Conservation 144: 1841-1849

Appendix E. Regulatory Impact Review

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

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

1.1 Problems and Objectives

The purpose and need, issues, problems, and objectives of the action considered in Regulatory Amendment 1 to the Fishery Management Plan for the Dolphin and Wahoo Fishery of the Atlantic (Dolphin Wahoo FMP) are presented in **Chapter 1** and are incorporated herein by reference.

1.2 Methodology and Framework for Analysis

This RIR assesses management measures from the standpoint of determining the resulting changes in costs and benefits to society. To the extent practicable, the net effects of the proposed measures for an existing fishery should be stated in terms of producer and consumer surplus, changes in profits, and employment in the direct and support industries. Where figures are available, they are incorporated into the analysis of the economic impacts of the different actions and alternatives (**Chapters 2** and **4**).

1.3 Description of the Fishery

Descriptions of the affected fisheries are contained in **Chapter 3** of this amendment.

1.4 Effects of the Management Measures

A detailed discussion of expected economic effects of the action and alternatives considered in this proposed amendment is provided in **Chapter 4**. The following information summarizes the expected economic effects of the preferred alternative/sub-alternative.

Preferred Alternative 4, Preferred Sub-Alternative 4d would establish a commercial trip limit of 4,000 lbs ww for dolphin for vessels with a Commercial Dolphin Wahoo Permit once 75% of the commercial sector annual catch limit (ACL) is reached. Amendment 8 to the Dolphin Wahoo FMP (SAFMC 2015) raised the commercial sector ACL in 2016, however it was not in place for the 2015 fishing season. Had the new ACL been in place in 2015, not only was it projected that a commercial sector closure would not have been needed, but the projected value of the fishery would have been $3,895,436 (in 2014 dollars) with no trip limits. Because a small number of trips are expected to be affected by **Preferred Alternative 4, Preferred Sub-Alternative 4d** the projected value of the commercial dolphin fishery is estimated to be $3,725,896, a reduction of $169, 539, or 4.4%.

1.5 Public and Private Costs of Regulations

The preparation, implementation, enforcement, and monitoring of this or any Federal action involves the expenditure of public and private resources, which can be expressed as costs associated with the regulations. Costs associated with this regulatory amendment include, but are not limited to Council costs of document preparation, meeting, and other costs; NMFS administration costs of document preparation, meetings and review, and annual law enforcement costs. The preliminary estimate is that this proposed action will cost up to $150,000 to develop and implement. This cost does not include annual law enforcement costs. Enforcement costs associated with a specific regulation are generally managed as part of a fixed budget and not typically allocated by species or regulation. As a result, any increase in enforcement costs associated with a specific regulatory change must occur at the expense of the enforcement of other regulations or other enforcement activities.

1.6 Determination of Significant Regulatory Action

Pursuant to E.O. 12866, a regulation is considered a "significant regulatory action" if it is expected to result in: (1) An annual effect of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities; (2) create a serious inconsistency or otherwise interfere with an action taken or planned by another agency; (3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights or obligations of recipients thereof; or (4) raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in this executive order. Based on the information provided above, this regulatory action would not meet the first criterion. Therefore, this regulatory action is determined to not be economically significant for the purposes of E.O. 12866.

Appendix F. Regulatory Flexibility Act Analysis

Introduction

The purpose of the Regulatory Flexibility Act (RFA) is to establish a principle of regulatory issuance that agencies shall endeavor, consistent with the objectives of the rule and of applicable statutes, to fit regulatory and informational requirements to the scale of businesses, organizations, and governmental jurisdictions subject to regulation. To achieve this principle, agencies are required to solicit and consider flexible regulatory proposals and to explain the rationale for their actions to assure that such proposals are given serious consideration. The RFA does not contain any decision criteria; instead, the purpose of the RFA is to inform the agency, as well as the public, of the expected economic impacts of various alternatives contained in the fishery management plan (FMP) or amendment (including framework management measures and other regulatory actions). The RFA is also intended 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. In addition to analyses conducted for the RIR, the regulatory flexibility analysis provides: 1) a statement of the reasons why action by the agency is being considered; 2) a succinct statement of the objectives of, and legal basis for the proposed rule; 3) a description and, where feasible, an estimate of the number of small entities to which the proposed rule will apply; 4) a description of the projected reporting, record-keeping, and other compliance requirements of the proposed rule, including an estimate of the classes of small entities which will be subject to the requirements of the report or record; 5) an identification, to the extent practical, of all relevant Federal rules which may duplicate, overlap, or conflict with the proposed rule; and 6) a description of any significant alternatives to the proposed rule which accomplish the stated objectives of applicable statutes and which minimize any significant economic impact of the proposed rule on small entities.

Additional information on the description of affected entities may be found in **Chapter 3,** and additional information on the expected economic effects of the proposed rule may be found in **Chapter 4**.

Statement of Need for, Objectives of, and Legal Basis for the Rule

The purpose and need of the proposed rule are presented in **Chapter 1**. The purpose of this proposed rule is to institute a commercial trip limit for the dolphin fishery. The need for this

proposed rule is to maintain a dolphin fishery that lasts throughout the year in order to reduce the severity of social and economic impacts caused by an early closure of the commercial dolphin fishery.

The Magnuson-Stevens Fishery Conservation and Management Act provides the statutory basis for this proposed rule.

Identification of All Relevant Federal Rules Which May Duplicate, Overlap or Conflict with the Proposed Rule

No duplicative, overlapping, or conflicting Federal rules have been identified with this proposed rule.

Description and Estimate of the Number of Small Entities to Which the Proposed Rule will Apply

This proposed rule is expected to directly affect federally permitted commercial fishermen fishing for dolphin in Federal waters off of the South Atlantic and northeastern states (states north of North Carolina). The Small Business Administration established size criteria for all major industry sectors in the U.S. including fish harvesters and for-hire operations. A business involved in fish harvesting is classified as a small business if independently owned and operated, is not dominant in its field of operation (including its affiliates), and its combined annual receipts are not in excess of $20.5 million (NAICS code 114111, finfish fishing) for all of its affiliated operations worldwide.

From 2010 through 2014, an average of 531 vessels landing at least 1 pound (lb) of dolphin generated revenues (2014 dollars) of approximately $600,000 from dolphin, $3.87 million from other species jointly landed with dolphin, and $15.40 million from all other species in trips where dolphin was not caught. The average revenue per vessel from all species, including dolphin, caught by these vessels was $37,303. Of the 531 vessels, an average of 23 vessels used longline for harvesting dolphin and generated revenues (2014 dollars) of approximately $361,000 from dolphin, $1.37 million from other species jointly landed with dolphin, and $1.89 million from all other species in trips where dolphin was not caught. The average revenue per longline vessel was $82,276 (2014 dollars). Vessels that caught and landed dolphin may also operate in other fisheries, the revenues of which are not known and are not reflected in these totals. Based on revenue information, all commercial vessels affected by the proposed rule may be assumed to be small entities.

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

The proposed rule would not introduce any changes to reporting, record-keeping, and other compliance requirements which are currently required.

Substantial Number of Small Entities Criterion

All directly affected entities have been determined, for the purpose of this analysis, to be small entities. Therefore, the proposed rule would affect a substantial number of small entities.

Significant Economic Impact Criterion

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

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

All entities that are expected to be affected by this proposed rule are considered small entities, so the issue of disproportional effects on small versus large entities does not presently arise.

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

The proposed rule would establish a 4,000 lbs whole weight (ww) commercial trip limit for dolphin once 75 percent of the commercial annual catch limit (ACL) is reached. For the first time ever, the commercial sector for dolphin was subject to a closure on June 30, 2015, when the sector's allocation of 1,157,001 lbs ww was reached. However, the Generic Accountability Measures and Dolphin Allocation Amendment (SAFMC 2015), which became effective on February 22, 2016, increased the commercial sector ACL for dolphin to 1,534,485 lbs ww. Using 2015 data for the open months and average 2010-2014 data for the closed months, the National Marine Fisheries Service has estimated that in the absence of closures and trip limits the 2015 commercial landings would be approximately 1,285,622 lbs ww with a dockside value of $3,895,436 (2014 dollars). Thus, if the increased commercial allocation were in effect in 2015, no closure would have occurred.

Based on the increased commercial allocation, and assuming effort would remain the same as estimated for 2015, 75 percent of the commercial ACL would be reached on August 25 and the proposed trip limit would apply thereafter. The projected landings under this scenario would be 1,229,669 lbs ww with a dockside value of $3,725,896 (2014 dollars). Thus, the proposed trip limit would result in a dockside revenue reduction of $169,539 relative to the no action alternative, or an average of $319 per vessel. This revenue reduction is minimal at about 0.8 percent of total revenue per vessel. The trip limit is relatively high so that only few trips and vessels would actually be affected. The most likely affected vessels are those using longline gear, some of which could haul in as much as 20,000 lbs ww of dolphin on a trip. If the reduction in revenues were solely borne by the 23 longline vessels, the average revenue loss per vessel would be $7,371. This would be about 8.95 percent of total revenues per longline vessel. Hence, the revenue loss would be minimal if distributed among all 531 vessels with dolphin wahoo commercial permits or relatively large when solely borne by the 23 longline vessels. It is

likely that not all the estimated revenue reductions would be solely borne by longline vessels so that the actual revenue loss would be somewhere between the estimated high and low revenue loss per vessel. The estimated revenue loss from the proposed trip limit is due to the estimated shortfall in landings relative to that of the no action alternative. Because a trip limit would tend to reduce vessel profit per trip, the shortfall in revenues would translate to reductions in vessel total profits for the year.

If future effort and landings increase beyond those estimated for 2015, the proposed trip limit could be triggered earlier than August 25. It is possible, under this condition that the full commercial ACL could be taken even under the proposed trip limit. Total revenues for the year would be expected to be higher so long as the higher landings do not substantially depress the dockside price for dolphin. It cannot be determined, however, if higher revenues would translate to higher profits because the trip limit would reduce profit per trip. If the full commercial ACL is not reached under the proposed trip limit, the reductions in profit per trip due to the trip limit could very well translate to overall profit reductions for the year. The magnitude of such overall profit reduction would likely be lower than that estimated above because revenues would be generally higher under the condition that landings increase beyond those estimated for 2015. The proposed trip limit, as is the usual case with trip limits, has disproportionate effects on participating vessels. Those generally landing below the proposed trip limit would benefit from the trip limit more than those landing above the trip limit, especially since the trip limit would be expected to prolong the fishing season. Given the open access nature of the dolphin/wahoo commercial permit, new entrants could also be the source of increased effort.

Description of Significant Alternatives

Four alternatives, including the preferred alternative as described above, were considered for establishing a commercial trip limit for dolphin. The first alternative, the no action alternative, would not establish a commercial trip limit for dolphin, and therefore would have no negative revenue effects on vessels in the short term. However, if effort in the commercial sector for dolphin increased beyond what was estimated for 2015, closures could occur. This would tend to disrupt the usual economic activities associated with commercial fishing for dolphin, and would have negative consequences on the revenues and profits of vessels. The second alternative would establish a trip limit when 65 percent of the commercial ACL is reached, and the third alternative would establish a trip limit when 70 percent of the commercial ACL is reached. Each of these two other alternatives has four sub-alternatives for a trip limit of 1,000 lbs ww, 2,000 lbs ww, 3,000 lbs ww, or 4,000 lbs ww. It is noted that the alternative to establish a trip limit when 75 percent of the commercial ACL is reached also has the four trip limit sub-alternatives, one of which (4,000 lbs ww) is the preferred sub-alternative. All these other alternatives and sub-alternatives, except the no action alternative, would have more negative effects on revenues and profits of vessels than the proposed action.

Appendix G. Essential Fish Habitat and Move to Ecosystem Based Management

South Atlantic Fishery Management Council Habitat Conservation, Ecosystem Coordination and Collaboration

The Council, using the Essential Fish Habitat Plan as the cornerstone, adopted a strategy to facilitate the move to an ecosystem-based approach to fisheries management in the region. This approach required a greater understanding of the South Atlantic ecosystem and the complex relationships among humans, marine life, and the environment including essential fish habitat. To accomplish this, a process was undertaken to facilitate the evolution of the Habitat Plan into a Fishery Ecosystem Plan (FEP), thereby providing a more comprehensive understanding of the biological, social, and economic impacts of management necessary to initiate the transition from single species management to ecosystem-based management in the region.

Moving to Ecosystem-Based Management

The Council adopted broad goals for Ecosystem-Based Management to include maintaining or improving ecosystem structure and function; maintaining or improving economic, social, and cultural benefits from resources; and maintaining or improving biological, economic, and cultural diversity. Development of a regional FEP (SAFMC 2009a) provided an opportunity to expand the scope of the original Council Habitat Plan and compile and review available habitat, biological, social, and economic fishery and resource information for fisheries in the South Atlantic ecosystem. The South Atlantic Council views habitat conservation as the core of the move to EBM in the region. Therefore, development of the FEP was a natural next step in the evolution and expands and significantly updates the SAFMC Habitat Plan (SAFMC 1998a) incorporating comprehensive details of all managed species (SAFMC, South Atlantic States, ASMFC, and NOAA Fisheries Highly Migratory Species and Protected Species) including their biology, food web dynamics, and economic and social characteristics of the fisheries and habitats essential to their survival. The FEP therefore serves as a source document and presents more complete and detailed information describing the South Atlantic ecosystem and the impact of fisheries on the environment. This FEP updated information on designated Essential Fish Habitat (EFH) and EFH-Habitat Areas of Particular Concern; expanded descriptions of biology and status of managed species; presented information that will support ecosystem considerations for managed species; and described the social and economic characteristics of the fisheries in the region. In addition, it expanded the discussion and description of existing research programs and needs to identify biological, social, and economic research needed to fully address ecosystem-based management in the region. In is anticipated that the FEP will provide a greater degree of guidance by fishery, habitat, or major ecosystem consideration of bycatch reduction, prey-predator interactions, maintaining biodiversity, and spatial management needs. This FEP serves as a living source document of biological, economic, and social information for all Fishery Management Plans (FMP). Future Environmental Assessments and Environmental Impact Statements associated with subsequent amendments to Council FMPs will draw from or cite by reference the FEP.

The Fishery Ecosystem Plan for the South Atlantic Region encompasses the following volume structure:
FEP Volume I - Introduction and Overview of FEP for the South Atlantic Region
FEP Volume II - South Atlantic Habitats and Species
FEP Volume III - South Atlantic Human and Institutional Environment
FEP Volume IV - Threats to South Atlantic Ecosystem and Recommendations

FEP Volume V - South Atlantic Research Programs and Data Needs
FEP Volume VI - References and Appendices

Comprehensive Ecosystem-Based Amendment (CE-BA) 1 (SAFMC 2009b) is supported by this FEP and updated EFH and EFH-HAPC information and addressed the Final EFH Rule (e.g., GIS presented for all EFH and EFH-HAPCs). Management actions implemented in CE-BA 1 established deepwater Coral HAPCs to protect what is thought to be the largest continuous distribution (>23,000 square miles) of pristine, deepwater coral ecosystems in the world.

The Fishery Ecosystem Plan, slated to be revised every five years, will again be the vehicle to update and refine information supporting designation and future review of EFH and EFH-HAPCs for managed species. Planning for the update was conducted in cooperation with the Habitat Advisory Panel during the fall and winter of 2013 with initiation during 2014.

Ecosystem Approach to Deepwater Ecosystem Management
The South Atlantic Council manages coral, coral reefs and live/hard bottom habitat, including deepwater corals, through the Fishery Management Plan for Coral, Coral Reefs and Live/Hard Bottom Habitat of the South Atlantic Region (Coral FMP). Mechanisms exist in the FMP, as amended, to further protect deepwater coral and live/hard bottom habitats. The SAFMC's Habitat and Environmental Protection Advisory Panel and Coral Advisory Panel have supported proactive efforts to identify and protect deepwater coral ecosystems in the South Atlantic region. Management actions in Comprehensive Ecosystem-Based Amendment (CE-BA 1) (SAFMC 2009b) established deepwater coral HAPCs (C-HAPCs) to protect what is thought to be the largest continuous distribution (>23,000 square miles) of pristine deepwater coral ecosystems in the world. In addition, CE-BA 1 established areas within the CHAPC, which provide for traditional fishing in limited areas, which do not impact deepwater coral habitat. CE-BA 1, supported by the FEP, also addressed non-regulatory updates for existing EFH and EFH- HAPC information and addressed the spatial requirements of the Final EFH Rule (i.e., GIS presented for all EFH and EFH-HAPCs). Actions in this amendment included modifications in the management of the following: octocorals; special management zones (SMZs) off the coast of South Carolina; and sea turtle release gear requirements for snapper grouper fishermen. The amendment also designated essential fish habitat (EFH) and EFH-Habitat Areas of Particular Concern (EFH-HAPCs).

CE-BA 2 established annual catch limits (ACL) for octocorals in the South Atlantic as well as modifying the Fishery Management Unit (FMU) for octocorals to remove octocorals off the coast of Florida from the FMU (SAFMC 2011). The amendment also limited the possession of managed species in the SMZs off South Carolina to the recreational bag limit for snapper grouper and coastal migratory pelagic species; modified sea turtle release gear requirements for the snapper grouper fishery based upon freeboard height of vessels; amends Council fishery management plans (FMPs) to designate or modify EFH and EFH-HAPCs, including the FMP for Pelagic Sargassum Habitat; amended the Coral FMP to designate EFH for deepwater Coral HAPCs designated under CE-BA 1; and amended the Snapper Grouper FMP to designate EFH-HAPCs for golden and blueline tilefish and the deepwater Marine Protected Areas. The final rule was published in the federal register on December 30, 2011, and regulations became effective on January 30, 2012.

Building from a Habitat to an Ecosystem Network to Support the Evolution
Starting with our Habitat and Environmental Protection Advisory Panel, the Council expanded and fostered a comprehensive Habitat network in our region to develop the Habitat Plan of the South

Atlantic Region completed in 1998 to support the EFH rule. Building on the core regional collaborations, the Council facilitated an expansion to a Habitat and Ecosystem network to support development of the FEP and CE-BA as well as coordinate with partners on other regional efforts.

Integrated Ocean Observing System (IOOS) and Southeast Coastal and Ocean Observing Regional Association (SECOORA)

The Integrated Ocean Observing System (IOOS®) is a partnership among federal, regional, academic, and private sector parties that works to provide new tools and forecasts to improve safety, enhance the economy, and protect our environment. IOOS supplies critical information about our Nation's oceans, coasts, and Great Lakes. Scientists working to understand climate change, governments adapting to changes in the Arctic, municipalities monitoring local water quality, and industries affected by coastal and marine spatial planning all have the same need: reliable, timely, and sustained access to data and information that inform decision making. Improving access to key marine data and information supports several purposes. IOOS data sustain national defense, marine commerce, and navigation safety. Scientists use these data to issue weather, climate, and marine forecasts. IOOS data are also used to make decisions for energy siting and production, economic development, and ecosystem-based resource management. Emergency managers and health officials need IOOS information to make decisions about public safety. Teachers and government officials rely on IOOS data for public outreach, training, and education.

SECOORA is one of 11 Regional Associations established nationwide through the US Integrated Ocean Observing System (IOOS) whose primary source of funding is via US IOOS through a 5-year cooperative agreement titled Coordinated Monitoring, Prediction, and Assessment to Support Decision-Makers Needs for Coastal and Ocean Data and Tools, but was recently awarded funding via a NOAA Regional Ocean Partnership grant through the Governors' South Atlantic Alliance. SECOORA is the regional solution to integrating coastal and ocean observing data in the Southeast United States to inform decision makers and the general public. The SECOORA region encompasses 4 states, over 42 million people, and spans the coastal ocean from North Carolina to the west Coast of Florida and is creating customized products to address these thematic areas: Marine Operations; Coastal Hazards; Ecosystems, Water Quality, and Living Marine Resources; and Climate Change. The Council is a voting member and Council staff was recently re-elected to serve on the Board of Directors for the Southeast Coastal Regional Ocean Observing Association (SECOORA) to guide and direct priority needs for observation and modeling to support fisheries oceanography and integration into stock assessments through SEDAR. Cooperation through SECOORA is envisioned to facilitate the following:

- Refining current or water column designations of EFH and EFH-HAPCs (e.g., Gulf Stream and Florida Current).
- Providing oceanographic models linking benthic, pelagic habitats, and food webs.
- Providing oceanographic input parameters for ecosystem models.
- Integration of OOS information into Fish Stock Assessment process in the SA region.
- Facilitating OOS system collection of fish and fishery data and other research necessary to support the Council's use of area-based management tools in the SA Region including but not limited to EFH, EFH-HAPCs, Marine Protected Areas, Deepwater Coral Habitat Areas of Particular Concern, Special Management Zones, and Allowable Gear Areas.
- Integration of OOS program capabilities and research Needs into the South Atlantic Fishery Ecosystem Plan.
- Collaboration with SECOORA to integrate OOS products with information included in the

Council's Habitat and Ecosystem Web Services and Atlas to facilitate model and tool development.

- Expanding Map Services and the Regional Habitat and Ecosystem Atlas in cooperation with SECOORA's Web Services that will provide researchers access to data or products including those collected/developed by SA OOS partners.

SECOORA researchers are developing a comprehensive data portal to provide discovery of, access to, and metadata about coastal ocean observations in the southeast US. Below are various ways to access the currently available data.

One project recently funded by SECOORA initiated development of species specific habitat models that integrate remotely sensed and in situ data to enhance stock assessments for species managed by the Council. The project during 2013/2014 was initiated to address red porgy, gray triggerfish, black sea bass, and vermilion snapper. Gray triggerfish and red porgy are slated for assessment through SEDAR in 2014/15 and 2015/16 respectively.

National Fish Habitat Plan and Southeast Aquatic Resource Partnership (SARP)

In addition, the Council serves on the National Habitat Board and, as a member of the Southeast Aquatic Resource Partnership (SARP), has highlighted this collaboration by including the Southeast Aquatic Habitat Plan (SAHP) and associated watershed conservation restoration targets into the FEP. Many of the habitat, water quality, and water quantity conservation needs identified in the threats and recommendations Volume of the FEP are directly addressed by on-the-ground projects supported by SARP. This cooperation results in funding fish habitat restoration and conservation intended to increase the viability of fish populations and fishing opportunity, which also meets the needs to conserve and manage Essential Fish Habitat for Council managed species or habitat important to their prey. To date, SARP has funded 53 projects in the region through this program. This work supports conservation objectives identified in the SAHP to improve, establish, or maintain riparian zones, water quality, watershed connectivity, sediment flows, bottoms and shorelines, and fish passage, and addresses other key factors associated with the loss and degradation of fish habitats. SARP also developed the Southern Instream Flow Network (SIFN) to address the impacts of flow alterations in the Southeastern US aquatic ecosystems which leverages policy, technical experience, and scientific resources among partners based in 15 states. Maintaining appropriate flow into South Atlantic estuarine systems to support healthy inshore habitats essential to Council managed species is a major regional concern and efforts of SARP through SIFN are envisioned to enhance state and local partners ability to maintain appropriate flow rates.

Governor's South Atlantic Alliance (GSAA)

Initially discussed as a South Atlantic Eco-regional Compact, the Council has also cooperated with South Atlantic States in the formation of a Governor's South Atlantic Alliance (GSAA). This will also provide regional guidance and resources that will address State and Council broader habitat and ecosystem conservation goals. The GSAA was initiated in 2006. An Executive Planning Team (EPT), by the end of 2007, had created a framework for the Governors South Atlantic Alliance. The formal agreement between the four states (NC, SC, GA, and FL) was executed in May 2009. The Agreement specifies that the Alliance will prepare a "Governors South Atlantic Alliance Action Plan" which will be reviewed annually for progress and updated every five years for relevance of content. The Alliance's mission and purpose is to promote collaboration among the four states, and with the support and interaction of federal agencies, academe, regional organizations, non-governmental organizations, and the private sector, to

sustain and enhance the region's coastal and marine resources. The Alliance proposes to regionally implement science-based actions and policies that balance coastal and marine ecosystems capacities to support both human and natural systems. The GSAA Action Plan was released in December 2010 and describes the four Priority Issue Areas that were identified by the Governors to be of mutual importance to the sustainability of the region's resources: Healthy Ecosystems; Working Waterfronts; Clean Coastal and Ocean Waters; and Disaster-Resilient Communities. The goals, objectives, actions, and implementation steps for each of these priorities were further described in the GSAA Implementation Plan released in July 2011. The final Action Plan was released on December 1, 2010, and marked the beginning of intensive work by the Alliance Issue Area Technical Teams (IATTs) to develop implementation steps for the actions and objectives. The GSAA Implementation Plan was published July 6, 2011, and the Alliance has been working to implement the Plan through the IATTs and two NOAA-funded Projects. The Alliance also partners with other federal agencies, academia, non-profits, private industry, regional organizations, and others. The Alliance supports both national and state-level ocean and coastal policy by coordinating federal, state, and local entities to ensure the sustainability of the region's economic, cultural, and natural resources. The Alliance has organized itself around the founding principles outlined in the GSAA Terms of Reference and detailed in the GSAA Business Plan. A team of natural resource managers, scientists, and information management system experts have partnered to develop a Regional Information Management System (RIMS) and recommend decision support tools that will support regional collaboration and decision-making. In addition to regional-level stakeholders, state and local coastal managers and decision makers will also be served by this project, which will enable ready access to new and existing data and information. The collection and synthesis of spatial data into a suite of visualization tools is a critical step for long-term collaborative planning in the South Atlantic region for a wide range of coastal uses. The Council's Atlas presents the spatial representations of Essential Fish Habitat, managed areas, regional fish and fish habitat distribution, and fishery operation information and it can be linked to or drawn on as a critical part of the collaboration with the RIMS.

South Atlantic Landscape Conservation Cooperative

One of the more recent collaborations is the Council's participation as Steering Committee member for the newly establish South Atlantic Landscape Conservation Cooperative (SALCC). Landscape Conservation Cooperatives (LCCs) are applied conservation science partnerships focused on a defined geographic area that informs on-the-ground strategic conservation efforts at landscape scales. LCC partners include DOI agencies, other federal agencies, states, tribes, non-governmental organizations, universities, and others. The newly formed Department of Interior Southeast Climate Services Center (CSC) has the LCCs in the region as their primary clients. One of the initial charges of the CSCs is to downscale climate models for use at finer scales.

The SALCC developed a Strategic Plan through an iterative process that began in December 2011. The plan provides a simple strategy for moving forward over the next few years. An operations plan was developed under direction from the SALCC Steering Committee to redouble efforts to develop version 1.0 of a shared conservation blueprint by spring-summer of 2014. The SALCC is developing the regional blueprint to address the rapid changes in the South Atlantic including but not limited to climate change, urban growth, and increasing human demands on resources which are reshaping the landscape. While these forces cut across political and jurisdictional boundaries, the conservation community does not have a consistent cross-boundary, cross-organization plan for how to respond. The South Atlantic Conservation Blueprint will be that plan. The blueprint is envisioned to be a spatially-explicit map depicting the places and actions needed to sustain South Atlantic LCC

objectives in the face of future change. The steps to creating the blueprint include development of: indicators and targets (shared metrics of success); the State of the South Atlantic (past, present, and future condition of indicators); and a Conservation Blueprint. Potential ways the blueprint could be used include: finding the best places for people and organizations to work together; raising new money to implement conservation actions; guiding infrastructure development (highways, wind, urban growth, etc.); creating incentives as an alternative to regulation; bringing a landscape perspective to local adaptation efforts; and locating places and actions to build resilience after major disasters (hurricanes, oil spills, etc.). Integration of connectivity, function, and threats to river, estuarine and marine systems supporting Council managed species is supported by the SALCC and enhanced by the Council being a voting member of its Steering Committee.
In addition, the Council's Regional Atlas presents spatial representations of Essential Fish Habitat, managed areas, regional fish and fish habitat distribution, and fishery operation information and it be linked to or drawn on as a critical part of the collaboration with the recently developed SALCC Conservation Planning Atlas.

Building Tools to support EBM in the South Atlantic Region
The Council has developed a Habitat and Ecosystem Section of the website http://www.safmc.net/ecosystem-management/mapping-and-gis-data and, in cooperation with the Florida Wildlife Research Institute (FWRI), developed a Habitat and Ecosystem Internet Map Server (IMS). The IMS was developed to support Council and regional partners' efforts in the transition to EBM. Other regional partners include NMFS Habitat Conservation, South Atlantic States, local management authorities, other Federal partners, universities, conservation organizations, and recreational and commercial fishermen. As technology and spatial information needs evolved, the distribution and use of GIS demands greater capabilities. The Council has continued its collaboration with FWRI in the now evolution to Web Services provided through the regional SAFMC Habitat and Ecosystem Atlas (http://ocean.floridamarine.org/safmc_atlas/) and the SAFMC Digital Dashboard (http://ocean.floridamarine.org/safmc_dashboard/). The Atlas integrates services for the following:

Species distribution and spatial presentation of regional fishery independent data from the SEAMAP-SA, MARMAP, and NOAA SEFIS systems; SAFMC Fisheries: (http://ocean.floridamarine.org/SA_Fisheries/)

Essential Fish Habitat and Essential Fish Habitat Areas of Particular Concern; SAFMC EFH: (http://ocean.floridamarine.org/sa_efh/)

Spatial presentation of managed areas in the region; SAFMC Managed Areas: (http://ocean.floridamarine.org/safmc_managedareas/)

An online life history and habitat information system supporting Council managed, State managed, and other regional species was developed in cooperation with FWRI. The Ecospecies system is considered dynamic and presents, as developed, detailed individual species life history reports and provides an interactive online query capability for all species included in the system: http://saecospecies.azurewebsites.net

Web Services System Updates:

- Essential Fish Habitat (EFH) – displays EFH and EFH-HAPCS for SAFMC managed species and NOAA Fisheries Highly Migratory Species.

- Fisheries - displays Marine Resources Monitoring, Assessment, and Prediction (MARMAP) and Southeast Area Monitoring and Assessment Program South Atlantic (SEAMAP-SA) data.
- Managed Areas - displays a variety of regulatory boundaries (SAFMC and Federal) or management boundaries within the SAFMC's jurisdiction.
- Habitat – displays habitat data collected by SEADESC, Harbor Branch Oceanographic Institute (HBOI), and Ocean Exploration dives, as well as the SEAMAP shallow and ESDIM deepwater bottom mapping projects, multibeam imagery, and scientific cruise data.
- Multibeam Bathymetry - displays a variety of multibeam data sources and scanned bathymetry charts.
- Nautical Charts – displays coastal, general, and overview nautical charts for the SAFMC's jurisdictional area.

Ecosystem Based Action, Future Challenges and Needs

The Council has implemented ecosystem-based principles through several existing fishery management actions including establishment of deepwater Marine Protected Areas for the Snapper Grouper fishery, proactive harvest control rules on species (e.g., dolphin and wahoo) which are not overfished, implementing extensive gear area closures which in most cases eliminate the impact of fishing gear on Essential Fish Habitat, and use of other spatial management tools including Special Management Zones. Pursuant to development of the Comprehensive Ecosystem-Based Amendment, the Council has taken an ecosystem approach to protect deepwater ecosystems while providing for traditional fisheries for the Golden Crab and Royal Red shrimp in areas where they do not impact deepwater coral habitat. The stakeholder based process taps in on an extensive regional Habitat and Ecosystem network. Support tools facilitate Council deliberations and with the help of regional partners, are being refined to address long-term ecosystem management needs.

One of the greatest challenges to the long-term move to EBM in the region is funding high priority research, including but not limited to, comprehensive benthic mapping and ecosystem model and management tool development. In addition, collecting detailed information on fishing fleet dynamics including defining fishing operation areas by species, species complex, and season, as well as catch relative to habitat is critical for assessment of fishery, community, and habitat impacts and for Council use in place based management measures. Additional resources need to be dedicated to expand regional coordination of modeling, mapping, characterization of species use of habitats, and full funding of regional fishery independent surveys (e.g., MARMAP, SEAMAP, and SEFIS) which are linking directly to addressing high priority management needs. Development of ecosystem information systems to support Council management should build on existing tools (e.g., Regional Habitat and Ecosystem GIS and Arc Services) and provide resources to regional cooperating partners for expansion to address long-term Council needs.

The FEP and CE-BA 1 complement, but do not replace, existing FMPs. In addition, the FEP serves as a source document to the CE-BAs. NOAA should support and build on the regional coordination efforts of the Council as it transitions to a broader management approach. Resources need to be provided to collect information necessary to update and refine our FEP and support future fishery actions including but not limited to completing one of the highest priority needs to support EBM, the completion of mapping of near-shore, mid-shelf, shelf edge, and deepwater habitats in the South Atlantic region. In developing future FEPs, the Council will draw on SAFEs (Stock Assessment and Fishery Evaluation reports) which NMFS is required to provide the Council for all FMPs implemented under the Magnuson-Stevens Act. The FEP, which has served as the source document for CE-BAs, could also meet some of the NMFS

SAFE requirements if information is provided to the Council to update necessary sections.

EFH and EFH-HAPC Designations Translated to Cooperative Habitat Policy Development and Protection

The Council actively comments on non-fishing projects or policies that may impact fish habitat. **Appendix A** of the Comprehensive Amendment Addressing Essential Fish Habitat in Fishery Management Plans of the South Atlantic Region (SAFMC 1998b) outlines the Council's comment and policy development process and the establishment of a four-state Habitat Advisory Panel. Members of the Habitat Advisory Panel serve as the Council's habitat contacts and professionals in the field. AP members bring projects to the Council's attention, draft comment letters, and attend public meetings. With guidance from the Advisory Panel, the Council has developed and approved policies on:

1. Energy exploration, development, transportation, and hydropower re-licensing;
2. Beach dredging and filling and large-scale coastal engineering;
3. Protection and enhancement of submerged aquatic vegetation;
4. Alterations to riverine, estuarine, and nearshore flows;
5. Marine aquaculture;
6. Marine Ecosystems and Non-Native and Invasive Species: and
7. Estuarine Ecosystems and Non-Native and Invasive Species.

NOAA Fisheries, State and other Federal agencies apply EFH and EFH-HAPC designations and protection policies in the day-to-day permit review process. The revision and updating of existing habitat policies and the development of new policies is being coordinated with core agency representatives on the Habitat and Coral Advisory Panels. Existing policies are included at the end of this Appendix.

The Habitat and Environmental Protection Advisory Panel, as part of their role in providing continued policy guidance to the Council, is during 2013/14, reviewing and proposing revisions and updates to the existing policy statements and developing new ones for Council consideration. The effort is intended to enhance the value of the statements and support cooperation and collaboration with NOAA Fisheries Habitat Conservation Division and State and Federal partners in better addressing the Congressional mandates to the Council associated with designation and conservation of EFH in the region.

South Atlantic Bight Ecopath Model

The Council worked cooperatively with the University of British Columbia and the Sea Around Us project to develop a straw-man and preliminary food web models (Ecopath with Ecosim) to characterize the ecological relationships of South Atlantic species, including those managed by the Council. This effort was envisioned to help the Council and cooperators in identifying available information and data gaps while providing insight into ecosystem function. More importantly, the model development process provides a vehicle to identify research necessary to better define populations, fisheries, and their interrelationships. While individual efforts are still underway in the South Atlantic, only with significant investment of new resources through other programs will a comprehensive regional model be further developed.

The latest collaboration builds on the previous Ecopath model developed through the Sea Around Us project for the South Atlantic Bight with a focus on beginning a dialogue on the implications of potential changes in forage fish populations in the region that could be associated with environmental or climate change or changes in direct exploitation of those populations.

Essential Fish Habitat and Essential Fish Habitat Areas of Particular Concern
Following is a summary of the current South Atlantic Council's EFH and EFH-HAPCs. Information supporting their designation was updated (pursuant to the EFH Final Rule) in the Council's Fishery Ecosystem Plan and Comprehensive Ecosystem Amendment:

Snapper Grouper FMP
Essential fish habitat for snapper grouper species includes coral reefs, live/hard bottom, submerged aquatic vegetation, artificial reefs, and medium to high profile outcroppings on and around the shelf break zone from shore to at least 600 feet (but to at least 2,000 feet for wreckfish) where the annual water temperature range is sufficiently warm to maintain adult populations of members of this largely tropical complex. EFH includes the spawning area in the water column above the adult habitat and the additional pelagic environment, including *Sargassum*, required for larval survival and growth up to and including settlement. In addition the Gulf Stream is an essential fish habitat because it provides a mechanism to disperse snapper grouper larvae.

For specific life stages of estuarine dependent and nearshore snapper grouper species, essential fish habitat includes areas inshore of the 100-foot contour, such as attached macroalgae; submerged rooted vascular plants (seagrasses); estuarine emergent vegetated wetlands (saltmarshes, brackish marsh); tidal creeks; estuarine scrub/shrub (mangrove fringe); oyster reefs and shell banks; unconsolidated bottom (soft sediments); artificial reefs; and coral reefs and live/hard bottom.

Areas which meet the criteria for EFH-HAPCs for species in the snapper-grouper management unit include medium to high profile offshore hard bottoms where spawning normally occurs; localities of known or likely periodic spawning aggregations; nearshore hard bottom areas; The Point, The Ten Fathom Ledge, and Big Rock (North Carolina); The Charleston Bump (South Carolina); mangrove habitat; seagrass habitat; oyster/shell habitat; all coastal inlets; all state-designated nursery habitats of particular importance to snapper grouper (e.g., Primary and Secondary Nursery Areas designated in North Carolina); pelagic and benthic *Sargassum*; Hoyt Hills for wreckfish; the *Oculina* Bank Habitat Area of Particular Concern; all hermatypic coral habitats and reefs; manganese outcroppings on the Blake Plateau; and Council-designated Artificial Reef Special Management Zones (SMZs). In addition, the Council through CEBA 2 (SAFMC 2011) designated the deepwater snapper grouper MPAs and golden tilefish and blueline tilefish habitat as EFH-HAPCs under the Snapper Grouper FMP as follows:

> EFH-HAPCs for golden tilefish to include irregular bottom comprised of troughs and terraces inter-mingled with sand, mud, or shell hash bottom. Mud-clay bottoms in depths of 150-300 meters are HAPC. Golden tilefish are generally found in 80-540 meters, but most commonly found in 200-meter depths.
>
> EFH-HAPC for blueline tilefish to include irregular bottom habitats along the shelf edge in 45-65 meters depth; shelf break or upper slope along the 100-fathom contour (150-225 meters); hardbottom habitats characterized as rock overhangs, rock outcrops, manganese-phosphorite rock slab formations, or rocky reefs in the South Atlantic Bight; and the Georgetown Hole (Charleston Lumps) off Georgetown, SC.
>
> EFH-HAPCs for the snapper grouper complex to include the following deepwater Marine Protected Areas (MPAs) as designated in Snapper Grouper Amendment 14: Snowy Grouper Wreck MPA,

Northern South Carolina MPA, Edisto MPA, Charleston Deep Artificial Reef MPA, Georgia MPA, North Florida MPA, St. Lucie Hump MPA, and East Hump MPA.

Deepwater Coral HAPCs designated in Comprehensive Ecosystem-Based Amendment 1 are designated as Snapper Grouper EFH-HAPCs: Cape Lookout Coral HAPC, Cape Fear Coral HAPC, Blake Ridge Diapir Coral HAPC, Stetson-Miami Terrace Coral HAPC, and Pourtalés Terrace Coral HAPC.

Shrimp FMP

For penaeid shrimp, Essential Fish Habitat includes inshore estuarine nursery areas, offshore marine habitats used for spawning and growth to maturity, and all interconnecting water bodies as described in the Habitat Plan. Inshore nursery areas include tidal freshwater (palustrine), estuarine, and marine emergent wetlands (e.g., intertidal marshes); tidal palustrine forested areas; mangroves; tidal freshwater, estuarine, and marine submerged aquatic vegetation (e.g., seagrass); and subtidal and intertidal non-vegetated flats. This applies from North Carolina through the Florida Keys.

For rock shrimp, essential fish habitat consists of offshore terrigenous and biogenic sand bottom habitats from 18 to 182 meters in depth with highest concentrations occurring between 34 and 55 meters. This applies for all areas from North Carolina through the Florida Keys. Essential fish habitat includes the shelf current systems near Cape Canaveral, Florida, which provide major transport mechanisms affecting planktonic larval rock shrimp. These currents keep larvae on the Florida Shelf and may transport them inshore in spring. In addition, the Gulf Stream is an essential fish habitat because it provides a mechanism to disperse rock shrimp larvae.

Essential fish habitat for royal red shrimp include the upper regions of the continental slope from 180 meters (590 feet) to about 730 meters (2,395 feet), with concentrations found at depths of between 250 meters (820 feet) and 475 meters (1,558 feet) over blue/black mud, sand, muddy sand, or white calcareous mud. In addition, the Gulf Stream is an essential fish habitat because it provides a mechanism to disperse royal red shrimp larvae.

Areas which meet the criteria for EFH-HAPCs for penaeid shrimp include all coastal inlets, all state-designated nursery habitats of particular importance to shrimp (for example, in North Carolina this would include all Primary Nursery Areas and all Secondary Nursery Areas), and state-identified overwintering areas.

Coastal Migratory Pelagics FMP

Essential fish habitat for coastal migratory pelagic species includes sandy shoals of capes and offshore bars, high profile rocky bottom, and barrier island ocean-side waters, from the surf to the shelf break zone, but from the Gulf Stream shoreward, including *Sargassum*. In addition, all coastal inlets and all state-designated nursery habitats of particular importance to coastal migratory pelagics (for example, in North Carolina this would include all Primary Nursery Areas and all Secondary Nursery Areas).

For Cobia essential fish habitat also includes high salinity bays, estuaries, and seagrass habitat. In addition, the Gulf Stream is an essential fish habitat because it provides a mechanism to disperse coastal migratory pelagic larvae.

For king and Spanish mackerel and cobia essential fish habitat occurs in the South Atlantic and Mid-Atlantic Bights.

Areas which meet the criteria for EFH-HAPCs include sandy shoals of Capes Lookout, Cape Fear, and Cape Hatteras from shore to the ends of the respective shoals, but shoreward of the Gulf stream; The Point, The Ten-Fathom Ledge, and Big Rock (North Carolina); The Charleston Bump and Hurl Rocks (South Carolina); The Point off Jupiter Inlet (Florida); *Phragmatopoma* (worm reefs) reefs off the central east coast of Florida; nearshore hard bottom south of Cape Canaveral; The Hump off Islamorada, Florida; The Marathon Hump off Marathon, Florida; The "Wall" off of the Florida Keys; Pelagic *Sargassum*; and Atlantic coast estuaries with high numbers of Spanish mackerel and cobia based on abundance data from the ELMR Program. Estuaries meeting this criteria for Spanish mackerel include Bogue Sound and New River, North Carolina; Bogue Sound, North Carolina (Adults May-September salinity >30 ppt); and New River, North Carolina (Adults May-October salinity >30 ppt). For Cobia they include Broad River, South Carolina; and Broad River, South Carolina (Adults & juveniles May-July salinity >25ppt).

Golden Crab FMP

Essential fish habitat for golden crab includes the U.S. Continental Shelf from Chesapeake Bay south through the Florida Straits (and into the Gulf of Mexico). In addition, the Gulf Stream is an essential fish habitat because it provides a mechanism to disperse golden crab larvae. The detailed description of seven essential fish habitat types (a flat foraminferan ooze habitat; distinct mounds, primarily of dead coral; ripple habitat; dunes; black pebble habitat; low outcrop; and soft-bioturbated habitat) for golden crab is provided in Wenner et al. (1987). There is insufficient knowledge of the biology of golden crabs to identify spawning and nursery areas and to identify HAPCs at this time. As information becomes available, the Council will evaluate such data and identify HAPCs as appropriate through the framework.

Spiny Lobster FMP

Essential fish habitat for spiny lobster includes nearshore shelf/oceanic waters; shallow subtidal bottom; seagrass habitat; unconsolidated bottom (soft sediments); coral and live/hard bottom habitat; sponges; algal communities (*Laurencia*); and mangrove habitat (prop roots). In addition the Gulf Stream is an essential fish habitat because it provides a mechanism to disperse spiny lobster larvae.

Areas which meet the criteria for EFH-HAPCs for spiny lobster include Florida Bay, Biscayne Bay, Card Sound, and coral/hard bottom habitat from Jupiter Inlet, Florida through the Dry Tortugas, Florida.

Coral, Coral Reefs, and Live/Hard Bottom Habitats FMP

Essential fish habitat for corals (stony corals, octocorals, and black corals) incorporate habitat for over 200 species. EFH for corals include the following:

A. Essential fish habitat for hermatypic stony corals includes rough, hard, exposed, stable substrate from Palm Beach County south through the Florida reef tract in subtidal waters to 30 m depth; subtropical (15°-35° C), oligotrophic waters with high (30-35$^{o}/_{oo}$) salinity and turbidity levels sufficiently low enough to provide algal symbionts adequate sunlight penetration for photosynthesis. Ahermatypic stony corals are not light restricted and their essential fish habitat includes defined hard substrate in subtidal to outer shelf depths throughout the management area.

B. Essential fish habitat for *Antipatharia* (black corals) includes rough, hard, exposed, stable substrate, offshore in high (30-35$^{o}/_{oo}$) salinity waters in depths exceeding 18 meters (54 feet), not restricted by light penetration on the outer shelf throughout the management area.

C. Essential fish habitat for octocorals excepting the order Pennatulacea (sea pens and sea pansies) includes rough, hard, exposed, stable substrate in subtidal to outer shelf depths within a wide range of salinity and light penetration throughout the management area.

D. Essential fish habitat for Pennatulacea (sea pens and sea pansies) includes muddy, silty bottoms in subtidal to outer shelf depths within a wide range of salinity and light penetration.

Areas which meet the criteria for EFH-HAPCs for coral, coral reefs, and live/hard bottom include: The 10-Fathom Ledge, Big Rock, and The Point (North Carolina); Hurl Rocks and The Charleston Bump (South Carolina); Gray's Reef National Marine Sanctuary (Georgia); The *Phragmatopoma* (worm reefs) reefs off the central east coast of Florida; Oculina Banks off the east coast of Florida from Ft. Pierce to Cape Canaveral; nearshore (0-4 meters; 0-12 feet) hard bottom off the east coast of Florida from Cape Canaveral to Broward County); offshore (5-30 meter; 15-90 feet) hard bottom off the east coast of Florida from Palm Beach County to Fowey Rocks; Biscayne Bay, Florida; Biscayne National Park, Florida; and the Florida Keys National Marine Sanctuary. In addition, the Council through CEBA 2 (SAFMC 2011) designated the Deepwater Coral HAPCs as EFH-HAPCs under the Coral FMP as follows:

> Deepwater Coral HAPCs designated in Comprehensive Ecosystem-Based Amendment 1 as Snapper Grouper EFH-HAPCs: Cape Lookout Coral HAPC, Cape Fear Coral HAPC, Blake Ridge Diapir Coral HAPC, Stetson-Miami Terrace Coral HAPC, and Pourtalés Terrace Coral HAPC.

Dolphin and Wahoo FMP

EFH for dolphin and wahoo is the Gulf Stream, Charleston Gyre, Florida Current, and pelagic *Sargassum*. This EFH definition for dolphin was approved by the Secretary of Commerce on June 3, 1999 as a part of the South Atlantic Council's Comprehensive Habitat Amendment (SAFMC 1998b) (dolphin was included within the Coastal Migratory Pelagics FMP at that time).

Areas which meet the criteria for EFH-HAPCs for dolphin and wahoo in the Atlantic include The Point, The Ten-Fathom Ledge, and Big Rock (North Carolina); The Charleston Bump and The Georgetown Hole (South Carolina); The Point off Jupiter Inlet (Florida); The Hump off Islamorada, Florida; The Marathon Hump off Marathon, Florida; The "Wall" off of the Florida Keys; and Pelagic *Sargassum*. This EFH-HAPC definition for dolphin was approved by the Secretary of Commerce on June 3, 1999 as a part of the South Atlantic Council's Comprehensive Habitat Amendment (dolphin was included within the Coastal Migratory Pelagics FMP at that time).

Pelagic *Sargassum* Habitat FMP

The Council through CEBA 2 (SAFMC 2011) designated the top 10 meters of the water column in the South Atlantic EEZ bounded by the Gulfstream, as EFH for pelagic Sargassum.

Actions Implemented That Protect EFH and EFH-HAPCs

Snapper Grouper FMP

- Prohibited the use of the following gears to protect habitat: bottom longlines in the EEZ inside of 50 fathoms or anywhere south of St. Lucie Inlet, Florida; bottom longlines in the wreckfish fishery; fish traps; bottom tending (roller- rig) trawls on live bottom habitat; and entanglement gear.
- Established the *Oculina* Experimental Closed Area where the harvest or possession of all species in the snapper grouper complex is prohibited.
- Established deepwater Marine Protected Areas (MPAs) as designated in Snapper Grouper Amendment 14: Snowy Grouper Wreck MPA, Northern South Carolina MPA, Edisto MPA, Charleston Deep Artificial Reef MPA, Georgia MPA, North Florida MPA, St. Lucie Hump MPA, and East Hump MPA.

Shrimp FMP

- Prohibition of rock shrimp trawling in a designated area around the *Oculina* Bank,
- Mandatory use of bycatch reduction devices in the penaeid shrimp fishery,
- Mandatory Vessel Monitoring System (VMS) in the Rock Shrimp Fishery.
- A mechanism that provides for the concurrent closure of the EEZ to penaeid shrimping if environmental conditions in state waters are such that the overwintering spawning stock is severely depleted.

Pelagic Sargassum Habitat FMP

- Prohibited all harvest and possession of *Sargassum* from the South Atlantic EEZ south of the latitude line representing the North Carolina/South Carolina border (34° North Latitude).
- Prohibited all harvest of *Sargassum* from the South Atlantic EEZ within 100 miles of shore between the 34° North Latitude line and the Latitude line representing the North Carolina/Virginia border.
- Harvest of *Sargassum* from the South Atlantic EEZ is limited to the months of November through June.
- Established an annual Total Allowable Catch (TAC) of 5,000 pounds landed wet weight.
- Required that an official observer be present on each *Sargassum* harvesting trip. Require that nets used to harvest *Sargassum* be constructed of four inch stretch mesh or larger fitted to a frame no larger than 4 feet by 6 feet.

Coastal Migratory Pelagics FMP

- Prohibited of the use of drift gillnets in the coastal migratory pelagic fishery.

Golden Crab FMP

- In the northern zone, golden crab traps can only be deployed in waters deeper than 900 feet; in the middle and southern zones traps can only be deployed in waters deeper than 700 feet.
  Northern zone - north of the 28°N. latitude to the North Carolina/Virginia border;
  Middle zone - 28°N. latitude to 25° N. latitude; and
  Southern zone - south of 25°N. latitude to the border between the South Atlantic and Gulf of Mexico Fishery Management Councils.

Coral, Coral Reefs and Live/Hard Bottom FMP

- Established an optimum yield of zero and prohibiting all harvest or possession of these resources which serve as essential fish habitat to many managed species.
- Designated the *Oculina* Bank Habitat Area of Particular Concern.
- Expanded the *Oculina* Bank Habitat Area of Particular Concern (HAPC) to an area bounded to the west by 80°W. longitude, to the north by 28°30' N. latitude, to the south by 27°30' N. latitude, and to the east by the 100 fathom (600 feet) depth contour.
- Established the following two Satellite *Oculina* HAPCs: (1) Satellite *Oculina* HAPC #1 is bounded on the north by 28°30'N. latitude, on the south by 28°29'N. latitude, on the east by 80°W. longitude, and on the west by 80°3'W. longitude; and (2) Satellite *Oculina* HAPC #2 is bounded on the north by 28°17'N. latitude, on the south by 28°16'N. latitude, on the east by 80°W. longitude, and on the west by 80°3'W. longitude.
- Prohibited the use of all bottom tending fishing gear and fishing vessels from anchoring or using grapples in the *Oculina* Bank HAPC.
- Established a framework procedure to modify or establish Coral HAPCs.
- Established the following five deepwater CHAPCs:
    - Cape Lookout Lophelia Banks CHAPC;
    - Cape Fear Lophelia Banks CHAPC;
    - Stetson Reefs, Savannah and East Florida Lithoherms, and Miami Terrace (Stetson-Miami Terrace) CHAPC;
    - Pourtales Terrace CHAPC; and
    - Blake Ridge Diapir Methane Seep CHAPC.
- Within the deepwater CHAPCs, the possession of coral species and the use of all bottom damaging gear are prohibited including bottom longline, trawl (bottom and mid-water), dredge, pot or trap, or the use of an anchor, anchor and chain, or grapple and chain by all fishing vessels.

South Atlantic Council Policies for Protection and Restoration of Essential Fish Habitat

SAFMC Habitat and Environmental Protection Policy

In recognizing that species are dependent on the quantity and quality of their essential habitats, it is the policy of the SAFMC to protect, restore, and develop habitats upon which fisheries species depend; to increase the extent of their distribution and abundance; and to improve their productive capacity for the benefit of present and future generations. For purposes of this policy, "habitat" is defined as the physical, chemical, and biological parameters that are necessary for continued productivity of the species that is being managed. The objectives of the SAFMC policy will be accomplished through the recommendation of no net loss or significant environmental degradation of existing habitat. A long-term objective is to support and promote a net-gain of fisheries habitat through the restoration and rehabilitation of the productive capacity of habitats that have been degraded, and the creation and development of productive habitats where increased fishery production is probable. The SAFMC will pursue these goals at state, Federal, and local levels. The Council will assume an aggressive role in the protection and enhancement of habitats important to fishery species, and shall actively enter Federal, decision making processes where proposed actions may otherwise compromise the productivity of fishery resources of concern to the Council.

SAFMC EFH Policy Statements

In addition to implementing regulations to protect habitat from fishing related degradation, the Council in cooperation with NOAA Fisheries, actively comments on non-fishing projects or policies that may impact fish habitat. The Council adopted a habitat policy and procedure document that established a four-state Habitat Advisory Panel and adopted a comment and policy development process. Members of the Habitat Advisory Panel serve as the Council's habitat contacts and professionals in the field. With guidance from the Advisory Panel, the Council has developed and approved a number of habitat policy statements which are available on the Habitat and Ecosystem section of the Council website (http://www.safmc.net/ecosystem/Home/EcosystemHome/tabid/435/Default.aspx).

References:

SAFMC (South Atlantic Fishery Management Council). 1998a. Habitat Plan for the South Atlantic Region. South Atlantic Fishery Management Council, 1 Southpark Cir., Ste 306, Charleston, S.C. 29407-4699.

SAFMC (South Atlantic Fishery Management Council). 1998b. Comprehensive Amendment Addressing Essential Fish Habitat in Fishery Management Plans of the South Atlantic Region. South Atlantic Fishery Management Council, 1 Southpark Cir., Suite 306, Charleston, S.C. 29407-4699.

SAFMC (South Atlantic Fishery Management Council). 2009a. Fishery Ecosystem Plan for the South Atlantic Region. South Atlantic Fishery Management Council, 4055 Faber Place, Ste 201, North Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2009b. Comprehensive Ecosystem-Based Amendment 1 for the South Atlantic Region. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Suite 201; North Charleston, SC 29405.

SAFMC (South Atlantic Fishery Management Council). 2011. Comprehensive Ecosystem-Based Amendment 2 for the South Atlantic Region. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Suite 201; North Charleston, SC 29405.

Wenner, E. L., G. F. Ulrich, and J. B. Wise. 1987. Exploration for golden crab, *Geryon fenneri*, in the south Atlantic Bight: distribution, population structure, and gear assessment. Fishery Bulletin 85:547-560.