Regulatory Amendment 25

to the Fishery Management Plan for the
Snapper Grouper Fishery of the South Atlantic Region

Annual Catch Limit Adjustment and Revision of Management Measures for Blueline Tilefish, Fishing Year Change for Yellowtail Snapper, and Recreational Bag Limit Adjustment for Black Sea Bass

Including an Environmental Assessment, Regulatory Flexibility Act Analysis, and

Regulatory Impact Review

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Abbreviations and Acronyms Used in the FMP

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
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
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 25 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region with an Environmental Assessment

Proposed actions:	Adjust the annual catch limit and revise management measures for blueline tilefish, modify the fishing year for yellowtail snapper, and adjust the recreational bag limit for black sea bass
Lead agency:	FMP Regulatory Amendment – South Atlantic Fishery Management Council Environmental Assessment – National Marine Fisheries Service (NMFS), Southeast Regional Office
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Summary

Regulatory Amendment 25 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region (Regulatory Amendment 25) includes actions to revise management of blueline tilefish, black sea bass, and yellowtail snapper.

Blueline Tilefish

The South Atlantic Fishery Management Council (South Atlantic Council) is proposing increasing the annual catch limit and optimum yield based on a new acceptable biological catch recommendation from the South Atlantic Council's Scientific and Statistical Committee. The Scientific and Statistical Committee recommended an acceptable biological catch of 224,100 pounds whole weight (lbs ww), which applies to the blueline tilefish population along the U.S. east coast. This value is referred to as the "stock" acceptable biological catch. **Section 1.5** outlines the reasoning for the change to the acceptable biological catch recommendation. The South Atlantic Council considered retaining the current buffer (2%) between the annual catch limit and the acceptable biological catch or increasing the buffer (options ranged from 4% to 22%) to account for landings in the Greater Atlantic Region (Maine through Virginia) where a fishery management plan for blueline tilefish does not yet exist and current management measures are temporary.

Action 1. Adjust the Acceptable Biological Catch (ABC), Annual Catch Limit (ACL) and Optimum Yield (OY) for the South Atlantic Blueline Tilefish Stock

The South Atlantic Council chose to set the ACL for the South Atlantic at 78% of the ABC (**Preferred Alternative 7**).

Alternative 1 (No Action). ACL = OY = 98%(ABC).
Preferred Alternative 7. ACL = OY = 78%(stock ABC) (The ratio of landings between the South Atlantic and Greater Atlantic Regions from 2011-2014 is 78%).

Table S-1 shows the current and proposed total annual catch limit and commercial and recreational annual catch limits based on existing sector allocations (50.07% commercial and 49.93% recreational).

Table S-1. Current and proposed South Atlantic blueline tilefish annual catch limits (lbs ww) for 2016.

	Year	Total ACL	Commercial ACL	Recreational ACL
Alt 1 (No Action)	2016	53,457	26,766	26,691
Preferred Alt 7	**2016**	**174,798**	**87,521**	**87,277**

Preferred Alternative 7 would establish the greatest buffer between the acceptable biological catch and total annual catch limit. The buffer could account for management uncertainty and may reduce the probability that blueline tilefish landings in the South Atlantic exceed the acceptable biological catch.

In general, the higher the annual catch limit, the greater the short-term social and economic benefits that would be expected to accrue, assuming long-term sustainable harvest. In terms of least to most expected direct positive socio-economic effects, **Alternative 1 (No Action)** would result in the least

followed in order by **Preferred Alternative 7** and the rest of the alternatives considered in descending order. This is because **Alternative 1 (No Action)** and **Preferred Alternative 7** result in the lowest annual catch limits and, consequently, the least dockside revenue and social benefits.

Action 2. Revise the Commercial Trip Limit for Blueline Tilefish

Alternative 1 (No Action). The commercial trip limit for blueline tilefish is 100 pounds gutted weight (lbs gw).
Preferred Alternative 3. Increase the commercial trip limit for blueline tilefish to 300 lbs gw.

The South Atlantic Council considered options to increase the commercial trip limit for blueline tilefish in the South Atlantic from the current 100-lbs gw trip limit to 200 lbs gw or 300 lbs gw. The Council chose to increase the trip limit to 300 lbs gw (**Preferred Alternative 3**) given the proposed increase to the commercial annual catch limit.

The biological effects of the proposed trip limit alternatives would be expected to be neutral compared to **Alternative 1 (No Action)**, because annual catch limits and accountability measures are in place to cap harvest and trigger corrective action if the annual catch limit is exceeded. Communities in North Carolina, South Carolina, and Florida would likely be affected by the proposed changes in the blueline tilefish commercial trip limit. However, it is likely that fishermen who have targeted blueline tilefish in recent years also target other species, and have already adjusted businesses plans to adapt to the recent changes in blueline tilefish management. In general, a commercial trip limit may help slow the rate of harvest, lengthen a season, and prevent the commercial annual catch limit 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, if the trip limit is too low, the commercial annual catch limit may not be met. However, commercial blueline tilefish would likely remain a bycatch species under any of the proposed annual catch limit increases in **Action 1**.

Action 3. Adjust the Bag Limit for Blueline Tilefish for the Recreational Sector

Alternative 1 (No Action). The recreational harvest of blueline tilefish is limited to 1 fish/vessel/day May through August (closed rest of year) within the aggregate grouper bag limit. The aggregate group contains the following species: gag, black grouper, snowy grouper, misty grouper, red grouper, scamp, yellowedge grouper, yellowfin grouper, yellowmouth grouper, blueline tilefish, golden tilefish, sand tilefish, coney, graysby, red hind, and rock hind.
Preferred Alternative 6. Establish a blueline tilefish bag limit of 3 fish/person/day May through August within the aggregate bag limit.

The South Atlantic Council considered several options to adjust the current recreational limit of 1 fish per vessel during May through August with no retention allowed for the remainder of the year. Options included per-person and per-vessel limits during a season or year-round. The South Atlantic Council selected to increase the recreational limit of blueline tilefish to 3 fish per person per day (within the aggregate grouper limit) during May through August. Prior to implementation of Amendment 32 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region in March 2015, blueline tielfish were inlcuded in the aggregate grouper bag limit and harvest was allowed year-round. The proposed change would limit harvest to those months which are most favorable for recreational fishing, and when harvest for other species that are commonly caught along with blueline tilefish (such as snowy grouper) is also allowed. Having seasons that coincide for species that are commonly caught

together helps to minimize regulatory discards, which is particularly important for species that live in deep water and typically do not survive being released.

Increasing the bag limit to 3 fish per person per day and only allowing harvest during 4 months of the year is not expected to result in a closure of recreational harvest if the proposed annual catch limit under **Action 1** is implemented. Among the action alternatives, **Alternative 5** is the least restrictive and **Alternative 1 (No Action)** is the most restrictive. Fishing mortality would be expected to increase as the regulations get less restrictive. Increasing biomass over time would be expected under all the alternatives.

Based on predicted increases in harvest (see **Table 4.3.3**), in order of most restrictive to least restrictive in terms of being able to keep blueline tilefish, **Alternative 1 (No Action)** would provide the lowest direct positive economic effect to the private angler and **Alternative 5** the highest with **Preferred Alternative 6** falling in between. The for-hire sector (charter/headboat industry) could sell more trips over a longer period if the season was open longer and increase their net operating revenue. Setting a vessel limit rather than a per-individual limit would make the season last longer, therefore, for the for-hire sector, **Preferred Alternative 6** and **Alternative 1 (No Action)** would provide the lowest direct economic benefit. However, the greatest amount of harvest would be realized under **Preferred Alternative 6**.

Black Sea Bass

The South Atlantic Council is considering an increase to the recreational bag limit to increase the chance the recreational annual catch limit for black sea bass would be met and optimum yield is being achieved. Regulatory Amendment 9 to the Snapper Grouper Fishery Management Plan reduced the black sea bass bag limit from 15 fish to 5 fish per person per day. This change became effective on June 22, 2011. Since then, the recreational annual catch limit for black sea bass increased substantially (from 482,620 lbs ww to 1,033,980 lbs ww), and the stock assessment (SEDAR 25 Update 2013) indicated that black sea bass in the South Atlantic are neither overfished nor undergoing overfishing. The South Atlantic Council is proposing to increase the black sea bass bag limit to 7 fish per person per day in federal waters of the South Atlantic.

Action 4. Increase the Recreational Bag Limit of Black Sea Bass

Alternative 1 (No action). The recreational bag limit of black sea bass is 5 fish per person per day.
Preferred Alternative 3. Increase the recreational bag limit of black sea bass to 7 fish per person per day.

The South Atlantic Council considered increasing the recreational bag limit of black sea bass to 6, 7, 8, 9, and 10 fish per person per day from the current 5-fish limit. While none of these options is expected to result in significant increases in recreational landings that would allow more of the recreational annual catch limit to be harvested, the South Atlantic Council nevertheless chose to increase the bag limit to 7 fish per person per day to increase harvest off SC and GA. Analysis also showed that almost 95% of the discarded black sea bass are below the minimum size of 13 inches. Even under a bag limit of 10 fish per person per day, only about 51% of the 2016

Current Black Sea Bass Recreational Management Measures

Annual Catch Limit = 1,033,980 pounds (whole weight)

Fishing Year – 4/1 to 3/31

Minimum Size = 13 inches total length

Bag Limit = 5 per person per day

Summary

recreational annual catch limit would be harvested, which is only about a 1.5% increase from the current bag limit of 5 per person per day. Hence, biological impacts are expected to be neutral for all the proposed bag limit alternatives as none of them results in appreciable increases in harvest.

In general, the greater the bag limit, the greater the potential for direct positive economic effects. Hence, a bag limit of 7 fish per person per day is not expected to be as economically beneficial as a bag limit of 10 fish. In terms of social effects, an increased bag limit of black sea bass would be expected to have little or no positive or negative social effects on recreational fishermen and for-hire businesses. Additionally, recreational landings of black sea bass in recent years have reached less than 50% of the current recreational annual catch limit, and there would not be an expectation of an early closure for the recreational sector under the current conditions (recreational participation and stock biomass). Therefore, there would be no difference in the expected social effects of an increase in the bag limit over the status quo.

Yellowtail Snapper

The current fishing year for yellowtail snapper is the calendar year. The South Atlantic Council is proposing changing the start date of the fishing year to August 1 to increase the probability that a closure of commercial harvest (if one were to occur from the commercial annual catch limit being met), would occur during the time yellowtail snapper are spawning (late spring/early summer). This would help to protect fish from being harvested when they are spawning. Also, changing the start date of the fishing year to August 1would benefit both commercial and recreational fishermen because it would ensure harvest is open during winter months, when yellowtail snapper obtain a higher price per pound commercially and the tourist season is in full swing in south Florida, where the majority of yellowtail harvest takes place.

Action 5. Modify the Fishing Year for Yellowtail Snapper

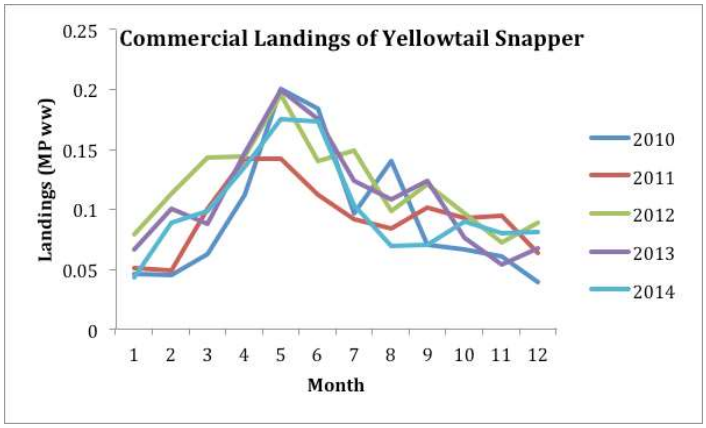
Alternative 1 (No Action). The fishing year for yellowtail snapper (commercial and recreational) is the calendar year, January 1 through December 31.

Preferred Alternative 2. Modify the fishing year for the commercial sector for yellowtail snapper.

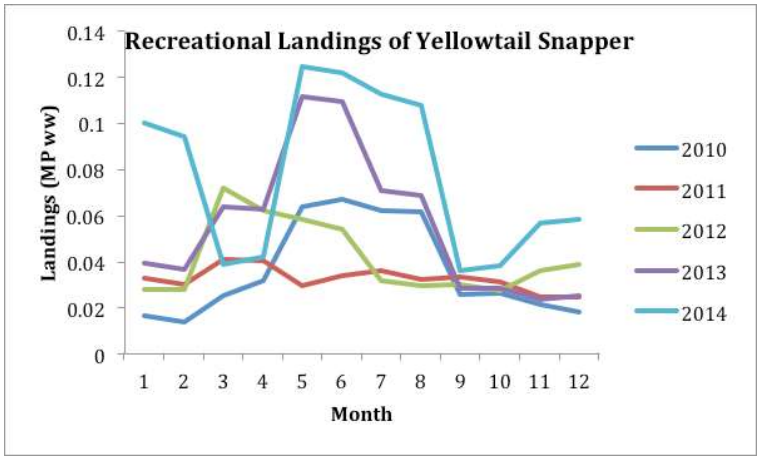
Preferred Sub-alternative 2c. August 1 through July 31

Preferred Alternative 3. Modify fishing year for the recreational sector for yellowtail snapper.

Preferred Sub-alternative 3c. August 1 through July 31



The South Atlantic Council considered changing the yellowtail snapper fishing year in 2013, when the annual catch limit for that species was increased in response to a new stock assessment (see Regulatory Amendment 15 to the Snapper Grouper Fishery Managememt Plan). However, the South Atlantic Council chose to take no action at that time due to concerns with having different fishing years in the South Atlantic and Gulf of Mexico. The population of yellowtail snapper is predominantly in South Florida, spanning both the jurisdiction of the South Atlantic Council and Gulf of Mexico Fishery Management Council (Gulf of Mexico Council).



Furthermore, yellowtail snapper are assessed as one stock in the Atlantic and Gulf of Mexico, so it is desirable to have fishing years that coincide in both jurisdictions. In 2015, yellowtail snapper fishermen again requested the South Atlantic Council reconsider shifting the start date of the fishing year as this would result in economic benefits to resource users and biological benefits to the stock. Hence, the South Atlantic Council considered fishing year start dates of June, July, August, and September and ultimately chose to change the start date of both the commercial and recreational fishing years to August 1. The Gulf of Mexico Fishery Management Council is proposing making the same change to the fishing year.

The biological effects of this change are expected to benefit the stock because if harvest were to be prohibited due to the commercial annual catch limit being met or the recreational season shortened due to the recreational annual catch limit being met, it would coincide with the time of year when yellowtail snapper are spawning. Of the alternatives considered, a start date of August 1 would be the most likely to realize the expected biological benefits. In terms of economic effects, it is expected that **Preferred Sub-alternative 2c** would generate the highest average fishing year dockside revenue and associated economic benefits; whereas, **Preferred Sub-alternative 3c** would generate the highest recreational average fishing year landings. However, changing the start date of the recreational fishing year as proposed under **Preferred Alternative 3** and its sub-alternatives would render it more likely that a shortened season would limit recreational harvest in the early summer months, which could have negative effects on recreational fishing opportunities during the time of year with traditionally higher recreational catch of yellowtail snapper.

Chapter 1. Introduction

1.1 What Actions Are Being Proposed?

Fishery managers are proposing changes to regulations through Regulatory Amendment 25. Regulatory Amendment 25 proposes measures to adjust the annual catch limits (ACLs), optimum yield (OY), and commercial and recreational management measures for blueline tilefish, change the fishing year and revise commercial accountability measures (AMs) for yellowtail snapper, and increase the recreational bag limit for black sea bass.

1.2 Who is Proposing the Action?

The South Atlantic Fishery Management Council (South Atlantic Council) is proposing the actions in this regulatory amendment. The South Atlantic Council develops the amendment and sends it to the National Marine Fisheries Service (NMFS) who implements the measures in the framework amendment on behalf of the Secretary of Commerce. NMFS is a line office in 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 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 Coastal Migratory Pelagics, which is from New York to Florida, and Dolphin Wahoo, which is from Maine to Florida

1.3 Where is the Project Located?

Management of the federal snapper grouper fishery located off the southeastern United States (South Atlantic) in the 3-200 nautical miles U.S. Exclusive Economic Zone is conducted under the Snapper Grouper FMP (SAFMC 1983) (**Figure 1.3.1**). Blueline tilefish, yellowtail snapper, and black sea bass are among the fifty-nine species managed by the South Atlantic Council under the Snapper Grouper FMP.

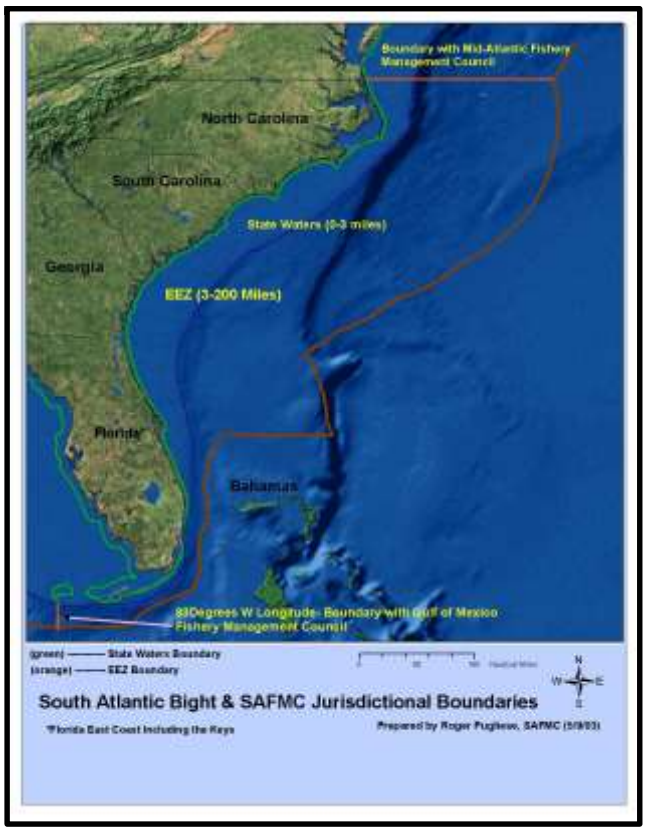


Figure 1.3.1. Jurisdictional boundaries of the South Atlantic Council.

1.4 Why are the South Atlantic Council and NMFS Considering Action (Purpose and Need)?

Blueline Tilefish

Actions 1 through **3** of Regulatory Amendment 25 address changes to blueline tilefish. The South Atlantic Council is proposing increases to the ACL and OY based on a new acceptable biological catch (ABC) recommendation from the South Atlantic Council's Scientific and Statistical Committee (SSC). **Section 1.5** outlines the reasoning for the change to the ABC recommendation. The South Atlantic Council considered retaining the current buffer between the ACL and the stock ABC (2%) and increasing the buffer (4-22%) to account for landings in the Greater Atlantic Region (Maine through Virginia). Finally, the South Atlantic Council is considering increasing the current commercial trip limit and changing the recreational bag limit to respond to the proposed increase in the blueline tilefish ACL in **Action 1,** as more fish are available for harvest.

Black Sea Bass

The South Atlantic Council is proposing an increase to the recreational bag limit to increase the chance the recreational ACL would be met and OY is being achieved. Regulatory Amendment 9 to the Snapper Grouper FMP (SAFMC 2011a) implemented a reduction in the black sea bass bag limit from 15 fish to 5 fish per person per day. This change became effective on June 22, 2011. Since then, the recreational ACL for black sea bass increased substantially (from 482,620 pounds whole weight [lbs ww] to 1,033,980 lbs ww), and the stock assessment indicated that black sea bass in the South Atlantic are neither overfished nor undergoing overfishing (SEDAR 25 Update 2013).

Yellowtail Snapper

The current fishing year is based on the calendar year. This increases the probability that harvest would occur during the spawning period (late spring/early summer). The South Atlantic Council is proposing changing the start date of the fishing year to increase the probability that an in-season closure from the ACL being met, if one were to occur, would occur during the spawning season. In southeast Florida, spawning occurs during spring and summer (Grimes 1987). This change would help to protect spawning fish from fishing mortality.

Changing the start date of the fishing year would be expected to provide economic benefits for commercial fishermen because yellowtail snapper obtain a higher price per pound during winter months. In addition, economic and social benefits could be provided to recreational fishermen if there was greater assurance that recreational harvest for yellowtail snapper would be open during the Christmas holiday season.

Purpose for Action

Adjust annual catch limits, optimum yield, and management measures for the blueline tilefish stock in the South Atlantic region in response to a re-evaluation of the stock assessment (SEDAR 32 2013) projections and the development of a new acceptable biological catch recommendation; increase the recreational bag limit for black sea bass; and change the fishing year for yellowtail snapper.

Need for Action

Ensure annual catch limits and optimum yield for blueline tilefish are based upon the best available scientific information while setting aside a portion of the annual catch limit and optimum yield to account for landings in the area north of the South Atlantic Fishery Management Council's jurisdiction; adjust commercial and recreational management measures for blueline tilefish and recreational management measures for black sea bass to achieve optimum yield; increase the probability that a commercial closure of yellowtail snapper, should one occur due to the annual catch limit being met, will coincide with that species' spawning season; and allow for economic benefits of yellowtail snapper during winter months.

1.5 What is the Acceptable Biological Catch for Blueline Tilefish?

In September 2015, the South Atlantic Council's SSC recommended setting the ABC at the equilibrium yield at 75%F_{MSY}. The equilibrium yield, 224,100 lbs ww, was derived from the most recent stock assessment for the blueline tilefish stock conducted through the Southeast Data, Assessment, and Review (SEDAR) process in 2013 (SEDAR 32 2013). The SEDAR 32 (2013) was a coast-wide assessment that applies to blueline tilefish along the entire U.S. east coast. Hence, this regulatory amendment refers to the current ABC recommendation as the "stock ABC". The SSC indicated that the recommended ABC is sufficient to prevent overfishing from occurring.

1.6 What is the History of Recent Management for Blueline Tilefish?

SEDAR 32 (2013) used data through 2011 and found the stock of blueline tilefish in the Atlantic to be overfished[1] and undergoing overfishing. At their December 2013 meeting, the South Atlantic Council initiated development of Amendment 32 to the Snapper Grouper FMP (Amendment 32; SAFMC 2014c) and voted to request emergency action to reduce overfishing of blueline tilefish immediately while Amendment 32 was being developed. The emergency rule, which was effective on April 17, 2014, set the blueline tilefish ACL at the yield at 75%F_{MSY} = 224,100 lbs ww.

[1] Effective November 6, 2014, Regulatory Amendment 21 to the Snapper Grouper FMP (SAFMC 2014b) changed the definition of the minimum stock size threshold (MSST) for several snapper grouper species with low natural mortality, including blueline tilefish. Under the revised definition (MSST = 75% SSB_{MSY}) the blueline tilefish stock is not considered overfished.

Amendment 32 was approved by NMFS on March 18, 2015, and the regulations were implemented on March 30, 2015. The amendment set the ACL for the South Atlantic region at 98% of the recommended ABC based on projections at the recommended P* level according to the South Atlantic Council's ABC control rule; the remaining 2% was set aside to account for landings north of North Carolina based on average landings at the time (**Table 1.6.1)**. Although the blueline tilefish stock was assessed as one unit along the entire U.S. east coast, regulations resulting from the final rule for Amendment 32 only apply to vessels in the South Atlantic Council's area of jurisdiction.

Table 1.6.1. Commercial and recreational ACLs (lbs ww) for blueline tilefish as implemented through Amendment 32.

	Blueline Tilefish ACL (lbs ww)		
Year	Total	Commercial	Recreational
2015	35,632	17,841	17,791
2016	53,457	26,766	26,691
2017	71,469	35,785	35,685
2018 and beyond until modified	87,974	44,048	43,925

Both the South Atlantic Council and the Mid-Atlantic Fishery Management Council (Mid-Atlantic Council) were concerned about rapidly increasing commercial and party/charter landings of blueline tilefish north of the North Carolina/Virginia boundary, particularly in New Jersey. In response, both Councils requested emergency action north of the South Atlantic Region. In February 2015, the Mid-Atlantic Council requested emergency action to implement a commercial trip limit of 300 lbs ww and a recreational possession limit of seven fish per person within its jurisdiction. The Mid-Atlantic Council also initiated development of an amendment to their Golden Tilefish Fishery Management Plan to include blueline tilefish in the fishery management unit and implement

permanent management measures before the emergency rule regulations expire.

At the March 2015 South Atlantic Council meeting, the Council voted to request NMFS take emergency action to apply the Amendment 32 measures north of the North Carolina/Virginia border. Representatives from the Mid-Atlantic Council attended this meeting. The South Atlantic Council's request was contingent on their SSC's review of SEDAR 32's applicability to the area north of North Carolina; that SSC review was scheduled to occur at the SSC's April 2015 meeting. At their April 2015 meeting, the SSC (including members who are also on the Mid-Atlantic Council's SSC) determined that the SEDAR 32 assessment constituted the best scientific information available and should be applicable to the blueline tilefish stock throughout its range along the U.S. east coast. Therefore, on May 6, 2015, the chairman of the South Atlantic Council Chair submitted an emergency rule request to NMFS that reflected the South Atlantic Council's motion passed at their March 2015 Council meeting.

On June 4, 2015, NMFS approved the Mid-Atlantic Council's request for emergency action and implemented a commercial trip limit of 300 lbs ww and a recreational possession limit of seven fish per person. On November 30, 2015, the emergency rule was extended and will expire on June 3, 2016.

In a letter to the South Atlantic Council dated October 23, 2015, NMFS stated that it was not implementing the South Atlantic Council's emergency rule request. NMFS's justification for not implementing the request, as stated in the letter, was based on the following: the South Atlantic Council's SSC had increased their recommendation for the blueline tilefish ABC; the South Atlantic Council was moving forward with a framework amendment to implement less restrictive management measures and catch levels for blueline tilefish in the South Atlantic; and temporary measures were in place to limit blueline tilefish harvest in the Mid-Atlantic.

1.7 Why did the SSC Change their ABC Recommendation for Blueline Tilefish in September 2015?

The SSC provided an initial ABC recommendation for blueline tilefish, based on the SEDAR 32 projections, in December 2013. In May 2015, the NMFS Southeast Regional Office Regional Administrator requested that the Southeast Fisheries Science Center (SEFSC) provide scientific advice on whether the SEDAR 32 projections represented the current state of the blueline tilefish stock given that the level of reported blueline tilefish landings in 2014 approached the biomass estimated by the SEDAR 32 projections. The SEFSC responded that the SEDAR 32 projections constituted the best scientific information available. However, the South Atlantic Council's SSC concluded during their June 3, 2015 webinar that "…the projections were properly prepared using accepted methods, incorporate typical assumptions and uncertainties, and reflect expected outcomes given the parameters with which they were prepared. However, given the concerns noted with continued shifts in the fishery since the assessment was completed, potential spatial patterns to the population and impacts of such patterns on productivity, and the inability of the projections to address effort shifts in the same manner as the assessment, the existing projections may not accurately reflect the population and fishery as they now exist, and therefore, cannot be considered Best Scientific Information Available. Based on this decision the Committee recommends that revised projections be prepared."

Following the South Atlantic Council's June 2015 meeting, the Council sent a request to the SEFSC for revised projections for the blueline tilefish stock. The SEFSC updated the base

projections as requested by the SSC, and also provided an updated handline catch per unit index based on an input dataset used in the SEDAR 32 assessment. The SEFSC decided that there was not sufficient scientific support for the SSC's requested alternative approaches assuming higher levels of recruitment; therefore, those analyses were not performed. On September 9, 2015, the South Atlantic Council's SSC met via webinar to review the new projections and consider other approaches to recommend a revised ABC for the blueline tilefish stock. The SSC stated that "Based on the limited scope of the projections (i.e., not all recruitment scenarios were evaluated), the high degree of uncertainty in the original assessment, and the disconnect between assessment and projections (the terminal year of data for this assessment was 2011 and the fishery has undergone major changes since then), the SSC concluded that the projections provided by the SEFSC do not represent the Best Scientific Information Available and were not adequate to support blueline tilefish fishing level recommendations for either current or future years." Instead, **the SSC recommended setting the ABC at the equilibrium yield at 75%F_{MSY} for 2016 and 2017.** The SSC reasoned that "given that the assessment results based on two types of assessment models (BAM and ASPIC) indicated that the stock generally fluctuated around the B_{MSY} and the fact that recent catches remain high, the fishery dependent index appears to have a positive trend, and there was no significant change in the age and size composition of the catch in recent years, the Committee felt that the ABC at equilibrium yield at 75%F_{MSY} is adequate and provides the best option for management. This method has been used in the past, but the SSC recognizes that this recommendation is based on results from the SEDAR 32 stock assessment, which had a very high degree of uncertainty." Setting the ABC at the equilibrium yield at 75% Fmsy results in a value of 224,100 lbs ww for blueline tilefish along the entire U.S. east coast based on results of the SEDAR 32 (2013) stock assessment. The 224,100 lbs ww was also the ACL contained in the emergency rule issued in April 2014 while the South Atlantic Council developed Amendment 32 to implement fishing levels based on the SEDAR 32 (2013) projections. During discussions leading up to implementation of the emergency rule, the chair of the SSC stated that the recommended ABC was sufficient to prevent overfishing of the blueline tilefish stock.

1.8 What is the History of Management for the Affected Species?

The South Atlantic Council and NMFS first implemented regulations to manage snapper grouper species in the South Atlantic Region in 1983 through the Snapper Grouper FMP (SAFMC 1983). Numerous amendments to the Snapper Grouper FMP have occurred over the years. See **Appendix D** for a detailed history of management of the snapper grouper fishery.

Chapter 2. Proposed Actions and Alternatives

2.1 Action 1. Adjust the Acceptable Biological Catch (ABC), Annual Catch Limit (ACL), and Optimum Yield (OY) for the South Atlantic Blueline Tilefish Stock

2.1.1 Alternatives

Alternative 1 (No Action). ACL = OY = 98%(ABC).

Alternative 2. ACL=OY=98%(stock ABC)
NOTE: This alternative uses the current ABC equation implemented through Amendment 32 but applied to the new ABC recommendation

Alternative 3. ACL = OY = 96%(stock ABC) (The ratio of landings between the South Atlantic and Greater Atlantic Regions from 2005-2010 is 96%.).

Alternative 4. ACL = OY = 93%(stock ABC) (The ratio of landings between the South Atlantic and Greater Atlantic Regions from 2005-2013 is 93%).

Alternative 5. ACL = OY = 89%(stock ABC) (The ratio of landings between the South Atlantic and Greater Atlantic Regions from 2011-2013 is 89%.).

Alternative 6. ACL = OY = 88%(stock ABC) (The ratio of landings between the South Atlantic and Greater Atlantic Regions from 2005-2014 is 88%).

Preferred Alternative 7. ACL = OY = 78%(stock ABC) (The ratio of landings between the South Atlantic and Greater Atlantic Regions from 2011-2014 is 78%).

2.1.2 Comparison of Alternatives

The South Atlantic Fishery Management Council (South Atlantic Council) developed optimum yield (OY) and sector annual catch limits (ACLs) for blueline tilefish in Amendment 32 (SAFMC 2014c). The final rule to implement Amendment 32, including specifying OY and ACLs for blueline tilefish, was effective on March 30, 2015 **(Table 2.1.1)**. **Table 2.1.1** shows the OY and ACLs values set forth in **Alternative 1 (No Action)** of this amendment. The OY and sector ACLs are based on the ABC recommendation (P*=30%) provided by the South Atlantic Council's Scientific and Statistical Committee (SSC) for Amendment 32. The total ACL is 2% less than the ABC, and the sector allocations are 50.07% commercial and 49.93% recreational.

Table 2.1.1. Current total ACL and sector ACLs for blueline tilefish.

	Blueline Tilefish ACL as Established by Amendment 32 (Implemented March 30, 2015) (lbs ww)		
Year	**Total**	**Commercial**	**Recreational**
2015	35,632	17,841	17,791
2016	53,457	26,766	26,691
2017	71,469	35,785	35,685
2018 and beyond until modified	87,974	44,048	43,925

Note: These ACLs are based on an ABC recommendation of P*=30%. The ABC values are 36,359 (2015), 54,548 (2016), 72,928 (2017), and 89,769 lbs ww (2018).

The South Atlantic Council is considering changing the current OY and ACLs based upon a revised ABC recommendation from their SSC, and considering a larger buffer between the ABC and ACL and the stock ABC to account for landings north of the South Atlantic Council's area of jurisdiction **(Table 2.1.2)**. The OY and ACL values in **Alternatives 2** through **7 (Preferred)** are based on the SSC's ABC recommendation of the equilibrium yield at 75%F_{MSY} (224,100 pounds whole weight [lbs ww]). **Alternative 2** would retain the current ACL equation as **Alternative 1 (No Action)** (ACL = OY = 98%ABC), but would update the value per the new ABC recommendation from the South Atlantic Council's SSC. **Alternatives 3** through **7 (Preferred)** consider adjusting the ABC and ACL to account for landings north of the South Atlantic Council's area of jurisdiction based on the ratio of landings between the South Atlantic and the Greater Atlantic regions for various time periods (**Table 2.1.3**). These fishing level specifications are temporary pending an update to the blueline tilefish stock assessment in 2017 and results from genetic studies to establish the stock structure of blueline tilefish. The alternatives provide percentages to deduct from the recommended ABC to account for blueline tilefish landings in the area north of the South Atlantic Council's jurisdiction (north of the North Carolina/Virginia border).

Table 2.1.2. Proposed ABC, ACLs (including sector ACLs) and recreational annual catch target (ACT) for blueline tilefish in the South Atlantic.

	Alt 2 (98%)	Alt 3 (96%)	Alt 4 (93%)	Alt 5 (89%)	Alt 6 (88%)	Pref Alt 7 (78%)
Stock OFL	226,500	226,500	226,500	226,500	226,500	**226,500**
Stock ABC	224,100	224,100	224,100	224,100	224,100	**224,100**
Total ACL	219,618	215,136	208,413	199,449	197,208	**174,798**
Comm ACL	109,963	107,719	104,352	99,864	98,742	**87,521**
Rec ACL	109,655	107,417	104,061	99,585	98,466	**87,277**
Rec ACT	68,666	67,265	65,163	62,360	61,659	**54,653**

Note: The ACLs are based on a stock ABC recommendation of the equilibrium yield at 75%F_{MSY} (224,100 lbs ww). The sector ACLs are based on allocations of 50.07% commercial and 49.93% recreational. The recreational ACT is based on the ACT equation where rec ACL*(1-PSE) or rec ACL*0.5, whichever is greater. The average annual percent standard error for blueline tilefish from 2009-2013 was 37.38%.

Table 2.1.3. Percent of total landings of blueline tilefish by area and for various time periods. Data include commercial landings, Southeast Headboat Survey, Marine Recreational Information Program, and the Northeast for-hire Vessel Trip Report (VTR). Landings not shown due to data confidentiality.

Alternative	Years	% VA-ME	% NC-FL
3	2005-2010	4	96
4	2005-2013	7	93
5	2011-2013	11	89
6	2005-2014	12	88
7 (Pref)	**2011-2014**	**22**	**78**

NOTE: 2011 landings were affected by the 240' harvest prohibition of six snapper grouper species in the South Atlantic. In 2014, there was an ACL closure in the South Atlantic very early in the season.
Source: Mike Errigo, SAFMC staff

Amendment 32 (SAFMC 2014c) established a recreational annual catch target (ACT) for blueline tilefish. The National Standard 1 guidelines recommend the use of ACTs to prevent ACLs from being exceeded. For species without in-season management controls to help prevent the ACL from being exceeded, managers may utilize ACTs that are set below ACLs so that catches do not exceed the ACLs. If an ACT is specified as part of the system of accountability measures (AMs) for a species, an ACT control rule that accounts for management uncertainty may be utilized for setting the ACT. The objective for establishing an ACT and related AMs is to prevent the ACL from being exceeded. In managing the snapper grouper fishery, however, the South Atlantic Council has chosen not to use ACTs to trigger AMs because it is anticipated that improvements in reporting will significantly reduce management uncertainty.

The updated framework procedure included in Amendment 17B to the Snapper Grouper FMP (Amendment 17B; SAFMC 2010b) allows for the timely establishment and adjustment of ACTs (and ACLs) if the South Atlantic Council and the National Marine Fisheries Service (NMFS) determine they are necessary. Additionally, Amendment 27 to the Snapper Grouper FMP (SAFMC 2014a) further modified the framework procedure to minimize regulatory delay when adjustments to snapper grouper species' ABC, ACLs, and ACTs are needed as a result of new stock assessments.

The National Standard 1 guidelines recommend a performance standard by which the efficacy of any system of ACLs and AMs can be measured and evaluated. According to the guidelines:

> *…if catch exceeds the ACL for a given stock or stock complex more than once in the last four years, the system of ACLs and AMs should be re-evaluated, and modified if necessary, to improve its performance and effectiveness ((50 C.F.R. §600.310(g)(3)).*

Through Regulatory Amendment 25, the South Atlantic Council would update the recreational ACT value based on the new ABC recommendation and resulting adjustments to the recreational ACL. The equation that was used to specify the original recreational ACT in Amendment 32 (SAFMC 2014c), however, would not change. The recreational ACT would still be based on ACT = recreational ACL*(1-PSE) or recreational ACL*0.5, whichever is greater, and where the PSE (percent standard error) is 37.38%.

2.2 Action 2. Revise the Commercial Trip Limit for Blueline Tilefish

2.2.1 Alternatives

Alternative 1 (No Action). The commercial trip limit for blueline tilefish is 100 pounds gutted weight (lbs gw).

Alternative 2. Increase the commercial trip limit for blueline tilefish to 200 lbs gw.

Preferred Alternative 3. Increase the commercial trip limit for blueline tilefish to 300 lbs gw.

2.2.2 Comparison of Alternatives

Alternative 1 (No Action) would retain the current trip limit that was implemented in 2015. **Alternatives 2** and **3 (Preferred)** consider less restrictive trip limits of 200 (lbs gw) and 300 lbs gw, respectively. The South Atlantic Council does not believe that more restrictive trip limits are reasonable for consideration as the ABC recommendation has recently increased. The range of commercial trip limit alternatives being considered is the same as that analyzed during development of Amendment 32 (SAFMC 2014c).

The biological effects of proposed **Alternatives 2** and **3 (Preferred)** would be expected to be neutral compared to **Alternative 1 (No Action)**, because ACLs and AMs are in place to cap harvest and trigger corrective action if ACLs are exceeded. Alternatives with larger trip limits could present a greater biological risk to blueline tilefish in terms of exceeding the ACL since the rate of harvest would be greater. However, improvements were made to the quota monitoring system with implementation of the Dealer Reporting Amendment (GMFMC and SAFMC 2013b) effective August 7, 2014, which has enhanced commercial data reporting. Larger trip limits could also result in earlier closures of blueline tilefish. Early closures can lead to regulatory discards, and release mortality for blueline tilefish is 100%, thus resulting in negative biological impacts to the stock. Similarly, smaller trip limits could increase bycatch if a trip is not ended and fishermen continue to target co-occurring species when the blueline tilefish trip limit is met. Therefore, little difference in the biological effects of the trip limit alternatives is expected.

In general, commercial trip limits may help slow the rate of harvest, lengthen a season, and prevent the ACL from being exceeded. However, trip limits that are too low may make fishing trips inefficient and too costly if fishing grounds are too far away, which could affect business decisions and fishing behavior for commercial fishermen. The costs and benefits to fishermen when considering commercial trip limits depend on whether a longer season, with a consistent supply of blueline tilefish, is more important than maximizing efficiency on fishing trips, even if the season is shorter. Users of longline gear would likely suffer the greatest negative economic effects, as a group, from lower trip limits since this type of gear is more capable of larger landings per trip than handline gear. It cannot be predicted how many trips would be made in the future that would land blueline tilefish as it is likely only to be a bycatch species regardless of the commercial sector ACL changes in **Action 1**. However, the lower the trip limit,

the more likely the commercial ACL would not be met. **Preferred Alternative 3** is likely to have the least direct negative economic effect, followed by **Alternative 2**, and then **Alternative 1 (No Action)**.

The lowest trip limit under **Alternative 1 (No Action)** could reduce the risk of derby conditions and associated negative impacts that can occur due to an in-season closure or payback provision if the ACL is exceeded when compared to the 200-lbs gw and 300-lbs gw trip limits in **Alternative 2** and **Preferred Alternative 3**. A more restrictive trip limit (**Alternative 1 (No Action)**) is more likely to slow the rate of harvest and lengthen the season than a less restrictive trip limit, unless vessels do not currently harvest over a proposed limit, as noted above. Vessels with landings of blueline tilefish in recent years are likely catching blueline tilefish in combination with other snapper grouper species (along with coastal migratory pelagic species). Therefore, a trip with low poundage of one particular species is not necessarily an inefficient trip.

2.3 Action 3. Adjust the Bag Limit for Blueline Tilefish for the Recreational Sector

2.3.1 Alternatives

Alternative 1 (No Action). The recreational harvest of blueline tilefish is limited to 1 fish/vessel/day May through August (closed rest of year) within the aggregate grouper bag limit. The aggregate group contains the following species: gag, black grouper, snowy grouper, misty grouper, red grouper, scamp, yellowedge grouper, yellowfin grouper, yellowmouth grouper, blueline tilefish, golden tilefish, sand tilefish, coney, graysby, red hind, and rock hind.

Alternative 2. Establish a blueline tilefish bag limit of 1 fish/person/day year-round within the aggregate grouper bag limit.

Alternative 3. Establish a blueline tilefish vessel limit of 1 fish/vessel/day year-round within the aggregate grouper bag limit.

Alternative 4. Establish a blueline tilefish bag limit of 1 fish/person/day May through August within the aggregate grouper bag limit. Prohibit retention of blueline tilefish for the remainder of the year.

Alternative 5. Establish a blueline tilefish bag limit of 3 fish/person/day year-round within the aggregate bag limit.

Preferred Alternative 6. Establish a blueline tilefish bag limit of 3 fish/person/day May through August within the aggregate bag limit.

2.3.2 Comparison of Alternatives

Alternative 1 (No Action) would retain the current vessel limit that was implemented in 2015. **Alternatives 2** through **6 (Preferred)** consider less restrictive bag and vessel limits. The South Atlantic Council did not consider more restrictive limits as the ABC recommendation has recently increased. The alternatives consider modifications to the bag and vessel limits and the time period during which they would apply. No negative biological effects would be expected to the stock since ACLs and AMs are in place to prevent overfishing. Among the action alternatives, **Alternative 5** is the least restrictive and **Alternative 1 (No Action)** is the most restrictive. The greatest biological benefits would be provided by **Alternative 1 (No Action)**, followed by **Alternatives 4**, **3**, **2**, **6 (Preferred)**, and **5**. Fishing mortality would be expected to increase as the regulations get less restrictive. Blueline tilefish is not overfished but overfishing is occurring. Biomass would be expected to continue to increase under all the alternatives as (1) the increase in bag/vessel limit is in response to an increase in the SSC's ABC recommendation and the South Atlantic Council's preferred alternative for ACL **(Action 1)** and (2) recreational AMs are in place to close the recreational sector in-season if the ACL is met or projected to be met. Under **Action 1** ACL **Alternatives 2-7 (Preferred)**, the shortest season is anticipated for **Alternatives 1 (No Action)**, **4**, and **6 (Preferred)**, because the season would only be open May-August (123 days), and a quota closure is not predicted (**Table 4.3.2**). Bycatch could increase with **Alternatives 1 (No Action)**, **4**, and **6 (Preferred)** under this action, as blueline tilefish would have to be returned to the water over the longest

period of time since the predicted season lengths are the shortest. The release mortality of blueline tilefish, a deepwater species, is likely 100%. In addition, effective August 20, 2015, NMFS implemented a bag limit of one-fish per vessel per day during May through August with no retention for the remainder of the year for both snowy grouper (Regulatory Amendment 20; SAFMC 2014d) and blueline tilefish (Amendment 32; SAFMC 2014c). One of the goals of these actions was to align the seasons and regulations to minimize discard mortality for these species. **Alternatives 2**, **3**, and **5** would remove the aligned allowable fishing seasons and could increase discards if the two species are targeted in the same area (i.e., if fishing for one of the species was closed and the other was open).

Based on predicted increases in harvest (**Table 4.3.3**), in order of most restrictive to least restrictive in terms of being able to keep blueline tilefish, and therefore lowest to highest direct positive economic benefit to the private recreational fisher, is **Alternative 1 (No Action)**, followed by **Alternatives 4**, **3**, **2**, **6 (Preferred)**, and **5**. However, the for-hire sector (charter/headboat industry) could sell more trips over a longer period if the season was open longer and increase their net operating revenue. Setting a vessel limit rather than a per-individual limit would make the season last longer (**Table 4.3.2**). Therefore, for the for-hire sector the order of longest to shortest fishing season, and therefore highest to lowest direct positive economic benefit would be **Alternative 3**, **2**, **5**, and a tie between **Alternative 1 (No Action)**, **Alternative 4**, and **Preferred Alternative 6**. The greatest to least harvest for the for-hire sector would be ranked from **Alternatives 6 (Preferred)**, **2**, **5**, **4**, **3**, and finally, **Alternative 1 (No Action)** (**Table 4.3.3**).

In terms of social effects, benefits from improved recreational fishing opportunities would result from a bag/vessel limit that has the largest portion of the year open to recreational harvest, with the highest number of fish per person, as long as the recreational ACL is not exceeded and there is no in-season closure or post-season payback. However, a higher bag limit could result in a shorter open season (**Table 4.3.2**). If the time of year is not an important factor to blueline tilefish social effects, the length of fishing seasons and associated social benefits would decline from **Alternative 3**, **2**, **5**, and a tie between **Alternative 1 (No Action)**, **Alternative 4**, and **Preferred Alternative 6**. Overall, the benefits and costs to recreational fishermen under each alternative would depend on the most popular time to target blueline tilefish compared with season length.

2.4 Action 4. Increase the Recreational Bag Limit of Black Sea Bass

2.4.1 Alternatives

Alternative 1 (No action). The recreational bag limit of black sea bass is 5 fish per person per day.

Alternative 2. Increase the recreational bag limit of black sea bass to 6 fish per person per day.

Preferred Alternative 3. Increase the recreational bag limit of black sea bass to 7 fish per person per day.

Alternative 4. Increase the recreational bag limit of black sea bass to 8 fish per person per day.

Alternative 5. Increase the recreational bag limit of black sea bass to 9 fish per person per day.

Alternative 6. Increase the recreational bag limit of black sea bass to 10 fish per person per day.

2.4.2 Comparison of Alternatives

Alternative 1 (No Action) would retain the current bag limit that was implemented in 2011 through Regulatory Amendment 9 to the Snapper Grouper FMP (SAFMC 2011a). **Alternatives 2** through **6** consider an increase in the bag limit to six fish per person per day to 10 fish per person per day. The South Atlantic Council is not considering a decrease in the bag limit as the stock is rebuilt and the ACLs were increased in 2013 through the final rule for Regulatory Amendment 19 to the Snapper Grouper FMP (SAFMC 2013a), and the recreational ACL is not being met. As such, the South Atlantic Council does not believe that more restrictive bag limit regulations are necessary.

Analysis results also show that a higher bag limit would have a negligible impact on the recreational landings of black sea bass (**Tables 4.4.7- 4.4.9**). Almost 95% of the discarded black sea bass are below the minimum size of 13 inches total length (TL). Even under a bag limit of 10 fish per person per day, only about 51% of the 2016 recreational ACL would be taken, which is only about a 1.5% increase from the current bag limit of five fish per person per day. Hence, biological impacts are expected to be neutral for all the proposed bag limit alternatives as none of them results in appreciable increases in harvest. Moreover, the amount of black sea bass being discarded appears to be due to the current minimum size limit and not to anglers landing quantities of black sea bass above the current bag limit.

The greater the bag limit, the greater the potential for direct positive economic effects. Therefore, the order of least to most increase in direct economic benefits is **Alternative 1 (No Action)**, **Alternative 2**, **Preferred Alternative 3**, **Alternative 4**, **Alternative 5**, and **Alternative 6**. However, the higher the bag limit, the shorter the open season may be if landings typically reach or exceed the recreational ACL. A shorter season may result in fewer angler trips and smaller trip-related economic benefits, such as fewer angler-related jobs and decreased income, sales, and value added. An increased bag limit would be expected to have little or no positive or negative social effects on recreational fishermen and for-hire businesses. Additionally, recreational landings in recent years have reached less than 50% of the current

recreational ACL, and there would not be an expectation of an early closure for the recreational sector, under the current conditions (recreational participation and stock biomass). The expected social effects under **Alternatives 2-6** would be the same as under **Alternative 1 (No Action).**

2.5 Action 5. Modify the Fishing Year for Yellowtail Snapper

2.5.1 Alternatives

Alternative 1 (No Action). The fishing year for yellowtail snapper (commercial and recreational) is the calendar year, January 1 through December 31.

Preferred Alternative 2. Modify the fishing year for the commercial sector for yellowtail snapper.

Sub-alternative 2a. June 1 through May 31

Sub-alternative 2b. July 1 through June 30

Preferred Sub-alternative 2c. August 1 through July 31

Sub-alternative 2d. September 1 to August 31

Preferred Alternative 3. Modify fishing year for the recreational sector for yellowtail snapper.

Sub-alternative 3a. June 1 through May 31

Sub-alternative 3b. July 1 through June 30

Preferred Sub-alternative 3c. August 1 through July 31

Sub-alternative 3d. September 1 to August 31

2.5.2 Comparison of Alternatives

Preferred Alternative 2 and its sub-alternatives consider changes to the start date for commercial harvest of yellowtail snapper from January 1 to June 1 (**Sub-alternative 2a**) to September 1 (**Sub-alternative 2d**). The same suite of sub-alternatives is presented under **Preferred Alternative 3** for the recreational sector. The South Atlantic Council chose to take action to modify the start date for both sectors. Based on landings from 2010-2014 (see **Tables 4.5.1** and **4.5.2**), it is unlikely that yellowtail snapper commercial or recreational ACLs would be met during the any of the proposed fishing years and there would be no additional biological effects from a change in the fishing year. However, the commercial ACL was met in 2015. Although those data are not available for analyses, it can be assumed that commercial landings in future years could be similar to those in 2015, and commercial closures could occur. However, potential closures under all the sub-alternatives have an equal chance of occurring during the yellowtail snapper spawning season. In southeast Florida, spawning occurs during spring and summer with peak spawning in May-July (Grimes 1987, Muller et al. 2003). **Sub-alternatives 2a**, **2b**, **3a**, and **3b** could result in positive biological impacts if closures occurred during the beginning of peak spawning (peak spawning is May-July) for yellowtail snapper. An indirect biological benefit would result from **Alternative 1 (No Action)** in that the fishing year used in future stock assessments for the species would be consistent with previous ones. For management and stock assessment purposes, there are advantages to identical fishing years between the commercial and recreational sectors. Changing the fishing year for the recreational sector, but not the commercial sector, would result in additional data adjustments that introduce some level of uncertainty to a stock assessment and may compromise the ability to compare results with previous assessments. Different fishing years in the Gulf of Mexico and South Atlantic for yellowtail snapper would further accentuate this problem. However, the Gulf of Mexico Fishery Management Council is developing an amendment that may change the fishing year for yellowtail snapper that would match what the South Atlantic Council is proposing in Regulatory Amendment 25.

In terms of economic effects, it is expected that **Preferred Sub-alternative 2c** would generate the highest average fishing year dockside revenue and associated economic benefits for the commercial sector, followed in turn by **Sub-alternatives 2b**, **2a**, **2d** and **Alternative 1 (No Action)**. For the recreational sector, **Sub-alternatives 3a** through **3d** would delay the start date of the recreational fishing year by five to eight months, respectively. **Sub-alternative 3d** would generate the highest recreational average fishing year landings, followed in turn by **Sub-alternatives 3c (Preferred)**, **3b**, **3a**, and **Alternative 1 (No Action)**. **Sub-alternative 3d**'s highest average landings in turn may represent the highest number of angler trips and, therefore, highest associated economic benefits in a fishing year.

The top five communities with the highest levels of commercial landings of yellowtail snapper include the Florida communities of Key West, Miami, Marathon, Hialeah, and Key Largo; these would be areas that may be most affected by changes to yellowtail snapper management as the bulk of yellowtail harvest occurs in south Florida. The effects on commercial fishermen and associated businesses would be associated with access to the yellowtail stock during periods when the dockside value is highest, and if the commercial ACL is met and an early closure occurs. Because the commercial value of yellowtail snapper is typically higher in winter months, it is important to fishermen and fish houses for yellowtail snapper to be open during these months. Under **Alternative 2**, **Sub-alternative 2d** would be the most likely to keep the commercial sector open in the winter months, followed by **Preferred Sub-alternative 2c**, and **Sub-alternatives 2b** and **2a**. Under **Preferred Alternative 3** and **Sub-alternatives 3a-3d**, it would be more likely that, if the season were to be shortened in the event of a recreational ACL overage, recreational harvest would not be allowed during in the early summer months, which could have negative effects on recreational fishing opportunities because early summer is the time of year with traditionally higher recreational catch of yellowtail snapper.

Chapter 3. Affected Environment

This section describes the affected environment in the proposed project area. The affected environment is divided into four major components.

Affected Environment

- **Habitat environment (Section 3.1)**

  Examples include coral reefs and sea grass beds

- **Biological end ecological environment (Section 3.2)**

  Examples include populations of blueline tilefish, corals, and turtles

- **Social and economic environment (Section 3.3)**

  Examples include fishing communities and economic descriptions of the fisheries

- **Administrative environment (Section 3.4)**

  Examples include the fishery management process and enforcement activities

3.1 Habitat Environment

3.1.1 Inshore/Estuarine Habitat

Many snapper grouper species utilize both pelagic and benthic habitats during several stages of their life histories; larval stages of these species live in the water column and feed on plankton. Most juveniles and adults are demersal (bottom dwellers) and associate with hard structures on the continental shelf that have moderate to high relief (e.g., coral reef systems and artificial reef structures, rocky hard-bottom substrates, ledges and caves, sloping soft-bottom areas, and limestone outcroppings). Juvenile stages of some snapper grouper species also utilize inshore seagrass beds, mangrove estuaries, lagoons, oyster reefs, and embayment systems. In many species, various combinations of these habitats may be utilized during daytime feeding migrations or seasonal shifts in cross-shelf distributions. Additional information on the habitat utilized by species in the Snapper Grouper Complex is included in Volume II of the Fishery Ecosystem Plan (FEP, SAFMC 2009c) and incorporated here by reference. The FEP can be found at: http://safmc.net/ecosystem-management/fishery-ecosystem-plan-1

3.1.2 Offshore Habitat

Predominant snapper grouper offshore fishing areas are located in live bottom and shelf-edge habitats where water temperatures range from 11º to 27º C (52º to 81º F) due to the proximity of the Gulf Stream, with lower shelf habitat temperatures varying from 11º to 14º C (52º to 57º F). Water depths range from 16 to 27 meters (54 to 90 ft) or greater for live-bottom habitats, 55 to 110 meters (180 to 360 ft) for the shelf-edge habitat, and from 110 to 183 meters (360 to 600 ft) for lower-shelf habitat areas.

The exact extent and distribution of productive snapper grouper habitat on the continental shelf north of Cape Canaveral, Florida is unknown. Current data suggest from 3 to 30% of the shelf is suitable habitat for these species. These live-bottom habitats may include low relief areas, supporting sparse to moderate growth of sessile (permanently attached) invertebrates, moderate relief reefs from 0.5 to 2 meters (1.6 to 6.6 ft), or high relief ridges at or near the shelf break consisting of outcrops of rock that are heavily encrusted with sessile invertebrates such as sponges and sea fan species. Live-bottom habitat is scattered irregularly over most of the shelf north of Cape Canaveral, Florida but is most abundant offshore from northeastern Florida. South of Cape Canaveral, Florida the continental shelf narrows from 56 to 16 kilometers (35 to 10 mi) wide off the southeast coast of Florida and the Florida Keys. The lack of a large shelf area, presence of extensive, rugged living fossil coral reefs, and dominance of a tropical Caribbean fauna are distinctive benthic characteristics of this area.

Rock outcroppings occur throughout the continental shelf from Cape Hatteras, North Carolina to Key West, Florida (MacIntyre and Milliman 1970; Miller and Richards 1979; Parker

et al. 1983), which are principally composed of limestone and carbonate sandstone (Newton et al. 1971), and exhibit vertical relief ranging from less than 0.5 to over 10 meters (33 ft). Ledge systems formed by rock outcrops and piles of irregularly sized boulders are also common. Parker et al. (1983) estimated that 24% (9,443 km^2) of the area between the 27 and 101-meter (89 and 331 ft) depth contours from Cape Hatteras, North Carolina to Cape Canaveral, Florida is reef habitat. Although the bottom communities found in water depths between 100 and 300 meters (328 and 984 ft) from Cape Hatteras, North Carolina to Key West, Florida is relatively small compared to the whole shelf, this area, based upon landing information of fishers, constitutes prime reef fish habitat and probably significantly contributes to the total amount of reef habitat in this region.

Artificial reef structures are also utilized to attract fish and increase fish harvests; however, research on artificial reefs is limited and opinions differ as to whether or not these structures promote an increase of ecological biomass or merely concentrate fishes by attracting them from nearby, natural un-vegetated areas of little or no relief.

The distribution of coral and live hard bottom habitat as presented in the Southeast Area Monitoring, Assessment, and Prediction Program (SEAMAP) bottom mapping project is a proxy for the distribution of the species within the snapper grouper complex. The method used to determine hard bottom habitat relied on the identification of reef obligate species including members of the snapper grouper complex. The Florida Fish and Wildlife Research Institute (FWRI), using the best available information on the distribution of hard bottom habitat in the South Atlantic region, prepared ArcView maps for the four-state project. These maps, which consolidate known distribution of coral, hard/live bottom, and artificial reefs as hard bottom, are available on the South Atlantic Fishery Management Council's (South Atlantic Council) online map services provided by the South Atlantic Council's Habitat and Ecosystem Atlas: http://ocean.floridamarine.org/safmc_atlas/. An introduction to the system is found at: http://safmc.net/ecosystem-management/mapping-and-gis-data.

Plots of the spatial distribution of offshore species were generated from the Marine Resources Monitoring, Assessment, and Prediction Program (MARMAP) data. The plots serve as point confirmation of the presence of each species within the scope of the sampling program. These plots, in combination with the hard bottom habitat distributions previously mentioned, can be employed as proxies for offshore snapper grouper complex distributions in the south Atlantic region. Maps of the distribution of snapper grouper species by gear type based on MARMAP data can also be generated through the South Atlantic Council's Internet Mapping System at the above address.

3.1.3 Essential Fish Habitat

Essential fish habitat (EFH) is defined in the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) as "those waters and substrates necessary to fish for spawning, breeding, feeding, or growth to maturity" (16 U.S. C. 1802(10)). Specific categories

of EFH identified in the South Atlantic Bight, which are utilized by federally managed fish and invertebrate species, include both estuarine/inshore and marine/offshore areas. Specifically, estuarine/inshore EFH includes: estuarine emergent and mangrove wetlands, submerged aquatic vegetation, oyster reefs and shell banks, intertidal flats, palustrine emergent and forested systems, aquatic beds, and estuarine water column. Additionally, marine/offshore EFH includes: live/hard bottom habitats, coral and coral reefs, artificial and manmade reefs, *Sargassum* species, and marine water column.

EFH utilized by snapper grouper species in this region 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 183 meters [600 ft (but to at least 2,000 ft for wreckfish)] where the annual water temperature range is sufficiently warm to maintain adult populations of members of this largely tropical fish complex. EFH includes the spawning area in the water column above the adult habitat and the additional pelagic environment, including *Sargassum*, required for survival of larvae and growth up to and including settlement. In addition, the Gulf Stream is also EFH because it provides a mechanism to disperse snapper grouper larvae.

For specific life stages of estuarine-dependent and near shore snapper grouper species, EFH includes areas inshore of the 30 meter (100-ft) 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 habitats.

Refer to **Appendix I** for description of EFH for all Council-managed species.

3.1.4 Habitat Areas of Particular Concern

Areas which meet the criteria for Essential Fish Habitat-Habitat Areas of Particular Concern (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; near shore 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).

Areas that meet the criteria for EFH-HAPCs include habitats required during each life stage (including egg, larval, postlarval, juvenile, and adult stages).

In addition to protecting habitat from fishing related degradation though fishery management plan regulations, the South Atlantic Council, in cooperation with National Marine Fisheries Service (NMFS), actively comments on non-fishing projects or policies that may impact essential fish habitat. With guidance from the Habitat Advisory Panel, the South Atlantic Council has developed and approved policies on: energy exploration, development, transportation and hydropower re-licensing; beach dredging and filling and large-scale coastal engineering; protection and enhancement of submerged aquatic vegetation; alterations to riverine, estuarine and near shore flows; offshore aquaculture; and marine invasive species and estuarine invasive species.

Refer to **Appendix I** for description of EFH-HAPCs for all South Atlantic Council-managed species.

3.2 Biological and Ecological Environment

The waters off the South Atlantic coast are home to a diverse population of fish. The snapper grouper fishery management unit contains 59 species of fish, many of them neither "snappers" nor "groupers". These species live in depths from a few feet (typically as juveniles) to hundreds of feet. As far as north/south distribution, the more temperate species tend to live in the upper reaches of the South Atlantic management area (black sea bass, red porgy) while the tropical variety's core residence is in the waters off south Florida, Caribbean Islands, and northern South America (black grouper, mutton snapper).

These are reef-dwelling species that live amongst each other. These species rely on the reef environment for protection and food. There are several reef tracts that follow the southeastern coast.

3.2.1 Fish Stocks

3.2.1.1 Blueline Tilefish

Life History

Blueline tilefish, *Caulolatilus microps*, occurs in the Western Atlantic Ocean, North Carolina to southern Florida and Mexico, including the northern (and probably eastern) Gulf of Mexico (Dooley 1978). Blueline tilefish are found along the outer continental shelf, shelf break, and upper slope on irregular bottom with ledges or crevices, and around boulders or rubble piles in depths of 30-236 m (98-774 ft) and temperatures ranging from 15 to 23° C (59-73.4º F) (Ross 1978; Ross and Huntsman 1982; Robins and Ray 1986; Parker and Mays 1998). Maximum

reported size is 90 cm (35.4 in) FL (SEDAR 32 2013) and 7 kg (15 pounds [lbs]) (Dooley 1978). Maximum reported age is 43 years (SEDAR 32 2013). The SEDAR group estimated the natural mortality rate to be 0.1 (SEDAR 32 2013). Spawning occurs at night, from March to October, with a peak in May (SEDAR 32 (2013) using information from Harris et al. (2004)). Blueline tilefish primarily feeds on benthic invertebrates and fishes (Dooley 1978).

Blueline Tilefish Life History
An Overview

- Extend from North Carolina to southern Florida and Mexico, including the Gulf of Mexico
- Waters ranging from 98-774 feet
- The spawning season extends from March to October, peaking May.
- Age for oldest fish discovered is 43 years.

Several species in the snapper grouper fishery management unit, though they occupy the same time and space in the reef environment, occupy different trophic niches. For example, blueline tilefish consume a higher diversity of organisms and prey that is more closely associated with the bottom (Bielsa and Labinski 1987). In contrast, the diet of snowy grouper is more specialized and prey items are found higher in the water column. It has been suggested that the different trophic niches reduces the interspecific competition for food items between these two species (Bielsa and Labinski 1987).

Snapper grouper species that reside in deepwater could be affected by the action. In addition to blueline tilefish, snapper grouper species most likely to be affected by the proposed actions includes many species that occupy the same habitat at the same time. Therefore, snapper grouper species are likely to be caught when regulated since they will be incidentally caught when fishermen target other co-occurring species.

Stock Status

Blueline tilefish are distributed from Campeche, Mexico northward to Cape Charles, Virginia (Dooley 1978). The development of a recreational fishery for deepwater snapper grouper (including blueline tilefish) off Virginia since the 2000s suggests a portion of the population resides north of Cape Hatteras, a biogeographic break for many species. The participants in the recent stock assessment decided to assess the stock as two stock jurisdictions: Gulf of Mexico and South Atlantic.

Below average recruitment was predicted through the 1990s with several strong year classes predicted to have occurred in the early 2000s. Similarly, high biomass in the 1970s was followed by low but stable biomass during the 1980s and 1990s, and a second peak in biomass in the mid-2000s (SEDAR 32 2013) (**Figure 3.2.1**).

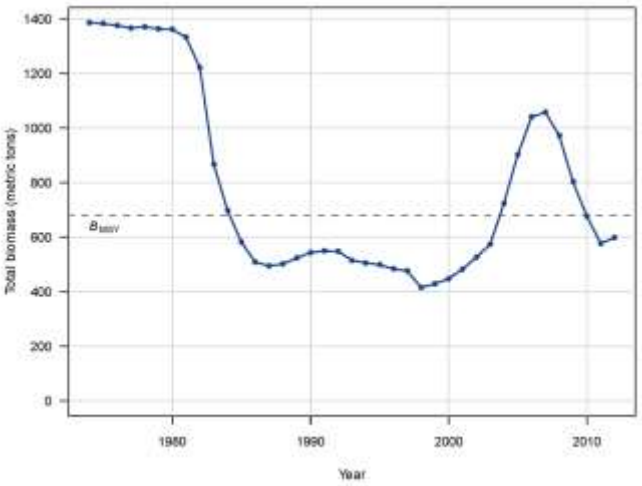
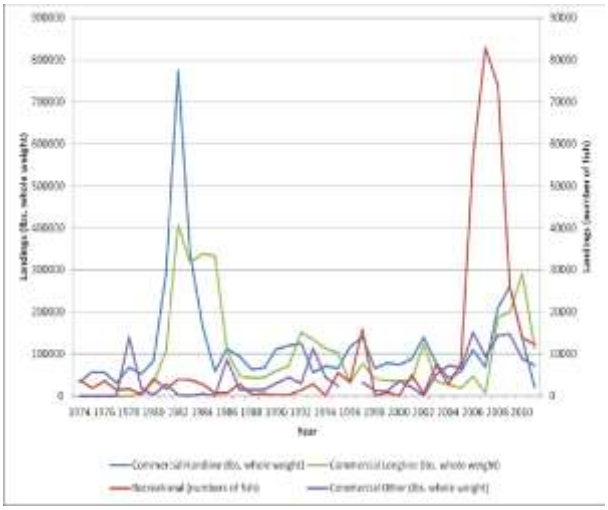


Figure 3.2.1. Estimated total biomass (metric tons) at start of year (SEDAR 32 2013).

The following description of the blueline landings is from the SEDAR 32 assessment report: Commercial handline landings peaked in the early 1980s, declined and remained relatively stable throughout the 1990s and early 2000s, and increased again in the mid to late 2000s **(Figure 3.2.2)**. Commercial longline landings followed a similar trend with a peak in the early 1980s, a decline in the mid- late 1980s followed by relatively stable landings during the 1990s and early 2000s, and a second peak in the late 2000s. Commercial 'other' landings have remained relatively low and stable throughout the assessment period with a small increase seen in the 2000s. For the assessment, commercial 'other' landings were grouped with commercial handline landings. Commercial discards were provided from 1993-2011 and made up a very small proportion of the overall removals.



The observed recreational landings remained relatively low throughout the majority of the assessment period with the exception of the mid-2000s. A steep increase in landings occurred in the mid-2000s, peaking in 2007 and was followed by a sharp decline with landings reaching levels more similar to the rest of the time series by 2010. Recreational discards were low throughout the assessment period with the exception of 2007 when recreational discards were estimated to be over 37,000 fish.

Figure 3.2.2. South Atlantic blueline tilefish commercial and recreational landings by fleet. Commercial landings are in lbs of whole weight. Recreational landings are in numbers of fish. (SEDAR 32 2013).

The results of SEDAR 32, utilizing data through 2011, determined the blueline tilefish stock to be **undergoing overfishing** and **to be overfished** according to the definition of MSST that

was current at the time. However, effective November 6, 2014, (79 FR 60379), the blueline tilefish stock is considered **not overfished** based on revisions to the MSST definition in Regulatory Amendment 21 to the Snapper Grouper FMP (SAFMC 2014b).

The South Atlantic Council's Scientific and Statistical Committee (SSC) reviewed the blueline tilefish stock assessment at their October 2013 meeting and approved it as the best available science and usable for management purposes. However, over 2014 and 2015, much discussion took place regarding the appropriateness of projections and recommended fishing levels for blueline tilefish. Refer to **Section 1.6** for details of the recent management history for blueline tilefish (additional management history is provided in **Appendix D**). In September 2015, the South Atlantic Council's SSC recommended setting the ABC at the equilibrium yield at 75%F_{MSY}. The SSC reasoned that "given that the assessment results based on two types of assessment models (BAM and ASPIC) indicated that the stock generally fluctuated around the B_{MSY} and the fact that recent catches remain high, the fishery dependent index appears to have a positive trend, and there was no significant change in the age and size composition of the catch in recent years, the Committee felt that the ABC at equilibrium yield at 75%F_{MSY} is adequate and provides the best option for management. This method has been used in the past, but the SSC recognizes that this recommendation is based on results from the SEDAR 32 stock assessment, which had a very high degree of uncertainty." This value, 224,100 lbs ww, is for blueline tilefish throughout its range along the entire U.S. east coast based on results of the SEDAR 32 (2013) stock assessment. The 224,100 lbs ww was also the ACL contained in the emergency rule issued in April 2014 while the South Atlantic Council developed Amendment 32 to implement fishing levels based on the SEDAR 32 (2013) projections. At the September 2015 South Atlantic Council meeting, the chair of the SSC stated that the recommended ABC was sufficient to prevent overfishing of the blueline tilefish stock.

The Council described the method to measure overfishing of blueline tilefish in Amendment 32 (SAFMC 2014c). NMFS uses both the Maximum Fishing Mortality Threshold (MFMT) and OFL as metrics to determine the overfishing status of blueline tilefish. The OFL was previously defined as the yield at the P*=50%. However, the SSC stated that the stock assessment projections were not usable for management purposes (see **Section 1.5** for a detailed discussion). At the December 2015 Council meeting, the SSC Chairman clarified that the OFL level is the yield when fishing at the maximum sustainable yield (226,500 lbs ww).

Bycatch

See **Sections 4.2.1** and **4.3.1** and the Bycatch Practicability Analysis **(Appendix E)** for detailed descriptions of bycatch when fishing for blueline tilefish.

3.2.1.2 Yellowtail Snapper

Life History

Yellowtail snapper, *Ocyurus chrysurus*, occurs in the Western Atlantic, ranging from Massachusetts to southeastern Brazil, including the Gulf of Mexico and Caribbean Sea, but is most common in the Bahamas, off south Florida, and throughout the Caribbean. Most U.S. landings are from the Florida Keys and southeastern Florida. The yellowtail snapper inhabits waters as deep as 180 m (590 ft), and usually is found well above the bottom (Allen 1985). Muller et al. (2003) state that adults typically inhabit sandy areas near offshore reefs at depths ranging from 10 to 70 m (33-230 ft). Thompson and Munro (1974) indicate that this species is most abundant at depths of 20-40 m (66-131 ft) near the edges of shelves and banks off Jamaica. Juveniles are usually found over back reefs and seagrass beds (Thompson and Munro 1974; Muller et al. 2003). Yellowtail snapper exhibits schooling behavior (Thompson and Munro 1974).

Maximum reported size is 86.3 cm (34.2 in) TL (male) and 4.1 kg (9.1 lbs) (Allen 1985). Maximum age is 17 years (Manooch and Drennon 1987). Natural mortality is estimated at 0.20 with a range of 0.15-0.25 (Muller et al. 2003). There is a truncation in the size and age structure of yellowtail snapper near human population centers.

Yellowtail snapper have separate sexes throughout their lifetime (i.e., they are gonochoristic). Figuerola et al. (1997) estimated size at 50% maturity as 22.4 cm (8.9 in) FL (males) and 24.8 cm (9.8 in) FL (females), based on fishery independent and dependent data collected off Puerto Rico.

Spawning occurs over a protracted period and peaks at different times in different areas. In southeast Florida, spawning occurs during spring and summer with peak spawning in May-July (Grimes 1987, Muller et al. 2003). The spawning season for yellowtail snapper held in captivity was March to October with peak periods in March and July (Soletchnik et al.1989). Spawning may occur year-round in the Bahamas and Caribbean (Grimes 1987). Figuerola et al. (1997) reported that, in the U.S. Caribbean, spawning occurs during February to October, with a peak from April to July. Erdman (1976) reported that 80% of adult yellowtail snapper captured off San Juan spawn during March through May. Spawning occurs in offshore waters (Figuerola et al. 1997; Thompson and Munro 1974) and during the new moon (Figuerola et al. 1997). Large spawning aggregations are reported to occur seasonally off Cuba, the Turks and Caicos, and USVI. A large spawning aggregation occurs during May-July at Riley's Hump near the Dry Tortugas off Key West, Florida (Muller et al. 2003).

Yellowtail snapper are nocturnal predators. Juveniles feed primarily on plankton (Allen 1985; Thompson and Munro 1974). Adults eat a combination of planktonic (Allen 1985), pelagic (Thompson and Munro 1974), and benthic organisms, including fishes, crustaceans, worms, gastropods, and cephalopods (Allen 1985). Bortone and Williams (1986) stated that both juveniles and adults feed on fish, shrimp, and crabs.

Stock Status

A benchmark assessment for yellowtail snapper was conducted by the state of Florida in 2012 with data through 2010 (FWRI 2012). Most of the data sources were simply updated with the additional years of observations available since the SEDAR 3 benchmark (SEDAR 2003). Additional changes made in some sources, such as recreational length measurements, indices, and discards are detailed below. In addition, changes were made in model configuration to address new information, management actions, and improvements in the estimation of assessment uncertainty. Several sensitivity runs were performed to explore the model's sensitivity to changes in the release mortality.

The 2012 assessment showed that yellowtail snapper are **not overfished** and **overfishing is not occurring**. The spawning stock biomass (SSB) was over three times higher than the SSB that would produce the maximum sustainable yield, or SSB_{MSY} (335.7% of SSB_{MSY}, **Table 3.2.2**). Fishing mortality (F) at the time of the assessment was well below F_{MSY} (18.9% of F_{MSY}, **Table 3.2.2**). Stock biomass showed a period of stability until the mid-1990s followed by an increasing trend that continued into recent years (**Figure 3.2.3**). Also, there was no trend in the level of recruitment entering the stock, but there was a large amount of year-to-year variation (**Figure 3.2.4**). The fact that the population continued to grow despite large fluctuations in recruitment, coupled with the fact that F was only 19% of F_{MSY} and SSB was over three times higher than SSB_{MSY}, suggests that recruitment was not being affected by stock size or fishing pressure during the assessment period, but by variations in environmental factors. These diagnostics suggest that the stock, as of the date of the assessment, was being sustainably harvested and that the rate of exploitation and total take could increase without detriment to the stock.

Table 3.2.2. Management parameters from the 2012 benchmark assessment for yellowtail snapper. Values are given for maximum sustainable yield (MSY), the fishing mortality at MSY (F_{MSY}), the fishing mortality from the terminal year of the assessment (F_{2010}), spawning stock biomass at MSY (SSB_{MSY}), the minimum stock size threshold (MSST), and the spawning stock biomass from the terminal year of the assessment (SSB_{2010}).

Parameter	Value
F_{MSY}	0.24
F_{2010}	0.0454
SSB_{MSY} (mt)*	3,072
MSST (mt)	2,488
SSB_{2010} (mt)	10,311
MSY (mt)	2,088

* The value of SSB_{MSY} given here is calculated using the original proxy value of MSY, which is 30% of the spawning potential ratio and has a value of 1,700 mt. The estimated empirical value of SSB_{MSY} was not available in the assessment report.

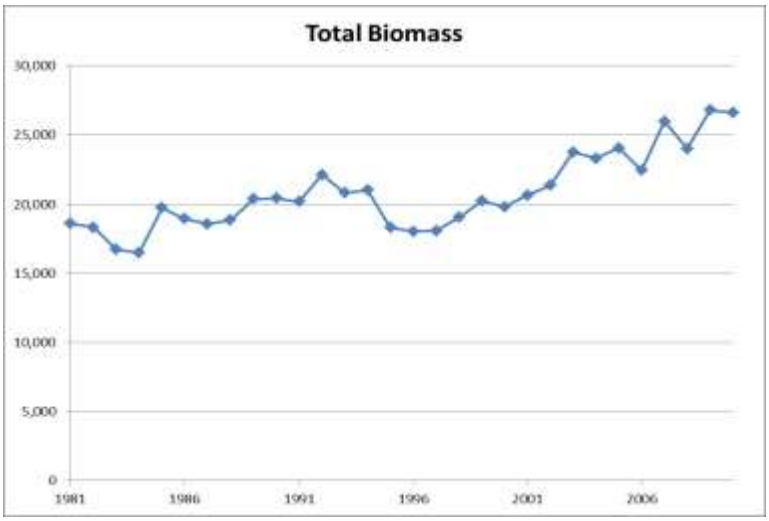


Figure 3.2.3. Total biomass of yellowtail snapper in metric tons. Data are from the 2012 assessment report for yellowtail snapper, Florida Fish and Wildlife Conservation Commission.

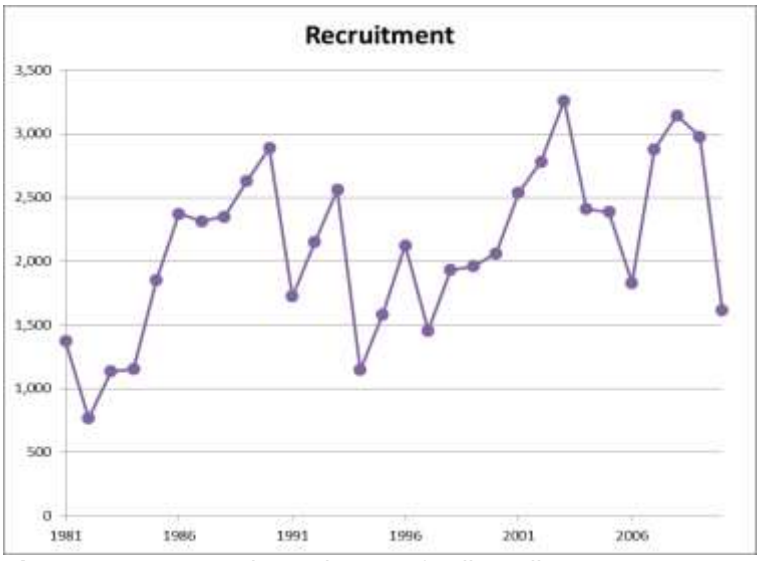


Figure 3.2.4. Annual recruitment of yellowtail snapper expressed as biomass of age 1 fish in metric tons. Data are from the 2012 assessment report for yellowtail snapper, Florida Fish and Wildlife Conservation Commission.

Bycatch

See the Bycatch Practicability Analysis **(Appendix E)** for detailed descriptions of bycatch when fishing for yellowtail snapper.

3.2.1.3 Black Sea Bass

Life History

Black sea bass, *Centropristis striata*, occur in the Western Atlantic, from Maine to northeastern Florida, and in the eastern Gulf of Mexico. The species can be found in extreme south Florida during cold winters (Robins and Ray 1986). Separate populations were reported to exist to the north and south of Cape Hatteras, North Carolina (Wenner et al. 1986). This species is common around rock jetties and on rocky bottoms in shallow water (Robins and Ray 1986) at depths from 2-120 m (7-394 ft). Most adults occur at depths from 20-60 m (66-197 ft) (Vaughan et al. 1995).

Maximum reported size is 66.0 cm (26.1 in) TL and 3.6 kg (7.9 lbs) (McGovern et al. 2002). The minimum size and age of maturity for females studied off the southeastern U.S. coast is 10 cm (3.6 in) SL and age 0. All females are mature by 18 cm (7.1 in) SL and age 3 (McGovern et al. 2002). Wenner et al. (1986) reported that spawning occurs from March through May in the South Atlantic Bight. McGovern et al. (2002) indicated that black sea bass females are in spawning condition during March-July, with a peak during March through May (McGovern et al. 2002). Some spawning also occurs during September and November. Spawning takes place in the evening (McGovern et al. 2002). Black sea bass change sex from female to male (protogyny). McGovern et al. (2002) noted that the size at maturity and the size at transition of black sea bass was smaller in the 1990s than during the early 1980s. Black sea bass appear to compensate for the loss of larger males by changing sex at smaller sizes and younger ages.

In the eastern Gulf of Mexico and off North Carolina, females dominate the first 5-year classes. Individuals over the age of 5 are more commonly males. Black sea bass live for at least 10 years. The diet of this species is generally composed of shrimp, crab, and fish (Sedberry 1988). Sedberry (1988) indicated that black sea bass consume primarily amphipods, decapods, and fishes off the Southeastern United States. Smaller black sea bass ate more small crustaceans and larger individuals fed more on decapods and fishes.

Stock Status

An update to the black sea bass assessment was conducted in 2013 with data through 2012. Most of the data sources were simply updated with the 2 additional years of observations available since SEDAR 25 (2011) benchmark assessment that contained data through 2010. Additional changes were made in some sources, such as recreational catch records, indices, and discards. In addition, some datasets were unable to be updated due to management actions, regulations, and data availability issues.

The SEDAR 25 Update (2013) concluded that black sea bass are **not overfished** and **overfishing is not occurring**. The stock is very close to B_{MSY} (B_{2012}/B_{MSY}=0.96) and the SSB in 2012 is just above SSB_{MSY} (SSB_{2012}/SSB_{MSY}=1.032, **Table 3.2.3**). SSB in 2012 was estimated to be above $SSB_{MSY,}$ indicating that the stock is rebuilt. Spawning stock biomass decreased

significantly from the beginning of the assessment period, dropping below SSB_{MSY} in 1989, until finally stabilizing and remaining at a low level from 1994-2007 (**Figure 3.2.5** in red). The SSB has been increasing consistently since 2008, crossing SSB_{MSY} in the terminal year of the assessment. Current fishing mortality (F) is well below F_{MSY} ($F_{Current}/F_{MSY}$=0.659, **Table 3.2.3**). The trend in F shows a rapid increase from the late-1970s until 1988, when it surpassed F_{MSY} by a significant amount (**Figure 3.2.5** in blue). F remained above F_{MSY}, with large inter-annual variability, until it dropped below F_{MSY} in 2011.

There were several concerns addressed by the assessment scientists, all related to the final estimate of SSB. The MCB runs indicate a high level of uncertainty around the terminal estimate of SSB. Approximately 32% of the MCB runs indicate that the stock is still below SSB_{MSY}. Some of the increased uncertainty in these terminal year estimates concerns the use of a geometric mean of past landings and discards in the recreational sector to estimate the 2012 landings and discards. The other concern involves the estimates of recruitment (R) in the model. The increasing trend in biomass is dependent on the estimate of a strong year class in 2010. The conclusion that the stock is rebuilt is also critically dependent on the estimate of this 2010 year class. However, there is a high level of uncertainty surrounding this estimate of R in 2010. The issue is that the fish do not appear in the age samples until age 2 and the estimates of the composition of age 2 fish from this year class do not agree well with respect to the strength of this year class. In addition, R has declined in the last 2 years of the assessment and shows a cyclical pattern throughout the time series (**Figure 3.2.6**). The pattern shows a good year class followed by several smaller year classes. If we did have a strong year class in 2010, there may not be another one for several years or more.

Table 3.2.3. Benchmarks and status parameters estimated in the 2013 update to SEDAR 25 for black sea bass.
M is the average Lorenzen natural mortality, $F_{Current}$ is the geometric mean of F_{2011} and F_{2012}, F_{MSY} is the fishing mortality that produces MSY, SSB_{2012} is the estimated spawning stock biomass in 2012, SSB_{MSY} is the SSB when the stock is at MSY equilibrium, MSST is the minimum stock size threshold, B_{MSY} is the stock biomass when the stock is at MSY equilibrium, R_{MSY} is the expected number of age-0 fish when the stock is at MSY equilibrium, D_{MSY} is the expected dead discards when the stock is at MSY equilibrium, and MSY is the maximum sustainable yield. Data are from the 2013 assessment update report for black sea bass.

Quantity	Units	Estimate
M	per year	0.38
$F_{current}$	per year	0.402
F_{MSY}	per year	0.61
SSB_{2012}	1E10 eggs	265
SSB_{MSY}	1E10 eggs	256
MSST	1E10 eggs	159
B_{MSY}	1,000 lbs	12,383
R_{MSY}	1,000 age-0 fish	35,843
D_{MSY}	1,000 fish	288
MSY	1,000 lbs	1,780
SSB_{2012}/SSB_{MSY}	-	1.032
SSB_{2012}/MSST	-	1.66
$F_{current}/F_{MSY}$	-	0.659

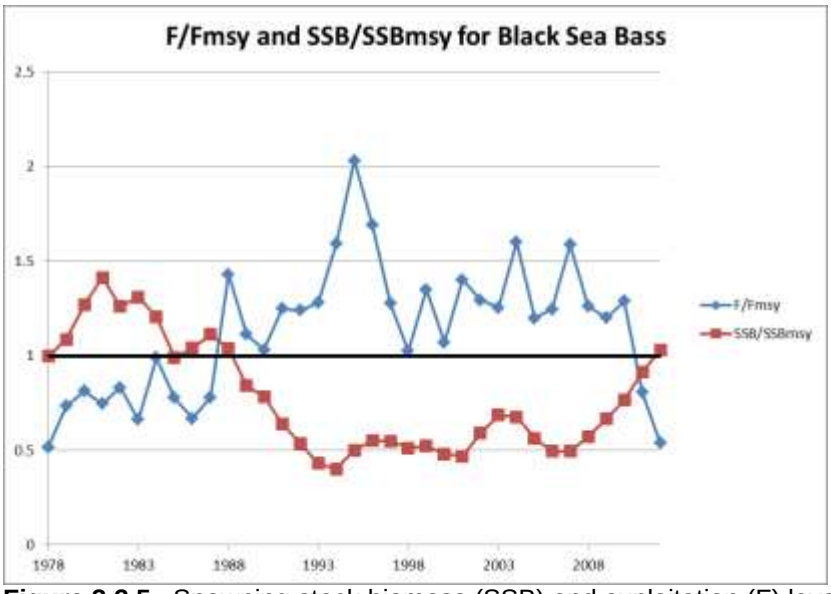


Figure 3.2.5. Spawning stock biomass (SSB) and exploitation (F) levels relative to expected conditions of the black sea bass stock at MSY. Relative biomass is depicted by SSB/SSB_{MSY} and exploitation by F/F_{MSY}. The index line at 1 represents MSY conditions. Data are from the 2013 assessment update report for black sea bass.

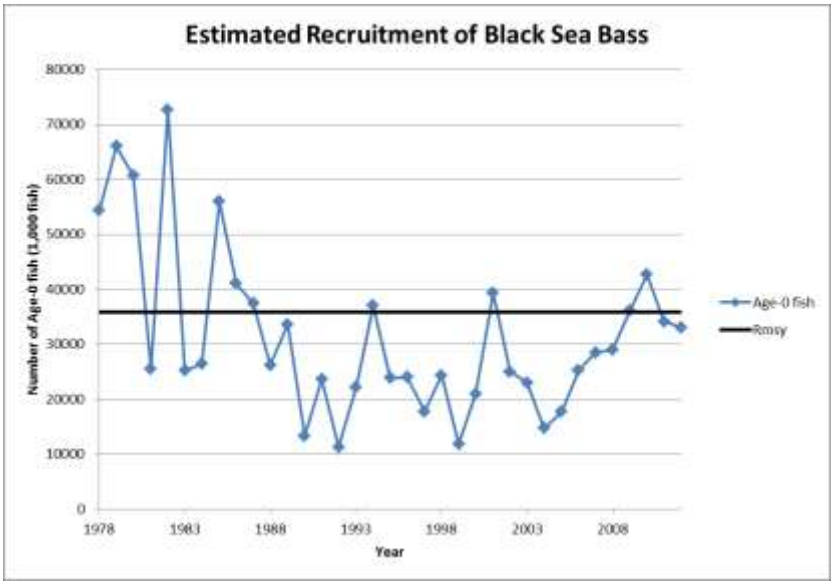


Figure 3.2.6. Estimated annual recruitment and expected recruitment at MSY conditions for black sea bass in number of age-0 fish. Data are from the 2013 assessment update report for black sea bass.

The SSC reviewed the 2013 update of the black sea bass assessment at their April 9-11, 2013 meeting. The SSC recommended that the update assessment be considered best available science, and agreed that the assessment findings are useful for providing fishing level recommendations. Based on both the deterministic results of the base run and probabilistic runs incorporating assessment uncertainty, the stock has rebuilt ($SSB>SSB_{MSY}$) and is no longer experiencing overfishing ($F<F_{MSY}$). Applying the ABC control rule resulted in an adjustment of 10% for assessment uncertainty, providing a P* of 40%. Projection runs incorporating assessment uncertainty and covering the period 2013-2015 were used to provide ABC and OFL recommendations. Recommended OFL is based on the projection runs at 50% chance of overfishing occurring (P* = 50%), and ABC is based on the projection having a 40% chance of overfishing occurring (P* = 40%). The SSC provided OFL and ABC values for 3 years and requested that an assessment update be available in time to provide ABC and OFL recommendations for 2016 and beyond.

The SSC noted that estimates of ABC over the next few years exceed the equilibrium estimates of MSY from the base run. This is addressed in the assessment report, and is largely due to recent recruitment being higher than expected average recruitment and a stock biomass that is slightly greater than the biomass expected at MSY conditions. The sustainability of ABCs above equilibrium MSY will depend upon future recruitment conditions.

Bycatch

See the Bycatch Practicability Analysis **(Appendix E)** for detailed descriptions of bycatch when fishing for black sea bass.

3.2.2 Other Species Affected

For details on the life histories and ecology of co-occurring species, the reader is referred to Volume II of the Fishery Ecosystem Plan (SAFMC 2009c) available at: http://www.safmc.net/ecosystem-management/fishery-ecosystem-plan-1.

3.2.3 The Stock Assessment Process

The Southeast Data, Assessment, and Review (SEDAR) process is a cooperative Fishery Management Council initiative to improve the quality and reliability of fishery stock assessments in the South Atlantic, Gulf of Mexico, and U.S. Caribbean. The Caribbean, Gulf of Mexico, and South Atlantic Fishery Management Councils manage SEDAR in coordination with the National Marine Fisheries Service (NMFS) and the Atlantic and Gulf States Marine Fisheries Commissions. SEDAR seeks improvements in the scientific quality of

stock assessments, constituent and stakeholder participation in assessment development, transparency in the assessment process, and a rigorous and independent scientific review of completed stock assessments.

SEDAR is organized around three workshops. First is the Data Workshop, during which fisheries monitoring and life history data are reviewed and compiled. Second is the Assessment Workshop, which may be conducted via a workshop and several webinars, during which assessment models are developed and population parameters are estimated using the information provided from the Data Workshop. Third and final is the Review Workshop, during which independent experts review the input data, assessment methods, and assessment products. The completed assessment, including the reports of all three workshops and all supporting documentation, are then forwarded to the South Atlantic Council's Scientific and Statistical Committee (SSC). The SSC considers whether the assessment represents the best available science and develops fishing level recommendations for South Atlantic Council consideration.

SEDAR workshops are public meetings organized by SEDAR. Workshop participants appointed by the lead Council are drawn from state and federal agencies, non-government organizations, Council members, Council advisors, and the fishing industry with a goal of including a broad range of disciplines and perspectives. All participants are expected to contribute to this scientific process by preparing working papers, contributing data, providing assessment analyses, evaluating and discussing information presented, and completing the workshop report.

3.2.4 Protected Species

There are 44 species, or distinct population segments (DPSs) of species, protected by NMFS that may occur in the exclusive economic zone (EEZ) of the South Atlantic Region. Thirty-one of these species are marine mammals protected under the Marine Mammal Protection Act (MMPA) (Wynne and Schwartz 1999; Waring et al. 2013). The MMPA requires that each commercial fishery be classified by the number of marine mammals it seriously injures or kills. NMFS's List of Fisheries (LOF) classifies U.S. commercial fisheries into three categories based on the number of incidental mortality or serious injury they cause to marine mammals. More information about the LOF and the classification process can be found at: http://www.nmfs.noaa.gov/pr/interactions/lof/.

Six of the marine mammal species (sperm, sei, fin, blue, humpback, and North Atlantic right whales) protected by the MMPA that may occur in the EEZ of the South Atlantic Region , are also listed as endangered under the Endangered Species Act (ESA) of 1973, as amended. In addition to those six marine mammals, five species of sea turtles (green, hawksbill, Kemp's ridley, leatherback, and loggerhead); the smalltooth sawfish; five DPSs of Atlantic sturgeon; and seven coral species (elkhorn, staghorn, rough cactus, pillar, lobed star, mountainous star, and boulder star) are also protected under the ESA and may occur in the EEZ of the South Atlantic Region. Portions of designated critical habitat for North Atlantic right whales, the Northwest

Atlantic (NWA) DPS of loggerhead sea turtles, and *Acropora* corals occur within the South Atlantic Council's jurisdiction. NMFS has conducted specific analyses ("Section 7 consultations") to evaluate the potential adverse effects from the South Atlantic Snapper Grouper Fishery on species protected under the ESA. Summaries of those consultations and their determination are in **Appendix C**. Those consultations indicate that of the species listed above, sea turtles and smalltooth sawfish are the only species that the hook-and-line portion of the fishery adversely affects.

3.2.4.1 ESA-Listed Sea Turtles

Green, hawksbill, Kemp's ridley, leatherback, and loggerhead sea turtles are all highly migratory and travel widely throughout the South Atlantic Region. In this section we present 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 1997; Lutz et al. 2002).

Green sea turtle hatchlings 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 50 m) 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, a 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. They will enter coastal waters and 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 do not shift during their life cycles. 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 routine 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 eat a wide range of organisms 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 1987). 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).

3.2.4.2 ESA-Listed Marine 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 meters (Bigelow and Schroeder 1953; Adams and Wilson 1995), while mature animals occur in waters in excess of 100 meters (Simpfendorfer pers. comm. 2006). Smalltooth sawfish feed primarily on fish. Mullet, jacks, and ladyfish are believed to be their primary food sources (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 Social and Economic Environment

3.3.1 Economic Description of the Commercial Sector

3.3.1.1 Introduction

In 2012, the U.S. seafood industry, which here includes the commercial marine harvest sector, seafood processors and dealers, seafood wholesalers and distributors, importers, and seafood retailers, supported approximately 1.3 million full- and part-time jobs and generated $141 billion in sales impacts, $39 billion in income impacts, and $59 billion in value added impacts (NMFS FEUS 2012). The commercial harvest sector landed 9.6 billion pounds of finfish and shellfish with a dockside value of $5.1 billion. Over 60% of those landings were made up of ten U.S. key species and species groups. None of those key species or species groups are within the South Atlantic snapper grouper fishery. However, landings and dockside revenue of the snapper grouper fishery rank high in the South Atlantic Region.

The snapper grouper fishery is one of eight fisheries managed by the South Atlantic Council: coastal migratory pelagics, coral and live bottom habitat, dolphin and wahoo, golden crab, shrimp, snapper grouper, spiny lobster, and *Sargassum*. Three of the eight managed fisheries are comprised of finfish (coastal migratory pelagics, dolphin and wahoo, and snapper grouper) and three are shellfish (golden crab, shrimp, and spiny lobster). The snapper grouper fishery is the South Atlantic Council's only managed fishery with overfished stocks. According to the National Marine Fisheries Service (NMFS) 2nd Quarter 2015 Update on stock status for Fish Stock Sustainability Index (FSSI) stocks, 3 stocks within the snapper grouper fishery were experiencing overfishing (blueline tilefish, hogfish Southeast Florida, red snapper, speckled hind, and warsaw grouper) and four were being overfished (hogfish Southeast Florida, red porgy, red snapper, and snowy grouper).

Over the 5-year period from 2008 through 2012, total commercial landings of the above six finfish and shellfish fisheries in the South Atlantic Region (NC, SC, GA, and Florida's East Coast) represented approximately 36% of all commercial landings by weight and 35% by dockside revenue (**Table 3.3.1**). The shrimp fishery (brown, pink, rock, and white) ranked first in commercial landings by both weight and dockside revenue among the managed fisheries. From 2008 through 2012, shrimp accounted for approximately 21% of all commercial landings in the region by weight and 22% by dockside revenue. Landings of snapper grouper accounted for approximately 5% of commercial landings by weight and 6% by dockside revenue over those five years (**Table 3.3.1**). Among the six finfish and shellfish fisheries, the commercial snapper grouper fishery ranked second by dockside revenue and third by weight during that period.

Table 3.3.1. Total 5-year landings of six managed finfish and shellfish fisheries and non-managed species (2008 – 2012), by weight and value.

Managed Fishery	Lbs ww	% Lbs ww	Dollars	% Dollars
Coastal Migratory Pelagics	40,396,918	8.15%	$54,496,297	5.32%
Dolphin & Wahoo	2,823,539	0.57%	$5,662,226	0.55%
Golden Crab	2,897,011	0.58%	$5,846,115	0.57%
Shrimp	105,105,122	21.20%	$220,671,417	21.54%
Snapper Grouper	25,423,713	5.13%	$60,898,257	5.94%
Spiny Lobster	2,101,550	0.42%	$12,156,595	1.19%
Sub-Total	178,747,853	36.05%	$359,730,907	35.11%
Non-managed species	317,098,788	63.95%	$664,965,517	64.89%
Total	**495,846,641**	**100.00%**	**$1,024,696,424**	**100.00%**

Source: NMFS ALS database, confidential landings excluded.

Over the two 5-year periods from 2003 through 2007 and 2008 through 2012, the averages of annual commercial landings of snapper grouper species were approximately 6.79 million pounds whole weight (lbs ww) and 7.29 million lbs ww, respectively (SERO ACL). Although average annual commercial landings were higher in the second 5-year period, the range of annual commercial landings was lower from 2008 through 2012 than from 2003 through 2007 (**Figure 3.3.1**).

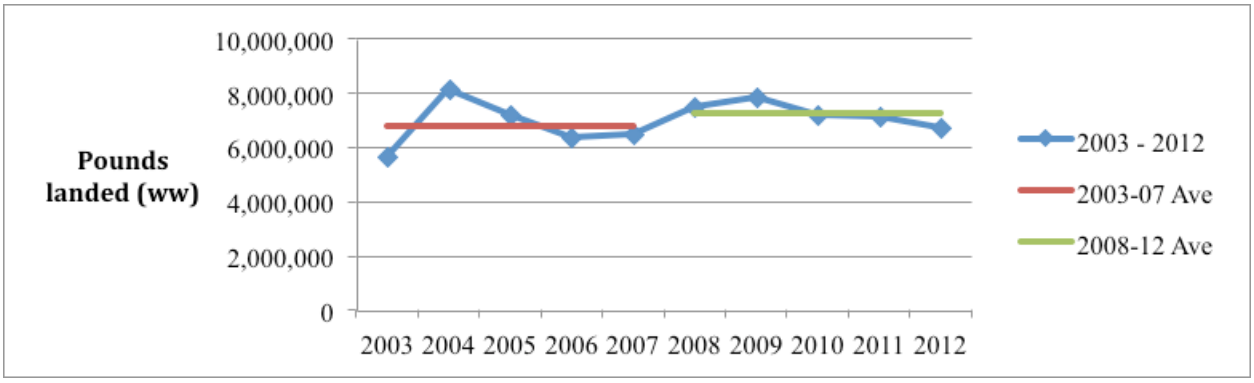


Figure 3.3.1. Annual commercial landings by weight (lbs ww) of snapper grouper species, 2003 – 2012.
Source: SERO ACL.

Any commercial fishing vessel with landings of species within the snapper grouper fishery must have a valid commercial snapper grouper permit, which is a limited access permit for either an unlimited quantity of pounds per trip or no more than 225 pounds per trip. The numbers of both valid unlimited and 225-lbs permits have declined annually since 2008 resulting in increased concentration of the commercial sector of the fishery (**Table 3.3.2**). If the expired but renewable permits as of October 13, 2015, become valid, the numbers of valid permits would be 556 unlimited and 117 225-lbs permits, which would represent increases in the numbers of valid

permits since March 2014. Note that these permits do not allow fishing for wreckfish. To commercially land wreckfish, a vessel must also have a wreckfish permit and wreckfish permits are limited to those with shares of the wreckfish individual transferrable quota (IFQ).

Table 3.3.2. Numbers of valid South Atlantic commercial snapper grouper permits, 2007 - 2015.

Year	Valid permits		Change		% Change	
	Unlimited	225-lbs	Unlimited	225-lbs	Unlimited	225-lbs
2007	695	165				
2008	665	151	-30	-14	-4.32%	-8.48%
2009	640	144	-25	-7	-3.76%	-4.64%
2010	624	139	-16	-5	-2.50%	-3.47%
2011	569	126	-55	-13	-8.81%	-9.35%
2012	558	123	-11	-3	-1.93%	-2.38%
2013	551	121	-7	-2	-1.25%	-1.63%
2014	541	109	-10	-12	-1.81%	-9.92%
2015	**527**	**110**	**-14**	**+1**	**-2.59%**	**+0.91%**

Sources: SAFMC May 22, 2013 (Snapper Grouper Regulatory Amendment 19) for 2007 - 2013 and NMFS SERO PIMS as of March 13, 2014, and October 13, 2015.

The largest drop in the number of valid unlimited permits occurred in 2011. A partial explanation for that drop is that by 2011, there were many in-season closures for snapper grouper species, such as vermilion snapper, golden tilefish, and black sea bass, and longer seasonal closures for grouper species.

Another explanation is the 2-for-1 permit transfer requirement. A vessel owner intending to obtain a commercial snapper grouper unlimited permit from a permit holder who is not in the vessel owner's immediate family must obtain and exchange two such permits for one permit to be issued. NMFS will transfer a single Snapper Grouper Unlimited permit only to the permit holder's immediate family (e.g. mother, father, brother, sister, son, daughter, or spouse). A transferred permit's catch history follows it to the new permit holder or vessel with that permit, which can affect the perceived value of a permit.

During the first quarter of 2014, the total number of snapper grouper permits declined by two (**Table 3.3.3**). After a permit expires, it is not valid, but it can be renewed and transferred up to one year after it expires. Two 225-lbs permits were not renewed/transferred during that time. As of October 13, 2015, there were 556 valid and renewable unlimited and 117 valid and renewable 225-lbs permits, representing a loss of 13 unlimited and six 225-lbs permits since March 13, 2014.

Table 3.3.3. Valid and renewable/transferrable South Atlantic commercial snapper grouper permits as of January 30, February 16, and March 13, 2014.

South Atlantic S-G Permits	Unlimited lbs			225-lbs			Total		
	Jan. 30, 2014	Feb. 16, 2014	Mar. 13, 2014	Jan. 30, 2014	Feb. 16, 2014	Mar. 13, 2014	Jan. 30, 2014	Feb. 16, 2014	Mar. 13, 2014
Valid	547	547	541	117	112	109	664	659	650
Renewable/Transferrable	22	22	28	8	12	14	30	34	42
Total	569	569	569	125	124	123	694	693	692

Source: NMFS SERO PIMS.

The largest percentage of commercial snapper grouper permit holders resides in Florida (**Table 3.3.4**). Residents outside the South Atlantic States hold less than 2% of the permits.

Table 3.3.4. Number and percent of valid and renewable/transferable commercial snapper grouper permits by state of residence of permit holder as of February 16, 2014.

State	Unlimited permits		225-lbs permits	
	Number	%	Number	%
FL	394	69.2%	112	90.3%
GA	5	0.9%	0	0.0%
NC	114	20.0%	8	6.5%
SC	49	8.6%	2	1.6%
Other	7	1.2%	2	1.6%
Total	**569**	**100.0%**	**124**	**100.0%**

Source: NMFS SERO PIMS.

The black sea bass pot endorsement program began in 2012, and a commercial vessel with an unlimited snapper-grouper permit may harvest black sea bass using pot gear only if the vessel has a black sea bass pot endorsement. As of October 13, 2015, there were 31 valid and one expired but renewable endorsements.

The US Coast Guard (USCG) documents approximately 30% of the vessels with a 225-lbs limit and 43% of vessels with an unlimited trip permit. USCG documentation is required for all fishing vessels that are five net tons or more. Approximately 81% of the documented vessels with a 225-lbs permit have a USCG hailing port in Florida and 94% of the undocumented vessels with a 225-lbs permit have Florida registration (**Table 3.3.5**). None of the vessels has a hailing port or registration in Georgia, and two have a hailing port/registration outside the South Atlantic States; however, that does not preclude those two vessels from landing catches in the Region. Moreover, vessels with a permit can catch snapper grouper species from the South Atlantic Council's area of jurisdiction and land that catch in states beyond the South Atlantic Region. The average net tonnage of a documented vessel with a 225-lbs permit is approximately 15. Documented vessels with a hailing port in Florida have the highest average net tonnage with 16, followed in turn by North Carolina's documented vessels with an average net tonnage of 13 and South Carolina's with an average of 11 net tons.

Table 3.3.5. Number of documented and undocumented fishing vessels with 225-lbs trip limit permit as of February 16, 2014, by state of hailing port or vessel registration and total net tonnage of documented vessels.

State	Documented				Undocumented		All vessels	
	No. vessels	Total net tonnage	Percent of vessels	Percent of total net tonnage	No. vessels	Percent of vessels	All vessels	Percent all vessels
FL	30	484	81.1%	85.7%	82	94.3%	112	90.3%
NC	4	51	10.8%	9.0%	4	4.6%	8	6.5%
SC	2	21	5.4%	3.7%	0	0.0%	2	1.6%
VA	1	9	2.7%	1.6%	0	0	1	0.8%
NJ	0	0	0.0%	0.0%	1	1.1%	1	0.8%
Total	**37**	**565**	**100.0%**	**100.0%**	**87**	**100.0%**	**124**	**100.0%**

Source: SERO PIMS for vessels with permits and state of vessel registration, NMFS online USCG Vessel Documentation System for net tonnage and hailing port.

Approximately 43% of the vessels with an unlimited trip permit are USCG documented, and approximately 54% of those vessels have a USCG hailing port in Florida. Approximately 78% of the undocumented vessels have Florida registration (**Table 3.3.6**). Three of the documented vessels have a hailing port and four undocumented vessels have registration outside the South Atlantic Region. The average net tonnage of a documented vessel with an unlimited weight permit is approximately 16. Within the South Atlantic States Region, documented vessels with a hailing port in Georgia have the highest average net tonnage with 21, followed in turn by South Carolina's documented vessels with an average net tonnage of 17, North Carolina's with an average of 16, and Florida with an average of 15 net tons.

Table 3.3.6. Number of documented and undocumented fishing vessels with an unlimited weight trip limit permit as of February 16, 2014, by state of hailing port or vessel registration and total net tonnage of documented vessels.

State	Documented				Undocumented		All vessels	
	No. vessels	Total net tonnage	Percent of vessels	Percent of total net tonnage	No. vessels	Percent of vessels	All vessels	Percent all vessels
FL	140	2,111	57.1%	53.6%	254	78.4%	394	69.2%
GA	5	107	2.0%	2.7%	0	0.0%	5	0.9%
MI	0	0	0.0%	0.0%	1	0.3%	1	0.2%
NC	58	935	23.7%	23.8%	56	17.3%	114	20.0%
NJ	1	81	0.4%	2.1%	1	0.3%	2	0.4%
NY	0	0	0.0%	0.0%	1	0.3%	1	0.2%
OH	0	0	0.0%	0.0%	1	0.3%	1	0.2%
SC	39	675	15.9%	17.1%	10	3.1%	49	8.6%
VA	2	27	0.8%	0.7%	0	0.0%	2	0.4%
Total	**245**	**3,936**	**100.0%**	**100.0%**	**324**	**100.0%**	**569**	**100.0%**

Source: SERO PIMS for vessels with permits and state of vessel registration, NMFS online USCG Vessel Documentation System for net tonnage and hailing port.

3.3.1.2 Groups within the snapper grouper fishery

The number of species within the snapper grouper fishery management plan (FMP) varied considerably from 2008 through 2012. There were 73 until 2011, then 60 in 2012. Thirteen species were removed from the FMP: black margate, bluestriped grunt, crevalle jack, French grunt, grass porgy, porkfish, puddingwife, queen triggerfish, sheepshead, smallmouth grunt, Spanish grunt, tiger grouper, and yellow jack. In 2013, blue runner was removed. Consequently, there are presently 59 species within the FMP. Six of the 59 species are designated as ecosystem component species (cottonwick, bank sea bass, rock sea bass, longspine porgy, ocean triggerfish, and schoolmaster) and, as such, there are no federal regulations that directly affect them.

The snapper grouper fishery can be divided into 11 species groups: sea basses (3 species), groupers (17 species), wreckfish (1 species), snappers (14 species), porgies (7 species), grunts (5 species), jacks (5 species), tilefishes (3 species), triggerfishes (2 species), wrasses (1 species), spadefishes (1 species), and the six ecosystem component species. The six ecosystem component species are found within the sea basses, grunts, jacks, snappers, and triggerfish groups.

The snappers group ranked first in commercial landings by weight and the combined sea basses and groupers group ranked first by dockside revenue in the South Atlantic Region. During the 5-year period from 2008 through 2012, total landings of the snapper species group represented approximately 26% of all snapper grouper commercial landings by weight and approximately 32% by revenue (**Table 3.3.7**). Groupers accounted for approximately 33% of commercial landings by revenue and 23% by weight. Sea basses ranked fifth by weight, but fourth by revenue.

Table 3.3.7. Percent of snapper grouper commercial landings (lbs ww and dollars) by species group, 5-year period from 2008 – 2012.

Species Groups	Percent Total Lbs ww	Percent of Total Dollars
Groupers	22.83%	33.47%
Sea Basses	11.86%	10.81%
Wreckfish	<1%	<1%
Snappers	25.93%	31.81%
Porgies	7.26%	3.19%
Grunts	0.62%	0.23%
Jacks	15.02%	5.83%
Tilefishes	15.18%	13.61%
Triggerfishes	0.03%	0.02%
Wrasses	0.74%	0.95%
Spadefishes	0.53%	0.08%
Total	**100.00%**	**100.00%**

Source: NMFS ALS, excluding confidential data.

The 59 species of the snapper grouper fishery comprise 28 species and complexes, each subject to its own ACLs. The actions of this regulatory amendment concern fishing for blueline tilefish, yellowtail snapper, and black sea bass. Consequently, the remainder of this section focuses exclusively on commercial fishing for these three species. Additional information on commercial landings and fishing for the snapper grouper fishery as a whole or the other groups within it can be found in previous amendments [Amendment 13C (SAFMC 2006), Amendment 15A (SAFMC 2008a), Amendment 15B (SAFMC 2008b), Amendment 16 (SAFMC 2009a), Regulatory Amendment 9 (SAFMC 2011a), and Comprehensive ACL Amendment for the South Atlantic Region (SAFMC 2011c)] and is incorporated herein by reference.

3.3.1.3 Blueline Tilefish

As shown in **Figure 3.3.2** below, commercial landings of blueline tilefish greatly increased after 2007. An explanation for the increase after 2007 can be found in the 100-lbs trip limit placed on commercial snowy grouper landings established in 2008. Prior to the snowy grouper trip limit, blueline tilefish was primarily bycatch, caught while targeting the higher priced snowy grouper. Now, once commercial fishing vessels reach the trip limit for snowy grouper, they

harvest blueline tilefish, which is found in more areas than snowy grouper, and which prior to 2015 had no trip limit. The switch of blueline tilefish from bycatch to targeted species is illustrated in the relationship of dockside revenues of blueline tilefish and snowy grouper from 2003 through 2012 (**Figure 3.3.3**). This is not to suggest, however, that trips that land blueline tilefish target or land only snowy grouper and blueline tilefish. Note that the drop in landings in 2011 occurred when fishing for blueline tilefish and five other species in federal waters seaward of 240 feet deep was prohibited from February 1, 2011, until May 10, 2012.

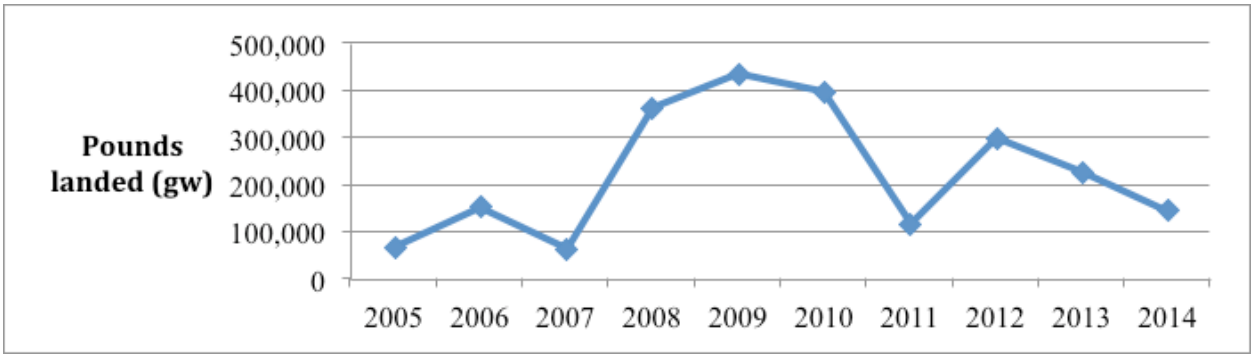


Figure 3.3.2. Annual commercial landings (lbs gw) of blueline tilefish, 2005 – 2014.
Source: SEFSC Economic Query System

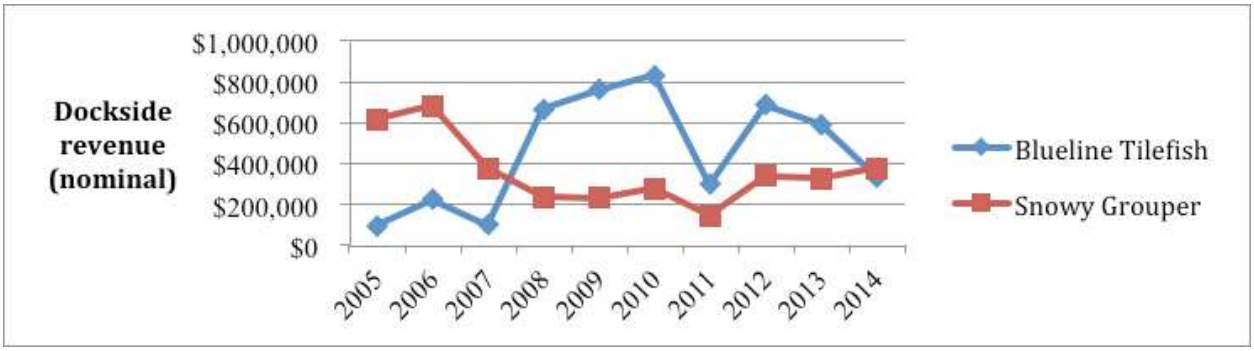


Figure 3.3.3. Annual dockside revenue from blueline tilefish and snowy grouper commercial landings, 2005 – 2014.
Source: SEFSC Economic Query System

The fishing year for blueline tilefish runs from January 1 to December 31 each year, and commercial landings of the species vary seasonally. Commercial landings peak in the summer months as shown in **Figure 3.3.4**. However, since the separation of blueline tilefish from the Deepwater Complex, the commercial season for blueline tilefish has ended earlier: in June 2014 and in April 2015 when landings reached the species ACL. Note that in 2012, there were no commercial landings from October through December because the season closed in September when landings for the Deepwater Complex reached its commercial ACL and blueline tilefish was part of the complex at that time.

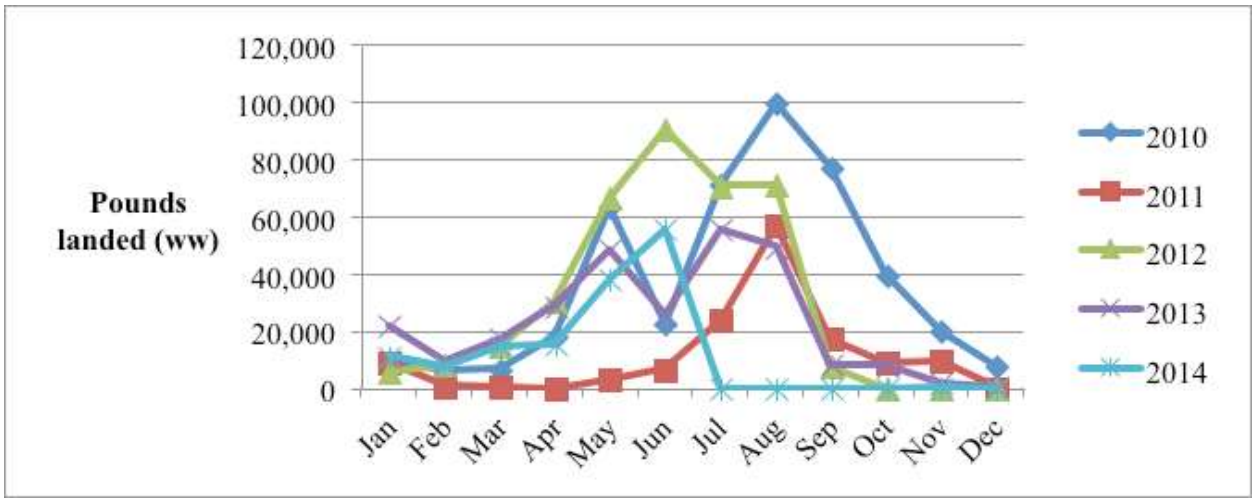


Figure 3.3.4. Annual commercial landings of blueline tilefish in the South Atlantic Region by month, 2010 – 2014.
Source: NMFS ACL data.

When blueline tilefish was part of the Deepwater Complex, commercial landings of blueline tilefish were limited by the complex's commercial ACL, which in 2012 and 2013 was 378,667 and 309,195 lbs ww, respectively. After the removal of blueline tilefish from the complex in 2014, the commercial ACL for the species was set at 112,207 lbs ww and the season closed on June 23, 2014. Commercial landings reached approximately 142% of the commercial ACL that year.

In 2015, the commercial ACL was set at 17,841 lbs ww, and the commercial fishing season closed on April 7. Preliminary commercial landings data as of September 21, 2015, indicate a total of 68,547 pounds gutted weight [lbs gw] (76,773 lbs ww) of blueline tilefish was landed, which is an overage of 58,932 lbs ww. Under current regulation, the commercial ACL for 2016 would be reduced by the amount of the commercial ACL overage if commercial landings exceed the commercial ACL, the total ACL is exceeded, and blueline tilefish stock is overfished. Although commercial landings exceeded both the commercial ACL and the total ACL (35,632 lbs ww) in 2015, the blueline tilefish stock is not overfished. Therefore, the 2016 commercial ACL will not be reduced and is set to increase to 26,766 lbs ww for 2016, to 35,785 lbs ww for 2017, and 44,048 lbs ww for 2018 and thereafter.

Since March 2015, there has been a commercial trip limit of 100 lbs gw; however, blueline tilefish must be landed with head and fins intact. Prior to that, there was no commercial trip limit for blueline tilefish; however, a vessel with a 225-lbs snapper-grouper permit was limited to no more than 225 lbs ww of blueline tilefish per trip. From 2010 through 2014, an average of approximately 33% of trips that landed the species landed more than 100 lbs gw (**Table 3.3.8**). Moreover, an average of approximately 33% of the vessels that landed blueline tilefish had at least one trip that landed over 100 lbs gw (**Table 3.3.9**).

Table 3.3.8. Number of trips and percentage of trips with blueline tilefish landings by lbs gw landed, 2010 - 2014.

Year	Number of Trips by Pounds (gw) of Blueline Tilefish Landed					
	1 to 100	101 - 200	201 – 300	Over 300	Total	% Over 100
2010	434	45	18	208	705	38.4%
2011	216	16	11	77	320	32.5%
2012	382	26	11	118	537	28.9%
2013	440	39	23	138	640	31.3%
2014	350	41	28	95	514	31.9%
Average	**364**	**33**	**18**	**127**	**543**	**32.6%**

Source: SEFSC Economic Query System.

Table 3.3.9. Number of vessels and percentage of vessels with blueline tilefish landings by lbs gw landed per trip, 2010 - 2014.

Year	Number of Vessels by Most Pounds Landed of Blueline Tilefish					
	1 to 100	101 - 200	201 - 300	Over 300	Total	% Over 100
2010	92	10	8	21	131	29.8%
2011	68	6	5	19	98	30.6%
2012	90	13	6	16	125	28.0%
2013	83	11	10	25	129	35.7%
2014	77	21	7	29	134	42.5%
Average	**82**	**12**	**7**	**22**	**123**	**33.3%**

Source: SEFSC Economic Query System.

An average of 123 vessels made 543 trips and landed 236,760 lbs gw of blueline tilefish (BLT) with a dockside value of $575,075 (2014 $) annually from 2010 through 2014 (**Table 3.3.10**). The average annual price (2014 $) ranged from $2.28 to $2.69 per pound gw. Collectively, those 123 vessels had annual dockside revenues of approximately $1.9 million ($575,075 plus $1,320,713) from their trips that landed blueline tilefish, and blueline tilefish revenues represented approximately 30% of that $1.9 million. Dockside revenue from landings of blueline tilefish during the 5-year period represents an average of approximately 6% of all dockside revenue from all trips made by the 123 vessels. The average annual price (2014 $) per pound for the other species landings during these trips ranged from $2.32 to $3.02.

Table 3.3.10. Numbers of vessels, trips, pounds and dockside revenue (2014 $) from blueline tilefish (BLT) landings and dockside revenue from other species landed during blueline tilefish trip, 2010 - 2014.

Year	No. vessels with BLT landings	Number of trips with BLT landings	Pounds (gw) BLT landed	Dockside Revenue (2014 $) from BLT	Average dockside revenue (2014 $) per vessel	Average dockside revenue (2014 $) per trip	Average price per pound (gw) BLT	Dock Rev. Other Species (2014 $) from BLT trip
2010	131	705	397,165	$907,017	$6,924	$1,287	$2.28	$1,403,653
2011	98	320	117,102	$314,897	$3,213	$984	$2.69	$976,840
2012	125	537	297,237	$711,194	$5,690	$1,324	$2.39	$1,087,420
2013	129	640	227,728	$604,921	$4,689	$945	$2.66	$1,694,445
2014	134	514	144,568	$337,347	$2,518	$656	$2.33	$1,441,207
Ave.	**123**	**543**	**236,760**	**$575,075**	**$4,607**	**$1,039**	**$2.47**	**$1,320,713**

Source: SEFSC Economic Query System.

Annual trips with blueline tilefish landings represent an average of approximately 13% of all trips made by the vessels that had landings of the species during a year (**Table 3.3.11**). Dockside revenue (2014 $) from blueline tilefish represented an average of approximately 19% of the vessels' total annual dockside revenue.

Table 3.3.11. Comparison of number of trips and dockside revenue (2014 $) of trips with and without blueline tilefish (BLT) landings by vessels that had blueline tilefish landings during the year, 2010 - 2014.

Year	Number of trips with BLT landings	Number of trips without BLT landings	Total number of trips by vessels with BLT landings	Percent trips with BLT landings	Dockside Revenue (2014 $) of trips with BLT landings	Dockside revenue (2014 $) of trips without BLT landings	Total dockside revenue (2014 $) of vessels with BLT landings	Percent dockside revenue from trips with BLT landings
2010	705	3,787	4,492	15.69%	$2,097,899	$7,817,000	$9,914,899	21.2%
2011	320	2,976	3,296	9.71%	$1,196,785	$6,330,818	$7,527,604	15.9%
2012	537	3,627	4,164	12.90%	$1,733,922	$7,091,631	$8,825,553	19.7%
2013	640	3,117	3,757	17.03%	$2,245,688	$7,458,564	$9,704,252	23.1%
2014	514	4,244	4,758	10.80%	$1,778,554	$8,317,060	$10,095,614	17.6%
Average	**543**	**3,550**	**4,093**	**13.23%**	**$1,810,570**	**$7,403,015**	**$9,213,584**	**19.5%**

Source: SEFSC Economic Query System.

Figure 3.3.5 compares the average annual dockside revenue (2014 $) per vessel from blueline tilefish versus all species landed by vessels that landed blueline tilefish during the year. Annual dockside revenue from blueline tilefish landings per vessel ranged from $2,518 to $6,924 from 2010 through 2014 and represented from approximately 3% to 9% of the average vessel's annual dockside revenue from all South Atlantic Region landings.

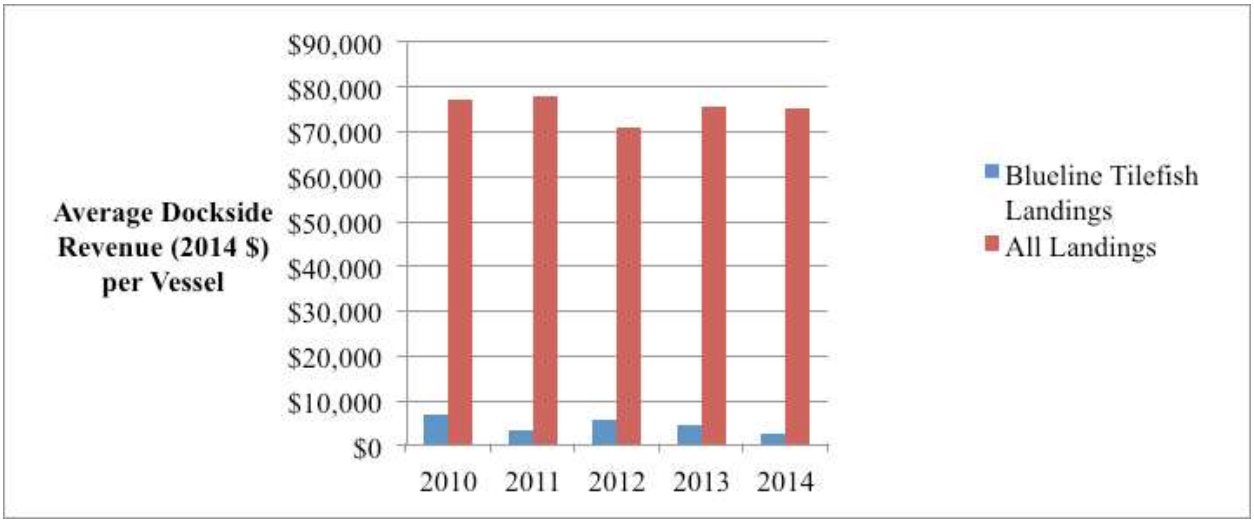


Figure 3.3.5. Average annual dockside revenue per vessel of all vessels that landed blueline tilefish during the year, 2010 - 2014.
Source: SEFSC Economic Query System.

The average annual dockside revenue from commercial landings of blueline tilefish in the South Atlantic Region ($575,075) is estimated to support 84 jobs, generates $5.7 million in sales impacts, $2.959 million in income, and $2.959 million in value added impacts (2014 $).

Hook and line gear is the most popular gear used to commercially harvest blueline tilefish. Over the 10-year period from 2003 through 2012, hand lines and longlines accounted for the majority of commercial blueline tilefish landings (lbs ww) (SERO ACL). The percent of commercial landings from the use of longline gear more than doubled from 2003-2007 to 2008-2012.

Over the 10-year period from 2003 through 2012, commercial landings in North Carolina accounted for approximately 90% of all commercial landings (lbs ww) of blueline tilefish in the South Atlantic Region. South Carolina accounted for approximately 5% as did Georgia and Florida's east coast. In North Carolina, the majority of blueline tilefish are landed in gutted condition.

3.3.1.4 Yellowtail snapper

Over the 10-year period from 2005 through 2014, commercial landings of yellowtail snapper varied from approximately 0.76 million to 1.1 million lbs gw (**Figure 3.3.6**). From 2008 to 2012, there was a generally increasing trend; however, since 2013 there has been a generally decreasing trend. Almost all of the yellowtail snapper landed during this time were harvested in federal waters.

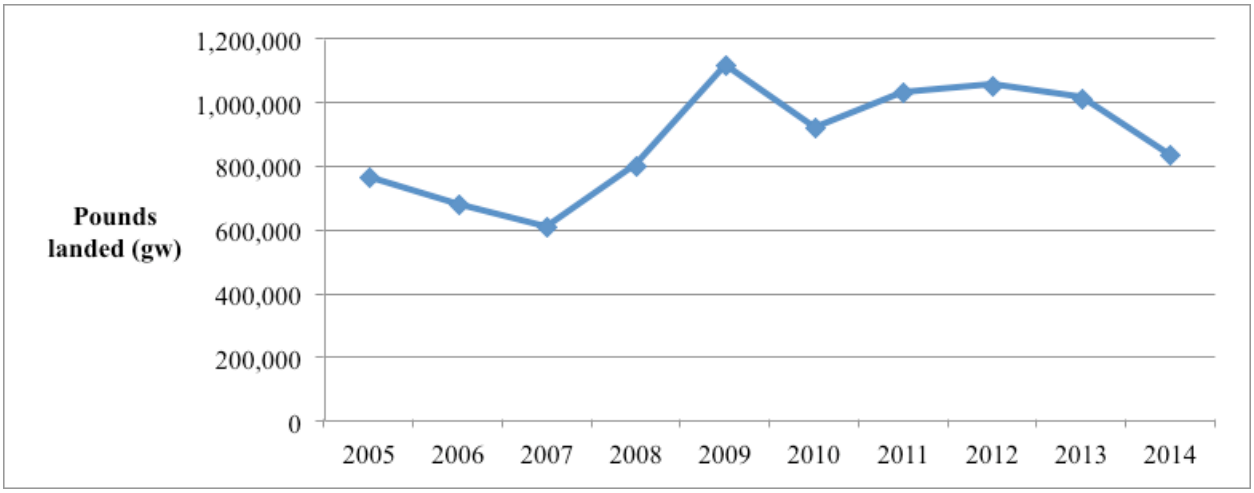


Figure 3.3.6. Annual commercial landings (lbs gw) of yellowtail snapper, 2003 – 2012.
Source: SEFSC Economic Query System.

The fishing year for yellowtail snapper presently runs from January 1 to December 31. Commercial landings of yellowtail snapper from 2010 through 2014 tend to peak in the late spring to early summer as illustrated in **Figure 3.3.7** and more clearly explained as follows.

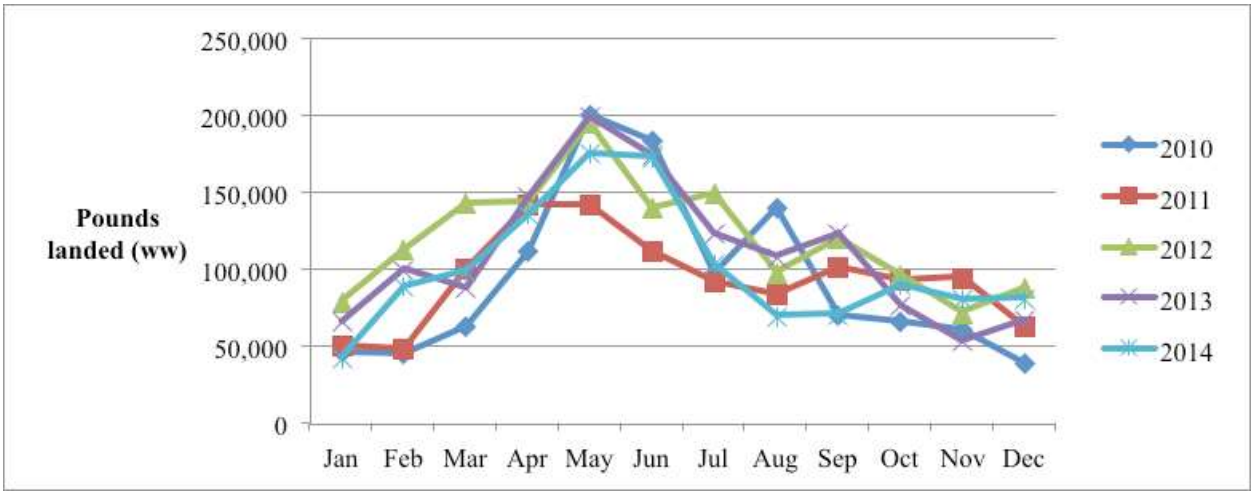


Figure 3.3.7. Annual landings (lbs ww) of yellowtail snapper in the South Atlantic Region by month, 2010 – 2014.
Source: NMFS ACL.

Average monthly commercial landings of yellowtail snapper during the 5-year period ranged from 55,329 to 185,728 lbs ww (**Table 3.3.12**). April through July landings ranked as the top four months by landings.

Table 3.3.12. Average monthly commercial landings of yellowtail snapper in South Atlantic Region.

Month	Ave. Pounds Landed (ww)
Jan	55,329
Feb	89,408
Mar	95,184
Apr	140,033
May	185,728
Jun	168,203
Jul	113,403
Aug	92,610
Sep	97,131
Oct	83,550
Nov	68,977
Dec	72,058
Average	**105,134**

Source: NMFS ACL.

An annual average of 971,710 lbs gw was landed from 2010 through 2014. Since 2012, the commercial ACL for yellowtail snapper has been 1,596,501 lbs ww and from 2012 through

2014, annual landings of the species were less than the commercial ACL. As of October 28, 2015, commercial landings were projected to reach the commercial ACL (1,596,501 lbs ww) and on October 31, 2015, the commercial season closed.

There is not, nor has there been, a commercial trip limit for yellowtail snapper. From 2010 through 2014, an annual average of 256 vessels made 3,798 trips that landed yellowtail snapper, and approximately 87% (3,292) of those trips landed no more than 500 lbs gw of the species (**Tables 3.3.13** and **3.3.14**). Approximately 3% (118) of those annual trips and approximately 9% of those vessels landed more than 1,500 lbs gw in at least one trip.

Table 3.3.13. Number of trips with yellowtail snapper landings by pounds (gw) landed, 2010 - 2014.

Year	Number of Trips by Pounds Landed of Yellowtail Snapper					
	1 to 500	501 - 1,000	1,001 - 1,500	1,501 - 2,000	Over 2,000	Total
2010	3,190	343	104	48	42	3,727
2011	3,403	266	109	60	79	3,917
2012	3,341	258	121	93	69	3,882
2013	2,989	286	165	65	52	3,557
2014	3,536	195	92	45	39	3,907
Average	**3,292**	**270**	**118**	**62**	**56**	**3,798**

Source: SEFSC Economic Query System.

Table 3.3.14. Number of vessels by pounds (gw) landed of yellowtail snapper per trip, 2010 - 2014.

Year	Number of Vessels by Most Pounds Landed of Yellowtail Snapper					
	1 to 500	501 - 1,000	1,001 - 1,500	Over 1,500	Total	% Over 1,000
2010	230	20	14	29	293	14.7%
2011	202	21	18	26	267	16.5%
2012	195	29	6	27	257	12.8%
2013	177	17	20	20	234	17.1%
2014	187	19	13	12	231	10.8%
Average	**198**	**21**	**14**	**23**	**256**	**14.4%**

Source: SEFSC Economic Query System.

An annual average of 971,710 lbs gw of yellowtail snapper with a dockside value of approximately $3.1 million (2014 $) was landed annually from 2010 through 2014 by the above 256 vessels (**Table 3.3.15**). The average annual price (2014 $) ranged from $3.05 to $3.32 per pound (gw). The dockside revenue from all landings of yellowtail snapper during this period represents an average of approximately 77% of all annual dockside revenue from trips with yellowtail snapper landings. The average annual price (2014 $) per pound for the other species landings during these trips ranged from $2.03 to $2.54.

Table 3.3.15. Numbers of vessels, trips, pounds and dockside revenue (2014 $) from yellowtail snapper (YTS) landings and dockside revenue from other species landed during yellowtail snapper trip, 2010 - 2014.

Year	No. vessels with YTS landings	No. trips with YTS landings of trips	Pounds gw landed of YTS	Dockside Revenue (2014 $) from YTS	Ave. dockside revenue (2014 $) per vessel	Ave. dockside revenue (2014 $) per trip	Ave. price per pound gw of YTS	Dock Rev. (2014 $) from other species landed
2010	293	3,727	919,540	$2,806,535	$9,579	$753	$3.05	$1,001,137
2011	267	3,917	1,033,376	$3,419,713	$12,808	$873	$3.31	$831,797
2012	257	3,882	1,054,102	$3,494,356	$13,597	$900	$3.32	$815,441
2013	234	3,557	1,014,589	$3,266,758	$13,961	$918	$3.22	$957,358
2014	231	3,907	836,941	$2,604,768	$11,276	$667	$3.11	$943,395
Ave	**256**	**3,798**	**971,710**	**$3,118,426**	**$12,244**	**$822**	**$3.20**	**$909,826**

Source: SEFSC Economic Query System.

Trips with yellowtail landings represented an average of approximately 49% of all (7,785) annual trips made by the 256 vessels (**Table 3.3.16**). Dockside revenue (2014 $) from yellowtail snapper represented an average of approximately 40% of the vessels' total annual dockside revenue. The average annual price per pound when yellowtail snapper was not landed ranged from $2.32 to $3.17 per lbs gw during the 5-year period.

Table 3.3.16. Comparison of number of trips and dockside revenue (2014 $) of trips with and without yellowtail snapper (YTS) landings by vessels that had yellowtail snapper landings during the year, 2010 - 2014.

Year	Number of trips with YTS landings	Number of trips without YTS landings	Total number of trips by vessels with YTS landings	Percent trips with YTS landings	Dockside Revenue (2014 $) of trips with YTS landings	Dockside revenue (2014 $) of trips without YTS landings	Total dockside revenue of vessels with YTS landings	Percent dockside revenue from trips with YTS landings
2010	3,727	4,433	8,160	45.67%	$3,807,672	$6,483,578	$10,291,249	37.00%
2011	3,917	4,117	8,034	48.76%	$4,251,510	$5,828,157	$10,079,667	42.18%
2012	3,882	3,831	7,713	50.33%	$4,309,797	$5,803,166	$10,112,963	42.62%
2013	3,557	3,201	6,758	52.63%	$4,224,116	$5,086,712	$9,310,828	45.37%
2014	3,907	4,351	8,258	47.31%	$3,548,163	$6,961,760	$10,509,923	33.76%
Ave.	**3,798**	**3,987**	**7,785**	**48.94%**	**$4,028,252**	**$6,032,674**	**$10,060,926**	**40.18%**

Source: SEFSC Economic Query System.

Figure 3.3.8 compares the average annual dockside revenue (2014 $) per vessel from yellowtail snapper versus all species landed by the vessels that landed yellowtail snapper during a year. Annual dockside revenue from yellowtail snapper landings per vessel ranged from $9,585 to $13,969 and represented from approximately 25% to 35% of the average vessel's annual dockside revenue from all landings in the South Atlantic Region.

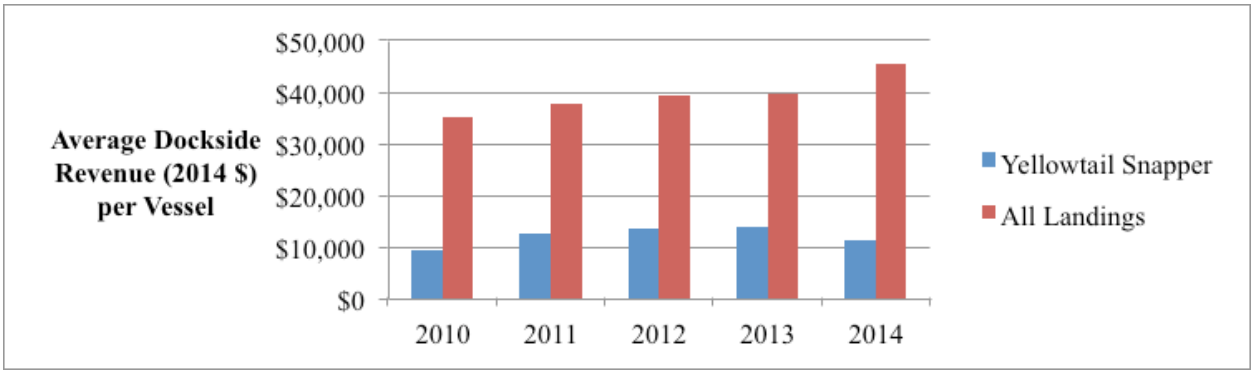


Figure 3.3.8. Average annual dockside revenue per vessel of all vessels that landed yellowtail snapper during the year, 2010 - 2014.
Source: SEFSC Economic Query System.

The average annual dockside revenue from commercial landings of yellowtail snapper in the South Atlantic Region ($3,118,426) is estimated to support 455 jobs, generate approximately $16.0 million in sales impacts, $30.9 million in income, and $11.3 million in value added impacts (2014 $).

Hook and line gear is the most popular gear used to commercially harvest yellowtail snapper. Over the 5-year period from 2010 through 2014, hook and line gear accounted for over 99%, but not all, of commercial landings (lbs ww) of South Atlantic (SERO ACL) yellowtail snapper.

Over the 5-year period from 2010 through 2014, commercial landings of yellowtail snapper in Florida dwarfed those in the other South Atlantic States. Over 99% (almost all) of the landings occurred in Florida (NMFS ACL).

3.3.1.5 Black Sea Bass

Over the 10-year period from 2005 through 2014, commercial landings of black sea bass ranged from approximately 0.31 million to approximately 0.54 million lbs gw (**Figure 3.3.9**). Annual landings have generally declined since peaking in 2009.

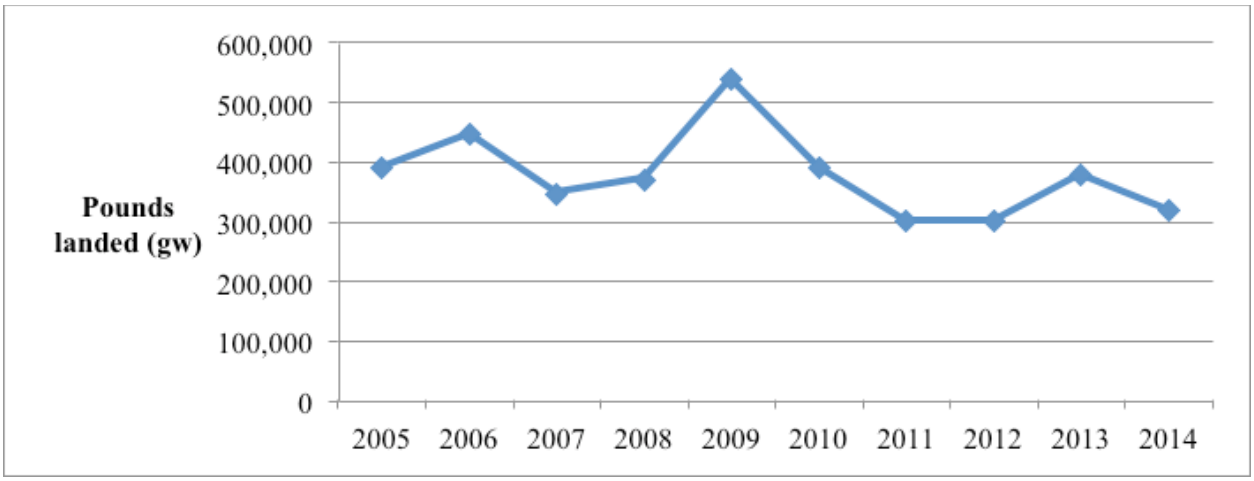


Figure 3.3.9. Annual commercial landings of black sea bass in South Atlantic Region, 2005 – 2014. Source: SEFSC Economic Query System

Monthly commercial landings of black sea bass tend to display a spike at the beginning of the fishing year, which prior to 2015, began on June 1, except in the 2012/2013 fishing year when it began on July 1 (**Figure 3.3.10**). The fishing year ended on May 31 from 2010 to 2014.

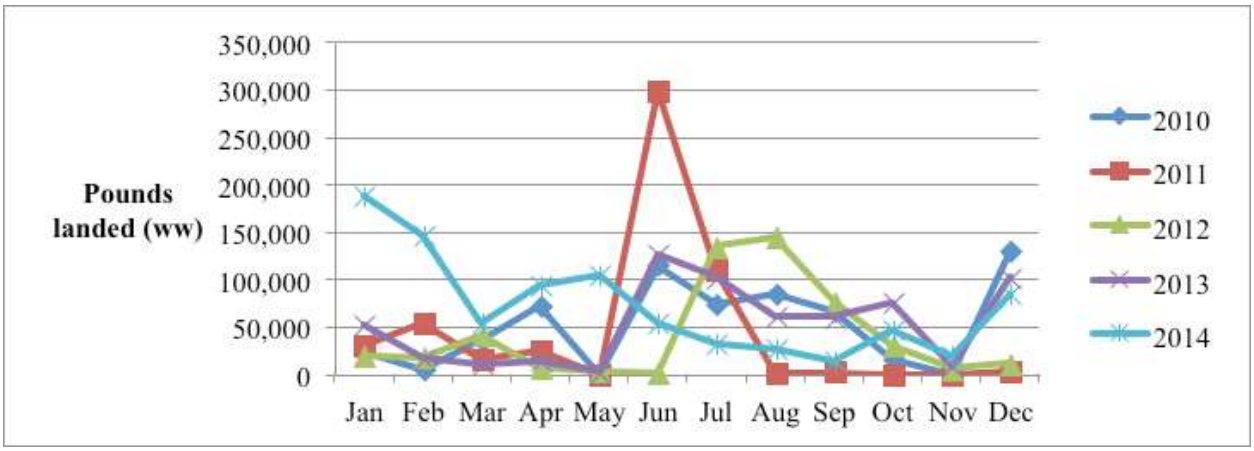


Figure 3.3.10. Annual commercial landings of black sea bass by month, 2010 – 2014. Source: NMFS ACL

From 2010 through 2014, the commercial season closed early in three consecutive seasons. In 2010, the season closed on October 7, 2010, and remained closed for the rest of the calendar year (except for a one-week reopening in December 2010). In 2011, the season was closed from January 1 through May 31 and from July 15 to December 31. In 2012, the season was closed from January 1 through June 30 and was closed again from October 8 to December 31. The season did not close early in 2014. The fishing year now runs from January 1 through December 31, and as of October 7, 2015, preliminary landings data indicate approximately 37% of the

commercial ACL of 780,020 lbs ww was landed. Fishing for black sea bass with pots is and was prohibited from November 1 through April 30.

Average monthly commercial landings of black sea bass from 2010 through 2014 ranged from 6,750 to 118,822 lbs ww (**Table 3.3.17**). June through July landings ranked first and second by average monthly landings and those were the first two months of the fishing year at that time, except for 2012, when the fishing year started on July 1. The prohibition on use of black sea bass pots during the six months from November 1 through April 30 indicates that vessels that use hook-and-line gear account for all of the January through April and November through December monthly landings each year. January, February, April and May landings in 2014 were substantially greater than their averages for the previous four years and June and July 2014 landings were substantially less than their averages for the previous four years.

Table 3.3.17. Average monthly commercial landings of black sea bass in South Atlantic Region, 2010 – 2014.

Month	Ave. Pounds Landed (ww)	Percent Total
Jan	62,733	9.98%
Feb	47,687	7.59%
Mar	31,123	4.95%
Apr	42,390	6.74%
May	21,742	3.46%
Jun	118,822	18.90%
Jul	90,242	14.35%
Aug	63,536	10.11%
Sep	43,788	6.97%
Oct	33,682	5.36%
Nov	6,750	1.07%
Dec	66,164	10.52%
Average	**52,388**	**8.33%**

Source: NMFS ACL.

An annual average of 339,093 lbs gw of black sea bass was landed from 2010 through 2014. Since July 2012, there has been a commercial trip limit of 1,000 lbs gw (or 1,080 lbs ww); however, since 2015, the hook-and-line trip limit is 300 lbs gw from January 1 through April 30 (when fishing with black sea bass pots is prohibited) and back to 1,000 lbs gw from May 1 through December 31. From 2010 through 2014, an annual average of 208 vessels made 1,525 trips that landed black sea bass, and approximately 74% of those trips landed no more than 300 lbs gw of the species (**Tables 3.3.18** and **3.3.19**). Note that although the 1,000 lbs gw trip limit was established in July 2012, there were trips that exceeded the trip limit in 2013 and 2014.

Table 3.3.18. Number of trips with black sea bass landings by lbs gw landed, 2010 - 2014.

Year	Number of Trips by Pounds Landed (gw) Black Sea Bass						
	1 to 300	301 - 600	601 - 900	901-1,000	Over 1,000	Total	% 1 - 300
2010	1,000	153	74	16	119	1,362	73.4%
2011	427	69	55	14	111	676	63.2%
2012	898	128	138	76	12	1,252	71.7%
2013	1,499	209	184	63	2	1,957	76.6%
2014	2,021	190	115	53	1	2,380	84.9%
Average	**1,169**	**150**	**113**	**44**	**49**	**1,525**	**74.0%**

Source: SEFSC Economic Query System.

Table 3.3.19. Number of vessels by lbs gw landed of black sea bass per trip, 2010 - 2014.

Year	Number of Vessels by Most Pounds Landed (gw) of Black Sea Bass						
	1 to 300	301 - 600	601 - 900	901-1,000	Over 1,000	Total	% 1 - 300
2010	153	19	9	5	28	214	71.5%
2011	114	19	14	3	29	179	63.7%
2012	145	23	16	11	8	203	71.4%
2013	143	26	26	17	2	214	66.8%
2014	163	30	20	18	1	232	70.3%
Average	**144**	**23**	**17**	**11**	**14**	**208**	**68.7%**

Source: SEFSC Economic Query System.

An annual average of 339,093 lbs gw of black sea bass (BSB) with a dockside value of approximately $0.93 million (2014 $) was landed annually from 2010 through 2014 by the above 208 vessels (**Table 3.3.20**). The average annual price (2014 $) ranged from $2.17 to $2.98 per lbs gw. The dockside revenue from all landings of black sea bass during this period represents an average of approximately 28% of all annual dockside revenue from trips with black sea bass landings. The average annual price (2014 $) per pound for the other species landings during these trips ranged from $2.90 to $3.39.

Table 3.3.20. Number of vessels, trips, pounds and dockside revenue (2014 $) from black sea bass (BSB) landings and dockside revenue from other species landed during black sea bass trip, 2010 - 2014.

Year	No. vessels with BSB landings	No. trips with BSB landings	Pounds gw landed of BSB	Dockside Revenue (2014 $) from BSB	Average dockside revenue (2014 $) per vessel	Average dockside revenue (2014 $) per trip	Average price per pound gw of BSB	Dock Rev. (2014 $) from other species landed
2010	214	1,362	391,687	$1,038,937	$4,855	$763	$2.65	$2,690,280
2011	179	676	302,793	$657,965	$3,676	$973	$2.17	$990,138
2012	203	1,252	302,737	$893,629	$4,402	$714	$2.95	$2,296,136
2013	214	1,957	378,674	$1,130,320	$5,282	$578	$2.98	$3,737,606
2014	232	2,380	319,574	$937,398	$4,041	$394	$2.93	$3,911,114
Average	**208**	**1,525**	**339,093**	**$931,650**	**$4,451**	**$684**	**$2.74**	**$2,725,055**

Source: SEFSC Economic Query System.

Trips with black sea bass landings represented an average of approximately 27% of all (1,525) annual trips made by the above 208 vessels (**Table 3.3.21**). Dockside revenue (2014 $) from black sea bass represented an average of approximately 32% of the vessels' total annual dockside revenue. The average annual price per pound when black sea bass was not landed ranged from $2.23 to $2.55 per lbs gw during the 5-year period.

Table 3.3.21. Comparison of number of trips and dockside revenue (2014 $) of trips with and without black sea bass (BSB) landings by vessels that had black sea bass landings during the year, 2010 - 2014.

Year	Number of trips with BSB landings	Number of trips without BSB landings	Total number of trips by vessels with BSB landings	Percent trips with BSB landings	Dockside Revenue (2014 $) of trips with BSB landings	Dockside revenue (2014 $) of trips without BSB landings	Total dockside revenue of vessels with BSB landings	Percent dockside revenue from trips with BSB landings
2010	1,362	4,053	5,415	25.15%	$3,729,217	$8,044,678	$11,773,896	31.67%
2011	676	3,890	4,566	14.81%	$1,648,104	$8,166,793	$9,814,897	16.79%
2012	1,252	3,893	5,145	24.33%	$3,189,765	$7,548,836	$10,738,601	29.70%
2013	1,957	3,349	5,306	36.88%	$4,867,926	$7,146,310	$12,014,236	40.52%
2014	2,380	4,407	6,787	35.07%	$4,848,512	$7,287,821	$12,136,333	39.95%
Ave.	**1,525**	**3,918**	**5,444**	**27.25%**	**$3,656,705**	**$7,638,888**	**$11,295,593**	**31.73%**

Source: SEFSC Economic Query System.

Figure 3.3.11 compares the average annual dockside revenue (2014 $) per vessel from black sea bass versus all species landed by the vessels that landed black sea bass during a year. Annual dockside revenue from black sea bass landings per vessel ranged from $3,676 to $5,282 and represented from approximately 6.7% to 9.4% of the average vessel's annual dockside revenue from all landings in the South Atlantic Region.

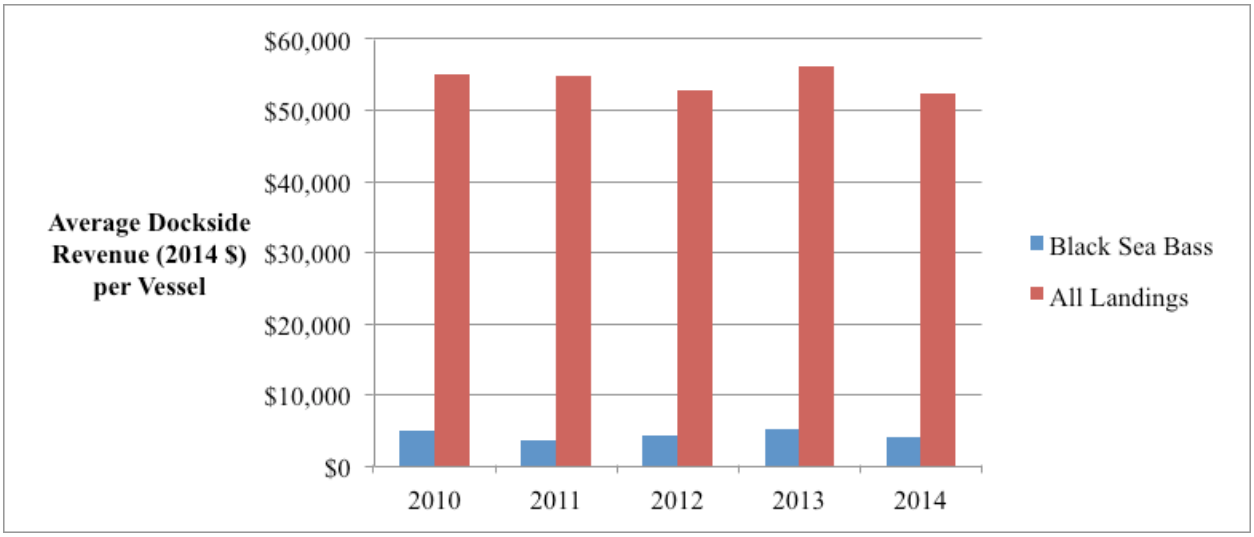


Figure 3.3.11. Average annual dockside revenue per vessel of all vessels that landed black sea bass during the year, 2010 - 2014.
Source: SEFSC Economic Query System.

The average annual dockside revenue from commercial landings of black sea bass in the South Atlantic Region ($931,650) is estimated to support 136 jobs, generate approximately $9.2 million in sales impacts, $3.4 million in income, and $4.8 million in value added impacts (2014 $).

Traps accounted for approximately 51% of landings (lbs ww) of black sea bass from 2010 through 2014, followed in turn by hook and line (approximately 25%), otter trawl (approximately 23%), and other gears (NMFS ACL). During that same period, North Carolina ranked first in commercial landings with approximately 57% of the landings, followed in turn by South Carolina (approximately 19%), Florida (approximately 17%), New England states (approximately 7%), and Georgia with less than one percentage (NMFS ACL).

3.3.2 Economic Description of the Recreational Sector

3.3.2.1 Introduction

The recreational fishing sector in the South Atlantic Region is a substantial part of the national sector as illustrated by comparisons of regional and national numbers of participants, angler trips, fish harvested, and fish released. Recreational fishing participants of the region make up, on average, approximately 49% of the nation's annual participants in recreational fishing (**Table 3.3.22**). Angler trips in the region represent approximately 25% of national angler trips from 2010 through 2014 (**Table 3.3.23**). Approximately 22% of the fish harvested and approximately 24% of those caught and released annually by the nation's anglers are caught in the region (**Tables 3.3.24** and **3.3.25**).

Table 3.3.22. Comparison of national and South Atlantic numbers of participants (anglers) in recreational fishing sector, 2010 - 2014.

Year	Number of Participants		
	South Atlantic[1]	National	Percent South Atlantic
2010	4,726,600	9,669,551	48.88%
2011	3,993,274	9,290,140	42.98%
2012	4,395,783	9,490,680	46.32%
2013	4,284,048	9,472,779	45.22%
2014	4,970,464	8,364,641	59.42%
Average	**4,474,034**	**9,257,558**	**48.57%**

[1]Includes out-of-state participants, and when out-of-state participants are excluded, the average annual percentage falls from approximately 49% to approximately 27%.
Source: Personal communication from the National Marine Fisheries Service, Fisheries Statistics Division, October 16, 2015 (online recreational fisheries statistics query).

Table 3.3.23. Comparison of national and South Atlantic numbers of angler trips in recreational fishing sector, 2010 - 2014.

Year	Number of Angler Trips		
	South Atlantic	National	Percent South Atlantic
2010	19,066,280	72,347,567	26.35%
2011	17,672,803	69,660,694	25.37%
2012	17,792,683	70,784,062	25.14%
2013	16,616,357	71,801,384	23.14%
2014	17,645,501	68,081,662	25.92%
Average	**17,758,725**	**70,535,074**	**25.18%**

Source: Personal communication from the National Marine Fisheries Service, Fisheries Statistics Division, October 16, 2015 (online recreational fisheries statistics query).

Table 3.3.24. Comparison of national and South Atlantic numbers of fish harvested (all modes, all areas), 2010 - 2014.

Year	Number of Fish Harvested (Landed)		
	South Atlantic	National	Percent South Atlantic
2010	27,713,524	141,691,295	19.56%
2011	32,913,253	140,930,287	23.35%
2012	29,670,213	141,255,298	21.00%
2013	36,254,780	172,322,348	21.04%
2014	35,353,927	155,247,954	22.77%
Average	**32,381,139**	**150,289,436**	**21.55%**

Source: Personal communication from the National Marine Fisheries Service, Fisheries Statistics Division, October 16, 2015 (online recreational fisheries statistics query).

Table 3.3.25. Comparison of national and South Atlantic numbers of fish released (all modes, all areas), 2010 - 2014.

Year	Numbers of Fish Released		
	South Atlantic	National	Percent South Atlantic
2010	53,903,479	216,234,572	24.93%
2011	50,024,780	206,424,416	24.23%
2012	55,550,926	240,341,240	23.11%
2013	59,938,652	263,535,713	22.74%
2014	64,769,599	237,037,420	27.32%
Average	**56,837,487**	**232,714,672**	**24.47%**

Source: Personal communication from the National Marine Fisheries Service, Fisheries Statistics Division, October 16, 2015 (online recreational fisheries statistics query).

Over the 5-year period from 2010 through 2014, anglers harvested from approximately 2.8 million to 3.6 million fish annually from the South Atlantic EEZ (**Table 3.3.26**). The average of that harvest (approximately 3.0 million fish) represents approximately 9% of all fish annually harvested by anglers in the region. Recreational fishing from for-fishing fishing vessels accounts for an average of approximately 20% of the fish harvested annually in the EEZ (**Table 3.3.27**).

Table 3.3.26. Comparison of numbers of fish harvested in South Atlantic EEZ and region (all modes), 2010 - 2014.

Year	Number of Fish Harvested in South Atlantic Region		
	EEZ	All Areas	Percent EEZ
2010	2,894,996	27,713,524	10.45%
2011	2,791,619	32,913,253	8.48%
2012	2,810,050	29,670,213	9.47%
2013	3,179,063	36,254,780	8.77%
2014	3,601,769	35,353,927	10.19%
Average	**3,055,499**	**32,381,139**	**9.47%**

Source: Personal communication from the National Marine Fisheries Service, Fisheries Statistics Division, October 16, 2015 (online recreational fisheries statistics query).

Table 3.3.27. Comparison of numbers of fish harvested in South Atlantic EEZ by mode, 2010 - 2014.

Mode	Number of Fish Harvested from South Atlantic EEZ					
	2010	2011	2012	2013	2014	Average
For-Hire Vessels	732,708	638,523	625,514	398,129	652,096	609,394
Private/Rental Vessels	2,162,288	2,169,196	2,184,534	2,780,933	2,949,673	2,449,325
Total	**2,894,996**	**2,807,719**	**2,810,048**	**3,179,062**	**3,601,769**	**3,058,719**
Percent For-Hire Vessels	25.31%	22.74%	22.26%	12.52%	18.10%	19.92%

Source: Personal communication from the National Marine Fisheries Service, Fisheries Statistics Division, October 16, 2015 (online recreational fisheries statistics query).

The species group most frequently harvested by anglers in the South Atlantic EEZ is herrings, followed in turn by dolphins (e.g., mahi mahi), tunas and mackerels, sea basses, grunts, snappers, jacks, and others as shown in **Table 3.3.28**. On average, sea basses and snappers represent approximately 11% and 7%, respectively, of the number of fish harvested from the EEZ annually.

Table 3.3.28. Percent of total number of fish harvested in South Atlantic EEZ by species group, 2010 - 2014.

Species Group	Percent of Fish Harvested from South Atlantic EEZ						
	2010	2011	2012	2013	2014	Average	Rank
Barracudas	0.40%	0.76%	0.29%	0.71%	0.26%	0.48%	16
Bluefish	1.65%	0.24%	1.84%	0.58%	0.28%	0.92%	15
Cartilaginous fishes	0.30%	0.00%	0.35%	0.18%	0.75%	0.32%	17
Catfishes	0.00%	0.01%	0.00%	0.01%	0.00%	0.00%	21
Cods & hakes	0.00%	26.72%	0.00%	0.00%	0.00%	5.34%	8
Dolphins	26.46%	0.46%	24.15%	15.31%	14.13%	16.10%	2
Drums	1.68%	0.00%	3.20%	0.26%	0.63%	1.15%	14
Eels	0.01%	1.13%	0.00%	0.00%	0.00%	0.23%	19
Flounders	0.99%	2.44%	1.30%	1.63%	1.35%	1.54%	13
Grunts	3.51%	17.49%	4.04%	5.88%	5.29%	7.24%	5
Herrings	12.35%	7.85%	18.04%	27.06%	17.52%	16.56%	1
Jacks	3.20%	4.86%	5.34%	6.23%	8.39%	5.60%	7
Mullets	8.34%	2.32%	3.92%	2.30%	4.46%	4.27%	9
Other fishes	2.39%	5.15%	2.91%	3.37%	5.82%	3.93%	10
Porgies	3.53%	0.00%	4.02%	3.96%	3.62%	3.03%	11
Puffers	0.00%	0.00%	0.07%	0.00%	0.00%	0.01%	20
Sea basses	16.47%	10.93%	9.39%	7.54%	9.41%	10.75%	4
Snappers	3.43%	3.88%	3.67%	8.93%	15.22%	7.03%	6
Temperate basses	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	21
Triggerfishes/filefishes	3.25%	2.51%	2.19%	3.27%	3.29%	2.90%	12
Tunas & mackerels	11.97%	13.18%	15.02%	12.57%	9.03%	12.35%	3
Wrasses	0.07%	0.09%	0.25%	0.20%	0.54%	0.23%	18
Total	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	

Source: Personal communication from the National Marine Fisheries Service, Fisheries Statistics Division, October 16, 2015 (online recreational fisheries statistics query).

The most popular mode of recreational fishing in the South Atlantic Region is private/rental vessel, which from 2010 through 2014 accounted for an annual average of approximately 8.5 million angler trips and 48% of all trips in the region (**Table 3.3.29**). The least popular, by number of angler trips, is for-hire fishing, which accounted for approximately 2% of annual trips from 2010 through 2014.

Table 3.3.29. Number of South Atlantic angler trips by mode (all areas), 2010 - 2014.

Year	Number of Angler Trips in South Atlantic Region by Mode					
	Man-made	Beach/Bank	Shore	For-Hire Vessel	Private/Rental Vessel	Total
2010	1,382,296	1,930,919	5,871,420	367,854	9,513,792	19,066,281
2011	1,284,670	1,404,886	5,947,782	372,379	8,663,086	17,672,803
2012	1,482,635	1,599,759	5,587,077	348,342	8,774,870	17,792,683
2013	1,543,314	1,212,558	5,646,253	336,441	7,877,791	16,616,357
2014	1,484,850	1,665,273	6,244,793	414,272	7,836,314	17,645,502
Average	**1,435,553**	**1,562,679**	**5,859,465**	**367,858**	**8,533,171**	**17,758,725**

Source: Personal communication from the National Marine Fisheries Service, Fisheries Statistics Division, October 16, 2015 (online recreational fisheries statistics query).

The most popular recreational fishing area is inland waters, which from 2010 through 2014 accounted for approximately 8.7 million (49%) of the 17.8 million annual angler trips in the region (**Table 3.3.30**). The least popular area by number of trips is federal waters (EEZ).

Table 3.3.30. Number of South Atlantic angler trips by fishing area (all modes), 2010 - 2014.

Year	Number of Angler Trips in South Atlantic Region by Fishing Area				
	Inland	State Waters	Federal Waters	Total	Percent Federal Waters
2010	8,741,863	8,943,413	1,381,005	19,066,281	7.24%
2011	9,317,371	7,081,412	1,469,709	17,868,492	8.23%
2012	9,115,884	7,207,091	1,469,709	17,792,684	8.26%
2013	8,328,432	7,026,743	1,261,183	16,616,358	7.59%
2014	8,257,074	7,894,132	1,494,294	17,645,500	8.47%
Average	**8,752,125**	**7,630,558**	**1,415,180**	**17,797,863**	**7.96%**

Source: Personal communication from the National Marine Fisheries Service, Fisheries Statistics Division, October 16, 2015 (online recreational fisheries statistics query).

From 2010 through 2014, private/rental vessels accounted for approximately 1.2 million (88%) of the region's approximately 1.4 million average annual angler trips. For-hire vessels accounted for approximately 12% of the annual regional trips during that time (**Table 3.3.31**).

Table 3.3.31. Number of angler trips in South Atlantic EEZ by mode, 2010 - 2014.

Year	Number of Angler Trips in South Atlantic EEZ by Mode			
	For-Hire Vessel	Private/Rental Vessel	Total	Percent For-Hire Vessel
2010	163,256	1,217,749	1,381,005	11.82%
2011	177,103	1,096,916	1,274,019	13.90%
2012	166,318	1,303,391	1,469,709	11.32%
2013	132,255	1,128,928	1,261,183	10.49%
2014	188,990	1,305,305	1,494,295	12.65%
Average	**165,584**	**1,210,458**	**1,376,042**	**12.03%**

Source: Personal communication from the National Marine Fisheries Service, Fisheries Statistics Division, October 16, 2015 (online recreational fisheries statistics query).

The number of angler trips in the South Atlantic EEZ shows seasonal trends as illustrated in **Figure 3.3.12**, with the numbers of trips by for-hire and private/rental vessels being lowest in the winter months (January/February and November/December) and highest in the late spring and summer months (May/June and July/August).

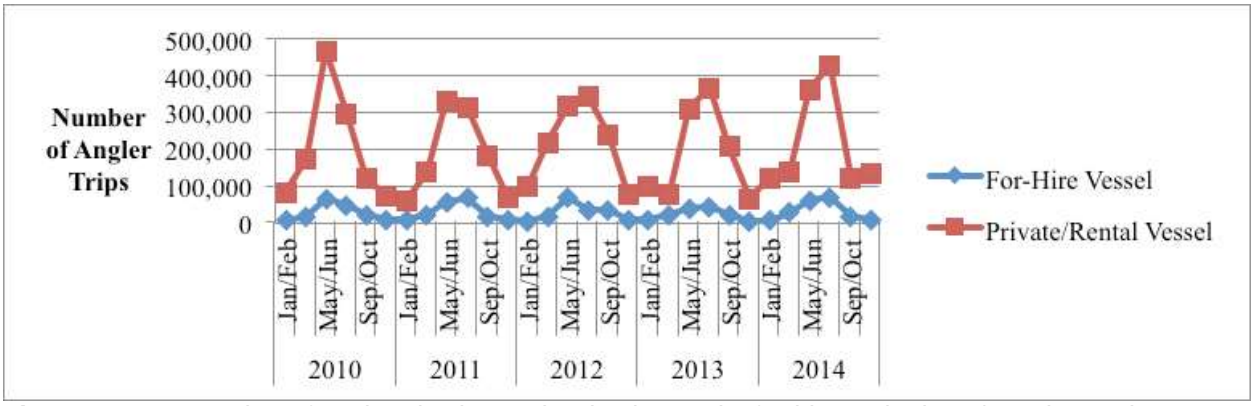


Figure 3.3.12. Number of angler trips in South Atlantic EEZ by for-hire and private/rental vessel, 2010 - 2014.
Source: Personal communication from the National Marine Fisheries Service, Fisheries Statistics Division, October 16, 2015 (online recreational fisheries statistics query).

Any for-hire vessel that takes anglers into the South Atlantic EEZ to catch snapper grouper species is required to have a South Atlantic charter/headboat snapper grouper permit. As of October 15, 2015, there were 1,475 for-hire fishing vessels with that permit.

The top five species groups by number of fish harvested in the South Atlantic EEZ by anglers aboard for-hire vessels from 2010 through 2014 are dolphins, tunas and mackerel, sea basses, snappers and triggerfishes/filefishes, while the top five harvested by anglers aboard private/rental vessels are herrings, dolphins, tunas and mackerels, sea basses and snappers (**Table 3.3.32**).

Table 3.3.32. Top ten species groups harvested in South Atlantic EEZ by for-hire and private/rental fishing vessels by number of fish, 2010 - 2014.

Species Group	Number of Fish Harvested by Anglers on For-Hire Vessels						Rank
	2010	2011	2012	2013	2014	Average	
Dolphins	287,236	321,888	251,475	141,237	143,714	229,110	1
Grunts	13,028	16,883	40,032	5,291	44,168	23,880	6
Herrings	76,059	0	0	1,741	5,251	16,610	10
Jacks	28,424	11,500	20,286	13,685	44,286	23,636	7
Other fishes	10,644	26,375	14,698	20,703	13,725	17,229	9
Porgies	25,510	13,251	24,072	12,641	14,021	17,899	8
Sea basses	93,859	82,203	45,264	28,372	128,260	75,592	3
Snappers	39,728	21,342	33,824	26,028	71,722	38,529	4
Triggerfishes/filefishes	27,709	22,586	40,905	33,686	30,793	31,136	5
Tunas & mackerels	111,764	97,890	141,971	106,616	108,449	113,338	2
All	**732,708**	**638,522**	**625,514**	**398,129**	**652,096**	**609,394**	
Species Group	**Number of Fish Harvested by Anglers on Private/Rental Vessels**						
	2010	**2011**	**2012**	**2013**	**2014**	**Average**	**Rank**
Dolphins	478,853	423,897	427,240	345,413	365,083	408,097	2
Grunts	88,462	51,109	73,522	181,795	146,518	108,281	8
Herrings	281,469	488,179	507,036	858,501	625,862	552,209	1
Jacks	64,304	207,585	129,724	184,499	257,860	168,794	6
Mullets	241,351	135,558	110,125	73,092	160,795	144,184	7
Other fishes	58,675	38,284	67,039	86,506	195,937	89,288	10
Porgies	76,673	130,527	88,863	113,388	116,483	105,187	9
Sea basses	383,055	222,846	218,609	211,356	210,784	249,330	4
Snappers	59,468	87,084	69,365	257,809	476,537	190,053	5
Tunas & mackerels	234,732	270,074	280,217	293,020	216,787	258,966	3
All	**2,162,289**	**2,169,196**	**2,184,536**	**2,780,934**	**2,949,674**	**2,449,326**	

Source: Personal communication from the National Marine Fisheries Service, Fisheries Statistics Division, October 16, 2015 (online recreational fisheries statistics query).

Anglers' expenditures on recreational fishing trips and fishing-related durable equipment (e.g., vessel or fishing tackle) generate economic impacts, such as jobs, sales, income, and value added, that derive from the businesses that provide goods and services to the anglers. The approximately 9.4 million angler trips in Eastern Florida in 2012, for example, generated 34,073 full-and part-time jobs, approximately $4.0 billion in sales, approximately $1.4 billion in income, and $2.4 billion in value added (2012 $) (**Table 3.3.33**).

Table 3.3.33. Economic impacts of recreational fishing trips by state in the South Atlantic Region, 2012.

Area	Recreational Trips	Number of Jobs	Thousands of Dollars (2012 $)		
			Sales	Income	Value Added
East Florida	9,391,000	34,073	$4,007,766	$1,490,240	$2,366,556
Georgia	892,000	2,787	$298,791	$117,042	$187,681
North Carolina	5,304,000	18,902	$1,867,621	$691,732	$1,113,168
South Carolina	2,206,000	4,095	$383,622	$141,006	$228,682

Source: NMFS, 2012, Fisheries Economics of the United States.

3.3.2.2 Blueline Tilefish

From 2010 through 2014, an average of 24,171 blueline tilefish were harvested annually by anglers in the South Atlantic Region, and 927 (approximately 4%) of those caught were released (**Table 3.3.34**). The numbers of blueline tilefish harvested by anglers in the region and from the South Atlantic EEZ represent less than one percent of all fish harvested annually in the region and EEZ (**Tables 3.3.35** and **3.3.36**). However, 55% (13,324) of the average annual recreational harvest of blueline tilefish in the region (24,171) is from the EEZ.

Table 3.3.34. Recreational catch of blueline tilefish, 2010 – 2014 (all modes and all areas).

Year	Number of Blueline Tilefish Caught in South Atlantic Region		
	Harvested	Released	Total Caught
2010	8,688	1,814	10,502
2011	8,225	271	8,496
2012	23,853	1,345	25,198
2013	66,186	1,200	67,386
2014	13,905	7	13,912
Average	**24,171**	**927**	**25,099**

Source: Personal communication from the National Marine Fisheries Service, Fisheries Statistics Division, October 16, 2015 (online recreational fisheries statistics query).

Table 3.3.35. Comparison of numbers of blueline tilefish and all fish harvested in South Atlantic Region, 2010 – 2014 (all modes and all areas).

Year	Number of Fish Harvested in South Atlantic Region		
	Blueline Tilefish	All	Percent Blueline Tilefish
2010	8,688	27,713,524	0.03%
2011	8,225	32,913,253	0.02%
2012	23,853	29,670,213	0.08%
2013	66,186	36,254,780	0.18%
2014	13,905	35,353,927	0.04%
Average	**24,171**	**32,381,139**	**0.07%**

Source: Personal communication from the National Marine Fisheries Service, Fisheries Statistics Division, October 16, 2015 (online recreational fisheries statistics query).

Table 3.3.36. Comparison of numbers of blueline tilefish and all fish harvested from South Atlantic EEZ, 2010 – 2014 (all modes).

Year	Number of Fish Harvested from South Atlantic EEZ		
	Blueline Tilefish	All	Percent Blueline Tilefish
2010	6,954	2,894,996	0.24%
2011	5,267	2,807,719	0.19%
2012	15,631	2,810,048	0.56%
2013	27,034	3,179,062	0.85%
2014	11,736	3,601,769	0.33%
Average	**13,324**	**3,058,719**	**0.43%**

Source: Personal communication from the National Marine Fisheries Service, Fisheries Statistics Division, October 16, 2015 (online recreational fisheries statistics query).

Recreational harvest of blueline tilefish from the South Atlantic EEZ from 2010 through 2014 was landed in East Florida and North Carolina (**Table 3.3.37**). Whereas most of the blueline tilefish landed in Florida were harvested by anglers aboard private/rental vessels, most of those landed in North Carolina are taken by anglers aboard for-hire fishing vessels.

Table 3.3.37. Numbers of blueline tilefish harvested from South Atlantic EEZ by state and mode, 2010 – 2014.

Year	Number of Blueline Tilefish Harvested from South Atlantic EEZ						
	Florida			North Carolina			Total
	For-Hire	Private/Rental	Total	For-Hire	Private/Rental	Total	
2010	61	1,820	1,881	3,779	1,294	5,073	6,954
2011	345	0	345	4,514	408	4,922	5,267
2012	3,896	3,909	7,805	6,339	1,486	7,825	15,630
2013	0	21,125	21,125	5,908	0	5,908	27,033
2014	0	1,578	1,578	7,914	2,244	10,158	11,736
Average	**860**	**5,686**	**6,547**	**5,691**	**1,086**	**6,777**	**13,324**

Source: Personal communication from the National Marine Fisheries Service, Fisheries Statistics Division, October 16, 2015 (online recreational fisheries statistics query).

Up until 2014, blueline tilefish was part of the Deepwater Complex. In 2012 and 2013, the recreational ACL for the complex was 332,039 lbs ww and 334,556 lbs ww, respectively. Annual recreational landings of the complex for those years were less than the ACL: 107,849 lbs ww in 2012 and 325,129 lbs ww in 2013.

In 2014, anglers landed a total of 95,712 lbs ww of blueline tilefish in the region, which was less than the recreational ACL at the time (**Table 3.3.38**). However, in 2015, the recreational season closed on June 10, when landings of blueline tilefish reached and exceeded the recreational ACL that was established through Amendment 32 to the Snapper Grouper FMP, which substantially reduced the catch levels for blueline tilefish. Effective March 30, 2015, the final rule for Amendment 32 reduced the blueline tilefish recreational ACL from 111,893 lbs ww to 17,791 lbs ww. Preliminary data indicate that approximately 269% (47,838 lbs ww) of the new recreational ACL (17,791 lbs ww) was landed in 2015. Presently, the 2016 recreational ACL is set to be 26,691 lbs ww, then increase to 35,685 lbs ww in 2017 and 43,925 lbs ww in 2018 and thereafter. From 2010 through 2014, average annual recreational landings of blueline tilefish in the region were 129,480 lbs ww (NMFS SERO). From that average, it is expected landings in 2016 and thereafter would reach the ACL and the season would close early.

Table 3.3.38. Recreational landings (lbs ww) of blueline tilefish in South Atlantic Region, 2014 and 2015.

Year	Jan/Feb	Mar/Apr	May/Jun	Jul/Aug	Sep/Oct	Nov/Dec	Total	ACL
2014	6,908	19,804	23,914	30,817	12,833	1,436	95,712	111,893
2015	32,600	1,950	13,288	0	0	0	47,838	17,791

Source: NMFS SERO ACL.

The bag limit since March 2015 is one blueline tilefish per vessel per day in the South Atlantic EEZ when the federal season is open. Prior to that date, the bag limit had been the aggregate grouper/tilefish bag limit of 3-fish per person per day. Recreational harvest data for 2015 are preliminary; however, a comparison of the numbers of blueline tilefish harvested from the South Atlantic EEZ during the two waves of March/April and May/June from 2010 through

2015 is provided by **Table 3.3.39**. The harvest in May/June 2015 is within the range of the May/June harvest from 2010 through 2014, whereas the lack of harvest of blueline tilefish in March/April of 2015 falls outside the range from 2010 through 2014.

Table 3.3.39. Numbers of blueline tilefish harvested from South Atlantic EEZ in March/April and May/June, 2010 – 2014.

Year	Number of Blueline Tilefish Harvested in South Atlantic EEZ	
	March/April	May/June
2010	793	2,595
2011	54	487
2012	602	55
2013	1,245	849
2014	1,041	2,679
2015*	0	739

*: Preliminary estimates

Source: Personal communication from the National Marine Fisheries Service, Fisheries Statistics Division, October 16, 2015 (online recreational fisheries statistics query).

Up through 2015, the recreational fishing season opened on January 1 and remained open through December 31, unless it was closed when landings reached or were projected to reach the ACL. In 2015, for example, the season closed on June 10th. Starting in 2016, current regulations specify that the recreational season will be closed from January through April, will be open from May 1 through August 31 unless landings reach or exceed the recreational ACL, and then be closed from September 1 through December 31.

In 2014, anglers made an estimated 3,642 trips by for-hire fishing vessels and 3,390 trips by private/rental vessels that caught blueline tilefish in the South Atlantic Region. No shore-line trips caught the species. These for-hire and private/rental trips are estimated to generate 20 and 2 jobs, respectively, and other economic impacts to the nation (**Table 3.3.40**). The catch trips occurred in Eastern Florida and North Carolina, and the economic impacts of these trips are summarized in **Table 3.3.41**.

Table 3.3.40. Number of recreational trips that caught blueline tilefish in South Atlantic Region in 2014 (all areas) and estimates of economic impacts of those trips.

Mode	Trips	Jobs	Sales (2014 $)	Income (2014 $)	Value Added (2014 $)
For-Hire	3,642	20	$2,813,000	$1,099,000	$2,813,000
Private/Rental	3,390	2	$442,000	$127,000	$442,000

Table 3.3.41. Number of recreational trips that caught blueline tilefish in South Atlantic Region in 2014 by mode (all areas) by state and estimates of economic impacts of those trips to the state.

State	Mode	Trips	Jobs	Sales	Income	Value Added
Eastern Florida	For-Hire	365	2	$245,127	$104,570	$161,300
	Private/Rental	2,194	1	$102,153	$33,198	$57,559
	Shore	0	0	$0	$0	$0
	Total	**2,559**	**3**	**$347,280**	**$137,768**	**$218,859**
North Carolina	For-Hire	3,277	15	$1,534,823	$702,715	$1,051,099
	Private/Rental	1,196	1	$93,976	$30,491	$53,239
	Shore	0	0	$0	$0	$0
	Total	**4,473**	**16**	**1,628,799**	**733,206**	**1,104,338**

3.3.2.3 Yellowtail Snapper

From 2010 through 2014, anglers in the South Atlantic Region harvested an average of 197,547 yellowtail snapper annually, and 235,799 (approximately 54% of those caught) were released (**Table 3.3.42**). The number of yellowtail snapper harvested represents, on average, less than one percent of all fish harvested annually in the region (**Table 3.3.43**), and less than 2% of all fish harvested from the South Atlantic EEZ (**Table 3.3.44**).

Table 3.3.42. Recreational catch of yellowtail snapper, 2010 – 2014 (all modes and all areas).

Year	Number of Yellowtail Snapper Caught in South Atlantic Region		
	Harvested	**Released**	**Total Caught**
2010	176,268	159,217	335,485
2011	107,944	102,415	210,359
2012	143,852	142,161	286,013
2013	203,080	421,003	624,083
2014	356,592	354,199	710,791
Average	**197,547**	**235,799**	**433,346**

Source: Personal communication from the National Marine Fisheries Service, Fisheries Statistics Division, October 16, 2015 (online recreational fisheries statistics query).

Table 3.3.43. Numbers of yellowtail snapper and all fish harvested in South Atlantic Region by recreational sector, 2010 – 2014 (all modes and all areas).

Year	Number of Fish Harvested in South Atlantic Region		
	Yellowtail Snapper	All	Percent Yellowtail Snapper
2010	176,268	27,713,524	0.64%
2011	107,944	32,913,253	0.33%
2012	143,852	29,670,213	0.48%
2013	203,080	36,254,780	0.56%
2014	356,592	35,353,927	1.01%
Average	**197,547**	**32,381,139**	**0.60%**

Source: Personal communication from the National Marine Fisheries Service, Fisheries Statistics Division, October 16, 2015 (online recreational fisheries statistics query).

Table 3.3.44. Numbers of yellowtail snapper and all fish and harvested from South Atlantic EEZ by recreational sector, 2010 – 2014 (all modes).

Year	Number of Fish Harvested from South Atlantic EEZ		
	Yellowtail Snapper	All	Percent Yellowtail Snapper
2010	11,370	2,894,996	0.39%
2011	19,784	2,807,719	0.70%
2012	18,387	2,810,048	0.65%
2013	71,108	3,179,062	2.24%
2014	131,278	3,601,769	3.64%
Average	**50,385**	**3,058,719**	**1.53%**

Source: Personal communication from the National Marine Fisheries Service, Fisheries Statistics Division, October 16, 2015 (online recreational fisheries statistics query).

From 2010 through 2014, the number of yellowtail snapper harvested in the South Atlantic EEZ represented approximately 19% of all snappers harvested from the EEZ (**Table 3.3.45**). Almost one in five snappers harvested from the EEZ by private/rental vessels during the 5-year period from 2010 through 2014 was a yellowtail snapper. All of the yellowtail snapper harvested from the South Atlantic EEZ were landed in Florida. On average, 2,958 (approximately 13%) of the yellowtail snapper harvested was by anglers aboard for-hire fishing vessels (**Table 3.3.45**).

Table 3.3.45. Numbers of yellowtail snapper and all snappers harvested from South Atlantic EEZ by recreational sector by mode, 2010 – 2014.

Year	Numbers of Fish Harvested from EEZ								
	Snappers			Yellowtail Snapper			Percent Yellowtail Snapper		
	For-Hire	Private	Total	For-Hire	Private	Total	For-Hire	Private	Total
2010	39,728	59,468	99,196	4,496	6,874	11,370	11.32%	11.56%	11.46%
2011	21,342	87,084	108,426	559	19,225	19,784	2.62%	22.08%	18.25%
2012	33,824	69,365	103,189	2,893	15,494	18,387	8.55%	22.34%	17.82%
2013	26,028	257,809	283,837	3,647	67,461	71,108	14.01%	26.17%	25.05%
2014	71,722	476,537	548,259	3,193	128,085	131,278	4.45%	26.88%	23.94%
Average	**38,529**	**190,053**	**228,581**	**2,958**	**47,428**	**50,385**	**8.19%**	**21.80%**	**19.30%**

Source: Personal communication from the National Marine Fisheries Service, Fisheries Statistics Division, October 16, 2015 (online recreational fisheries statistics query).

From 2010 through 2012, the harvest of yellowtail snapper in the South Atlantic EEZ represented an average of approximately 13% of all yellowtail snapper harvested annually in the region. That figure rises to 36% after 2013 and 2014 (**Table 3.3.46**). Note that anglers harvested 76% more yellowtail snapper in 2014 than in the previous year.

Table 3.3.46. Number of yellowtail snapper harvested in South Atlantic Region by area, 2010 – 2014.

Year	Numbers of Yellowtail Snapper Harvested in Region				
	Inland	State Waters	EEZ	Total	Percent EEZ
2010	814	164,083	11,371	176,268	6.45%
2011	1,209	86,950	19,785	107,944	18.33%
2012	1,551	123,913	18,387	143,851	12.78%
2013	2,416	129,556	71,109	203,081	35.02%
2014	37,967	187,348	131,278	356,593	36.81%
Average	**8,791**	**138,370**	**50,386**	**197,547**	**21.88%**

Source: Personal communication from the National Marine Fisheries Service, Fisheries Statistics Division, October 16, 2015 (online recreational fisheries statistics query).

The recreational fishing year for yellowtail snapper begins January 1 and ends December 31. Recreational landings of yellowtail snapper by weight in the region, on average, peak in May/June as illustrated by **Figure 3.3.13**, while harvest of yellowtail snapper by number, on average, peak in July/August (**Figure 3.3.14)**.

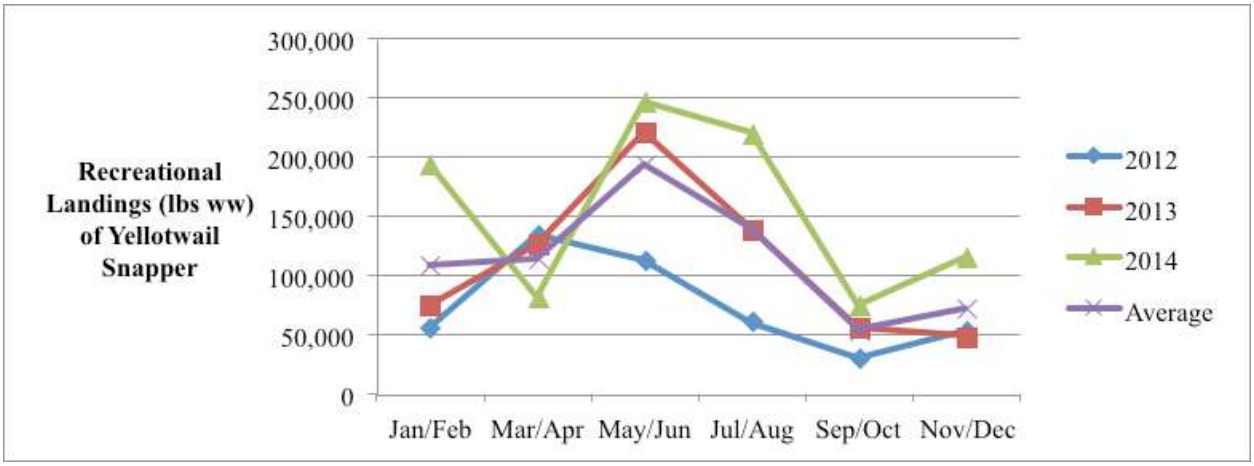


Figure 3.3.13. Recreational landings (lbs ww) of yellowtail snapper in South Atlantic Region by wave, 2012 – 2014.
Source: NMFS SERO ACL.

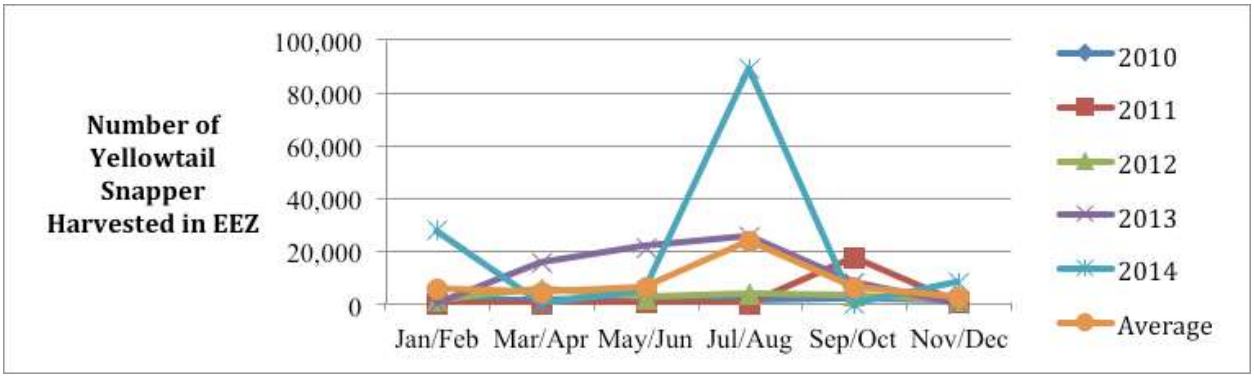


Figure 3.3.14. Number of yellowtail snapper harvested in South Atlantic EEZ by wave, 2010 – 2014.
Source: Personal communication from the National Marine Fisheries Service, Fisheries Statistics Division, October 16, 2015 (online recreational fisheries statistics query).

There is no bag limit specifically for yellowtail snapper; however, it is limited by the aggregate snapper-grouper bag limit of 10 fish per person per day. Preliminary landings figures for 2015 indicate that approximately 32% of the recreational ACL had been landed during the first six months of the year.

In 2014, anglers made an estimated 17,418 trips by for-hire fishing vessels, 181,865 trips by private/rental vessels, and 18,168 shore-line trips that caught yellowtail snapper in the South Atlantic Region. These trips are estimated to have generated 243 jobs, and other economic impacts to the nation (**Table 3.3.47**). The catch trips occurred in Eastern Florida and North Carolina, and the economic impacts of these trips are summarized in **Table 3.3.48**.

Table 3.3.47. Number of recreational trips that caught yellowtail snapper in South Atlantic Region in 2014 (all areas) and estimates of economic impacts of those trips.

Mode	Trips	Jobs	Sales (2014 $)	Income (2014 $)	Value Added (2014$)
For-Hire	17,418	95	$13,454,394	$5,257,167	$8,150,075
Private/Rental	181,865	134	$23,688,619	$6,789,893	$11,951,986
Shore	18,168	14	$2,113,638	$625,426	$1,078,348
Total	217,451	243	$39,256,651	$12,672,486	$21,180,409

Table 3.3.48. Number of recreational trips that caught yellowtail snapper in South Atlantic Region in 2014 by mode (all areas) by state and estimates of economic impacts of those trips to the state.

State	Mode	Trips	Jobs	Sales (2014 $)	Income (2014 $)	Value Added (2014 $)
Eastern Florida	For-Hire	17,210	99	$11,558,000	$4,931,000	$7,605,000
	Private/Rental	181,865	73	$8,468,000	$2,752,000	$4,771,000
	Shore	18,168	6	$647,000	$213,000	$359,000
	Total	**217,243**	**178**	**$20,673,000**	**$7,896,000**	**$12,735,000**
North Carolina	For-Hire	208	1	$97,000	$45,000	$67,000
	Private/Rental	0	0	$0	$0	$0
	Shore	0	0	$0	$0	$0
	Total	**208**	**1**	**$97,000**	**$45,000**	**$67,000**

3.3.2.4 Black Sea Bass

From 2010 through 2014, an average of approximately 3.9 million black sea bass were caught annually in the South Atlantic Region by the recreational sector, and approximately 91% of those caught were released (**Table 3.3.49**). The number of black sea bass harvested represents, on average, approximately one percent of all fish harvested annually in the region, but approximately 10% of all fish harvested from the EEZ (**Tables 3.3.50** and **3.3.51**).

Table 3.3.49. Recreational catch of black sea bass in South Atlantic Region, 2010 – 2014 (all modes and all areas).

Year	Number of Black Sea Bass Caught in South Atlantic Region			
	Harvested	Released	Total Caught	Percent Harvested
2010	508,525	2,595,082	3,103,607	16.38%
2011	336,706	3,031,378	3,368,084	10.00%
2012	292,735	4,374,457	4,667,192	6.27%
2013	246,303	2,864,561	3,110,864	7.92%
2014	338,238	4,967,202	5,305,440	6.38%
Average	**344,501**	**3,566,536**	**3,911,037**	**9.39%**

Source: Personal communication from the National Marine Fisheries Service, Fisheries Statistics Division, October 16, 2015 (online recreational fisheries statistics query).

Table 3.3.50. Numbers of black sea bass and all fish harvested in South Atlantic Region by recreational sector, 2010 – 2014 (all modes and all areas).

Year	Number of Fish Harvested in South Atlantic Region		
	Black Sea Bass	All	Percent Black Sea Bass
2010	508,525	27,713,524	1.83%
2011	336,706	32,913,253	1.02%
2012	292,735	29,670,213	0.99%
2013	246,303	36,254,780	0.68%
2014	338,238	35,353,927	0.96%
Average	**344,501**	**32,381,139**	**1.10%**

Source: Personal communication from the National Marine Fisheries Service, Fisheries Statistics Division, October 16, 2015 (online recreational fisheries statistics query).

Table 3.3.51. Numbers of black sea bass and all fish harvested from South Atlantic EEZ by recreational sector, 2010 – 2014 (all modes).

Year	Number of Fish Harvested from EEZ		
	Black Sea Bass	All	Percent Black Sea Bass
2010	439,105	2,894,996	15.17%
2011	277,652	2,807,719	9.89%
2012	237,331	2,810,048	8.45%
2013	201,652	3,179,062	6.34%
2014	294,035	3,601,769	8.16%
Average	**289,955**	**3,058,719**	**9.60%**

Source: Personal communication from the National Marine Fisheries Service, Fisheries Statistics Division, October 16, 2015 (online recreational fisheries statistics query).

From 2010 through 2014, anglers harvested an average of 289,955 black sea bass annually from the South Atlantic EEZ, and that harvest represents approximately 89% of all sea basses

harvested annually from that area (**Table 3.3.52**). Approximately 22% of the black sea bass harvested from the EEZ were by anglers on for-hire fishing vessels.

Table 3.3.52. Numbers of black sea bass and all sea basses harvested from South Atlantic EEZ, 2010 – 2014.

Year	Number of Black Sea Bass Harvested from EEZ				Number of Sea Basses Harvested	Percent Black Sea Bass
	For-Hire	Private/ Rental	Total	Percent For-Hire		
2010	80,646	358,459	439,105	18.37%	476,914	92.07%
2011	76,299	201,353	277,652	27.48%	305,049	91.02%
2012	37,772	199,559	237,331	15.92%	263,873	89.94%
2013	24,391	177,261	201,652	12.10%	239,728	84.12%
2014	102,036	191,999	294,035	34.70%	339,044	86.72%
Average	**64,229**	**225,726**	**289,955**	**21.71%**	**324,922**	**88.77%**

Source: Personal communication from the National Marine Fisheries Service, Fisheries Statistics Division, October 16, 2015 (online recreational fisheries statistics query).

The fishing year for the fishing years from 2010/2011 through 2013/2014 was from June 1 through May 31. Recreational landings of black sea bass during the 2010/2011 fishing year exceeded the ACL by 67,253 lbs ww. In response, the 2011/2012 recreational ACL was reduced from 409,000 lbs ww to 341,747 lbs ww to account for the 67,253 lbs ww overage, and in June 2011, the bag limit for black sea bass (in the EEZ) was reduced from 15 to five harvested per person per day. The 2011/2012 season closed in October and the 2012/2013 season closed in September when landings reached the quota. Also, in July 2012, the minimum size limit was raised from 12 to 13 inches total length. The recreational fishing year for the species currently begins April 1 and ends March 31.

During the fishing years from 2010/2011 through 2013/2014, recreational landings (lbs ww) of black sea bass in the South Atlantic Region, on average, were highest during the first three months of the fishing year (June through August), then declined in the following months as illustrated by **Figure 3.3.15.** However, in the 2010/2011 season, landings peaked later: in September/October. Preliminary landings figures for 2015 indicate that approximately 32% of the recreational ACL had been landed during the first six months of the year. Numbers of black sea bass harvested from the South Atlantic EEZ have shown a similar same trend (**Figure 3.3.16**).

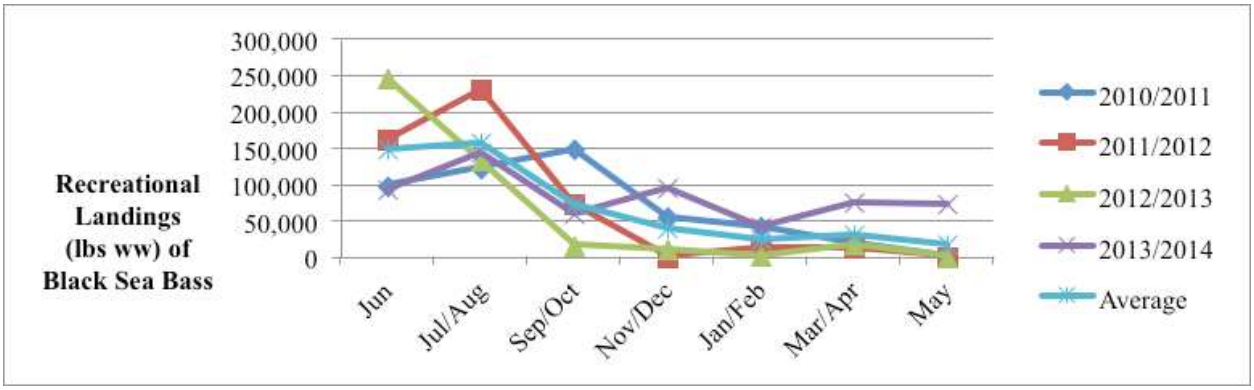


Figure 3.3.15. Recreational landings (lbs ww) of black sea bass by wave, 2010/2011 – 2013/2014. Source: NMFS SERO ACL.

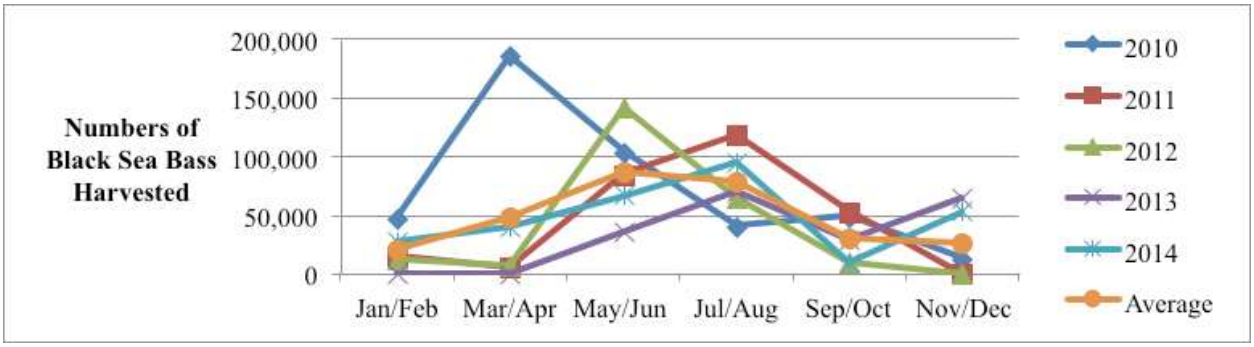


Figure 3.3.16. Number of black sea bass harvested in South Atlantic EEZ by wave, 2010 – 2014. Source: Personal communication from the NMFS, Fisheries Statistics Division, October 16, 2015 (online recreational fisheries statistics query).

Black sea bass are harvested from the South Atlantic EEZ by anglers in all four states of the region (**Table 3.3.53**). Florida ranks first by average annual harvest, followed in turn by South Carolina, North Carolina and Georgia.

Table 3.3.53. Numbers of black sea bass harvested from South Atlantic EEZ by state, 2010 – 2014.

Year	Number of Black Sea Bass Harvested in EEZ				
	Florida	Georgia	North Carolina	South Carolina	Total
2010	129,151	11,525	100,959	197,470	439,105
2011	135,263	43,548	90,526	8,316	277,653
2012	83,454	6,045	68,594	79,237	237,330
2013	63,896	76,260	42,539	18,958	201,653
2014	99,166	33,732	59,286	101,851	294,035
Average	102,186	34,222	72,381	81,166	289,955

Source: Personal communication from the National Marine Fisheries Service, Fisheries Statistics Division, October 16, 2015 (online recreational fisheries statistics query).

On average, approximately 22% of the black sea bass harvested annually from the South Atlantic EEZ are taken by anglers onboard for-hire fishing vessels (**Table 3.3.54**). The numbers

of black sea bass harvested by anglers on private/rental vessels exceeded that by anglers on for-hire vessels in all four states (**Table 3.3.55**).

Table 3.3.54. Numbers of black sea bass harvested from South Atlantic EEZ by mode, 2010 – 2014.

Year	Number of Black Sea Bass Harvested from South Atlantic EEZ			
	For-Hire	Private/Rental	Total	Percent For-Hire
2010	80,646	358,459	439,105	18.37%
2011	76,299	201,353	277,652	27.48%
2012	37,772	199,559	237,331	15.92%
2013	24,391	177,261	201,652	12.10%
2014	102,036	191,999	294,035	34.70%
Average	**64,229**	**225,726**	**289,955**	**21.71%**

Source: Personal communication from the National Marine Fisheries Service, Fisheries Statistics Division, October 16, 2015 (online recreational fisheries statistics query).

Table 3.3.55. Numbers of black sea bass harvested from South Atlantic EEZ by state and mode, 2010 – 2014.

Year	Number of Black Sea Bass Harvested by For-Hire Vessels				
	Florida	Georgia	North Carolina	South Carolina	Total
2010	10,053	3,399	33,824	33,369	80,645
2011	32,593	8,421	32,215	3,070	76,299
2012	5,421	1,716	25,033	5,602	37,772
2013	2,681	2,722	12,045	6,943	24,391
2014	20,468	13,529	12,146	55,893	102,036
Average	**14,243**	**5,957**	**23,053**	**20,975**	**64,229**
Year	**Number of Black Sea Bass Harvested by Private/Rental Vessels**				
	Florida	**Georgia**	**North Carolina**	**South Carolina**	**Total**
2010	119,098	8,126	67,135	164,100	358,459
2011	102,669	35,127	58,310	5,246	201,352
2012	78,033	4,330	43,562	73,635	199,560
2013	61,214	73,538	30,494	12,015	177,261
2014	78,698	20,204	47,140	45,958	192,000
Average	**87,942**	**28,265**	**49,328**	**60,191**	**225,726**

Source: Personal communication from the National Marine Fisheries Service, Fisheries Statistics Division, October 16, 2015 (online recreational fisheries statistics query).

As stated previously, since June 2011, the bag limit for black sea bass (in the EEZ) is five harvested fish per person per day, and since July 2012, the minimum size limit has been 13 inches total length. Preliminary analysis indicates the increase in the minimum size limit has had a greater impact on harvest of black sea bass than the bag limit because an estimated average of

approximately 92% of the trips from 2013 through 2014 harvested less than the bag limit (Personal communication from SAFMC, October 7, 2015).

In 2014, anglers made an estimated 62,362 trips by for-hire fishing vessels, 637,713 trips by private/rental vessels, and 116,523 shore-line trips that caught black sea bass in the South Atlantic Region. These trips are estimated to have generated 896 jobs and other economic impacts to the nation (**Table 3.3.56**). The catch trips occurred in the four states of the region, and the economic impacts of these trips are summarized in **Table 3.3.57**.

Table 3.3.56. Number of recreational trips that caught black sea bass in South Atlantic Region in 2014 (all areas) and estimates of economic impacts of those trips.

Mode	Trips	Jobs	Sales (2014 $)	Income (2014 $)	Value Added (2014$)
For-Hire	62,362	340	$48,171,027	$18,822,337	$29,179,871
Private/Rental	637,713	469	$83,064,578	$23,808,887	$41,909,860
Shore	116,523	87	$13,556,113	$4,011,257	$6,916,137
Total	**816,598**	**896**	**$144,791,718**	**$46,642,481**	**$78,005,868**

Table 3.3.57. Number of recreational trips that caught black sea bass in South Atlantic Region in 2014 by mode (all areas) by state and estimates of economic impacts of those trips to the state.

State	Mode	Trips	Jobs	Sales (2014 $)	Income (2014 $)	Value Added (2014 $)
Eastern Florida	For-Hire	15,514	89	$10,418,922	$4,444,632	$6,855,916
	Private/Rental	303,125	122	$14,113,539	$4,586,626	$7,952,411
	Shore	29,124	10	$1,037,540	$341,751	$575,123
	Total	**347,763**	**221**	**$25,570,001**	**$9,373,010**	**$15,383,450**
Georgia	For-Hire	5,195	18	$2,070,581	$981,494	$1,454,263
	Private/Rental	26,239	11	$1,228,320	$408,748	$720,500
	Shore	17,495	9	$970,400	$319,093	$548,884
	Total	**48,929**	**38**	**$4,269,301**	**$1,709,334**	**$2,723,647**
North Carolina	For-Hire	10,059	46	$4,711,254	$2,157,036	$3,226,429
	Private/Rental	188,863	133	$14,839,906	$4,814,966	$8,407,141
	Shore	43,490	52	$5,144,918	$1,695,058	$2,886,074
	Total	**242,412**	**231**	**$24,696,078**	**$8,667,060**	**$14,519,644**
South Carolina	For-Hire	31,594	196	$17,755,122	$8,047,962	$12,204,444
	Private/Rental	119,486	58	$5,628,685	$1,790,450	$3,137,335
	Shore	26,414	28	$2,667,292	$860,630	$1,517,585
	Total	**177,494**	**282**	**$26,051,099**	**$10,699,041**	**$16,859,364**

3.3.3 Social Environment

The social environment includes a description of the commercial and recreational components of the snapper grouper fishery. The description is based on the geographical distribution of landings and the relative importance of the species for commercial and recreational fishing communities. A spatial approach enables the consideration of the importance of fishery resources to those communities, as required by National Standard 8.

3.3.3.1 Commercial

Since 2001, South Atlantic Snapper Grouper Unlimited Permits and Snapper Grouper 225-pound Trip Limit Permits have shown a downward trend (**Figure 3.3.17**) as would be expected with a limited entry program in place since 1998 and a "2 for 1" requirement for new permits. That trend will likely continue as long as the criteria are a continued part of management for the snapper grouper commercial fishery. The decline in the number of permits has slowed in recent years as there seems to be a leveling off with the number of unlimited permits in 2013 going from 593 to 584 in 2014 and limited permits dropping from 130 in 2013 to 125 in 2014.

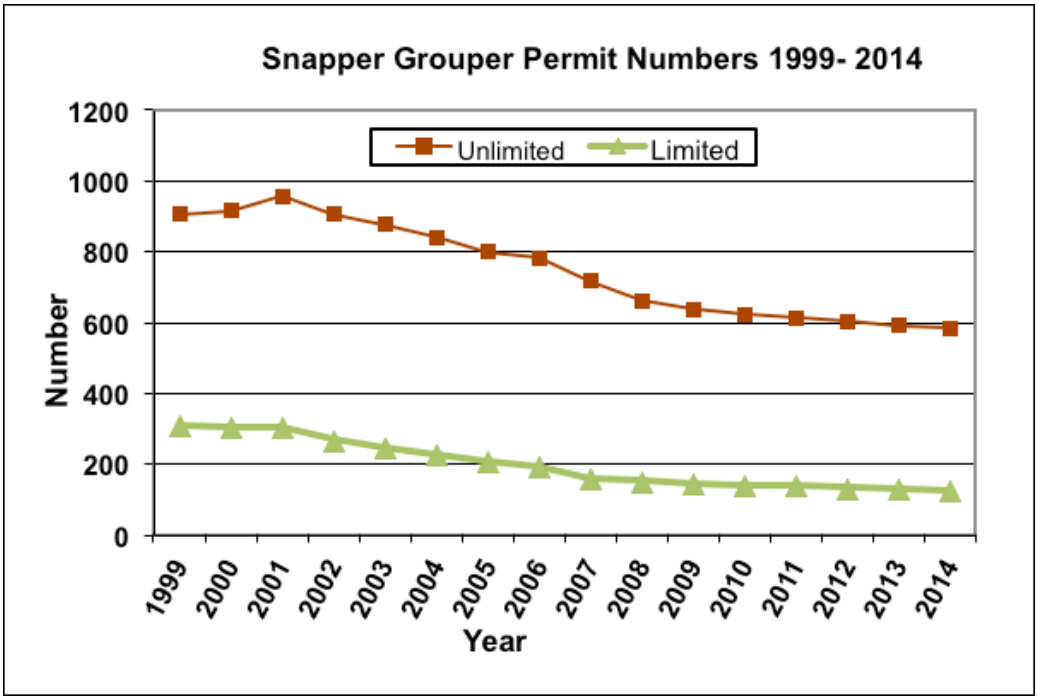


Figure 3.3.17. Snapper grouper Unlimited and 225-pound trip limit permits 1999-2014.
Source: NMFS SERO Permits (2015).

Blueline Tilefish

In terms of where permit holders are landing blueline tilefish, **Figure 3.3.18** provides a ranking of the top fifteen communities with blueline tilefish landings and their regional quotient (RQ) in the South Atlantic for 2011 and 2013. Regional quotient is the amount of blueline tilefish landed by a community out of all blueline tilefish landed within the South Atlantic region[2]. Landings for 2011 and 2013 are included here to demonstrate a recent shift in landings of blueline tilefish for certain communities and the subsequent change in both regional quotient and local quotient for communities.

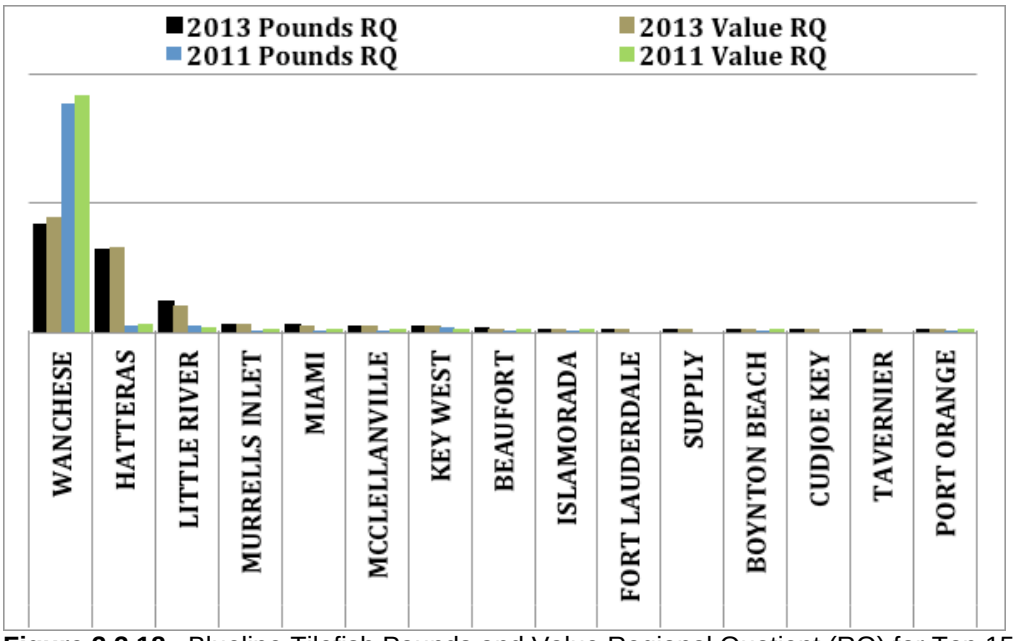


Figure 3.3.18. Blueline Tilefish Pounds and Value Regional Quotient (RQ) for Top 15 South Atlantic Communities in 2011 and 2013.
Source: NMFS: ALS

As evident in **Figure 3.3.18**, there has been a recent shift in where blueline tilefish have been landed. Wanchese, North Carolina dominated landings in 2011, but more recently landings have increased in both Hatteras, North Carolina and Little River, South Carolina. Overall, many communities saw their landings of blueline tilefish increase in recent years while Wanchese, NC has seen a decline in its RQ.

Because Wanchese still has the majority of blueline landings, it is useful to look at how blueline tilefish landings and value rank compared to other species landed in the community.

[2] The values on the y axis are not provided to protect confidentiality.

Figure 3.3.19 provides the local quotient for value and landings for the community of Wanchese. The local quotient is the percentage of value and landings of a particular species out of the total for all species landed at dealers within a community. Blueline tilefish represents 3% of value and less than 2% in terms of landings local quotient for Wanchese in 2013 and is ranked 7th out of the top 15. This is slightly higher than in 2011 where blueline tilefish were ranked 11th and had slightly lower percentages.

With Hatteras seeing an increase in blueline tilefish landings, the local quotient value can be instructive as to how important that species has become to that community also. With the recent increase in RQ, there may also be a corresponding change in its LQ for the community.

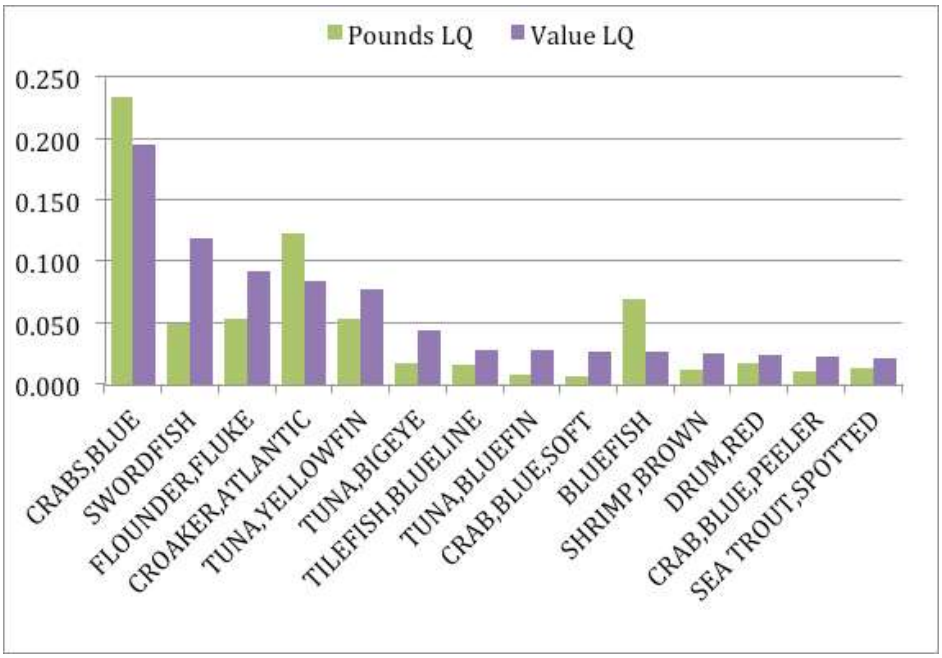


Figure 3.3.19. Top 15 species landed in Wanchese, North Carolina by local quotient (LQ) value for 2013. Source: NMFS: ALS (2013).

Hatteras, North Carolina has an LQ value for blueline tilefish that is just above 3% and ranks 11th overall in **Figure 3.3.20.** Therefore, its importance within that community is slightly less than it is for Wanchese, but has increased in recent years in terms of RQ.

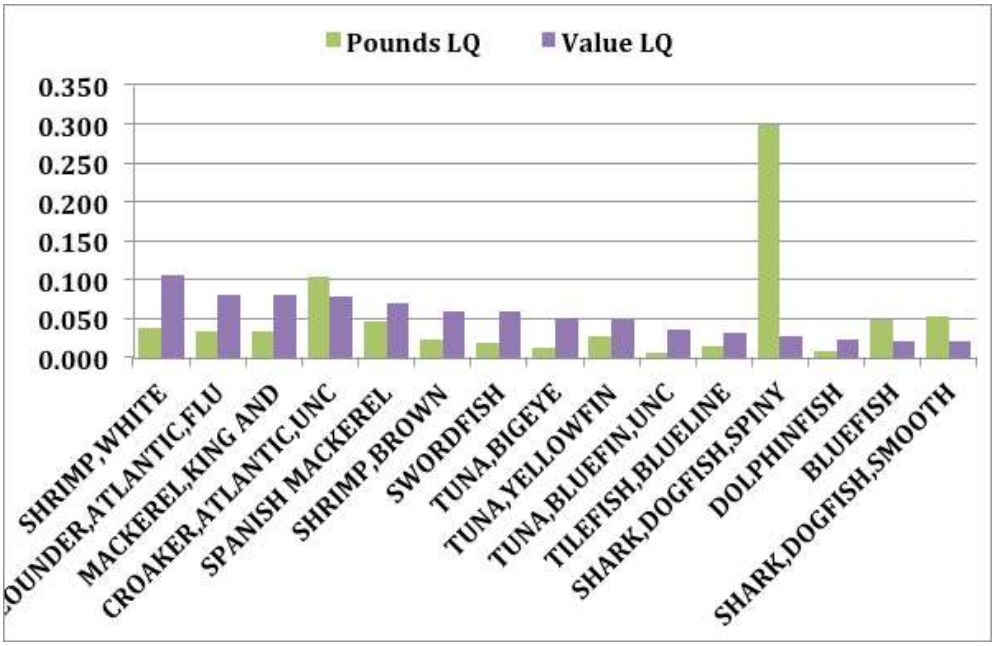


Figure 3.3.20. Top 15 species landed in Hatteras, North Carolina by local quotient (LQ) value for 2013. Source: NMFS: ALS (2013).

The third community with a relatively high RQ is Little River, South Carolina (**Figure 3.3.21**). The LQ for blueline tilefish in that community is higher than that for Wanchese or Hatteras at slightly over 6% for value and ranks 6th in terms of value of all species landed.

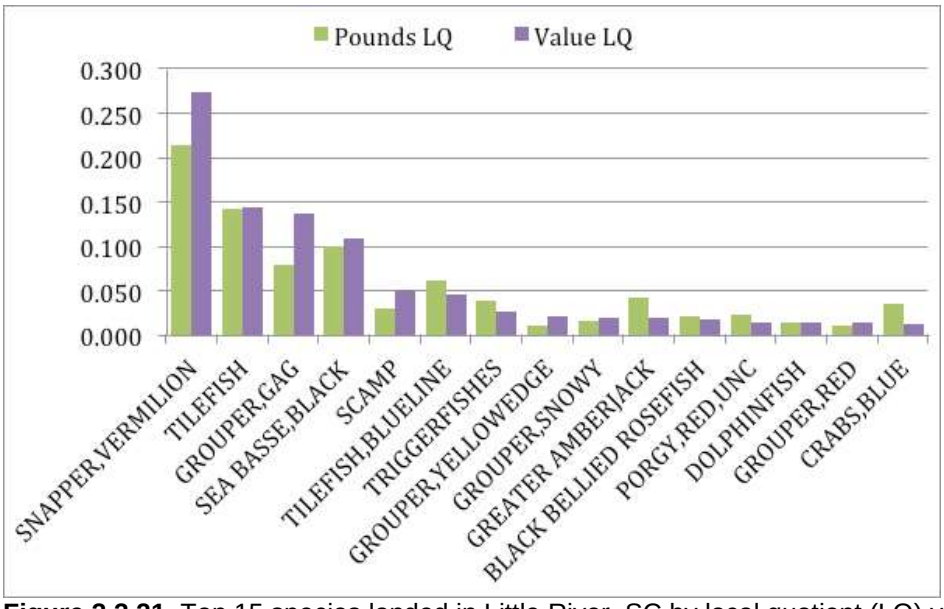


Figure 3.3.21. Top 15 species landed in Little River, SC by local quotient (LQ) value for 2013. Source: NMFS: ALS (2013).

While the LQ for value at the community level provides some measure of importance of that species for a community, it does not offer a view of that importance for an individual vessel. It is obvious that there has been some species substitution at the vessel level.

Yellowtail Snapper

Yellowtail snapper is primarily a Florida fishery as mentioned earlier and is evident in **Figure 3.3.22** where only Florida communities are listed in in terms of RQ for value of yellowtail landings in the region. Key West leads all communities followed by Miami, Marathon and Hialeah, with each community holding about half as much as the one prior.

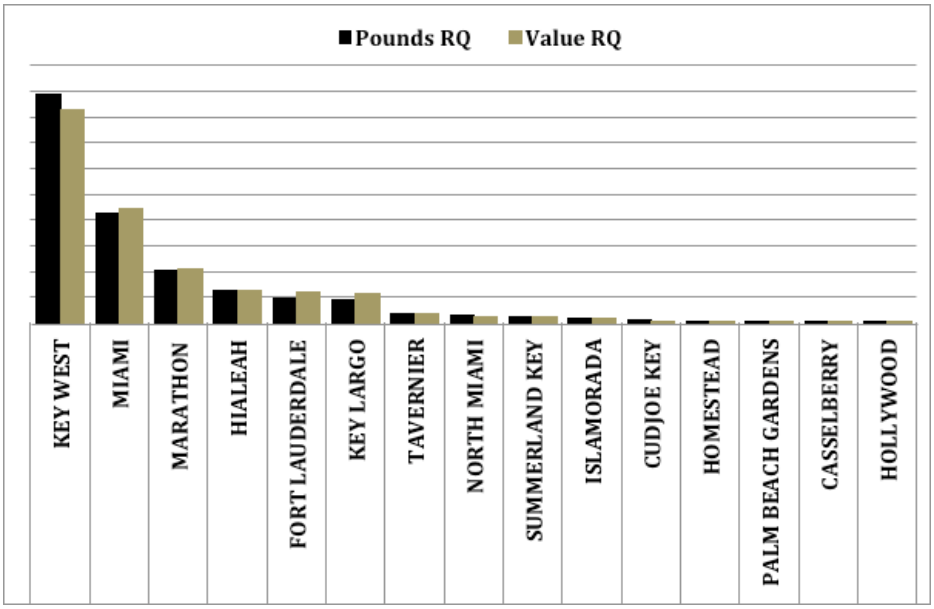


Figure 3.3.22. Yellowtail pounds and value regional quotient (RQ) for top 15 Florida communities. Source: NMFS: ALS 2013

Commercial Fishing Engagement and Reliance

To better understand how South Atlantic fishing communities are engaged and reliant on fishing overall, several indices composed of existing permit and landings data were created to provide a more empirical measure of fishing dependence (Colburn and Jepson 2012; Jepson and Colburn 2013). Commercial fishing engagement uses the absolute numbers of permits, landings and value, while commercial fishing reliance includes many of the same variables as engagement, but divides by population to give an indication of the per capita impact of this activity.

Using a principal component and single solution factor analysis, each community receives a factor score for each index to compare to other communities. Factor scores are represented by colored bars and are standardized therefore the mean is zero. Two thresholds of 1 and ½

standard deviation above the mean are plotted onto the graphs to help determine thresholds for significance. Because the factor scores are standardized, a score above 1 is also above one standard deviation.

All communities in **Figure 3.3.23** are highly engaged in commercial fishing as most all exceed both thresholds or are very close to the highest threshold. Very few communities show both high engagement and high reliance with Wanchese, North Carolina; Hatteras, North Carolina; Tavernier, Florida; and McClellanville, South Carolina the few that exceed both thresholds for engagement and reliance.

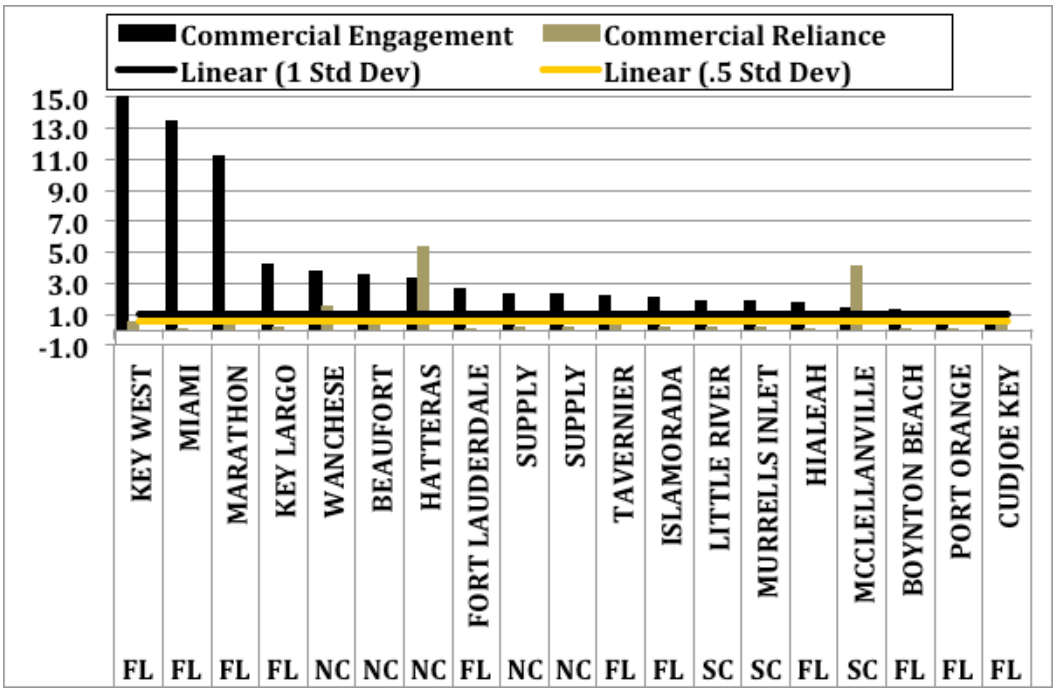


Figure 3.3.23. Commercial fishing engagement and reliance for selected engaged South Atlantic fishing communities.
Source: NMFS: Social Indicators 2015

3.3.3.2 Recreational

Because it is difficult to co-locate recreational fishermen and the species for which they fish, **Table 3.3.58** identifies those communities in the South Atlantic that have a high number of for-hire vessels and that same number divided by the community's population. Both ranks are averaged to understand the overall importance of for-hire fishing to that community. Rankings are based upon the vessels description of its primary category of fishing: charter, headboat, or commercial. Florida and North Carolina have the most number of communities by their average rank for charter and headboat designated vessels. Key West, Florida ranks first in terms of number of for-hire vessels and Hatteras is ranked first when dividing that number by the community population. These measures are similar to the recreational engagement and reliance measures that are used below to also gauge the importance of recreational fishing to a community.

Table 3.3.58. South Atlantic Communities Average Rank by For-hire Permits and For-hire Permits per Population.

State	Community	Number of For-hire Permits	Number of Permits Rank	Permits per Population Rank	Average Rank
NC	Manteo	24	6	2	4
FL	Islamorada	36	3	8	5.5
NC	Hatteras	14	11	1	6
FL	Marathon	44	2	11	6.5
FL	Key West	118	1	16	8.5
NC	Atlantic Beach	13	13	6	9.5
FL	Key Colony Beach	9	16	3	9.5
FL	Ponce Inlet	14	11	17	14
NC	Calabash	9	16	13	14.5
SC	Murrells Inlet	16	9	24	16.5
FL	Duck Key	6	28	5	16.5
NC	Wanchese	8	20	15	17.5
SC	Little River	15	10	27	18.5
NC	Nags Head	8	20	20	20
FL	Cudjoe Key	7	25	18	21.5
FL	Tavernier	7	25	19	22
NC	Morehead City	9	16	31	23.5
FL	Cape Canaveral	9	16	33	24.5
NC	Wrightsville Beach	6	28	22	25
NC	Southport	6	28	25	26.5
NC	Holden Beach	3	41	12	26.5
SC	Hilton Head Island	19	8	46	27
NC	Carolina Beach	7	25	30	27.5
FL	Key Largo	8	20	36	28
NC	Topsail Beach	2	47	9	28

The communities in Florida that are highly engaged in recreational fishing in **Figure 3.3.24** are many of the same communities that have important charter fishing activity in **Table 3.3.58**. Only five highly engaged communities have high reliance: Islamorada, Key West, Ponce Inlet, Marathon and Big Pine Key. St. Augustine is highly engaged and does show moderate reliance as does Key Largo. Although these communities are highly engaged and reliant on recreational fishing, we do not know to what extent that fishermen fish for blueline tilefish, yellowtail snapper or black sea bass. We assume that for many of the Keys communities that there are many fishermen who recreationally fish for yellowtail. For other more southerly Southeastern Florida communities this may also be the case. Blueline Tilefish or black sea bass may be fished from more northerly ports, yet there are commercial landings in Keys communities. It may be that for many of those communities where these species are landed commercially, there may also be a higher instance of recreational landings for those same species.

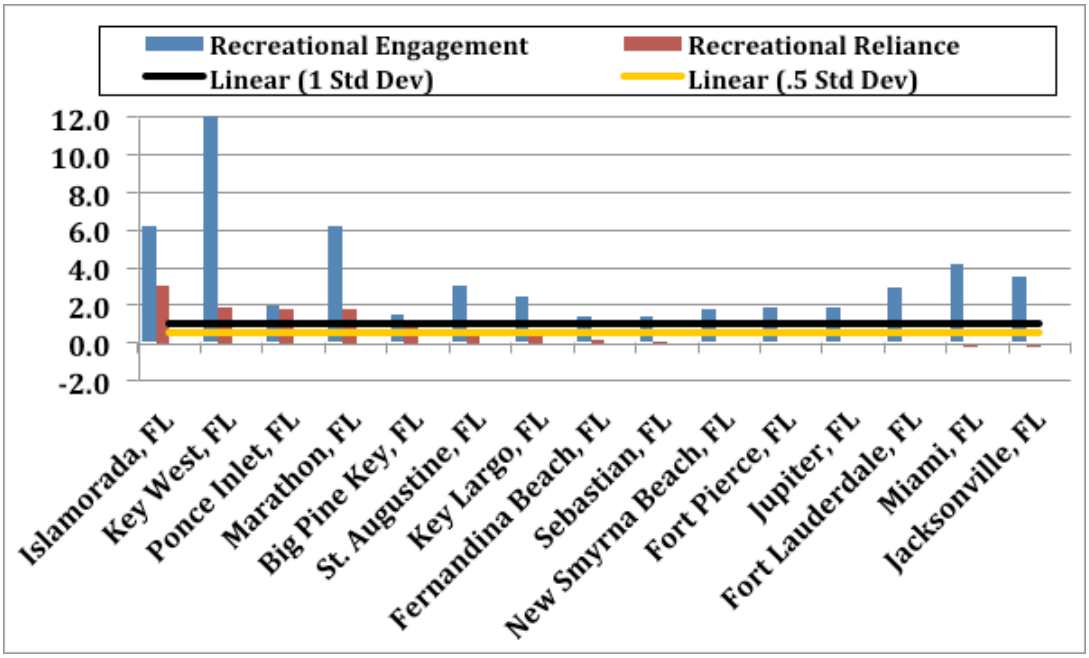


Figure 3.3.24. Recreational fishing engagement and reliance for top 15 engaged Florida communities. Source: NMFS: Social Indicators 2015

Those communities outside of Florida that have high recreational engagement are shown in **Figure 3.3.25**. Several show high reliance on recreational fishing in turn. The communities of Murrells Inlet, South Carolina; Atlantic Beach, North Carolina; Wanchese, North Carolina; Wrightsville Beach and Nags Head, North Carolina all exceed the thresholds for both engagement and reliance on recreational fishing. Several others show high engagement and moderate reliance, including: Morehead City, North Carolina; Little River, South Carolina; and Carolina Beach, North Carolina.

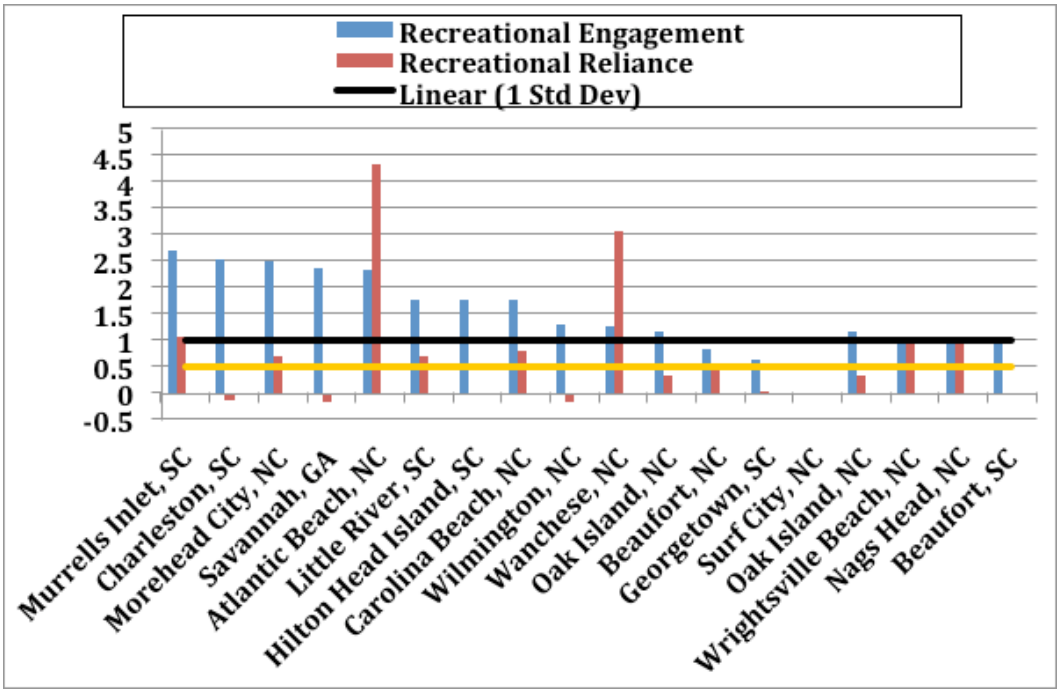


Figure 3.3.25. Recreational fishing engagement and reliance for top 15 engaged South Carolina and North Carolina communities.
Source: NMFS: Social Indicators 2015

The above communities, like those in Florida demonstrate that recreational fishing likely plays a prominent role in the local economy. Again, it is not possible to place blueline tilefish, yellowtail snapper or black sea bass fishing activity within a particular community and it is assumed that some fishermen in certain locales do participate in harvesting that species.

For those communities that are both highly engaged and reliant on both commercial and recreational fishing and have high regional quotients, we might expect that set of communities will be most susceptible if vulnerabilities to negative social or economic impacts from alternatives in the document exist within the community. At this time it is only possible to identify those communities that are highly engaged in fishing activities and have fishermen who may harvest blueline tilefish, black sea bass or yellowtail snapper within that community.

3.3.4 Environmental Justice

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 and coastal communities in the South Atlantic may experience some impacts by the proposed action depending upon the alternatives selected and whether they have negative or positive social effects. However, information on the race and income status for many of the individuals involved in fishing is not available. To evaluate where EJ concerns might exist, a suite of social vulnerability indices have been developed. 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 5, disruptions such as higher separation rates, higher crime rates and unemployment all are signs of populations experiencing vulnerabilities. These vulnerabilities signify that it may be difficult for someone living in these communities to recover from significant social disruption that might stem from a change in their ability to work or maintain a certain income level.

Because many of the communities included in both the commercial and recreational engagement and reliance figures are the same, a select group most common from each region and sector were included in the following figures. In **Figure 3.3.26** there are very few selected communities in Florida that exceed the thresholds for social vulnerability. Fort Pierce and Miami are the only two that demonstrate that substantial social vulnerabilities exist.

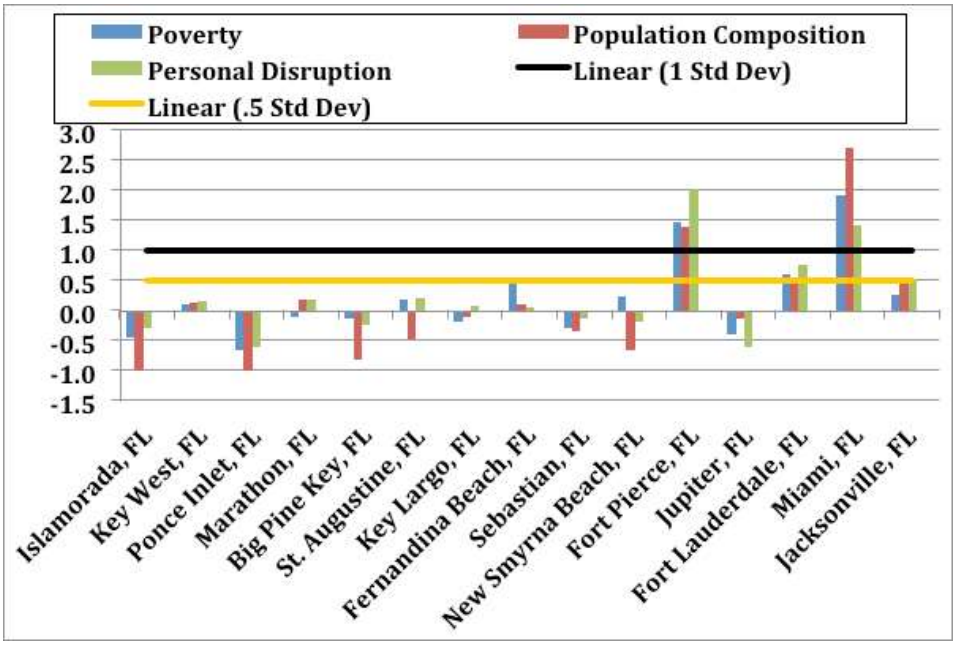


Figure 3.3.26. Social vulnerability indices for selected commercially and recreationally engaged Florida communities.
Source: NMFS: Social Indicators 2015

The same is true for communities outside of Florida in **Figure 3.3.27**, as only Georgetown, South Carolina and Savannah, Georgia exhibit substantial social vulnerabilities as they either exceed both thresholds for all three vulnerabilities or have exceeded the lowest threshold for all three. The other communities in the region show some vulnerability but exceed only the lower threshold for one or two vulnerabilities.

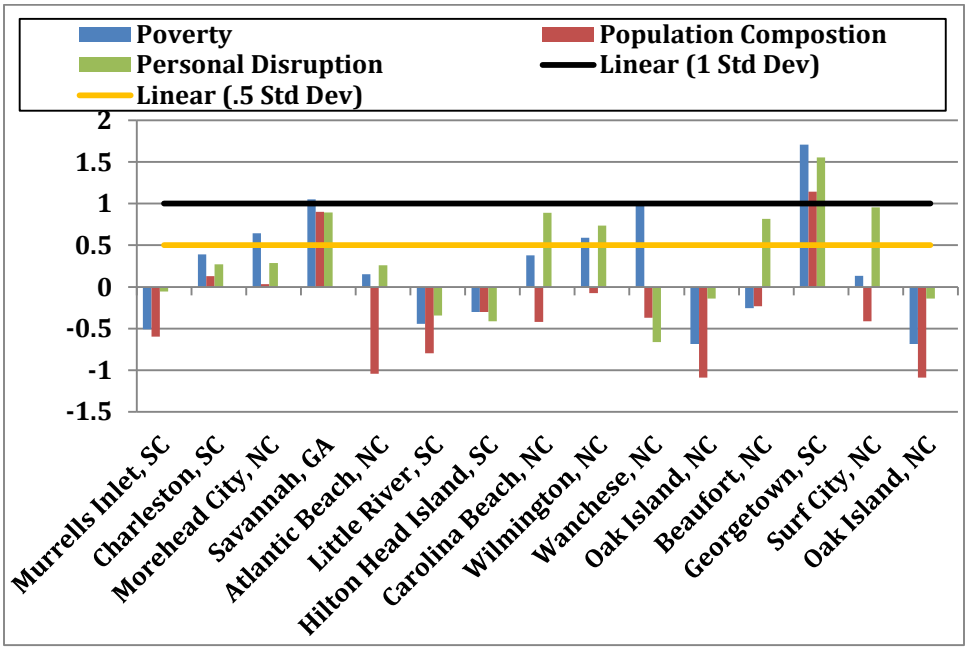


Figure 3.3.27. Social vulnerability indices for selected commercially and recreationally engaged communities in Georgia, South Carolina and North Carolina.
Source: NMFS: Social Indicators 2015

Those communities that exhibit high social vulnerabilities may experience negative social impacts if the alternatives within this amendment have adverse effects. This is not to say that these communities will be negatively affected, but the indicators suggest that they may experience difficulties in situations where negative social consequences may occur. These are the communities that would be most at risk and that may also depend upon their fishing as an important part of their overall economy. Because the species discussed here may represent a small portion of some community fishing portfolios, the impacts may not be community wide, but may affect businesses and households individually. At this time, there are no metrics that allow for the analysis of those types of impacts on individuals or households for either the commercial or recreational fishery. At this time we can only try to place some fishing activities within a community and demonstrate whether vulnerabilities may exist.

3.4 Administrative Environment

3.4.1 The Fishery Management Process and Applicable Laws

3.4.1.1 Federal Fishery Management

Federal fishery management is conducted under the authority of the Magnuson-Stevens Fishery Conservation and Management Act (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 shared 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 is responsible for conservation and management of fishery resources in federal waters of the U.S. South Atlantic. These waters extend from 3 to 200 nm offshore from the seaward boundary of 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 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 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, are open to the public. The South Atlantic Council uses its SSC 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.

3.4.1.2 State Fishery Management

The state governments of North Carolina, South Carolina, Georgia, and Florida have the authority to manage fisheries that occur in waters extending 3 nm from their respective shorelines. 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 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 South Atlantic States are also involved through the Atlantic States Marine Fisheries Commission (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 ASMFC is also represented at the Council level, but does not have voting authority at the Council level.

NMFS's 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.

3.4.1.3 Enforcement

Both the NMFS Office for Law Enforcement (NOAA/OLE) and the United States Coast Guard (USCG) have the authority and the responsibility to enforce federal 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.

Administrative monetary penalties and permit sanctions are issued pursuant to the guidance found in the Policy for the Assessment of Civil Administrative Penalties and Permit Sanctions for the NOAA Office of the General Counsel – Enforcement Section. This Policy is published at the Enforcement Section's website: http://www.gc.noaa.gov/enforce-office3.html .

Chapter 4. Environmental Consequences and Comparison of Alternatives

4.1 Action 1. Adjust the Acceptable Biological Catch (ABC), Annual Catch Limit (ACL), and Optimum Yield (OY) for the South Atlantic Blueline Tilefish Stock

Alternatives*

(preferred alternative in bold)

1. No action. ACL = OY = 98%ABC
2. ACL = OY = 98% (stock ABC)
3. ACL = OY = 96% (stock ABC)
4. ACL = OY = 93% (stock ABC)
5. ACL = OY = 89% (stock ABC)
6. ACL = OY = 88% (stock ABC)
7. **ACL = OY = 78% (stock ABC)**

* See Chapter 2 for detailed alternatives

4.1.1 Biological Effects

The South Atlantic Fishery Management Council (South Atlantic Council) developed sector optimum yield (OY) and annual catch limits (ACLs) for blueline tilefish in Amendment 32 to the Snapper Grouper FMP (SAFMC 2014c). The final rule to implement Amendment 32 was effective on March 30, 2015 (**Table 4.1.1**). These are the OY and ACL values currently in place (**Alternative 1 (No Action)**). The OY and sector ACLs are based on a previous acceptable biological catch (ABC) recommendation (P*=30%) from the South Atlantic Council's Scientific and Statistical Committee (SSC), an ACL two percent less than the ABC, and established sector allocations (50.07% commercial and 49.93% recreational).

Table 4.1.1. Current ACL and sector ACLs for blueline tilefish.

	Blueline Tilefish ACL as Established by Amendment 32 (Implemented March 30, 2015) (lbs ww)		
Year	**Total**	**Commercial**	**Recreational**
2015	35,632	17,841	17,791
2016	53,457	26,766	26,691
2017	71,469	35,785	35,685
2018 and beyond until modified	87,974	44,048	43,925

Note: These ACLs are based on an ABC recommendation of P*=30%. The values are 36,359 (2015), 54,548 (2016), 72,928 (2017), and 89,769 lbs ww (2018).

Alternatives 2 through **7 (Preferred)** would set OY equal to the ACL. National Standard 1 (NS1) establishes the relationship between conservation and management measures, preventing overfishing, and achieving OY from each stock, stock complex, or fishery. The NS1 guidelines

discuss the relationship of overfishing limit (OFL) to the maximum sustainable yield (MSY) and the ACL to OY. The OFL is an annual amount of catch that corresponds to the estimate of maximum fishing mortality threshold applied to a stock; MSY is the long-term average of such catches. The MFMT and OFL are both used as metrics to determine the overfishing status of blueline tilefish. The ACL is the limit that triggers accountability measures (AMs) and is the management target for the species. Management measures for a species should, on an annual basis, prevent the ACL from being exceeded. The long-term objective is to achieve OY through annual achievement of an ACL. The NS1 guidelines state that OY cannot exceed MSY, and if OY is set close to MSY, the conservation and management measures must have very good control of the amount of catch to achieve the OY without overfishing.

The South Atlantic Council and their SSC have established an ABC control rule that takes into consideration scientific and management uncertainty to ensure catches are maintained below OFL. Setting the ACL below the stock ABC (**Alternatives 2-7 (Preferred)**) leaves a buffer between the two harvest parameters, which may reduce risk that harvest could exceed the stock ABC. In addition, AMs and ACLs are in place to ensure overfishing of blueline tilefish does not occur. The NS1 Guidelines recommend a performance standard by which the system of ACLs and AMs can be measured and evaluated. If the ACL is exceeded more than once over the course of four years, the South Atlantic Council would reassess the system of ACLs and AMs for the species (50 C.F.R. § 600.310(g)(3)). The South Atlantic Council took action in Amendment 34 to the Snapper Grouper FMP (SAFMC 2015) to create a consistent regulatory environment while preventing unnecessary negative socio-economic impacts, and ensure overfishing of snapper grouper species, including blueline tilefish, does not occur.

Alternatives 2-7 (Preferred) would increase the ACLs as a result of the South Atlantic Council accepting the SSC's recommendation to increase the ABC. Although mortality of blueline tilefish in the South Atlantic would likely increase, significant adverse effects would not be expected because the SSC determined that the increased harvest would be at sustainable levels and would not cause overfishing. **Alternative 2** retains the current buffer between the ABC and the ACL (98%). **Preferred Alternative 7** would establish the greatest buffer between the stock ABC and ACL. The buffer could account for management uncertainty and may reduce the probability that blueline tilefish landings in the South Atlantic exceed the stock ABC. Along the same reasoning, **Alternatives 1 (No Action)** and **Alternative 2** would result in the least biological benefit among the alternatives considered because it only establishes a 2% buffer between the ABC and the ACL. Creating a buffer between the ABC and the ACL/OY would provide greater assurance that overfishing is prevented, and the long-term average biomass is near or above SSB_{MSY}. All alternatives would set the ACL equal to the portion of the ABC that accounts for landings in the South Atlantic Council's jurisdiction. The South Atlantic Council's ABC control rule takes into account scientific uncertainty. The Magnuson-Stevens Fishery Conservation and Management Act NS1 guidelines indicate an ACL may typically be set very close to the ABC. Setting a buffer between the ABC and the ACL would be appropriate in situations where there is uncertainty in whether or not management measures are constraining fishing mortality to target levels. An annual catch target (ACT), which is not required, can also be set below the ACL to account for management uncertainty and provide greater assurance

overfishing does not occur. In terms of most to least expected direct positive biological effect, **Alternative 1 (No Action)** would be most beneficial (because it uses the previous ABC that results in a lower ACL) followed in order by **Preferred Alternative 7**, **Alternative 6**, **Alternative 5**, **Alternative 4**, **Alternative 3**, and **Alternative 2** using the new, higher ABC.

With vastly improved commercial monitoring mechanisms recently implemented, it is unlikely that repeated commercial ACL overages would occur. The Commercial Landings Monitoring System (CLM) came online in June 2012 and is now being used to track commercial landings of federally managed fish species. This system is able to track individual dealer reports, track compliance with reporting requirements, project harvest closures using five different methods, and analyze why ACLs are exceeded. The CLM performs these tasks by taking into account: (1) spatial boundaries for each stock based on fishing area; (2) variable quota periods such as overlapping years or multiple quota periods in one year; and (3) overlapping species groups for single species as well as aggregated species. Data sources for the CLM system include the Standard Atlantic Fisheries Information System for Georgia and South Carolina, and the Bluefin Data file upload system for Florida and North Carolina. The CLM system is also able to track dealer reporting compliance with a direct link to the permits database in NMFS Southeast Regional Office (SERO).

Additionally, the Southeast Fisheries Science Center (SEFSC) worked with SERO, the Gulf of Mexico Fishery Management Council (Gulf of Mexico Council), and South Atlantic Council to develop a Joint Dealer Reporting Amendment (GMFMC and SAFMC 2013b), which became effective on August 7, 2014. The Joint Dealer Reporting Amendment requires electronic reporting, increases required reporting frequency for dealers to once per week, and requires a single dealer permit for all finfish dealers in the Southeast Region. The CLM and the new dealer reporting requirements constitute major improvements to how commercial fisheries are monitored, and go beyond monitoring efforts that were in place when the NS1 guidelines were developed. The new CLM quota monitoring system and actions in the Joint Generic Dealer Reporting Amendment are providing more timely and accurate data reporting and would thus reduce the incidence of quota overages.

Harvest monitoring efforts in the recreational sector have also been improved. On January 27, 2014, regulations became effective requiring headboats to report their landings electronically once per week (Generic Headboat Amendment, GMFMC and SAFMC 2013a). The Councils are working with the National Marine Fisheries Service to develop an electronic reporting system for charter boats operating the Southeast Region that would require weekly electronic reporting for charter vessels. These recreational harvest monitoring efforts would substantially increase the accuracy and timeliness of in-season reporting and reduce the risk of recreational ACL overages, that would be biologically beneficial for blueline tilefish. Therefore, there is a low risk of exceeding the commercial and recreational ACLs and **Alternatives 2-7 (Preferred)** can be used as part of a successful harvest management system for blueline tilefish with little risk of overfishing.

None of the **Action 1** alternatives are anticipated to have adverse effects on listed corals, large whales, or any distinct population segments (DPS) of Atlantic sturgeon. In previous ESA consultations NMFS determined that the hook-and-line sector of the snapper grouper fishery is not likely to adversely affect these species or DPSs. These alternatives are unlikely to alter fishing behavior in a way that would cause new adverse effects to these species. For the species that may interact with this sector of the fishery (i.e., sea turtles and smalltooth sawfish), **Alternative 1 (No Action)** would perpetuate the existing level of risk for interactions between these ESA-listed species and the fishery. Because the other alternatives would increase the allowable harvest for blueline tilefish relative to **Alternative 1 (No Action)**, each of those alternatives would potentially be less biologically beneficial to sea turtles and smalltooth sawfish if the total effort in the fishery increases as a result. **Alternative 2** would be the least biologically beneficial, followed in order by **Alternative 3, Alternative 4, Alternative 5, Alternative 6, Preferred Alternative 7**, and **Alternative 1 (No Action)**.

4.1.2 Economic Effects

Under **Alternative 1 (No Action)**, ACLs increase over time because they are based on stock assessment projections that project a higher level of allowable harvest as the stock biomass increases over time. Whereas all of the proposed changes to ACL (ACL=OY) in **Alternatives 2** through **7 (Preferred)** would result in a static increase in the blueline tilefish ACLs. **Table 3.3.10** calculated the average price per pound (in 2014 dollars) from 2010 through 2014 for commercially caught fish as $2.47 per pound. **Table 4.1.2** shows the expected dockside value of the commercial blueline tilefish ACL under the various alternatives presented. Compared to all the other alternatives, **Alternative 1 (No Action)** is expected to result in between $150,065 (compared to **Preferred Alternative 7**) and $205,497 (compared to **Alternative 2**) less direct, positive economic effect for fishermen, assuming the entire commercial ACL for blueline tilefish is caught in future years. In terms of least to most expected direct positive economic effect, **Alternative 1 (No Action)** would result in the least followed in order by **Preferred Alternative 7**, **Alternative 6**, **Alternative 5**, **Alternative 4**, **Alternative 3**, and **Alternative 2** would have the highest expected positive direct economic effect.

Table 4.1.2. Expected value of the blueline tilefish (in 2014 dollars) under **Alternatives 1-7 (Preferred)**.

	Commercial		Recreational	
	Pounds (ww)	**Value**	**Pounds (ww)**	**Value**
Alternative 1 (No Action)	26,766	$66,112	26,691	$13,157
Alternative 2	109,963	$271,609	109,655	$54,052
Alternative 3	107,719	$266,066	107,417	$52,948
Alternative 4	104,352	$257,749	104,061	$51,294
Alternative 5	99,864	$246,664	99,585	$49,088
Alternative 6	98,742	$243,893	98,466	$48,536
Alternative 7 (Preferred)	**87,521**	**$216,177**	**87,277**	**$43,021**

A specific consumer surplus value for a recreationally caught blueline tilefish does not exist. However, Haab et al. (2001) calculated a consumer surplus of $4.02 (in 2014 dollars) for a recreationally caught bottom fish in the South Atlantic region. **Table 4.1.2** shows the expected consumer surplus of recreationally caught blueline tilefish under the various alternatives presented using the CS value for a recreationally-caught bottom fish from Haab et al. (2001). Compared to all the other alternatives, **Alternative 1 (No Action)** is expected to result in between $29,864 (compared to **Preferred Alternative 7**) and $40,895 (compared to **Alternative 2**) less direct, positive economic effect for fishermen, assuming the entire commercial ACL for blueline tilefish is caught in future years.

In terms of least to most expected direct positive economic effect, **Alternative 1 (No Action)** would be least followed in order by **Preferred Alternative 7**, **Alternative 6**, **Alternative 5**, **Alternative 4**, **Alternative 3**, and **Alternative 2** would have the highest expected positive direct economic effect for both the commercial and recreational sectors.

4.1.3 Social Effects

In recent years, blueline tilefish was an important component of the commercial species landed in Wanchese and Hatteras, North Carolina; Murrells Inlet and Little River, South Carolina (see **Section 3.3.3**). However, when the decreased ACL in Amendment 32 to the Snapper Grouper FMP (SAFMC 2014c) became effective on March 30, 2015, access to the blueline tilefish resource was greatly reduced. Commercial harvest closed after about three months (April 7, 2015) and recreational harvest closed in just five weeks after a May 1st opening (June 10, 2015). Because of the changes to access from Amendment 32, some fishermen may have already adapted fishing practices and business plans to target species other than blueline tilefish.

The ACL for any stock does not directly affect resource users unless the ACL is met or exceeded, in which case AMs that restrict or close harvest could negatively impact the commercial fleet, for-hire fleet, and private anglers. The AMs can have significant direct and indirect social effects because, when triggered, they can restrict harvest in the current season or subsequent seasons. While the negative effects of such a temporary restriction in harvest are usually short-term, they may at times induce other indirect effects through changes in fishing behavior or business operations that could have long-term social effects, such as increased pressure on another species, or fishermen having to stop fishing altogether due to regulatory closures.

In general, the higher the ACL, the greater the short-term social and economic benefits that would be expected to accrue, as long as harvest is sustainable. Adhering to stock recovery is assumed to result in net long-term positive social and economic benefits. Additionally, adjustments in an ACL based on updated information from a stock assessment would be the most beneficial in the long term to fishermen and coastal communities because ACLs would be based on the current conditions, even if the updated information indicates that a lower ACL is appropriate to sustain the stock.

The proposed ACLs under **Alternatives 2-7 (Preferred)** are all substantially higher than the current ACL under **Alternative 1 (No Action)** and would likely result in benefits to commercial fishermen, for-hire fishing businesses, and recreational anglers by increasing access to blueline tilefish. Higher ACLs would be more likely to allow a longer fishing season for both the commercial and recreational sector. Although the proposed ACLs in **Alternatives 2-7 (Preferred)** are not at the same level of the highest landings in recent years, an increase in the ACL would be expected to result in social benefits. In general, the highest ACL (**Alternative 2**) would be the most beneficial to fishermen. **Alternative 1 (No Action)** would be expected to result in the least social benefits, followed in order by **Preferred Alternative 7**, **Alternative 6**, **Alternative 5**, **Alternative 4**, and **Alternative 3**.

4.1.4 Administrative Effects

Modifying the ACLs and OY for blueline tilefish would not have direct impacts on the administrative environment. ACLs are already in place for blueline tilefish, and commercial and recreational closures have taken place in the past. Under the current management system, the lower the ACL is set the more likely it is to be met or exceeded, and the more likely an AM would be triggered resulting in the greatest administrative impact. However, even with the ACL increase, in-season closures are likely to continue to occur for both sectors so there is not likely to be any effects to the administrative environment from this action.

4.2 Action 2. Revise the Commercial Trip Limit for Blueline Tilefish

Alternatives
(preferred alternative in bold)

1. No action. The commercial trip limit for blueline tilefish is 100 pounds gutted weight (lbs gw).

2. Increase the commercial trip limit for blueline tilefish to 200 lbs gw.

3. Increase the commercial trip limit for blueline tilefish to 300 lbs gw.

4.2.1 Biological Effects

The biological effects of **Alternatives 2** and **3 (Preferred)** would be expected to be neutral compared with **Alternative 1 (No Action)**, because an ACL and AMs are in place to cap harvest, and take action if the ACL is exceeded. **Preferred Alternative 3** could present a greater biological risk to blueline tilefish in terms of exceeding the ACL since the rate of harvest would be greater. However, improvements have been made to the quota monitoring system, and the South Atlantic Council has approved a Dealer Reporting Amendment (GMFMC and SAFMC 2013b effective August 7, 2014), which should enhance data reporting. Since neither alternative is expected to result in a commercial closure, there is little risk of regulatory discards. Therefore, little difference in the biological effects of the trip limit alternatives is expected.

In March 2015, a 100 pound gutted weight (lbs gw) trip limit was implemented for South Atlantic commercial blueline tilefish. To evaluate the impacts of increasing this trip limit, the ratios of mean 2012-2014 landings under simulated 150, 200, 250, and 300-lbs gw trip limits were compared to a simulated 100-lbs gw trip limit (**Table 4.2.1**). The percentage of trips with landings at various trip limit thresholds was also evaluated, as well as the number and percentage of vessels that would be impacted by the proposed trip limit alternatives (**Table 4.2.2**). For example, 23 vessels in 2010 had at least one trip with landings > 300 lbs gw. Therefore, on average, 18% of vessels would be impacted by a 300-lb trip limit based on 2012-2014 catch records.

Table 4.2.1. Projected increases in harvest under proposed trip limit alternatives.

Trip Limit (lbs gw)	Mean 2012-2014	2014
100 (status quo)	100%	100%
200	156%	152%
300 (Preferred)	**202%**	**192%**

Source: SEFSC Commercial logbook (Sept 2015).

Table 4.2.2. Number of vessels with at least one trip at or above proposed trip limit alternatives.

	TRIP LIMIT (lbs gw)					
Year	**No Limit**	**300 (Pref)**	**250**	**200**	**150**	**100**
2010	131	**23**	24	29	32	40
2011	98	**19**	21	24	28	31
2012	123	**16**	18	22	25	34
2013	129	**25**	29	35	40	45
2014	137	**30**	32	36	45	57
Mean 2012-2014	130	**24**	26	31	37	45
% Impacted	100%	**18%**	20%	24%	28%	35%

To evaluate the impacts of proposed trip limits on commercial blueline tilefish harvest, the mean landings per trip from 2010-2014 were evaluated (**Table 4.2.3**). Simulated trip limits were imposed on trip-level commercial landings data from 2012-2014 and the percent landings remaining under different trip limits was computed (**Table 4.2.4**). Because the historical data do not reflect the current 100-lbs gw commercial trip limit implemented in March 2015, for projection purposes, the increase in harvest under different trip limit alternatives was simulated by evaluating the difference in catch per trip from a 100-lbs gw trip limit to the other trip limit alternatives.

Table 4.2.3. Mean landings per trip (lbs gw) of commercial blueline tilefish in the SAFMC jurisdiction, by year.

		Landings per Trip (lbs gw)			
Year	**Trips**	**Mean**	**Std Dev**	**Minimum**	**Maximum**
2010	705	563	958	1	6897
2011	317	352	655	0.8928571	3703
2012	535	555	1191	0.8928571	7472
2013	639	356	716	0.8928571	3948
2014	531	280	639	0.8928571	4707

Source: SEFSC Commercial Logbook (Sept 2015).

Table 4.2.4. Mean (2012-2014) landings (lbs gw) and percent landings of commercial blueline tilefish in the SAFMC jurisdiction remaining under various trip limits applied to historical data.

Trip Limit (lbs gw)	Landings	Percent Remaining
No trip limit	224,425	100
400	67,058	32
300 (Pref)	**55,699**	**27**
250	49,598	24
200	43,001	21
150	35,750	17
100	27,623	13

Source: SEFSC Commercial Logbook (Sept 2015).

Table 4.2.5 shows the increases in harvest from the current regulatory status quo of a 100-lbs gw trip limit and the decreases in harvest from the pre-2015 regulatory environment of no trip limit. To simulate projected closure dates under these new trip limits, daily landings were projected relative to the proposed ACL. To capture uncertainty in catch rates, especially for

months subject to recent quota closures (6/23/2014, 4/7/2015), four different catch rate scenarios were evaluated (**Table 4.2.6**). Scenario 1 used mean monthly catch rates from 2010-2014 apportioned uniformly across days within months. Scenario 2 used the most recent monthly catch rates from July-Dec 2013 and Jan-June 2014 apportioned uniformly across days within months. Total landings from 2015 were available, but not monthly landings. As such, Scenario 3 used total landings from Jan-Apr 2015 (the most recent landings) apportioned by month based on the 2014 Jan-Apr distribution of landings by month and the number of days open in the month in 2015 (i.e., 7 days in April). Landings for May-Dec in Scenario 3 used the most recent landings similar to Scenario 2. Scenario 4 scaled up May-Dec landings from Scenario 3 relative to the observed increase in landings between Jan-Apr 2014 and Jan-Apr 2015 to account for potentially increased catch rates. All of these catch rate scenarios are imperfect, and many of the difficulties are associated within non-linear trends such as fishermen discovering and exploiting new areas and the lack of recent data for later months due to quota closures. Nevertheless, it seems likely that the four catch rate scenarios explored cover the range of likely catch rates.

Table 4.2.5. Projected changes in commercial blueline tilefish under various trip limits applied to historical data, as related to status quo (100-lb trip limit) and historical (no trip limit) regulatory environments. Note the 100-lb trip limit was implemented in March 2015.

	Current Regulatory Environment (100-lb trip limit)		**Historic Regulatory Environment (no trip limit)**	
Trip Limit	**Mean 2012-2014**	**2014**	**Mean 2012-2014**	**2014**
100 (status quo)	100%	100%	12%	19%
150	129%	128%	16%	24%
200	156%	152%	19%	28%
250	180%	174%	22%	32%
300 (Pref)	**202%**	**192%**	**25%**	**36%**
400	243%	225%	30%	42%

Source: SEFSC Commercial Logbook (Sept 2015).

Table 4.2.6. Simulated daily catch rates of commercial blueline tilefish in pounds, gutted weight, by month, used in projections of future seasons under various trip limit alternatives.

Month	Scenario 1: Mean 10-14	Scenario 2: Most recent 2013-2014	Scenario 3: Apportioned 2015 total (Jan-Apr) plus most recent 2013-2014 (May-Dec)	Scenario 4: Apportioned 2015 total (Jan-Apr) plus most recent 2013-2014 (May-Dec) scaled by Jan-Apr 2015:Jan-Apr 2014 ratio
1	374	367	612	612
2	237	282	471	471
3	356	479	799	799
4	618	514	3672	3672
5	1419	1230	1230	2052
6	1455	2414	2414	4026
7	1788	1791	1791	1900
8	2235	1600	1600	1698
9	928	284	284	302
10	460	266	266	282
11	268	63	63	66
12	72	28	28	30

Source: SEFSC Commercial Logbook (Sept 2015), SEFSC ACL Commercial Dataset (Oct 2015).

Projected closure dates under catch rate scenarios 1-4 and the various proposed trip limits are shown in **Table 4.2.7**. **Alternatives 2** and **3 (Preferred)** would not be expected to result in a closure of commercial harvest under most scenarios considered. Under **Action 1 Alternative 6** (ACL = 98,742 pounds whole weight), only one of four catch rate scenarios considered anticipated a commercial closure; this closure was predicted for trip limit **Action 2 Alternative 3 (Preferred)** (trip limit = 300 pounds) on November 16. Under **Action 1 Preferred Alternative 7** (ACL = 87,521 pounds whole weight), only one of four catch rate scenarios considered anticipated a commercial closure; this closure was predicted for trip limit **Action 2 Alternative 3 (Preferred)** (trip limit = 300 pounds) on August 16.

Table 4.2.7. Projected closure dates under simulated daily catch rate Scenarios 1-4 for commercial blueline tilefish under various trip limit alternatives. Blank cells indicate no closure projected (season open through end of year).

	Alt2				**Alt3**				**Alt4**				**Alt5**				**Alt6**				**Alt7 (Pref)**			
Comm ACL	**109,963**				**107,719**				**104,352**				**99,864**				**98,742**				**87,521**			
Scenario	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**
100 lbs (status quo)																								
150 lbs																								
200 lbs (Alt 2)																								
250 lbs																								10/29
300 lbs (Pref)																				**11/16**				**8/16**
400 lbs				8/25				8/21				8/14				8/5				8/3	10/11		8/28	7/14

Source: NMFS SERO

None of the alternatives in **Action 2** are anticipated to have adverse effects on listed *Acropora* species, large whales, or any DPS of Atlantic sturgeon. In previous ESA consultations NMFS determined the hook-and-line sector of the snapper grouper fishery was not likely to adversely affect *Acropora* species, large whales, or any DPS of Atlantic sturgeon. These alternatives are unlikely to alter fishing behavior in a way that would cause new adverse effects to these species. **Alternative 1 (No Action)** would perpetuate the existing level of risk for interactions between ESA-listed species and the fishery. **Alternatives 1 (No Action)**, **2**, and **3 (Preferred)** would not be expected to result in a closure of commercial harvest under most scenarios considered. Therefore, the biological effects to protected resources of **Alternatives 2** and **3 (Preferred)** would be expected to be neutral compared with **Alternative 1 (No Action)**.

4.2.2 Economic Effects

A blueline tilefish 100 lbs gw trip limit was established in 2015 (Amendment 32; SAFMC 2014c). **Action 2** seeks to modify the trip limit. **Table 4.2.8** shows that from 2010 through 2014 when there was no trip limit, on average 68% of the trips landed 100 lbs gw or less, 74% of the trips landed 200 lbs gw or less, and 77% of the trips landed 300 lbs gw or less. However, these trips tended to land a relatively small percent of the total annual landings, 4-7% overall.

Having the trip limit remain at 100 lbs gw (**Alternative 1 (No Action)**) would most likely keep blueline tilefish as a bycatch species in the future because trip costs to target the species would be too high due to the distances required to travel to harvest them. Historically, blueline tilefish were caught as bycatch in the snowy grouper portion of the snapper grouper fishery. Even though Regulatory Amendment 20 to the Snapper Grouper FMP (SAFMC 2014d) increased the commercial trip limit for snowy grouper to 200 lbs gw, it may not be economically feasible to harvest snowy grouper or blueline tilefish due to the low the trip limits. Additionally, on those trips where blueline tilefish are caught, lower trip limits could lead to higher trip costs if fishermen need to move their vessels more frequently to avoid catching them.

Table 4.2.8. Average numbers of trips and landings of blueline tilefish from the South Atlantic from 2010 – 2014 that were above and below the Action 2 trip limit alternatives.

	Trips Below Limit	Pounds Below Limit	% Trips Below Limit	% lbs Below Limit	Trips Above Limit	Pounds Above Limit	% Trips Above Limit	% lbs Above Limit
Alternative 1 (100 lbs gw)	357	8,631	68%	4%	169	222,985	32%	96%
Alternative 2 (200 lbs gw)	391	13,522	74%	6%	135	218,094	26%	94%
Pref Alternative 3 (300 lbs gw)	**405**	**16,938**	**77%**	**7%**	**121**	**214,678**	**23%**	**93%**

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

To determine how many additional trips can land blueline tilefish based on the trip limit alternatives in this action, the commercial sector ACL chosen in **Action 1** becomes relevant. **Table 4.2.2** assumes that all the trips that occurred below the **Action 2** trip limits would continue to occur and that all other trips that land blueline tilefish would catch the new trip limit. **Table 4.2.9** derives its values on commercial sector data from **Table 4.1.2** and shows how many pounds remaining and trips that could occur from the ACL alternatives from **Action 1**.

From 2010 through 2014, an average of 543 trips landed blueline tilefish when there was no trip limit and blueline tilefish were being targeted (**Table 3.3.8**). If an ACL is established in **Action 1** other than **Alternative 1 (No Action)**, it is not likely that the entire commercial ACL would be caught in future years with a 200 lbs ww (**Alternative 2**) or 300 lbs ww (**Preferred Alternative 3**) trip limit unless more trips land blueline tilefish as bycatch.

Table 4.2.9. Expected pounds and trips that could be affected by Action 2 trip limits given the commercial sector ACL alternatives in Action 1.

	Action 2 - Alternative 1		**Action 2 - Alternative 2**		**Action 2 - Alternative 3 (Pref)**	
Action 1	**Pounds Remaining**	**Additional Trips**	**Pounds Remaining**	**Additional Trips**	**Pounds Remaining**	**Additional Trips**
Alternative 1 (No Action)	18,135	181	13,244	66	**1,197**	**4**
Alternative 2	101,332	1,013	96,441	482	**84,394**	**281**
Alternative 3	99,088	991	94,197	471	**82,150**	**274**
Alternative 4	95,721	957	90,830	454	**78,783**	**263**
Alternative 5	91,233	912	86,342	432	**74,295**	**248**
Alternative 6	90,111	901	85,220	426	**73,173**	**244**
Alternative 7 (Pref)	**78,890**	**789**	**73,999**	**370**	**61,952**	**207**

It cannot be predicted how many trips would be made in the future that would land blueline tilefish as it is likely only to be a bycatch species regardless of the commercial sector ACL changes in **Action 1**. However, the lower the trip limit, the more likely the commercial ACL would not be met. Under Action 2, **Preferred Alternative 3** is likely to have the least direct negative economic effect, followed by **Alternative 2**, and then **Alternative 1 (No Action)**.

4.2.3 Social Effects

Commercial fishermen in the communities of Wanchese, Hatteras, Beaufort, and Supply, North Carolina; Little River, Murrell's Inlet, and McClellanville, South Carolina; and Miami, Key West, Islamorada, Fort Lauderdale, Boynton Beach, Cudjoe Key, Tavernier, and Port Orange, Florida (see **Figure 3.3.18**) would likely be those affected by a change in the blueline commercial trip limit. However, it is likely that fishermen who have targeted blueline tilefish in recent years also target other species, and have likely already adjusted businesses plans to adapt to the recent changes in blueline tilefish management. 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, if the trip limit is too low, the commercial ACL may not be met. However, as noted in **Section 4.2.2**, commercial blueline tilefish would likely remain a bycatch species under any possible ACL in **Action 1**.

The lowest trip limit under **Alternative 1 (No Action)** could reduce the risk of derby conditions and associated negative impacts that can occur due to an in-season closure or payback provision if the ACL is exceeded when compared to the 200-lbs gw and 300-lbs gw trip limits in **Alternative 2** and **Preferred Alternative 3**. A more restrictive trip limit (**Alternative 1 (No Action)**) is more likely to slow the rate of harvest and lengthen the season than a less restrictive trip limit, unless vessels do not currently harvest over a proposed limit, as noted in **Section 4.2.2**. Vessels with landings of blueline tilefish in recent years are likely catching blueline tilefish in combination with other snapper grouper species (along with coastal migratory pelagic species). Therefore, a trip with low poundage of one particular species is not necessarily an inefficient trip.

A longer open season could be beneficial to the commercial fleet and to end users of blueline tilefish (restaurant owners, fish houses, and consumers) by improving consistency of availability. However, because of a potential increase in the ACL under **Action 1**, the expected social effects under **Alternatives 1 (No Action)-3 (Preferred)** would have no difference as there would not be an expected in-season closure under any of the alternatives, as noted in **Section 4.2.1**. Additionally, increasing the trip limit in **Alternatives 2** and **3 (Preferred)** would help to reduce discards of blueline tilefish. Overall, the social benefits to the commercial fleet, associated businesses, and communities would likely be maximized under the highest trip limit in **Preferred Alternative 3**.

4.2.4 Administrative Effects

Alternatives 2 and **3 (Preferred)** may cause temporary administrative burdens in the form of cost, time, or law enforcement efforts to react to the changes. However, since a trip limit is already in place, the effects to the administrative environment are not expected to be significant. Changing the trip limit may require more outreach to notify the public and more law enforcement efforts to enforce the regulations.

4.3 Action 3. Adjust the Bag Limit for Blueline Tilefish for the Recreational Sector

Alternatives*

(preferred alternative in bold)

1 (No Action). Recreational harvest of blueline tilefish is limited to 1 fish/vessel/day May through August (closed rest of year) within the aggregate grouper bag limit.

2. Establish a blueline tilefish bag limit of 1 fish/person/day year-round within the aggregate grouper bag limit.

3. Establish a blueline tilefish vessel limit of 1 fish/vessel/day year-round within the aggregate grouper bag limit.

4. Establish a blueline tilefish bag limit of 1fish/person/day May through August within the aggregate grouper bag limit.

5. Establish a blueline tilefish bag limit of 3 fish/person/day year-round within the aggregate bag limit.

6. Establish a blueline tilefish bag limit of 3 fish/person/day May through August within the aggregate bag limit.

* See Chapter 2 for detailed alternatives

4.3.1 Biological Effects

Alternative 1 (No Action) allows retention of one fish per vessel per day for the months of May through August. **Alternatives 2-6 (Preferred)** would increase allowable harvest relative to **Alternative 1 (No Action) (Tables 4.3.1** and **4.3.3)**. No negative effects would be expected to the stock since ACLs and AMs are in place to prevent overfishing. Among the action alternatives, fishing mortality would be expected to decrease from **Alternatives 4**, **3**, **2**, **6 (Preferred)**, and **5** as the regulations would be less restrictive (**Table 4.3.3**). Thus, the greatest biological benefits would be provided by **Alternative 1 (No Action)** followed by **Alternatives 3**, **5**, **2**, and **6 (Preferred)**. Blueline tilefish is not overfished. Under all the alternatives, the stock is expected to increase because (1) the increase in bag limit is in response to an increase in the SSC's ABC recommendation and the South Atlantic Council's preferred alternative for ACL **(Action 1)** and (2) recreational AMs are in place to close the recreational sector in-season if the ACL is met or projected to be met.

The analysis of recreational bag limit impacts on blueline tilefish recreational harvest is presented in detail in **Appendix F**. (Note that **Appendix F** also contains an alternative analytical approach for bag limit analyses that provides information on discards, relative to the minimum size limit. This alternative approach will be reviewed by the SSC in May 2016 to assess its applicability to other managed species.) Analyses presented here are based both on the current baseline of 1-fish per vessel May through August and the past baseline of 3-fish per person open throughout the year. Since the regulations from Amendment 32 to the Snapper Grouper FMP (**Alternative 1 (No Action)**) have only been in place for a short time period (since March 30, 2015), this amendment also analyzes the effects of increasing the bag limit in **Alternatives 2-6** prior to the time the current regulation in **Alternative 1** (**No Action**: one-blueline tilefish per vessel from May through August) became effective. In 2015, blueline tilefish was included in the three-fish grouper aggregate bag limit from January 1 to March 30. When Amendment 32 became effective on March 30, 2015, the harvest of blueline tilefish was closed until May 1.

Harvest was then allowed beginning May 1 under a vessel limit of one blueline tilefish. The recreational sector was again closed on June 10 as the sector ACL was exceeded.

Table 4.3.1A presents the scalar change (i.e., no change = 100%) in recreational harvest under the proposed bag limit alternatives relative to the statutory baseline of a 1-fish per vessel limit. Under ACL **Action 1 Alternatives 2-7 (Preferred)**, only bag limit **Action 3 Alternatives 2** and **5** (year-round one fish and three fish per-person limits), were projected to result in an ACL overage (**Table 4.3.2**). **Preferred Alternative 6**, a May-August 3-fish per person bag limit, was projected to catch approximately 80,000 lbs ww (**Table 4.3.3**). **Alternative 1 (No Action)** would result in no change in harvest, with an anticipated closure date of August 31 (a 123-day season; **Tables 4.3.2** and **4.3.3**). The longest seasons would be provided by **Alternatives 3** and **2** since recreational harvest would be allowed year-round and a quota closure is only predicted for **Alternative 2** under ACL **Action 1 Alternatives 5-7 (Preferred) (Table 4.3.2)**. **Alternatives 4** and **6 (Preferred)** would not result in a closure and the season is projected to last 123 days as under **Alternative 1 (No Action)**. **Alternative 5** would result in quota closures for each of the ACL alternatives proposed in **Action 1** with closure dates ranging from January 28 (for status quo ACL) to July 23 (for highest ACL under **Alternative 2** of **Action 1**) **(Table 4.3.2)**. For **Action 1 Alternatives 2-7 (Preferred)**, **Action 3 Alternative 5** would result in longer seasons than **Action 3 Alternatives 1 (No Action)**, **4**, and **6 (Preferred)**, because the quota closure would occur after a season of greater than 123 days (**Table 4.3.2**). Substantial increases in harvest are anticipated for **Alternatives 2-6 (Preferred)**, with the largest increases anticipated for **Alternatives 2**, **5**, **6 (Preferred)**, and **4** because they would allow multiple fish to be retained on a vessel with multiple anglers **(Table 4.3.3)**. In general, headboats carry more anglers than charter boats, and charter boats carry more people than private boats. The mode-specific impacts of increasing bag limits follow this trend with headboats realizing the greatest potential increase in harvest if a per-person bag limit is selected **(Table 4.3.1)**.

Bycatch could be greater for **Alternatives 1 (No Action)**, **4**, and **6 (Preferred)** than the other alternatives considered under this action as blueline tilefish would have to be returned to the water over the longest period of time. The release mortality of blueline tilefish, a deepwater species, is likely 100%. In addition, effective August 20, 2015, NMFS implemented a one-fish per vessel per day during May through August with no retention for the remainder of the year for both snowy grouper (Regulatory Amendment 20; SAFMC 2014d) and blueline tilefish (Amendment 32; SAFMC 2014c). One of the goals of these actions was to align the seasons and regulations to minimize discard mortality of deepwater species. **Alternatives 2**, **3**, and **5** would remove the aligned allowable fishing seasons and could increase discards if the two species inhabit the same area.

From the baseline of a three fish bag limit, **Alternative 1 (No Action)**, one fish per vessel from May through August and included in the grouper aggregate, had an average harvest reduction from 69% to 97% in May through August, depending on the sector (**Table 4.3.1B**). The reduction in harvest based on **Alternative 2**, one fish per person per day and included in the grouper aggregate, ranged from 38% to 85% depending on the sector and time period included. The reduction in harvest based on **Alternative 3**, one fish per vessel per day bag limit and

included in the grouper aggregate, ranged from 69% to 98%. The reduction in harvest based on **Alternative 4**, one fish per person per day from May through August and included in the grouper aggregate, ranged from 38% to 55%. **Alternatives 5** and **6 (Preferred)** are equivalent to the 3-fish baseline for this comparison for May through August.

Background Information on the Bag Limit Analysis of the Increase from the 3-Fish Aggregate

For this analysis, data for the private recreational and charter boat sectors were obtained through the Marine Recreational Information Program (MRIP) and the headboat sector through the NMFS Headboat Survey. The code for the analysis was developed for black sea bass and modified for blueline tilefish bag limit. Bag limit reductions were based on the reported catch (i.e., not limited to current regulations) from 2010 to 2014. Data from 2015 were not available for analysis. In March 2015, implementation of Amendment 32 (SAFMC 2014c) reduced the bag limit from three fish and included in the grouper aggregate to one blueline tilefish (within the grouper aggregate) with recreational harvest limited to May through August and no possession allowed for the remainder of the year.

Some of trips in the headboat sector reported fishing on multi-day trips; therefore, the bag limit was based on the legal number for the trip length (trips lasting less than 24 hrs=1 fish per person or vessel, trips lasting between 24 and 48 hrs= 2 fish per person or vessel, and trips lasting longer than 48 hrs = 3 fish per person or vessel). In 2011, a harvest prohibition for six snapper grouper species in water deeper than 240 feet was enacted and analyses were completed with 2011 included and without 2011. The 240-foot harvest prohibition was removed in 2012. MRIP interviewed 144 charter boat trips and 36 private recreational trips that caught at least one blueline tilefish (A, B1, or B2) from 2010 to 2014 (**Table 4.3.4**). This totaled to 745 anglers on charter vessels and 95 anglers on private recreational vessels. The headboat survey interviewed 468 trips with 9,734 anglers from 2010 to 2014. Most of the private and for-hire trips that reported catching blueline tilefish kept at least one blueline tilefish on the trip and there were few trips that reported any discards of blueline tilefish.

Table 4.3.1. Projected South Atlantic recreational blueline tilefish scalar changes in landings under proposed bag limit alternatives based on simulations using mean 2010-2014 data. (A) projected changes in landings relative to current statutory baseline (1 fish/vessel May-Aug) and (B) projected changes in landings relative to 2009-2014 baseline (three fish/person in grouper aggregate year round).

A) Relative to statutory baseline of one fish/vessel May-Aug

	Charter Boat						**Private**						**Headboat**					
						Pref						**Pref**						**Pref**
	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	**Alt. 6**	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	**Alt. 6**	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	**Alt. 6**
Season	1 per vessel (May-Aug)	1 per person	1 per vessel	1 per person (May-Aug)	3 fish per person	**3 fish per person (May-Aug)**	1 per vessel (May-Aug)	1 per person	1 per vessel	1 per person (May-Aug)	3 fish per person	**3 fish per person (May-Aug)**	1 per vessel (May-Aug)	1 per person	1 per vessel	1 per person (May-Aug)	3 fish per person	**3 fish per person (May-Aug)**
Jan-Apr	0%	132%	34%	0%	291%	**0%**	0%	200%	100%	0%	323%	**0%**	0%	859%	77%	0%	1643%	**0%**
May-Aug	100%	464%	100%	464%	873%	**873%**	100%	200%	100%	200%	323%	**323%**	100%	1524%	100%	1524%	3401%	**3401%**
Sept-Dec	0%	254%	60%	0%	541%	**0%**	0%	200%	100%	0%	323%	**0%**	0%	777%	66%	0%	1552%	**0%**

B) Relative to 2010-2014 baseline of three fish/person

Season	Charter Boat						Private						Headboat					
	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	**Pref Alt. 6**	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	**Pref Alt. 6**	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	**Pref Alt. 6**
	1 per vessel (May-Aug)	1 per person	1 per vessel	1 per person (May-Aug)	3 fish per person	**3 fish per person (May-Aug)**	1 per vessel (May-Aug)	1 per person	1 per vessel	1 per person (May-Aug)	3 fish per person	**3 fish per person (May-Aug)**	1 per vessel (May-Aug)	1 per person	1 per vessel	1 per person (May-Aug)	3 fish per person	**3 fish per person (May-Aug)**
Jan-Apr	0%	15%	4%	0%	100%	**0%**	0%	62%	31%	0%	100%	**0%**	0%	25%	2%	0%	100%	**0%**
May-Aug	11%	53%	11%	53%	100%	**100%**	31%	62%	31%	62%	100%	**100%**	3%	45%	3%	45%	100%	**100%**
Sept-Dec	0%	29%	7%	0%	100%	**0%**	0%	62%	31%	0%	100%	**0%**	0%	23%	2%	0%	100%	**0%**

Sources: SEFSC MRIP Catch-Effort Files (2015) and SEFSC Southeast Headboat Survey Catch-Effort Files (2015)

Table 4.3.2. Projected closure dates and season lengths in days for South Atlantic recreational blueline tilefish prior to reaching annual catch limit (ACL) for each proposed ACL alternative and bag limit alternative in Regulatory Amendment 25.
Note analysis is forward projected for 2016 (a leap year).

Alternative		Closure Date							Days in Season						
		ACL Alt1	ACL Alt2	ACL Alt3	ACL Alt4	ACL Alt5	ACL Alt6	**Pref ACL Alt7**	ACL Alt1	ACL Alt2	ACL Alt3	ACL Alt4	ACL Alt5	ACL Alt6	**Pref ACL Alt7**
1	1 per vessel (May-Aug)	31-Aug	31-Aug	31-Aug	31-Aug	31-Aug	31-Aug	**31-Aug**	123	123	123	123	123	123	**123**
2	1 per person	17-Feb	31-Dec	31-Dec	31-Dec	28-Dec	21-Dec	**1-Sep**	48	366	366	366	363	356	**245**
3	1 per vessel	7-Jul	31-Dec	31-Dec	31-Dec	31-Dec	31-Dec	**31-Dec**	189	366	366	366	366	366	**366**
4	1 per person (May-Aug)	31-Jul	31-Aug	31-Aug	31-Aug	31-Aug	31-Aug	**31-Aug**	92	123	123	123	123	123	**123**
5	3 per person	28-Jan	23-Jul	20-Jul	17-Jul	12-Jul	11-Jul	**28-Jun**	28	205	202	199	194	193	**180**
6 (Pref)	**3 per person (May-Aug)**	**5-Jul**	**31-Aug**	**31-Aug**	**31-Aug**	**31-Aug**	**31-Aug**	**31-Aug**	**66**	**123**	**123**	**123**	**123**	**123**	**123**

Table 4.3.3. Projected landings by mode and for all recreational modes combined under each proposed bag limit alternative for Action 1 ACL **Preferred Alternative 7** of 87,277 lb. ww.

Bag Limit	Headboat	Private	Charter	All	%Alt1
Alt 1	276	15,302	2,427	18,005	100%
Alt 2	9,390	65,869	11,991	87,250	485%
Alt 3	6,231	37,464	3,481	47,177	262%
Alt 4	276	30,603	11,270	42,149	234%
Alt 5	8,604	66,531	12,097	87,232	484%
Alt 6 (Pref)	**9,390**	**49,360**	**21,188**	**79,938**	**444%**

Table 4.3.4. Number of sampled charter boat, private, and headboat vessels and anglers on the vessels reporting blueline tilefish and the percentage of trips landing blueline tilefish, and trips with discards from 2010 to 2014.

	Charter Boat				Private				Headboat			
Year	Trips Sampled Reporting Blueline Tilefish	Number of Anglers Sampled	% of Trips Landing Blueline Tilefish	% of Trips with Discarded Blueline Tilefish	Trips Sampled Reporting Blueline Tilefish	Number of Anglers Sampled	% of Trips Landing Blueline Tilefish	% of Trips with Discarded Blueline Tilefish	Trips Sampled Reporting Blueline Tilefish	Number of Anglers Sampled	% of Trips Landing Blueline Tilefish	% of Trips with Discarded Blueline Tilefish
2010	34	180	100%	9%	6	12	100%	0%	69	1,561	91%	14%
2011	20	114	100%	5%	2	4	100%	0%	115	2,099	97%	10%
2012	35	171	100%	3%	11	36	64%	36%	101	2,102	87%	44%
2013	19	92	100%	5%	7	17	86%	14%	67	1,449	100%	0%
2014	36	188	97%	3%	10	26	100%	0%	116	2,523	100%	3%

None of the alternatives in **Action 3** are anticipated to have adverse effects on listed *Acropora* species, large whales, or any DPS of Atlantic sturgeon. In previous ESA consultations NMFS determined the hook-and-line sector of the snapper grouper fishery was not likely to adversely affect *Acropora* species, large whales, or any DPS of Atlantic sturgeon. These alternatives are unlikely to alter fishing behavior in a way that would cause new adverse effects to these species.

4.3.2 Economic Effects

There are no specific economic data on the consumer surplus value to anglers for catching the first blueline tilefish compared to another species. Haab et al. (2001) estimated CS only for additional fish caught and made no CS estimate for landing a single blueline tilefish. It is rare for anglers to catch more than one blueline tilefish **(Section 3.3.2.2)** with only an average 4% of recreationally caught blueline tilefish being released between 2010 and 2014. However, it is logical to assume that being allowed to catch and keep a blueline tilefish has more value to the angler than not being allowed to catch a blueline tilefish altogether. Therefore, while it is not possible to put a specific dollar value to each of the alternatives of **Action 3**, it is possible to rank them in terms of highest to lowest in terms of consumer surplus value to anglers.

Based on predicted increases in harvest (see **Table 4.3.3**), in order of most restrictive to least restrictive in terms of being able to keep blueline tilefish, and therefore lowest to highest direct positive economic benefit to the private recreational fisher, is **Alternative 1 (No Action)**, followed by **Alternatives 4**, **3**, **6 (Preferred)**, **2**, and **5**. However, the for-hire sector (charter/headboat industry) could sell more trips over a longer period if the season was open longer and increase their net operating revenue. Setting a vessel limit rather than a per-individual limit would make the season last longer (**Table 4.3.2**). Therefore, for the for-hire sector, the order of longest to shortest fishing season, and therefore highest to lowest direct positive economic benefit would be **Alternative 3**, **2**, **5**, and a tie between **Alternative 1 (No Action)**, **Alternative 4**, and **Preferred Alternative 6**. The greatest to least harvest for the for-hire sector would be ranked from **Alternatives 6 (Preferred)**, **2**, **5**, **4**, **3**, and finally, **Alternative 1 (No Action)** (**Table 4.3.3**).

4.3.3 Social Effects

In general, the social effects of modifying the recreational bag or vessel limit would be associated with the biological costs of each alternative (see **Section 4.3.1**), as well as the effects on current recreational fishing opportunities. While each alternative would limit recreational fishing opportunities for blueline tilefish, each alternative would also be expected to contribute to the increase in population size under the proposed ACLs in **Action 1**.

Different levels of recreational fishing opportunities under each alternative could affect recreational anglers and for-hire businesses targeting blueline tilefish. The social effects of bag limits can be associated with how many and at what times of year the recreational catch may be retained. Additionally, any long-term negative biological effects on the stock due to recreational

landings from higher bag limits, or dead discards due to lower bag limits, would also likely result in negative effects of recreational fishing opportunities in future years.

In general, social benefits from improved recreational fishing opportunities would result from a bag limit that has the largest portion of the year open to recreational harvest, with the highest number of fish per person, as long as the recreational ACL is not exceeded and there is no in-season closure or post-season payback. As noted in **Section 4.3.1**, however, a higher bag limit could result in a shorter open season. In terms of social effects, benefits from improved recreational fishing opportunities would result from a bag/vessel limit that has the largest portion of the year open to recreational harvest, with the highest number of fish per person, as long as the recreational ACL is not exceeded and there is no in-season closure or post-season payback. However, a higher bag limit could result in a shorter open season (**Table 4.3.2**). If the time of year is not an important factor to blueline tilefish social effects, the length of fishing seasons and associated social benefits would decline from **Alternative 3**, **2**, **5**, and a tie between **Alternative 1 (No Action)**, **Alternative 4**, and **Preferred Alternative 6**. Overall, the benefits and costs to recreational fishermen under each alternative could depend on the most popular time to target blueline tilefish compared with season length.

4.3.4 Administrative Effects

Alternatives 2 through **6 (Preferred)** may cause temporary administrative burdens in the form of cost, time, or law enforcement efforts to react to the changes. However, since a bag limit is already in place, the effects to the administrative environment are not expected to be significant. Changing the bag limit may require more outreach to notify the public and more law enforcement efforts to enforce the regulations.

4.4 Action 4. Increase the Recreational Bag Limit of Black Sea Bass

Alternatives
(preferred alternative in bold)

1 (No action). The recreational bag limit of black sea bass is 5 fish per person per day.

2. Increase the recreational bag limit of black sea bass to 6 fish per person per day.

3. Increase the recreational bag limit of black sea bass to 7 fish per person per day.

4. Increase the recreational bag limit of black sea bass to 8 fish per person per day.

5. Increase the recreational bag limit of black sea bass to 9 fish per person per day.

6. Increase the recreational bag limit of black sea bass to 10 fish per person per day.

4.4.1 Biological Effects

A higher bag limit, as determined through the bag limit analysis described below, is expected to have a negligible impact on the recreational landings of black sea bass. Therefore, biological impacts are expected to be neutral for all the proposed bag limit alternatives (**Alternatives 1** through **6**) as none of them results in appreciable increases in harvest. Moreover, the amount of fish being discarded appears to be due to the current minimum size limit and not due to anglers landing quantities of black sea bass above the current bag limit.

The analysis presented herein examines increasing the recreational bag limit for black sea bass from the current bag limit of 5 fish per angler per day to proposed bag limits ranging from 6 to 10 fish per angler per day and including information relative to the minimum size limit. Refer to **Appendix F** for detailed methodology on the analysis used for this section. (Note that **Appendix F** contains detailed methodology for the new bag limit analysis presented here as well as for the older established approach. The alternative approach presented in this section will be reviewed by the SSC in May 2016 to assess its applicability to other managed species.)

The following two data sources were used to estimate the effects from changing the bag limit: intercept data from the Marine Recreational Information Program (MRIP) for 2013 and 2014 and Southeast Headboat Survey data for the same years. The data ranges from Cape Hatteras, North Carolina to the Florida Keys and includes all trips that encountered at least one black sea bass (either landed, discarded, or both). Data for 2012 were excluded due to the change in the recreational minimum size limit from 12 inches total length (TL) in 2012 to 13 inches TL in 2013 and beyond. Also, 2013 was the first year the new MRIP sampling protocol was used. Data from each year were analyzed individually, and data averaged from 2013 and 2014 were also examined to obtain a range of estimated landings values under each of the proposed bag limits. All assessment data came from the SEDAR 25 update for black sea bass completed in 2013 (SEDAR 25 Update 2013).

Tables 4.4.1 and **4.4.2** show the percentage of trips (for both MRIP and headboat) that met the bag limit in 2013 and 2014 and the percentage of anglers (for headboat) that met the bag limit. On headboat trips that did not meet the bag limit, the total number of black sea bass

landed was divided by five to estimate the maximum number of anglers that could have met the bag limit on each trip.

Table 4.4.1. Percentage of trips (private and charter) that met and did not meet the black sea bass bag limit in 2013 and 2014.

Year	% Trips Met Bag			% Trips Did Not Meet Bag			
	Charter	Private	Total	Charter	Private	Shore	Total
2013	1.5%	0.9%	0.8%	98.5%	99.1%	100.0%	99.2%
2014	0.8%	0.8%	0.7%	99.2%	99.2%	100.0%	99.3%
Avg.	0.9%	0.8%	0.7%	99.1%	99.2%	100.0%	99.3%

Table 4.4.2. Percentage of trips (headboat) and anglers that met and did not meet the black sea bass bag limit in 2013 and 2014.

Year	% Trips		% Anglers	
	Did Not Hit Bag	Met Bag	Did Not Hit Bag	Met Bag
2013	96.7%	3.3%	78.3%	21.7%
2014	96.8%	3.2%	82.6%	17.4%
Avg.	96.8%	3.2%	80.6%	19.4%

These statistics show that a very small number of trips are meeting the black sea bass bag limit on average in any given year. A comparison between the percentages of landed black sea bass and discarded black sea bass to the total encountered (**Tables 4.4.3** and **4.4.4**) confirms that most of the black sea bass caught in 2013 and 2014 were discarded. However, on trips that did meet the bag limit, the majority of the black sea bass were landed, although there was still a large amount of discards on those trips.

Table 4.4.3. Percentage of black sea bass landed and percentage discarded on private and charter trips that met and did not meet the bag limit in 2013 and 2014.

Year	Did Not Hit Bag		Hit Bag		All Trips	
	% Landed	% Discarded	% Landed	% Discarded	% Landed	% Discarded
2013	5.2%	94.8%	61.1%	38.9%	7.8%	92.2%
2014	5.2%	94.8%	33.9%	66.1%	6.4%	93.6%
Avg.	5.2%	94.8%	44.8%	55.2%	6.9%	93.1%

Table 4.4.4. Percentage of black sea bass landed and percentage discarded on headboat trips that met and did not meet the bag limit in 2013 and 2014.

Percent Landed and Discarded BSB On All Headboat Trips						
Year	Did Not Hit Bag		Hit Bag		All Trips	
	% Landed	% Discarded	% Landed	% Discarded	% Landed	% Discarded
2013	9.5%	90.5%	34.7%	65.3%	10.5%	89.5%
2014	9.6%	90.4%	35.4%	64.6%	10.7%	89.3%
Total	9.5%	90.5%	35.0%	65.0%	10.6%	89.4%

With so few trips and anglers reaching the bag limit, and such a high percentage of the catch being discarded (**Tables 4.4.5** and **4.4.6**), the data suggest that the landings are being limited by the minimum size limit and not the bag limit.

Table 4.4.5. Landings and total discards of black sea bass on all recreational trips in 2013 and 2014.

Year	Catch All Trips			% Catch All Trips	
	Landed	Discarded	Total	Landed	Discarded
2013	325,013	3,552,391	3,877,404	8.38%	91.62%
2014	415,910	5,579,806	5,995,716	6.94%	93.06%
Avg.	370,461	4,566,098	4,936,560	7.50%	92.50%

Table 4.4.6. Total number of discarded black sea bass from recreational trips that occurred inside and outside of three miles from shore.

Year	<= 3 mi	> 3 mi
2013	1,716,353	1,094,821
2014	2,060,023	2,863,174
Avg.	1,888,188	1,978,998

Analysis results also show that a higher bag limit would have a negligible impact on the recreational landings of black sea sass (**Tables 4.4.7- 4.4.9**). As shown in **Figure 4.4.1**, almost 95% of the discarded black sea bass are below the minimum size of 13 inches TL. Even under a bag limit of 10 fish per person per day, only about 51% of the 2016 recreational ACL would be taken, which is only about a 1.5% increase from the current bag limit of five per person per day (**Table 4.4.9**).

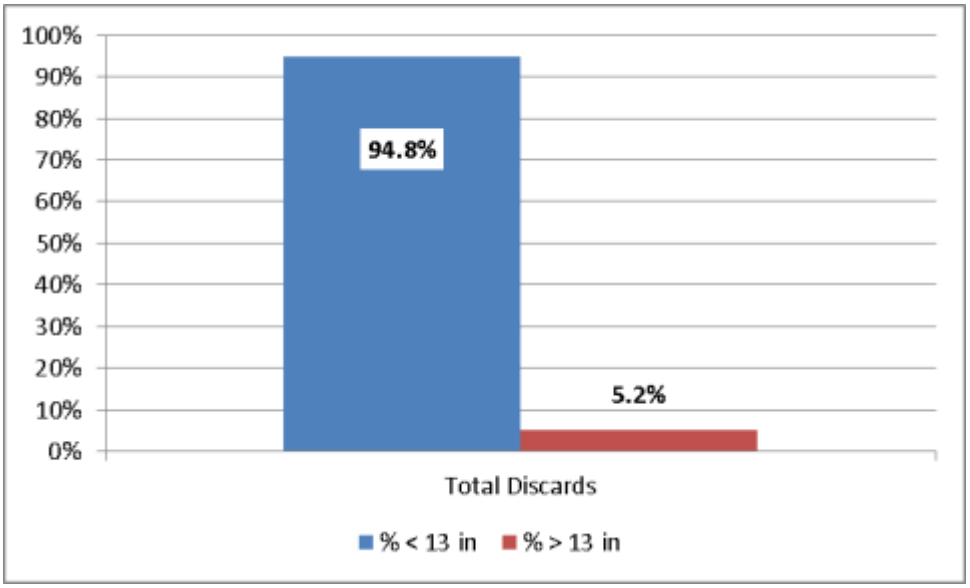


Figure 4.4.1. Estimated percent of total discards that are above and below the 13-inch TL minimum size limit.

On average, recreational anglers are discarding 12 times more black sea bass than they are landing. Even on trips that meet the bag limit, anglers are discarding 30% more black sea bass on average than they are landing. Therefore, it is not reasonable to assume that on trips where anglers caught the bag limit, they would be able to retain all their discarded black sea bass if the bag limit was high enough. The methodology used for the analysis presented herein corrects for that by estimating the proportion of fish that were discarded due to the minimum size limit versus those that were discarded due to hitting the bag limit.

Table 4.4.7. Estimated landings and percentage increase from current conditions for combined MRIP and headboat data in numbers of fish under different bag limit scenarios.

Year	Est. Landings (number) from Different Bag Limits						% Increase from Current				
	Current	Bag 6	Bag 7	Bag 8	Bag 9	Bag 10	Bag 6	Bag 7	Bag 8	Bag 9	Bag 10
2013	326,303	330,084	**331,366**	332,659	334,687	334,735	1.2%	**1.6%**	1.9%	2.6%	2.6%
2014	417,001	426,765	**430,363**	431,173	431,211	431,379	2.3%	**3.2%**	3.4%	3.4%	3.4%
Avg.	371,652	378,425	**380,864**	381,916	382,949	383,057	1.8%	**2.5%**	2.8%	3.0%	3.1%

Table 4.4.8. Estimated landings and percentage increase from current conditions for combined MRIP and headboat data in lbs ww under different bag limit scenarios.

Year	Est. Landings (lbs) from Different Bag Limits						% Increase from Current				
	Current	Bag 6	Bag 7	Bag 8	Bag 9	Bag 10	Bag 6	Bag 7	Bag 8	Bag 9	Bag 10
2013	415,888	421,233	**422,861**	424,497	427,106	427,182	1.3%	**1.7%**	2.1%	2.7%	2.7%
2014	579,164	592,845	**597,913**	598,896	598,951	599,307	2.4%	**3.2%**	3.4%	3.4%	3.5%
Avg.	497,526	507,039	**510,387**	511,696	513,028	513,245	1.9%	**2.6%**	2.8%	3.1%	3.2%

Table 4.4.9. Percentage of black sea bass 2016 recreational ACL estimated to be landed under different bag limit scenarios.

Year	2016 Rec ACL (lbs)	% of 2016 ACL (lbs)					
		Current	Bag 6	Bag 7	Bag 8	Bag 9	Bag 10
2013	1,001,177	41.5%	42.1%	**42.2%**	42.4%	42.7%	42.7%
2014		57.8%	59.2%	**59.7%**	59.8%	59.8%	59.9%
Avg.		49.7%	50.6%	**51.0%**	51.1%	51.2%	51.3%

None of the alternatives in **Action 4** are anticipated to have adverse effects on listed *Acropora* species, large whales, or any DPS of Atlantic sturgeon. In previous ESA consultations NMFS determined the hook-and-line sector of the snapper grouper fishery was not likely to adversely affect *Acropora* species, large whales, or any DPS of Atlantic sturgeon. These alternatives are unlikely to alter fishing behavior in a way that would cause new adverse effects to these species. In addition, a higher bag limit, as determined through the bag limit analysis described below, is expected to have a negligible impact on the recreational landings of black sea bass. Therefore, biological impacts to protected species that interact with the fishery (i.e., sea turtles and smalltooth sawfish) are expected to be neutral for all the proposed bag limit alternatives **(Alternatives 1** through **6)** as none of them results in appreciable increases in harvest.

4.4.2 Economic Effects

Analyses in **Section 4.4.1** show that few trips have landed the current recreational bag limit for black sea bass. However, the analysis also shows that large numbers of black sea bass caught by anglers are discarded, presumably because they are undersized. Until the stock of black sea bass biomass includes more individuals that meet the 13 inch TL minimum size limit or the minimum size limit is reduced, it is unlikely there would be much economic benefit to anglers from an increase in the bag limit because only 1.8% (6 fish bag limit - **Alternative 2**) to 3.2% (10 fish bag limit - **Alternative 6**) more fish are expected to be landed (see **Table 4.4.7**). Based on landings from 2013 and 2014, the current average recreational landings account for 49.7% on average of the recreational sector ACL. Increasing the bag limit would only increase the harvest to 51.3% of the recreational sector ACL (**Table 4.4.9**).

Participation, effort, and harvest are indicators of the value of saltwater recreational fishing. However, a more specific indicator of value is the satisfaction that anglers experience over and above their costs of fishing. The monetary value of this satisfaction is referred to as consumer surplus. The value or benefit derived from the recreational experience is dependent on several quality determinants, which include fish size, catch success rate, and the number of fish kept. These variables help determine the value of a fishing trip and influence total demand for recreational fishing trips.

Haab et al. (2001) estimated consumer surplus (CS) for an additional recreationally caught bottom fish in the South Atlantic Region to be $4.02 (in 2014 dollars). **Table 3.3.56** estimated that 816,598 recreational trips landed black sea bass in 2014. **Table 4.4.10** shows the estimated increase in consumer surplus and the average per trip increase in consumer surplus for each of the alternative black sea bass bag limits for this action using the CS value for a recreationally-caught bottom fish in the South Atlantic as a proxy.

Table 4.4.10. Total expected increase and per trip increase in consumer surplus expected for each increase in the black sea bass recreational bag limit as proposed in Action 2.

	Total Increase in Consumer Surplus	Per Trip Increase in Consumer Surplus
Alternative 1 (5 fish)	$0	$0.00
Alternative 2 (6 fish)	$27,227	$0.03
Pref Alternative 3 (7 fish)	**$37,032**	**$0.05**
Alternative 4 (8 fish)	$41,261	$0.05
Alternative 5 (9 fish)	$45,414	$0.06
Alternative 6 (10 fish)	$45,848	$0.06

The greater the bag limit, the greater the potential for direct positive economic effects. Therefore, the order of least to most increase in direct economic benefits is **Alternative 1 (No Action)**, **Alternative 2**, **Preferred Alternative 3**, **Alternative 4**, **Alternative 5**, and **Alternative 6**. However, the higher the bag limit, the shorter the open season may be if landings typically reach or exceed the recreational ACL. A shorter season may result in fewer angler trips and smaller trip-related economic benefits, such as fewer angler-related jobs and decreased income, sales, and value added.

4.4.3 Social Effects

Black sea bass is an important recreational species in the South Atlantic. **Section 3.3.3.2** provides more detail about the social characteristics of the recreational sector for black sea bass. The potential effects on recreational fishing opportunities due to an increase in the black sea bass bag limit would be associated with the number of fish that could be retained, and how long the recreational fishing season would be expected to stay open. Input from the public following the 5-fish bag limit in Regulatory Amendment 9 to the Snapper Grouper FMP (SAFMC 2011a) indicate that the reduced bag limit resulted in negative effects on recreational fishing opportunities, particularly when combined with a reduced ACL that caused a short recreational season. While the increased black sea bass ACL in Regulatory Amendment 19 to the Snapper Grouper FMP (SAFMC 2013a) allowed recreational black sea bass to stay open all year, the 5-fish bag limit still limited recreational anglers in retention of this popular species.

As noted in **Sections 4.4.1** and **4.4.2**, the minimum size limit dictates the number of black sea bass that could be kept more so than the bag limit, and data indicate that most recreational trips do not catch the current bag limit. An increased bag limit would be expected to have little or no positive or negative effects on recreational fishermen and for-hire businesses. Additionally, recreational landings in recent years have reached less than 50% of the current recreational ACL, and there would not be an expectation of an early closure for the recreational sector, under the current conditions (recreational participation and stock biomass). The expected social effects under **Alternatives 2-6** would be the same as under **Alternative 1 (No Action)**.

4.4.4 Administrative Effects

Alternatives 2 through **6** may cause temporary administrative burdens in the form of cost, time, or law enforcement efforts to react to the changes. However, since a bag limit is already in place, the effects to the administrative environment are not expected to be significant. Changing the bag limit may require more outreach to notify the public and more law enforcement efforts to enforce the regulations.

4.5 Action 5. Modify the Fishing Year for Yellowtail Snapper

Alternatives
(preferred alternative in bold)

1 (No Action). The fishing year (commercial and recreational) is the calendar year, January 1 to December 31.

2. Modify the start date of the fishing year for the commercial sector for yellowtail snapper
- 2a. June 1 to May 31
- 2b. July 1 to June 30
- **2c. August 1 to July 31**
- 2d. September 1 to August 31

3. Modify the start date of the fishing year for the recreational sector for yellowtail snapper
- 3a. June 1 to May 31
- 3b. July 1 to June 30
- **3c. August 1 to July 31**
- 3d. September 1 to August 31

4.5.1 Biological Effects

To evaluate the impacts of proposed changes to the yellowtail snapper fishing season, commercial and recreational landings were summarized from the latest SEFSC ACL databases by year and month, and then totaled according to the various proposed seasons. **Table 4.5.1** presents results for the commercial sector whereas estimates for the recreational sector are shown in **Table 4.5.2**. Based on data from 2010-2014, none of the proposed fishing year alternatives are anticipated to result in an ACL closure for either sector. An annual average of 971,710 lbs gw was landed from 2010 through 2014. Since 2012, the commercial ACL for yellowtail snapper has been 1,596,501 lbs ww and from 2012 through 2014, annual landings of the species were less than the commercial ACL. However, the commercial ACL was met in 2015, and commercial closures could occur in future years if harvest levels are similar to those in 2015. As of October 28, 2015, commercial landings were projected to reach the commercial ACL (1,596,501 lbs ww) and on October 31, 2015, the commercial season closed.

There is not, nor has there been, a commercial trip limit for yellowtail snapper. From 2010 through 2014, an annual average of 256 vessels made 3,798 trips that landed yellowtail snapper, and approximately 87% (3,292) of those trips landed no more than 500 lbs gw of the species (see **Tables 3.3.13** and **3.3.14**). Approximately 3% (118) of those annual trips and approximately 9% of those vessels landed more than 1,500 lbs gw in at least one trip.

As shown in **Figure 4.5.1**, commercial landings of yellowtail snapper since 2010 have been highest in late spring and early summer, whereas recreational landings (**Figure 4.5.2**) tend to increase in the spring and remain high during summer months.

Table 4.5.1. Commercial yellowtail snapper landings (lbs ww) under proposed fishing year alternatives. Note for Alternative 1, landings summaries correspond to the first year in the sequence (e.g., 2011-2012 = 2011).

		Average (2011-2014)			
Alternative	**Fishing Year**	**2011-2012**	**2012-2013**	**2013-2014**	**Average (last 3 FY)**
1	Jan 1 - Dec 31	1,125,220	1,439,586	1,328,931	1,297,912
2a	June 1 - May 30	1,314,939	1,366,018	1,268,965	1,316,641
2b	July 1 - June 30	1,343,436	1,400,545	1,267,058	1,337,013
2c (Pref)	**Aug 1 - July 31**	**1,400,815**	**1,374,964**	**1,247,152**	**1,340,977**
2d	Sept 1 - Aug 31	1,414,483	1,385,401	1,208,287	1,336,057

Source: SEFSC Commercial ACL Data (Oct 2, 2015)

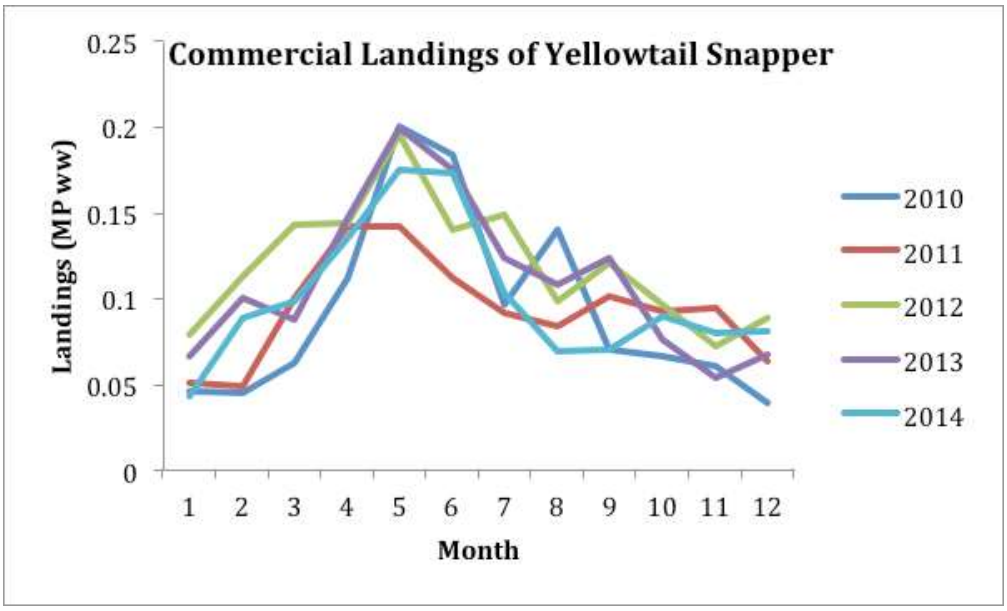


Figure 4.5.1. Distribution of South Atlantic yellowtail snapper commercial landings by month. Source: SEFSC Commercial ACL Data (Oct 2, 2015). Note for Alternative 1, landings summaries correspond to the first year in the sequence (e.g., 2011-2012 = 2011).

Table 4.5.2. Recreational yellowtail snapper landings (lbs ww) under proposed fishing year alternatives.

		Average (2011-2014)			
Alternative	**Fishing Year**	**2011-2012**	**2012-2013**	**2013-2014**	**Average (last 3 FY)**
1	Jan 1 - Dec 31	390,999	493,409	666,026	516,811
3a	June 1 - May 30	463,480	558,980	754,354	592,271
3b	July 1 - June 30	483,054	614,718	766,971	621,581
3c (Pref)	**Aug 1 - July 31**	**478,362**	**654,012**	**809,310**	**647,228**
3d	Sept 1 - Aug 31	475,750	693,025	848,588	672,454

Source: SEFSC MRFSS-based Recreational ACL Data (Sept 2015).

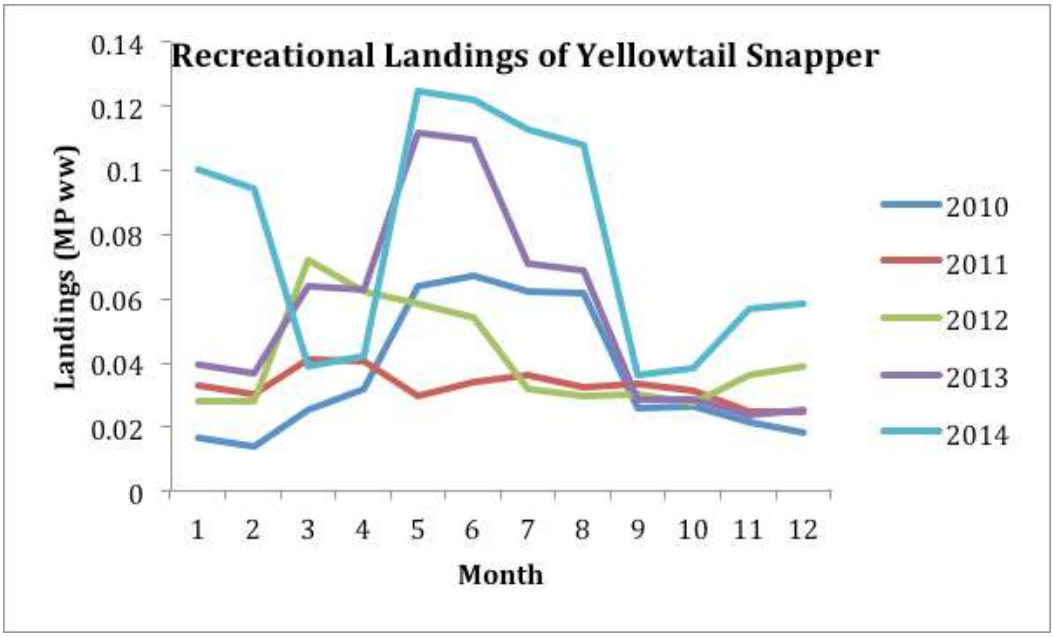


Figure 4.5.2. Distribution of South Atlantic yellowtail snapper recreational landings by month. Source: SEFSC MRFSS-based Recreational ACL Data (Sept 2015).

The commercial and recreational fishing year for yellowtail snapper begins on January 1 and ends on December 31. **Alternative 1 (No Action)** would not change the commercial or recreational fishing year. **Preferred Alternative 2** and its sub-alternatives consider various start dates for the commercial fishing year, whereas, **Preferred Alternative 3** and its sub-alternatives consider various start dates for the recreational fishing year. Based on landings from 2010-2014 (**Tables 4.5.1** and **4.5.2**), it is unlikely that yellowtail snapper commercial or recreational ACLs would be met during the any of the proposed fishing years and there would be no additional biological effects from a change in the fishing year under **Action 5**. However, the commercial ACL was met in 2015. Although those data are not available for analyses, it can be assumed that commercial landings in future years could be similar to those in 2015, and commercial closures could occur.

If the ACL is met for the commercial sector, the AM is to prohibit harvest and possession in season. If the recreational ACL is met, the current AM is to monitor landings in the following fishing year and potentially reduce the length of the fishing year; however, the final rule for the Comprehensive AM and Dolphin Allocation Amendment (SAFMC 2015), which became effective on February 22, 2016 requires a recreational sector in-season closure when the recreational ACL is met. Therefore, if the commercial or recreational ACL was expected to be met, **Preferred Alternatives 2** and **3** would allow for the start of the fishing year to be adjusted to increase the probability that the closed months would occur during the peak spawning period. However, potential closures under all the sub-alternatives have an equal chance of occurring during the yellowtail snapper spawning season. In southeast Florida, spawning occurs during spring and summer with peak spawning in May-July (Grimes 1987, Muller et al. 2003). **Sub-alternatives 2a**, **2b**, **3a**, and **3b** could result in positive biological impacts if closures occurred

during the beginning of peak spawning (peak spawning is May-July) for yellowtail snapper. Since the allowable harvest amounts are not changing, the level of discards is expected to remain the same.

The commercial harvest of yellowtail snapper had not been prohibited because of landings meeting or exceeding the ACL until 2015, when commercial harvest was closed on October 31. It is possible that the commercial ACL could be met in the future if harvest levels are similar to those in 2015. The length of the recreational fishing season for yellowtail snapper has never been shortened because the recreational ACL was exceeded. A shortening of the fishing year could translate into decreased fishing pressure during the yellowtail snapper spawning season, thus resulting in positive biological effects.

An indirect biological benefit would result from **Alternative 1 (No Action)** in that the fishing year used in future stock assessments for the species would be consistent with previous ones. If the fishing year were to change, then future stock assessments would have to account for the discrepancy, possibly introducing more uncertainty in the assessment results. In addition, yellowtail snapper are assessed as one stock in the Gulf of Mexico and South Atlantic. Stock assessments could be further confounded if the fishing year changed in the South Atlantic but not the Gulf of Mexico. The Gulf of Mexico Fishery Management Council (Gulf Council) is developing an amendment that considers a change in the fishing year for yellowtail snapper that is identical to what the South Atlantic Council is considering in Regulatory Amendment 25.

For management and stock assessment purposes, there are advantages to identical fishing years between the commercial and recreational sectors. Changing the fishing year for the recreational sector, but not the commercial sector, would result in additional data adjustments that introduce some level of uncertainty to a stock assessment and may compromise the ability to compare results with previous assessments. Different fishing years in the Gulf of Mexico and South Atlantic for yellowtail snapper would further accentuate this problem. **Alternative 1 (No Action)** would avoid this type of troubleshooting and maintain consistency in the input data for an assessment model. However, the Gulf Council is developing an amendment that could match the preferred alternatives for yellowtail snapper selected by the South Atlantic in Regulatory Amendment 25.

Regardless of the alternative selected, this action is not anticipated to increase the potential for interactions with smalltooth sawfish. However, the biological impacts of these alternatives on sea turtles are unclear. Sea turtles nest along the East Coast of the United States from April-October, with peak nesting occurring from May-July. **Alternative 1 (No Action)** is likely to have the higher adverse biological impacts to protected resources compared to the other alternatives because the peak harvest of yellowtail is currently occurring during sea turtle nesting season and often occurring during the peak nesting season. **Section 4.5.2** indicates that a change in the fishing year is likely to have little effect on actual fishing effort. If this holds true then regardless of the alternative selected the overall impacts to sea turtles are likely to remain the same as under **Alternative 1 (No Action)**. However, in some species effort peaks when harvest first opens. This is most common when the harvest has been closed for some period before the

season re-opens (i.e., a closing when the ACL was met). However, if fishing effort did increase at the beginning of the new fishing year, **Sub-alternatives 2d** and **3d** would likely have the lowest adverse impacts to sea turtles because any increase in fishing effort associated with the opening of the fishing season would occur outside the peak sea turtle nesting season, and at the tail end of the entire sea turtle nesting season. Conversely, **Sub-alternatives 2a** and **3a** would likely have far fewer biological benefits to sea turtles because any increase in effort would occur during peak nesting season. With respect to these alternatives, **Sub-alternatives 2b** and **3b**, and **Preferred Sub-alternatives 2c** and **3c** would increase biological benefits to sea turtles because the season opening date would occur later and later in the nesting season.

4.5.2 Economic Effects

Currently, and under **Alternative 1 (No Action)**, the commercial and recreational fishing years for yellowtail snapper would continue to run from January 1 through December 31 (the calendar year). **Sub-alternatives 2a** through **2d** would delay the start date of the fishing year for the commercial sector by five to eight months, respectively.

As shown in **Table 4.5.1**, the average of total landings over one 12-month period is not equivalent to that average over a different 12-month period that may include months within two calendar years. **Preferred Sub-alternative 2c** would generate the highest average of fishing year landings, followed in turn by **Sub-alternatives 2b**, **2d, 2a** and **Alternative 1 (No Action)** (**Table 4.5.1**). As shown in **Table 3.3.15**, increased annual landings of yellowtail snapper are accompanied by an increase in annual dockside revenue (in 2014 dollars).

Table 4.5.2 shows the expected average annual commercial landings for yellowtail snapper for each of the alternatives. By applying the average landings value per pound obtained from **Table 3.3.15**, one can derive an estimated difference in value between each of the Sub-alternatives of **Preferred Alternative 2** (**Table 4.5.3**). Hence, it is expected that **Preferred Sub-alternative 2c** would generate the highest average fishing year dockside revenue and associated economic benefits, followed in turn by **Sub-alternatives 2b**, **2d**, **2a** and **Alternative 1 (No Action)**.

Table 4.5.3. Expected commercial yellowtail snapper landings by sub-alternative with estimated difference compared to **Alternative 1 (No Action)** in dockside value (in 2014 $). Preferred indicated in bold.

	Expected lbs ww	Difference	Value of Difference
1 – No Action	1,297,912		
2a	1,316,641	18,729	$59,933
2b	1,337,013	39,101	$125,123
2c (Pref)	**1,340,977**	**43,065**	**$137,808**
2d	1,336,057	38,145	$122,064

Sub-alternatives 3a, through **3d** would delay the start date of the recreational fishing year by five to eight months, respectively. As shown in **Table 4.5.2**, **Sub-alternative 3d** would generate the highest recreational average fishing year landings, followed in turn by **Sub-alternatives 3c (Preferred)**, **3b, 3a** and **Alternative 1 (No Action)**. The average weight for a recreationally caught yellowtail snapper between 2010 and 2014 is 1.03 lbs ww. Haab et al. (2001) estimated consumer surplus for an additional recreationally caught bottom fish in the South Atlantic Region to be $4.02 (in 2014 dollars). **Table 4.5.4** estimates changes in consumer surplus for the sub-alternatives of **Preferred Alternative 3** using the consumer surplus value from Haab et al. (2001) as a proxy. **Sub-alternative 3d**'s highest average landings represents the highest number of angler trips and, therefore, highest associated economic benefits in a fishing year.

Table 4.5.4. Expected recreational yellowtail snapper landings (in numbers of fish) by sub-alternative with estimated differences compared to **Alternative 1 (No Action)** and associated changes in consumer surplus (in 2014 $). Preferred indicated in bold.

	Expected # of fish	Difference	Consumer Surplus Difference
1 – No Action	516,811		
3a	592,271	75,460	$303,349
3b	621,581	104,770	$421,275
3c (Pref)	**647,228**	**130,417**	**$524,276**
3d	672,454	155,643	$625,685

4.5.3 Social Effects

Yellowtail snapper is an important commercial and recreational species in Florida, particularly in South Florida and the Florida Keys (see **Section 3.3.3**). Changes to the fishing year for yellowtail snapper could change the level of access to the yellowtail stock during periods when yellowtail snapper are available and when participation in the yellowtail snapper portion of the snapper grouper fishery is highest. However, long-term biological benefits of maintaining a healthy stock would contribute to future fishing opportunities for both the commercial and recreational sectors.

The top five communities with the highest levels of commercial landings of yellowtail snapper include the Florida communities of Key West, Miami, Marathon, Hialeah, and Key Largo (**Figure 3.3.22**), and these would be areas that may be most affected by changes to yellowtail snapper management. The effects on commercial fishermen and associated businesses would be associated with access to the yellowtail stock during periods when the dockside value is highest, and if the commercial ACL is met and an early closure occurs. Because the commercial value of yellowtail snapper is typically higher in winter months (**Section 4.5.2**), it is important to fishermen and fish houses for yellowtail snapper to be open during these months. **Alternative 1 (No Action)** would be the most likely fishing season to ensure commercial harvest is open during January through March, but recent landings data suggest that the season would be closed during November and December. Under **Preferred Alternative 2**, **Sub-alternative 2d**

would likely be the most likely to keep the commercial sector open in the winter months, followed by **Sub-alternative 2c (Preferred), 2b**, and lastly, **2a**. However, if landings patterns are similar to landings in 2000-2014, an early closure is not expected under **Alternative 1 (No Action)** or **Preferred Alternative 2** unless commercial effort is similar to landings in 2015, which are higher than in recent years

As discussed in **Section 4.5.1**, recreational yellowtail snapper landings are highest in the summer months, which also coincide with spawning for yellowtail snapper. However, if the NMFS Southeast Regional Administrator implemented a shortened season to address overages in the recreational sector, the start date for the fishing year would determine the likely times of year that recreational harvest would be closed. Under **Alternative 1 (No Action)**, a shortened season would be likely to prohibit recreational harvest in the last months of the calendar year. This could limit recreational fishing opportunities and have negative effects on recreational fishermen and businesses that depend on access to yellowtail snapper during the holiday season (Thanksgiving through New Year's Day), which is the high tourism season for the Florida Keys. Under **Preferred Alternative 3** and **Sub-alternatives 3a-3d**, it would be more likely that, if the season were to be shortened in the event of a recreational ACL overage, recreational harvest would not be allowed during in the early summer months, which could have negative effects on recreational fishing opportunities because early summer is the time of year with traditionally higher recreational catch of yellowtail snapper.

4.5.4 Administrative Effects

Preferred Alternatives 2 and **3** could impact the administrative environment by possibly complicating the performance of future stock assessments, because yellowtail snapper are assessed as one stock in the Gulf of Mexico and South Atlantic. As explained in **Section 4.2.1**, stock assessment analysts would have to adjust the input data for an assessment model if a change in the fishing year occurred. Different fishing years in the South Atlantic and Gulf of Mexico would create further complications with conducting a stock assessment for yellowtail snapper. The analyses could become more time-consuming and burdensome when comparing results to those of previous stock assessments where the calendar year was used. **Preferred Alternatives 2** and **3** could also result in increased administrative adverse effects if fishing years were different in the Gulf of Mexico and South Atlantic. Different fishing years in the Gulf of Mexico and South Atlantic could create different timing for openings and closures in the two regions, which would enhance the administrative burden of announcing these events. Further, the burden to law enforcement would be increased, particularly in the Florida Keys, if there were different regulations for yellowtail snapper in the Gulf of Mexico and South Atlantic. However, the Gulf Council is considering the same change to the fishing year for yellowtail snapper in the Gulf of Mexico. Increased administrative impacts would also be expected if there are different regulations and openings/closings of yellowtail snapper in the Gulf of Mexico and the South Atlantic portion of the Florida Keys. However, any negative administrative effects from changing the fishing year would not be expected to be significant. Further, public confusion regarding the different fishing years in the Gulf of Mexico versus the South Atlantic portion of South Florida could create law enforcement difficulties.

Chapter 5. Council's Choice for the Preferred Alternatives

5.1 Action 1. Adjust the Acceptable Biological Catch (ABC), Annual Catch Limit (ACL), and Optimum Yield (OY) for the South Atlantic Blueline Tilefish Stock

Alternatives*
(preferred alternative in bold)

1. No Action. ACL = OY = 98%ABC
2. ACL = OY = 98% (stock ABC)
3. ACL = OY = 96% (stock ABC)
4. ACL = OY = 93% (stock ABC)
5. ACL = OY = 89% (stock ABC)
6. ACL = OY = 88% (stock ABC)
7. **ACL = OY = 78% (stock ABC)**

* See Chapter 2 for detailed alternatives

Snapper Grouper Advisory Panel Comments and Recommendations

The Snapper Grouper Advisory Panel (AP) met in Charleston, South Carolina on November 3-4, 2015. The Snapper Grouper AP received an overview of the proposed actions and alternatives in Regulatory Amendment 25 and a summary of the expected impacts. The Snapper Grouper AP had the following recommendation:

MOTION: RECOMMEND ALTERNATIVE 2 UNDER ACTION 1 AS PREFERRED

Action 1. Adjust the Acceptable Biological Catch (ABC), Annual Catch Limit (ACL) and Optimum Yield (OY) for the South Atlantic Blueline Tilefish Stock

Alternative 2. ACL=OY=98%(stock ABC)

NOTE: This alternative uses the current ABC equation implemented through Amendment 32 but applied to the new ABC recommendation

APPROVED BY AP (1 OPPOSED)

Law Enforcement Advisory Panel Comments and Recommendations

The Law Enforcement Advisory Panel (LEAP) received a draft of the amendment via email on December 3. The LEAP had no comments or recommendations.

Scientific and Statistical Committee Comments and Recommendations

The Scientific and Statistical Committee (SSC) met via webinar on September 9, 2015 to discuss their ABC recommendation for blueline tilefish. The excerpt below is from the SSC's final report for that meeting:

"The SSC received an overview presentation from Mike Errigo summarizing the history of SEDAR 32 projections and the issues associated with them (i.e., recruitment, fishing mortality,

interim landings, etc.). The Committee then discussed the chronology and content of response letters and different sets of blueline tilefish projections provided by the SEFSC.

The SEFSC felt that there was not sufficient scientific support for providing the exploratory alternative recruitment scenarios requested by the SSC, i.e., a lack of empirical evidence and that a multitude of equally likely scenarios could have been investigated. Consequently, the Committee was provided only a limited set of projections that prevented the SSC from evaluating all the scenarios originally requested. Instead of exploring the requested recruitment scenarios, the SEFSC recommended updating the handline index and looking at the slope of that index from 2012 to date. If the slope of the index was remaining flat or rising, that could be used as an indicator that catch levels over the last three years are not having an appreciable negative impact on the stock for the area covered by the index, i.e. Cape Hatteras to Cape Canaveral. In this case the SEFSC suggested that catch level advice going forward could be based on average landings for the years just prior to the recent large increases until the Center is able to assess the stock again.

Based on the limited scope of the projections (i.e., not all recruitment scenarios were evaluated), the high degree of uncertainty in the original assessment, and the disconnect between assessment and projections (the terminal year of data for this assessment was 2011 and the fishery has undergone major changes since then), the SSC concluded that the projections provided by the SEFSC do not represent the Best Scientific Information Available and were not adequate to support blueline tilefish fishing level recommendations for either current or future years.

The SSC then discussed alternatives for developing fishing level recommendations for blueline tilefish:

1) *The Committee discussed that given the new information (e.g., recent landings), the assessment may no longer represent the Best Scientific Information Available and, therefore, cannot be used for management advice. According to the ABC control rule, catch advice would be based on the ORCS method or another method in the control rule decision tree.*

2) *Set ABC at the equilibrium yield at 75% F_{MSY}*

After much discussion, the SSC consensus was that option 2 was the best recommendation given the information before the Committee. Although the SSC agreed that the projections based on the 2012 assessment, cannot be used for setting the ABC primarily due to the required length of the projection period into the future (from 2011 to 2017), the assessment estimates of reference points (B_{MSY}, F_{MSY}) based on historic stock production remain to be the best scientific information available and can be used for management advice. Given that the assessment results based on two types of assessment models (BAM and ASPIC) indicated that the stock generally fluctuated around the B_{MSY} and the fact that recent catches remain high, the fishery dependent index appears to have a positive trend, and there was no significant change in the age

and size composition of the catch in recent years, the Committee felt that the ABC at equilibrium yield at 75%F_{MSY} is adequate and provides the best option for management. This method has been used in the past, but the SSC recognizes that this recommendation is based on results from the SEDAR 32 stock assessment, which had a very high degree of uncertainty.

The Committee notes that the same sources of scientific uncertainty that accompanied earlier advice from the June 2015 webinar also pertain to this ABC recommendation. These sources include the lack of fishery-independent survey information, the northward shift in landings in recent years, and the lack of biological characteristics and abundance information for blueline tilefish north of North Carolina.

The Committee stressed the fact that, given the uncertainties and paucity of information, this recommendation should be in place for no more than 2 years. This would bridge the period to completion of the upcoming blueline tilefish assessment, upon which further recommendations can be based assuming it passes SEDAR review.

Therefore, the SSC recommends that the 2016 and 2017 ABC for blueline tilefish be based on the equilibrium yield at 75% F_{MSY}, or 224,100 lbs. whole weight. The SSC wishes to emphasize that by not accepting the projection results as BSIA, no basis exists to infer the current (i.e., 2015) status of the blueline tilefish stock or the impact of the fishery with respect to the accepted status determination criteria for this stock. As well, no basis exists to quantitatively gauge the consequences on the stock of the SSC's ABC recommendation for 2016 and 2017."

During discussion at the December 2015 South Atlantic Council meeting, the SSC Chair, Dr. Luiz Barbieri further clarified how the SSC arrived at their current ABC recommendation. Dr. Barbieri recounted that the blueline tilefish assessment was accepted as representing the Best Scientific Information Available and, therefore, the SSC did not feel they could apply the lower tiers of the ABC control rule to reconsider their ABC recommendation. Dr. Barbieri explained that the committee, however, did not deem the projections adequate for management, so the amount of uncertainty could not be quantified and the SSC made a recommendation that they determined was in line with National Standard 1 in terms of overfishing and hence, recommended setting the ABC at the equilibrium yield.

Public Comments

- Manage the blueline tilefish resource using state-by-state quotas to ensure equitable access
- Consider changing fishing year from the calendar year to start March 1 or March 15 to ensure more equitable access

South Atlantic Council's Choice for Preferred Alternative

The South Atlantic Fishery Management Council (South Atlantic Council) considered a broad range of alternatives to set the ACL for blueline tilefish in the South Atlantic based on

percentages of total landings occurring north of the North Carolina/Virginia border. At the September 2015 South Atlantic Council meeting, Mr. Tony DiLernia, Mid-Atlantic Fishery Management Council representative on the Snapper Grouper Committee, indicated that roughly 7% of the recommended ABC would be consistent with the level of historic and recent removals of blueline tilefish in the Greater Atlantic region (Virginia through Maine).

During discussions at the December 2015 South Atlantic Council meeting, Dr. Bonnie Ponwith, Southeast Fisheries Science Center (SEFSC), reminded the South Atlantic Council about the SSC's concerns about uncertainty in the stock assessment. Dr. Ponwith stated that the blueline tilefish portion of the snapper grouper fishery has undergone recent significant changes (e.g., levels of landings, geographic distribution, etc.) and, even though the stock assessment (SEDAR 32 2013) was satisfactory from a technical standpoint, there were concerns that the projections did not capture recent changes in harvest of blueline tilefish. Dr. Ponwith noted that the SSC's ABC recommendation (224,100 pounds whole weight [lbs ww]) represents 99% of the maximum sustainable yield (the maximum sustainable yield at equilibrium is also the overfishing limit) that resulted from the SEDAR 32 stock assessment (226,500 lbs ww). Dr. Ponwith encouraged setting a conservative buffer between the ABC and the ACL to mitigate for the high level of uncertainty in the ABC recommendation. At the December 2015 meeting, the South Atlantic Council also received a preliminary report on genetic studies conducted by the South Carolina Department of Natural Resources (SCDNR) on the population structure of blueline tilefish. The preliminary results suggest a low level of genetic diversity and the occurrence of a recent genetic bottleneck in the population.

The National Marine Fisheries Services' (NMFS) Southeast Regional Administrator, Dr. Roy Crabtree, stated that the proposed alternatives for ACLs contain buffers to address uncertainty. Dr. Crabtree stated that the buffer between the ABC and ACL does not represent an *allocation* for the Greater Atlantic Region. Therefore, the South Atlantic Council selected **Preferred Alternative 7** to set the ACL for blueline tilefish in the South Atlantic at 78% of the recommended ABC as it contains the largest buffer of the alternatives. It was noted that the resulting ACL would be a five-fold increase from the current ACL and a conservative 22% buffer would adequately account for all sources of uncertainty.

During the discussion of this action, some South Atlantic Council members were not in favor of the preferred alternative because they felt that such a wide buffer between the ABC and the ACL would not fully support the goal of stabilizing the blueline tilefish portion of the snapper grouper fishery since it would not allow for sufficiently large trip limits, etc. Hence, **Alternative 5** was briefly considered during discussions but was ultimately not chosen as the preferred alternative because the majority of South Atlantic Council members felt the existing sources of uncertainty (mainly the lack of an updated assessment that captures recent changes in blueline tilefish harvest and uncertainty about the level of future landings in the Greater Atlantic Region) justified adopting a more conservative approach.

The South Atlantic Council selected **Preferred Alternative 7** to set the blueline tilefish ACL in the South Atlantic at 78% of the stock ABC to ensure ACLs and optimum yield (OY) for

blueline tilefish are based upon the best available scientific information while setting aside a portion of the ACL and OY to account for landings in the area north of the South Atlantic Council's jurisdiction. In addition, **Preferred Alternative 7** best meets the objectives of the Snapper Grouper FMP, as amended, while complying with the requirements of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) and other applicable law.

5.2 Action 2. Revise the Commercial Trip Limit for Blueline Tilefish

Alternatives
(preferred alternative in bold)

1. No action. The commercial trip limit for blueline tilefish is 100 pounds gutted weight (lbs gw).

2. Increase the commercial trip limit for blueline tilefish to 200 lbs gw.

3. Increase the commercial trip limit for blueline tilefish to 300 lbs gw.

Snapper Grouper Advisory Panel Comments and Recommendations

The Snapper Grouper AP met in Charleston, South Carolina on November 3-4, 2015. The Snapper Grouper AP received an overview of the proposed actions and alternatives in Regulatory Amendment 25 and a summary of the expected impacts. The Snapper Grouper AP had the following recommendation:

MOTION: RECOMMEND ALTERNATIVE 3 (300 POUND COMMERCIAL TRIP LIMIT) UNDER ACTION 2 AS PREFERRED

Action 2. Revise the Commercial Trip Limit for Blueline Tilefish

Alternative 3. Increase the commercial trip limit for blueline tilefish to 300 lbs gw

APPROVED BY AP

Law Enforcement Advisory Panel Comments and Recommendations

The LEAP received a draft of the amendment via email on December 3. The LEAP had no comments or recommendations.

Scientific and Statistical Committee Comments and Recommendations

The SSC had no comments or recommendations.

Public Comments

- Manage the blueline tilefish resource using state-by-state quotas to ensure equitable access
- Commercial ACL and trip limit should be as large as possible to accommodate traditional bandit boats on multi-day trips
- Consider 100 lbs gw limit gw trip per 100,000 pounds of seasonal quota and specify bycatch possession limits
- 300 lbs gw is too low for commercial trip limit
- Consider changing fishing year from calendar year to start March 1 or March 15 to ensure more equitable access

South Atlantic Council's Choice for Preferred Alternative

Amendment 32 (SAFMC 2014c) implemented a 100-lbs gw trip limit effective March 30, 2015. The amendment also implemented a commercial ACL for 2015 of 17,841 pounds whole weight. Prior to implementation of these regulations, there was no commercial trip limit for blueline tilefish in the South Atlantic. Through Regulatory Amendment 25, the South Atlantic

Council proposes to increase the commercial trip limit in response to a higher ABC recommendation and, consequently, a higher commercial ACL. Because the blueline tilefish stock is undergoing overfishing (SEDAR 32 2013), the South Atlantic Council was conservative in their consideration of trip limits for the commercial sector and only considered a 200-lbs gw and a 300-lbs gw trip limits (**Alternatives 2** and **3 (Preferred)**, respectively) as reasonable alternatives.

During discussions at their December 2015 meeting, South Atlantic Council members expressed interest in a trip limit that would keep the commercial season open while harvest for snowy grouper was also open to minimize the potential for regulatory discards. Council members acknowledged the difficulty of addressing regional differences (i.e., south of Cape Hatteras, North Carolina blueline tilefish are caught incidentally as opposed to north of Cape Hatteras), and the need for state-by-state management for some species, such as blueline tilefish.

In discussing the analyses for this action, South Atlantic Council members also acknowledged that the various daily catch rates to predict season length are likely heavily influenced by fishermen behavior as a result of recent management actions in the blueline tilefish portion of the snapper grouper fishery. During the discussion of this amendment, some South Atlantic Council members expressed frustration at their inability to add an action that would provide flexibility to make in-season changes depending on catch rates and other criteria. Because the South Atlantic Council wanted to take final action on this amendment at their December 2015 meeting and not further delay the implementation of the new ACL, it was not possible to consider those kinds of additional actions in Regulatory Amendment 25 without delaying taking final action to approve the amendment for formal review. However, the South Atlantic Council expressed interest in exploring alternatives in a future amendment that would include, for instance, automatic triggers in accountability measures (AMs) that would affect regulatory changes quickly and without the time-consuming process of amending the fishery management plan. Furthermore, South Atlantic Council members reiterated that there is a high level of uncertainty in the current fishing levels for blueline tilefish and the management measures are intended to be temporary while a new stock assessment is conducted.

The South Atlantic Council selected **Preferred Alternative 3** to specify a commercial trip limit of 300 lbs gw in response to a new ABC recommendation and to ensure OY is achieved. In addition, **Preferred Alternative 3** best meets the objectives of the Snapper Grouper FMP, as amended, while complying with the requirements of the Magnuson-Stevens Act and other applicable law.

5.3 Action 3. Adjust the Bag Limit for Blueline Tilefish for the Recreational Sector

Snapper Grouper Advisory Panel Comments and Recommendations

The Snapper Grouper AP met in Charleston on November 3-4, 2015. The Snapper Grouper AP received an overview of the proposed actions and alternatives in Regulatory Amendment 25 and a summary of the expected impacts. The Snapper Grouper AP had the following recommendation:

MOTION: RECOMMEND ALTERNATIVE 4 UNDER ACTION 3 AS PREFERRED

Action 3. Adjust the Bag Limit for Blueline Tilefish for the Recreational Sector

Alternative 4. Establish a blueline tilefish bag limit of 1 fish/person/day May through August within the aggregate grouper bag limit. Prohibit retention the rest of the year.

APPROVED BY AP

Law Enforcement Advisory Panel Comments and Recommendations

The LEAP received a draft of the amendment via email on December 3. The LEAP had no comments or recommendations.

Alternatives*

(preferred alternative in bold)

1 (No Action). Recreational harvest of blueline tilefish is limited to 1 fish/vessel/day May through August (closed rest of year) within the aggregate grouper bag limit.

2. Establish a blueline tilefish bag limit of 1 fish/person/day year-round within the aggregate grouper bag limit.

3. Establish a blueline tilefish vessel limit of 1 fish/vessel/day year-round within the aggregate grouper bag limit.

4. Establish a blueline tilefish bag limit of 1fish/person/day May through August within the aggregate grouper bag limit.

5. Establish a blueline tilefish bag limit of 3 fish/person/day year-round within the aggregate bag limit.

6. Establish a blueline tilefish bag limit of 3 fish/person/day May through August within the aggregate bag limit.

* See Chapter 2 for detailed alternatives

Scientific and Statistical Committee Comments and Recommendations

The SSC had no comments or recommendations.

Public Comments

- Manage the blueline tilefish resource using state-by-state quotas to ensure equitable access
- Support for either 1 fish/person/day year-round or 1 fish/person/day during May-August
- Support for 3 fish/person/day during a season

South Atlantic Council's Choice for Preferred Alternative

Amendment 32 (SAFMC 2014c) implemented a vessel limit of one blueline tilefish per day (included in the three grouper aggregate bag limit) during May through August with no recreational harvest allowed for the remainder of the year. This change was effective March 30, 2015. The amendment also implemented a recreational ACL for 2015 of 17,791 pounds whole weight (lbs ww). Prior to implementation of these regulations, a recreational limit of three blueline tilefish per person per day (within the three grouper aggregate) was in place in the South Atlantic year-round. Through Regulatory Amendment 25, the South Atlantic Council proposes to adjust the recreational bag limit in response to a higher ABC recommendation from the South Atlantic Council's SSC and, consequently, a proposed higher recreational ACL. During early discussions of the regulatory amendment, the South Atlantic Council considered specifying a blueline tilefish bag limit of one fish/person/day year-round within the aggregate grouper bag limit, a vessel limit of one fish/day year-round within the aggregate grouper bag limit, and a bag limit of one fish/person/day May through August within the aggregate grouper bag limit. However, in response to public comment, the South Atlantic Council considered two additional alternatives: three fish/person/day (within the aggregate grouper limit) year-round, and three fish/person/day (within the aggregate grouper limit) during May through August. The South Atlantic Council selected the latter (**Preferred Alternative 6**) since it is expected to result in higher recreational landings (to respond to the increase in the recreational ACL) and to align the season with that for snowy grouper since the two species are frequently caught together and compatible seasons would reduce regulatory discards and associated release mortality.

The South Atlantic Council selected **Preferred Alternative 6** to specify a recreational bag limit of 3 blueline tilefish per person per day during May through August in response to a new ABC recommendation and to ensure OY is achieved. In addition, **Preferred Alternative 6** best meets the objectives of the Snapper Grouper FMP, as amended, while complying with the requirements of the Magnuson-Stevens Act and other applicable law.

5.4 Action 4. Increase the Recreational Bag Limit of Black Sea Bass

Snapper Grouper Advisory Panel Comments and Recommendations

The Snapper Grouper AP met in Charleston, South Carolina on November 3-4, 2015. The Snapper Grouper AP received an overview of the proposed actions and alternatives in Regulatory Amendment 25 and a summary of the expected impacts. The Snapper Grouper AP had the following recommendations:

MOTION: RECOMMEND ALTERNATIVE 1 (NO ACTION) UNDER ACTION 4 (BSB BAG LIMIT)

Action 4. Increase the Recreational Bag Limit of Black Sea Bass

Alternative 1. No Action. The recreational bag limit of black sea bass is 5 fish per person per day.

APPROVED BY AP (2 OPPOSED)

Alternatives
(preferred alternative in bold)

1 (No action). The recreational bag limit of black sea bass is 5 fish per person per day.

2. Increase the recreational bag limit of black sea bass to 6 fish per person per day.

3. Increase the recreational bag limit of black sea bass to 7 fish per person per day.

4. Increase the recreational bag limit of black sea bass to 8 fish per person per day.

5. Increase the recreational bag limit of black sea bass to 9 fish per person per day.

6. Increase the recreational bag limit of black sea bass to 10 fish per person per day.

MOTION: RECOMMEND THAT THE COUNCIL LOOK AT DECREASING THE RECREATIONAL SIZE LIMIT FOR BLACK SEA BASS AND MAKING THE SIZE LIMIT FOR BOTH SECTORS THE SAME.
APPROVED BY AP

****INTENT IS TO ADDRESS RECREATIONAL SECTOR AND EFFECT OF DECREASING THE SIZE LIMIT TO THAT SECTOR. TARGET SIZE LIMIT FOR BOTH SECTORS WOULD BE 12 INCHES****

MOTION: ANALYZE A 12-INCH MINIMUM SIZE LIMIT FOR COMMERCIAL BLACK SEA BASS
APPROVED BY AP

Law Enforcement Advisory Panel Comments and Recommendations

The LEAP received a draft of the amendment via email on December 3. The LEAP had no comments or recommendations.

Scientific and Statistical Committee Comments and Recommendations

The SSC had no comments or recommendations.

Public Comments

- Some support for No Action
- Some support for seven and 10 fish bag limit
- Consider size limit decrease

South Atlantic Council's Choice for Preferred Alternative

On June 22, 2011, implementation of Regulatory Amendment 9 (SAFMC 2011a) reduced the black sea bass bag limit from 15 fish to 5 fish per person per day. Since then, the recreational ACL for black sea bass increased substantially (from 482,620 lbs ww to 1,033,980 lbs ww), and the stock assessment (SEDAR 25 Update 2013) indicated that black sea bass in the South Atlantic are neither overfished nor undergoing overfishing. Therefore, the South Atlantic Council considered adjusting the recreational bag limit to increase recreational harvest and help to achieve OY.

South Atlantic Council members concluded that an increase in the bag limit from five to seven fish, as proposed under **Preferred Alternative 3**, is appropriate at this time. The South Atlantic Council believes that an increase in the black sea bass bag limit, even by a modest amount, would "give some fish back" to fishermen who have been patient through the fishery management process and have endured strict regulations (i.e., red snapper restrictions) in recent years. Also, an increase in the black sea bass bag limit is not expected to threaten the sustainable harvest of black sea bass since the stock is managed with ACLs, AMs, and harvest restrictions.

Council members did acknowledge that, according to the analyses performed, an increase in the bag limit is likely to increase recreational landings by only about 2%, would only affect a small portion of the anglers in the South Atlantic region, and the number of discarded fish would increase slightly from current levels. Even though analyses indicate that an adjustment to the minimum size limit (a decrease) would likely be more beneficial than an increase in the bag limit, the South Atlantic Council did not want to delay relaxing the current regulations and stated that minimum size limit adjustments (for both sectors) would be considered in the future.

The South Atlantic Council discussed increasing the bag limit to 10 fish (**Alternative 6**). Dr. Bonnie Ponwith, the SEFSC Director, reminded the South Atlantic Council that the rebuilt status of black sea bass hinged very strongly on a single year of very high recruitment in the terminal year (last year of data used) of the stock assessment (SEDAR 25 Update 2013). The terminal year is associated with the most uncertainty because it is difficult to predict how the fishery will change in the future. South Atlantic Council members agreed that adopting a more conservative approach, while still "giving some fish back", was appropriate at this time. South Atlantic Council members also acknowledged that there are likely sub-regional distributional differences in the black sea bass portion of the snapper grouper fishery. For instance, data from the SCDNR suggest that 22 to 24% of fishermen in South Carolina state waters are reaching the current bag limit (five fish per person per day); whereas, the percentage is much lower in federal waters. In addition, even though the data analyses for the bag limit increase indicate a high level of

discards, these are not all dead discards since black sea bass caught in shallow waters, on artificial reefs for instance, have a relatively low release mortality rate.

The South Atlantic Council selected **Preferred Alternative 3** to specify a recreational bag limit of seven black sea bass per person per day to help ensure OY is achieved. In addition, **Preferred Alternative 3** best meets the objectives of the Snapper Grouper FMP, as amended, while complying with the requirements of the Magnuson-Stevens Act and other applicable law.

5.5 Action 5. Modify the Fishing Year for Yellowtail Snapper

Alternatives
(preferred alternative in bold)

1 (No Action). The fishing year (commercial and recreational) is the calendar year, January 1 to December 31.

2. Modify the start date of the fishing year for the commercial sector for yellowtail snapper
- 2a. June 1 to May 31
- 2b. July 1 to June 30
- **2c. August 1 to July 31**
- 2d. September 1 to Auguts 31

3. Modify the start date of the fishing year for the recreational sector for yellowtail snapper
- 3a. June 1 to May 31
- 3b. July 1 to June 30
- **3c. August 1 to July 31**
- 3d. September 1 to August 31

Snapper Grouper Advisory Panel Comments and Recommendations

The Snapper Grouper AP met in Charleston, South Carolina on November 3-4, 2015. The Snapper Grouper AP received an overview of the proposed actions and alternatives in Regulatory Amendment 25 and a summary of the expected impacts. The Snapper Grouper AP had the following recommendations:

MOTION: RECOMMEND ALTERNATIVE 2, SUB-ALTERNATIVE 2C AS PREFERRED FOR ACTION 5 (FISHING YEAR FOR YELLOWTAIL SNAPPER)
Action 5. Modify the Fishing Year for Yellowtail Snapper
Alternative 2. Modify the fishing year for the commercial sector for yellowtail snapper.
Sub-alternative 2c. August 1 through July 31
APPROVED BY AP

MOTION: RECOMMEND ALTERNATIVE 3, SUB-ALTERNATIVE 3C AS PREFERRED FOR ACTION 5 (FISHING YEAR FOR YELLOWTAIL SNAPPER)
Action 5. Modify the Fishing Year for Yellowtail Snapper
Alternative 3. Modify fishing year for the recreational sector for yellowtail snapper.
Sub-alternative 3c. August 1 through July 31
APPROVED BY AP

Law Enforcement Advisory Panel Comments and Recommendations

The LEAP received a draft of the amendment via email on December 3. The LEAP had no comments or recommendations.

Scientific and Statistical Committee Comments and Recommendations

The SSC had no comments or recommendations.

Public Comments

- Most commenters supported an August 1 start date for the fishing year
- Support for a commercial trip limit during the spawning months instead of a change in the fishing year (suggestion of 250 lbs gw and 1,000 lbs gw)
- Consider implementing trip limit when the ACL is close to being met

- Step-down trip limit would result in user conflict since multi-day boats would be forced to remain close to shore and compete with day fishermen

South Atlantic Council's Choice for Preferred Alternative

The South Atlantic Council considered changing the yellowtail snapper fishing year in 2013, when the ACL for that species was increased in response to a new stock assessment through Regulatory Amendment 15 to the Snapper Grouper FMP (SAFMC 2013b). However, the South Atlantic Council chose to not take action at that time due to concerns with having different fishing years in the South Atlantic and the Gulf of Mexico. The population of yellowtail snapper spans both jurisdictions and stock assessments are conducted for the entire stock, so it is desirable to have fishing years that coincide in both jurisdictions. In 2015, yellowtail snapper fishermen again requested that the South Atlantic Council reconsider shifting the start date of the fishing year as this would result in economic benefits to resource users and biological benefits to the stock. At this time, the Gulf of Mexico Fishery Management Council (Gulf Council) is developing an amendment that proposes making the same adjustment to the yellowtail snapper fishing year as the South Atlantic Council.

Therefore, in response to fishermen's request, the South Atlantic Council included an action to adjust the fishing year in Regulatory Amendment 25. At the December 2015 meeting, the South Atlantic Council recognized that a change in the fishing year start date for the commercial sector, if implemented, would not reduce the probability of another commercial in-season closure due to the ACL being met (as occurred in 2015). Rather, South Atlantic Council members stated that changing the start date of the fishing year would only shift the time period of when a commercial closure occurs. As such, the South Atlantic Council's intent of the action is to increase the probability that a commercial closure, if one were to occur, would be during a time of year that would impact fishermen the least and would benefit the stock the most. The South Atlantic Council acknowledges, however, that a more holistic approach to the management of yellowtail snapper needs to take place. Such an approach would need to be in coordination with the Gulf Council and the Florida Fish and Wildlife Conservation Commission and could include commercial trip limits and in-season allocation shifts to prevent closures and help ensure OY is being achieved. The South Atlantic Council intends to begin development of an amendment in 2016 to address yellowtail snapper management issues.

The South Atlantic Council selected **Preferred Sub-alternative 2c** to change the yellowtail snapper commercial fishing year to begin August 1 because this alternative is expected to generate highest dockside revenue. Furthermore, a fishing year beginning in the summer is expected to provide biological benefits to the stock in that, if commercial harvest is prohibited due to the ACL being met, the closure would coincide with months of spawning activity. The South Atlantic Council selected **Preferred Sub-alternative 3c** to change the yellowtail snapper recreational fishing year to begin August 1 because this sub-alternative is expected to yield the highest average recreational landings and thus provide the most socio-economic benefits. Also, it is desirable to maintain consistency between sectors. In addition, **Preferred Sub-alternatives**

2c and **3c** best meet the objectives of the Snapper Grouper FMP, as amended, while complying with the requirements of the Magnuson-Stevens 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.

Identify the significant cumulative effects issues associated with the proposed action and define the assessment goals.

CEQ cumulative effects guidance states that this step is done through three activities. The three activities and the location in the document are as follows:

I. The direct and indirect effects of the proposed actions **(Chapter 4)**;

II. Which resources, ecosystems, and human communities are affected **(Chapter 3)**; and

III. Which effects are important from a cumulative effects perspective **(information revealed in this CEA)**.

Establish the geographic scope of the analysis.

The immediate impact area would be the federal 200-mile limit of the Atlantic off the coasts of North Carolina, South Carolina, Georgia, and east Florida to Key West, which is also the South Atlantic Fishery Management Council's (South Atlantic Council) area of jurisdiction. In light of the available information, the extent of the boundaries would depend upon the degree of fish immigration/emigration and larval transport whichever has the greatest geographical range. Therefore, the proper geographical boundary to consider effects on the biophysical environment is larger than the entire South Atlantic exclusive economic zone (EEZ). The ranges of affected species are described in **Section 3.2**. The most measurable and substantial effects would be limited to the South Atlantic region.

Establish the timeframe for the analysis.

The timeframe for the analysis of cumulative effects is 1983 through the present. Fishery managers implemented the first significant regulations pertaining to black sea bass in 1983

through the Snapper Grouper FMP (SAFMC 1983). The regulations included an eight-inch total length minimum size limit for black sea bass. Fishery managers implemented the first significant regulations pertaining to blueline tilefish in 1999 through Amendment 9 to the Snapper Grouper FMP (SAFMC 1998b). The regulations included a five fish aggregate grouper bag limit, which included blueline tilefish and a regulation whereby vessels with longline gear aboard could only possess snowy grouper, warsaw grouper, yellowedge grouper, misty grouper, golden tilefish, blueline tilefish, and sand tilefish.

Identify the other actions affecting the resources, ecosystems, and human communities of concern (the cumulative effects to the human communities are discussed in Chapter 4).

Listed are other past, present, and reasonably foreseeable actions occurring in the South Atlantic region. These actions, when added to the proposed management measures, may result in cumulative effects on the biophysical environment.

A. Fishery-related actions affecting the snapper grouper species addressed in this amendment

A. Past

The reader is referred to **Appendix D** for past regulatory activity all species in the Snapper Grouper FMP. Past regulatory activity for the relevant snapper grouper species in this amendment is listed below.

Regulatory Amendment 9 to the Snapper Grouper FMP (SAFMC 2011a) reduced the black sea bass recreational bag limit from 15 fish per person per day to 5 fish per person per day. The final rule published in the *Federal Register* on June 15, 2011.

Amendment 9 to the Snapper Grouper FMP (SAFMC 1998b) established minimum size limits for yellowtail snapper, red grouper, black grouper, gag, yellowfin grouper, yellowmouth grouper, and scamp; and created a 20-fish aggregate recreational bag limit for snapper grouper species without a bag limit (with the exception of tomtate and blue runner), including yellowtail snapper. The amendment also prohibited the sale and purchase of gag, red porgy, and black grouper during March and April; and included blueline tilefish, gag, and black grouper within the 5-fish aggregate grouper bag limit, of which no more than 2 fish could be gag or black grouper (individually or in combination). Also included was a provision whereby vessels with longline gear aboard could only possess snowy grouper, warsaw grouper, yellowedge grouper, misty grouper, golden tilefish, blueline tilefish, and sand tilefish. The final rule published in the *Federal Register* on January 25, 1999, and became effective on February 24, 1999.

Amendment 14 to the Snapper Grouper FMP (SAFMC 2007) was implemented on February 12, 2009. Amendment 14 established eight Type II marine protected areas (MPAs) where fishing for and retention of snapper grouper species is prohibited (as is the use of shark bottom longlines), but trolling for pelagic species such as tuna, dolphin, and billfish is allowed. The

intent was to achieve a more natural sex ratio, age, and size structure of all species within the MPAs, while minimizing adverse social and economic effects. The South Atlantic Council approved Amendment 14 at their June 2007 meeting. The final rule published in the *Federal Register* on January 13, 2009, and became effective on February 12, 2009.

Amendment 15B to the Snapper Grouper FMP (SAFMC 2008b) became effective on December 16, 2009. Management measures in Amendment 15B included a prohibition of the sale of bag limit caught snapper grouper species for fishermen not holding a federal commercial permit for South Atlantic snapper grouper; an action to adopt, when implemented, the Atlantic Coastal Cooperative Statistics Program release, discard and protected species module to assess and monitor bycatch, allocations for snowy grouper, and management reference points for golden tilefish. Biological benefits from Amendment 15B are not expected to result in a significant cumulative biological effect when added to anticipated biological impacts under this amendment. The South Atlantic Council approved Amendment 15B at their June 2008 meeting. The final rule published in the *Federal Register* on November 16, 2009, and became effective on December 16, 2009.

Amendment 17B to the Snapper Grouper FMP (SAFMC 2010b), which was implemented on January 31, 2011, established annual catch limits (ACL), annual catch targets (ACT), and accountability measures (AMs) for 8 species experiencing overfishing; modified management measures to limit total mortality to the ACL; and updated the framework procedure for specification of total allowable catch. Amendment 17B also prohibited the harvest and possession of deepwater snapper grouper species (snowy grouper, blueline tilefish, yellowedge grouper, misty grouper, queen snapper, and silk snapper) at depths greater than 240 feet. The intent of this measure was to reduce bycatch of speckled hind and warsaw grouper. The South Atlantic Council approved Amendment 17B at their September 2010 meeting. The final rule published in the *Federal Register* on December 30, 2010.

The Comprehensive ACL Amendment (SAFMC 2011c) includes ACLs and AMs for federally managed species not undergoing overfishing in four fishery management plans (Snapper Grouper, Dolphin Wahoo, Golden Crab, and *Sargassum*). Actions contained within the Comprehensive ACL Amendment include: (1) Removal of species from the snapper grouper fishery management unit; (2) designation of ecosystem component species; (3) allocations; (4) management measures to limit recreational and commercial sectors to their ACLs; (5) AMs; and (6) any necessary modifications to the range of regulations. The South Atlantic Council approved the Comprehensive ACL Amendment in September 2011. The final rule published in the *Federal Register* on March 16, 2012, and became effective on April 16, 2012.

Regulatory Amendment 11 to the Snapper Grouper FMP (SAFMC 2011b) eliminated the harvest prohibition of some deepwater snapper grouper species, including blueline tilefish, in waters greater than 240 feet deep that was established through Amendment 17B. The South Atlantic Council approved Regulatory Amendment 11 in August 2011. The final rule was published on May 10, 2012**,** with an effective date the same day.

Amendment 18A to the Snapper Grouper FMP (SAFMC 2012a) contained measures to limit participation and effort for black sea bass. Amendment 18A established an endorsement

program than enables snapper grouper fishermen with a certain catch history to harvest black sea bass with pots. In addition, Amendment 18A included measures to reduce bycatch in the black sea bass pot sector, modified the rebuilding strategy, and other necessary changes to management of black sea bass as a result of a 2011 stock assessment. The South Atlantic Council approved Amendment 18A in December 2011. The amendment was partially approved and the final rule published in the *Federal Register* on June 1, 2012, and became effective on July 1, 2012. NMFS disapproved the action establishing transferability criteria for the black sea bass pot endorsement, explaining that the amendment identified the wrong preferred alternative selected for this action, and there were discrepancies in the record regarding the South Atlantic Council's discussion of the alternatives and the text describing and analyzing this alternative in the document. Because the South Atlantic Council's intent was unclear from the administrative record, NMFS was unable to implement this action in compliance with the Administrative Procedure Act. The South Atlantic Council re-submitted the action from Amendment 18A to the NMFS on July 5, 2012. The final rule implementing transferability criteria for black sea bass pot endorsement was published in the *Federal Register* on December 7, 2012 and became effective on January 7, 2013.

Regulatory Amendment 12 to the Snapper Grouper FMP (SAFMC 2012b) established a golden tilefish longline endorsement program, and trip limit for golden tilefish commercial fishermen who did not qualify for an endorsement. The final rule for Regulatory Amendment 12 became effective on October 9, 2012.

Amendment 18B (SAFMC 2012c) to the Snapper Grouper FMP was approved by the South Atlantic Council at their June 2012 meeting and addressed golden tilefish. The amendment established initial eligibility requirements for a golden tilefish longline endorsement program, allocated golden tilefish quota between gear groups, and specified commercial trip limits for those who did not qualify for the longline endorsement. Amendment 18B was approved by the Secretary of Commerce on January 25, 2013, and the final rule published in the *Federal Register* on April 23, 2013 (78 FR 23858) with an effective date of May 23, 2013.

Regulatory Amendment 19 (SAFMC 2013a) adjusted the black sea bass harvest limits based on the results of a 2013 update assessment. Because the increase to the ABC/ACL was substantial, there was concern that this could extend fishing with pots into the calving season for right whales and create a risk of entanglement for large migratory whales during the fall months. To minimize this risk, the amendment also proposed a closure to black sea bass pot gear from November 1 to April 30. The South Atlantic Council approved the amendment for submission to the Secretary at a special South Atlantic Council meeting held via webinar in May 2013. The final rule published on September 23, 2013. The ACL increase for black sea bass in the South Atlantic was effective September 23, 2013. The annual prohibition on the use of black sea bass pots from November 1 through April 30 became effective October 23, 2013.

Regulatory Amendment 15 (SAFMC 2013b) included actions to modify the optimum yield (OY) and annual catch limits (ACL) for yellowtail snapper in the South Atlantic, consider changes to the commercial and recreational yellowtail snapper fishing years and a spawning season closure for the commercial sector, and modify the gag ACL and/or modify or remove the AM that requires a closure of shallow-water groupers (red grouper, black grouper, scamp,

yellowmouth grouper, yellowfin grouper, red hind, rock hind, graysby, and coney) when the commercial ACL for gag is met or projected to be met. The South Atlantic Council chose to take no action regarding changes to the yellowtail snapper fishing year and spawning season closure.

Through Regulatory Amendment 14 (SAFMC 2013c), the South Atlantic Council changed the fishing years for greater amberjack and black sea bass, revised the commercial trip limits for gag and black sea bass, and revised the recreational AMs for black sea bass and vermilion snapper. The South Atlantic Council approved the amendment for public hearings at their June 2013 meeting and approved the amendment at the September 2013 meeting. The National Marine Fisheries Service (NMFS) implemented the regulations on December 8, 2014.

B. Present

NMFS has expanded the designated critical habitat for endangered North Atlantic right whales in the northwestern Atlantic Ocean, including areas that will support calving and nursing (81 FR 4837, January 27, 2016). NMFS is issuing a final rule to replace the critical habitat for right whales in the North Atlantic with two new areas. The areas being designated as critical habitat contain approximately 29,763 nm 2 of marine habitat in the Gulf of Maine and Georges Bank region (Unit 1) and off the Southeast U.S. coast (Unit 2).

The Generic AMs and Dolphin Allocation Amendment (Amendment 34 to the Snapper Grouper FMP; SAFMC 2015) modified AMs for snapper grouper species and golden crab to make them more consistent with AMs already implemented for other species and other fishery management plans. In the same amendment, South Atlantic Council modified existing commercial and recreational sector allocations for dolphin. The final rule published on January 22, 2016, and regulations were effective on February 22, 2016.

In addition to snapper grouper fishery management issues being addressed in this amendment, other snapper grouper amendments have been developed concurrently and are in the process of approval and implementation.

Amendment 36 to the Snapper Grouper FMP would establish new Spawning Special Management Zones to protect spawning of snapper grouper species including speckled hind and warsaw grouper.

The Comprehensive Ecosystem-Based Amendment 3 contains an action to improve bycatch reporting for the snapper grouper fishery.

Amendment 35 to the Snapper Grouper FMP would remove four species from the Snapper Grouper Fishery Management Unit because they are not in need of federal management, and clarify regulations for golden tilefish endorsements. The Notice of Availability for public comment on this amendment published in the *Federal Register* on February 5, 2016 (81 FR 6222).

Regulatory Amendment 16 contains two actions: the first addresses the prohibition on the use of black sea bass pots that was implemented through Regulatory Amendment 19 and became effective on October 23, 2013; the second action specifies potential new black sea bass pot gear modifications that reduce the required breaking strength for buoy lines and weak links, and changes to aid in gear identification in the event of a whale entanglement.

C. Reasonably Foreseeable Future

The Joint Commercial Logbook Reporting Amendment would require electronic reporting of landings information by federally permitted commercial vessels, which would increase the timeliness and accuracy of landings data.

The For-Hire Reporting Amendment would require charter vessels to report their landings information electronically each week and change the deadline for headboat reports. Including charter boats in the recreational harvest reporting system would further improve the agency's ability to monitor recreational catch rates in-season.

Hogfish in the South Atlantic can be split into two genetically distinct stocks: one off Georgia and the Carolinas (GA-NC) and one Florida Keys/East Florida (FLK/EFL) stock. This recommended split is based on recent research completed by the Florida Fish and Wildlife Conservation Commission (FWC). Amendment 37 would specify the boundary between the FLK/EFL hogfish stock, managed by the South Atlantic Council, and the Gulf of Mexico stock, managed by the Gulf Council. Amendment 37 also includes actions to specify Acceptable Biological Catch (ABC), Annual Catch Limits (ACLs), and Optimum Yield (OY) for both stocks, establish a rebuilding plan for the FLK/EFL stock, and implement or modify management measures for both stocks to attain the desired level of harvest.

Amendment 41 to the Snapper Grouper FMP would adjust biological benchmarks and fishing levels for mutton snapper in the South Atlantic based on results of the latest stock assessment for that species.

II. Non-Council and other non-fishery related actions, including natural events affecting snapper grouper species in this amendment.

A. Past
B. Present
C. Reasonably foreseeable future

In terms of natural disturbances, it is difficult to determine the effect of non-Council and non-fishery related actions on stocks of snapper grouper species. Annual variability in natural conditions such as water temperature, currents, food availability, predator abundance, etc. can affect the abundance of young fish, which survive the egg and larval stages each year to become juveniles (i.e., recruitment). This natural variability in year class strength is difficult to predict, as it is a function of many interactive and synergistic factors that cannot all be measured

(Rothschild 1986). Furthermore, natural factors such as storms, red tide, cold-water upwelling, etc. can affect the survival of juvenile and adult fishes; however, it is very difficult to quantify the magnitude of mortality these factors may have on a stock. Alteration of preferred habitats for snapper grouper species could affect survival of fish at any stage in their life cycles. However, estimates of the abundance of fish, which utilize any number of preferred habitats, as well as, determining the impact habitat alteration may have on snapper grouper species, is problematic.

Climate change can impact marine ecosystems through ocean warming by increased thermal stratification, reduced upwelling, sea level rise, increases in wave height and frequency, loss of sea ice, and increased risk of diseases in marine biota. Decreases in surface ocean pH due to absorption of anthropogenic CO_2 emissions may impact a wide range of organisms and ecosystems, particularly organism that absorb calcium from surface waters, such as corals and crustaceans (IPCC 2014, and references therein).

The BP/Deepwater Horizon oil spill event, which occurred in the Gulf of Mexico on April 20, 2010, did not impact fisheries operating the South Atlantic. Oil from the spill site has not been detected in the South Atlantic region, and is not likely to pose a threat to the species addressed in this amendment. For additional information on the Deepwater Horizon MC252 oil spill and associated closures, see: http://sero.nmfs.noaa.gov/deepwater_horizon_oil_spill.htm

5. Characterize the resources, ecosystems, and human communities identified in scoping in terms of their response to change and capacity to withstand stress.

In terms of the biophysical environment, the resources/ecosystems identified in earlier steps of the CEA are the fish populations and protected resources directly or indirectly affected by the regulations. This step should identify the trends, existing conditions, and the ability to withstand stresses of the environmental components. Information on species most affected by this amendment is provided in **Section 3.2** of this document.

The commercial and for-hire sectors of the snapper grouper fishery have seen significant changes in regulatory actions with limited entry in the commercial sector and attempts to pursue other types of management that may seem too restrictive (i.e., individual fishing quotas), as well as closure of waters through the placement of MPAs. Additionally, all fishermen and associated businesses have been affected by ACLs and AMs. Increasing access to the fishery resources through changes to management for blueline tilefish, black sea bass, and yellowtail snapper will be overall beneficial to fishermen and communities.

6. Characterize the stresses affecting these resources, ecosystems, and human communities and their relation to regulatory thresholds.

This step is important in outlining the current and probable stress factors on the affected species, ecosystems, and human communities identified in the previous steps. The goal is to determine whether these species are approaching conditions where additional stresses could have an important cumulative effect beyond any current plan, regulatory, or sustainability threshold

(CEQ 1997). Sustainability thresholds can be identified for some resources, which are levels of impact beyond which the resources cannot be sustained in a stable state. Other thresholds are established through numerical standards, qualitative standards, or management goals. The CEA should address whether thresholds could be exceeded because of the contribution of the proposed action to other cumulative activities affecting resources.

The threats to protected species and the relation to regulatory thresholds, within the Endangered Species Act (ESA) and the Marine Mammal Protection Act (MMPA), can be found in **Sections 3.2** and **4** of this document.

Fish populations

Fishery managers have established management thresholds for black sea bass, blueline tilefish, and yellowtail snapper. The thresholds and fishing regulations ensure overfishing does not occur, and to ensure these stocks can be maintained at sustainable levels. With current AMs in place for these species it is unlikely that these thresholds would be exceeded. If the harvest limits are exceeded, management measures are in place to either restrict further fishing or correct for the overage in the following fishing season. The increase in the ACL for blueline tilefish is in response to an increase in an ABC recommendation from the South Atlantic Council's Scientific and Statistical Committee.

Climate change

Global climate changes could have significant effects on South 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 2014; Kennedy et al. 2002).

It is unclear how climate change would affect snapper grouper species in the South 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 snapper grouper species 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. In the near term, it is unlikely that the management measures contained in Regulatory Amendment 25 would compound or exacerbate the ongoing effects of climate change on snapper grouper species.

Protected resources

The threats to protected species and the relation to regulatory thresholds, within the ESA and MMPA, can be found in **Sections 3.2** and **4** of this document.

7. Define a baseline condition for the resources, ecosystems, and human communities.

The purpose of defining a baseline condition for the resource and ecosystems in the area of the proposed action is to establish a point of reference for evaluating the extent and significance of expected cumulative effects. The Southeast Data Assessment and Review assessments show trends in biomass, fishing mortality, fish weight, and fish length going back to the earliest periods of data collection. For some species such as snowy grouper, assessments reflect initial periods when the stock was above B_{MSY} and fishing mortality was fairly low. However, some species were heavily exploited or possibly overfished when data were first collected. As a result, the assessment must make an assumption of the biomass at the start of the assessment period thus modeling the baseline reference points for the species. The baseline condition for the resources, ecosystems, and human communities can be found in **Chapter 3.**

8. Identify the important cause-and-effect relationships between human activities and resources, ecosystems, and human communities.

The cause and effect relationship of fishing and regulatory actions for the species affected by this amendment is shown in **Table 6.1**.

Table 6.1. The cause and effect relationship of fishing and regulatory actions within the time period of the Cumulative Effects Analysis (CEA).

Time period/dates	Cause	Observed and/or Expected Effects
January 1992	Prohibited gear: fish traps south of Cape Canaveral, FL; entanglement nets; longline gear inside of 50 fathoms; powerheads and bangsticks in designated SMZs off SC. Size/Bag limits: 10" TL vermilion snapper (recreational only); 12" TL vermilion snapper (commercial only); 10 vermilion snapper/person/day; aggregate grouper bag limit of 5/person/day; and 20" TL gag, red, black, scamp, yellowfin, and yellowmouth grouper size limit (Snapper Grouper Amendment 4; SAFMC 1991).	Reduce mortality of snapper grouper species.
February 24, 1999	Snapper Grouper Amendment 6; SAFMC 1993.	All S-G without a bag limit: aggregate recreational bag limit 20 fish/person/day, excluding tomtate and blue runners. Vessels with longline gear aboard may only possess snowy, warsaw, yellowedge, and misty grouper, and golden, **blueline** and sand tilefish.
Effective	Stock assessments indicate **black sea bass**,	Management measures implemented to end

Time period/dates	Cause	Observed and/or Expected Effects
October 23, 2006	vermilion snapper, red porgy, and snowy grouper are undergoing overfishing. Snapper grouper FMP Amendment 13C (SAFMC 2006)	overfishing of these species.
Effective March 20, 2008	Stock assessments indicate snowy grouper, black sea bass, and red porgy are overfished. Snapper grouper FMP Amendment 15A (SAFMC 2008a).	Establish rebuilding plans and SFA parameters for snowy grouper, **black sea bass**, and red porgy.
Effective February 12, 2009	Recognized need to provide additional protection to deepwater snapper grouper species, and to protect spawning locations. Snapper grouper FMP Amendment 14 (SAFMC 2007).	Use MPAs as a management tool to promote the optimum size, age, and genetic structure of slow growing, long-lived deepwater snapper grouper species (e.g., speckled hind, snowy grouper, warsaw grouper, yellowedge grouper, misty grouper, golden tilefish, **blueline tilefish**, and sand tilefish). Gag and vermilion snapper occur in some of these areas.
Effective Date July 29, 2009	Stock assessment indicates some species are experiencing overfishing and is approaching an overfished condition. Snapper grouper FMP Amendment 16 (SAFMC 2009a).	Protect spawning aggregations and snapper grouper in spawning condition by increasing the length of the spawning season closure, decrease discard mortality by requiring the use of dehooking tools, reduce overall harvest of gag and vermilion snapper to end overfishing.
Effective Date January 31, 2011	Reauthorized Magnuson-Stevens Act requires ACLs for all species undergoing overfishing. Snapper Grouper Amendment 17B (SAFMC 2010b).	Specified ACLs and ACTs; management measures to limit recreational and commercial sectors to their ACTs; AMs, for species undergoing overfishing. Established a harvest prohibition of six snapper grouper species in depths greater than 240 feet.
Effective Date July 15, 2011	Additional management measures are considered to help ensure overfishing of black sea bass, vermilion snapper, and gag does not occur. Desired to have management measures slow the rate of capture to prevent derby fisheries. Regulatory Amendment 9 (SAFMC 2011a)	Harvest management measures for **black sea bass**; commercial trip limits for gag, vermilion snapper, and greater amberjack
Effective Date May 10, 2012	New analysis demonstrates prohibition to harvest of 6 deepwater species in Amendment 17B is not an effective measure to reduce bycatch of speckled hind and warsaw grouper. Regulatory Amendment 11 (SAFMC 2011b)	Removed the harvest prohibition of six deepwater snapper grouper species implemented in Amendment 17B.
Effective Date July 1, 2012	Need to slow rate of harvest in black sea bass pot sector to ease derby conditions. Amendment 18A (SAFMC 2012a).	Established an endorsement program for **black sea bass** commercial sector; established a trip limit; specified requirements for deployment and retrieval of pots; made improvements to data reporting for commercial and for-hire sectors
Effective Date January 7, 2013	Clarification of action in Amendment 18A for black sea bass pot endorsement transferability was needed. Amendment 18A Transferability Amendment.	Reconsidered action to allow for transfer of **black sea bass** pot endorsements that was disapproved in Amendment 18A.

Time period/dates	Cause	Observed and/or Expected Effects
Effective Date July 17, 2013	The recreational data collection system has changed from MRFSS to MRIP. ACLs and allocations in place utilize MRFSS data. Regulatory Amendment 13. (SAFMC 2013b).	Adjust ACLs and allocations for unassessed snapper grouper species with MRIP recreational estimates
	New stock assessment for black sea bass indicates the stock is rebuilt and catch levels can be increased. Regulatory Amendment 19 (SAFMC 2013f). When the ACL was increased in 2013, the recreational sector avoided an in-season closure, but landings from recreational trips were still limited by the five-fish bag limit along with the minimum size limit.	Increase recreational and commercial ACLs for **black sea bass**. Black sea bass pots prohibited from November 1 through April 30 (effective October 23, 2013). Participants in the recreational sector of the black sea bass fishery have been negatively affected by changes in black sea bass management that resulted in short recreational seasons and low bag limits from 2011 to 2013.
January 27, 2014	Amendment 27 (SAFMC 2014a)	Establish the SAFMC as the managing entity for **yellowtail** and mutton snappers and Nassau grouper in the Southeast U.S., modify the SG framework; modify placement of blue runner in an FMU or modify management measures for blue runner
March 30, 2015	Amendment 32 (SAFMC 2014c)	Measures to end overfishing of blueline tilefish

9. Determine the magnitude and significance of cumulative effects.

Actions in Regulatory Amendment 25 that address the black sea bass, blueline tilefish, and yellowtail snapper segments of the snapper grouper fishery, together or separately, are not expected to result in significant cumulative adverse biological effects. All of the proposed, or recently implemented management actions affecting these species within the snapper grouper fishery, are intended to improve management of the snapper grouper resource, while minimizing, to the maximum extent practicable adverse social and economic impacts. The effects of the actions (raising a bag limit and trip limit, modifying a fishing year, raising an ACL in response to an ABC recommendation change) are not expected to be at a magnitude that would cause significant effects to the biological resource.

The actions in Regulatory Amendment 25 are expected to increase access to blueline tilefish, black sea bass, and yellowtail snapper in the South Atlantic region. The likely cumulative socioeconomic effects would be improved commercial and recreational fishing opportunities, and benefits to associated businesses and communities.

In recent years, participants in the blueline tilefish portion of the snapper grouper fishery and associated businesses have experienced some negative economic and social impacts due to sharp decreases in the ACL, and early closures in 2015. The proposed actions in this amendment are expected to lengthen the season and increase fishing opportunities for both the commercial and

recreational sectors. This may provide some economic relief for commercial fishermen who harvest blueline tilefish to maximize efficiency on trips targeting multiple species. Changes to the bag limit may allow for-hire businesses to increase deepwater fishing trips and improve recreational fishing experiences for clients.

For yellowtail snapper, the proposed changes will benefit the fishermen and communities in the Florida Keys, including visitors to the area who participate in the recreational sector for yellowtail snapper.

The actions are not likely to result in direct, indirect, or cumulative adverse 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 South Atlantic region. The USS Monitor, Gray's Reef, and Florida Keys National Marine Sanctuaries are within the boundaries of the South Atlantic exclusive economic zone. The proposed actions are not likely to cause loss or destruction of the resources found within the national marine sanctuaries.

10. Modify or add alternatives to avoid, minimize, or mitigate significant cumulative effects.

The cumulative effects on the biophysical environment are expected to be negligible. Avoidance, minimization, and mitigation are not applicable. The proposed action is not related to other actions with individually insignificant, but cumulatively significant impacts. The actions contained in Regulatory Amendment 25, in combination with actions that have been implemented in the past, or will be implemented in the future, are not expected to result in any significant cumulative impacts. Modifying the ACLs, recreational ACT, and management measures for species in the fishery management unit species would be expected to help achieve the goals of this amendment. Therefore, the cumulative effects of the actions are not expected to significantly affect the magnitude of bycatch, diversity and ecosystem structure of fish communities, or safety at sea of fishermen targeting snapper grouper, and other species managed by the South Atlantic Council. Based on the cumulative effects analysis presented herein, the proposed actions will not have any significant cumulative impacts combined with other past, present, and foreseeable future actions.

11. Monitor the cumulative effects of the selected alternatives and adopt management.

The effects of the proposed actions are, and will continue to be, monitored through collection of data by NMFS, states, stock assessments and stock assessment updates, life history studies, and other scientific observations.

Chapter 7. List of Preparers

Table 7.1.1. List of Regulatory Amendment 25 preparers.

Name	Agency/Division	Area of Amendment Responsibility
Brian Cheuvront	SAFMC	Economist
Gregg Waugh	SAFMC	Deputy Executive Director
Jack McGovern	NMFS/SF	Fishery Biologist
Kari MacLauchlin	SAFMC	Fishery Social Scientist
Mike Errigo	SAFMC	Data Analyst
Myra Brouwer	SAFMC	Fishery Biologist/IPT co-lead
Rick DeVictor	NMFS/SF	Fishery Biologist/IPT co-lead
Denise Johnson	NMFS/SF	Economist
Mike Jepson	NMFS/SF	Fishery Social Scientist
Chip Collier	SAFMC	Fishery Scientist
Nick Farmer	NMFS/SF	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

Table 7.1.2. List of Regulatory Amendment 25 interdisciplinary plan team members.

Name	Organization	Title
Brian Cheuvront	SAFMC	Economist
Noah Silverman	NMFS/SER	Regional NEPA Coordinator
Gregg Waugh	SAFMC	Deputy Executive Director
Jack McGovern	NMFS/SF	Fishery Biologist
Kari MacLauchlin	SAFMC	Fishery Social Scientist
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Mike Errigo	SAFMC	Data Analyst
Mike Jepson	NMFS/SF	Fishery Social Scientist
Monica Smit-Brunello	NMFS SERO/GC	Attorney
Myra Brouwer	SAFMC	Fishery Biologist
Scott Crosson	SEFSC	Economist
Rick DeVictor	NMFS/SF	Fishery Biologist
Roger Pugliese	SAFMC	Sr. Fishery Biologist
Kevin Craig	NMFS/SF	Fishery Research Biologist
Stephen Holiman	NMFS/SF	Supervisory Industry Economist
Denise Johnson	NMFS/SF	Economist

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

Regulatory Amendment 25:
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Environmental Assessment:
NMFS, Southeast Region
263 13th Avenue South
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(727) 824-5301 (TEL)
(727) 824-5320 (FAX)

List of Agencies, Organizations, and Persons Consulted

SAFMC Law Enforcement Advisory Panel
SAFMC Snapper Grouper Advisory Panel
SAFMC Scientific and Statistical Committee
North Carolina Coastal Zone Management Program
South Carolina Coastal Zone Management Program
Georgia Coastal Zone Management Program
Florida Coastal Zone Management Program
Florida Fish and Wildlife Conservation Commission
Georgia Department of Natural Resources
South Carolina Department of Natural Resources
North Carolina Division of Marine Fisheries
North Carolina Sea Grant
South Carolina Sea Grant
Georgia Sea Grant
Florida Sea Grant
Atlantic States Marine Fisheries Commission
Gulf and South Atlantic Fisheries Development Foundation
Gulf of Mexico Fishery Management Council
National Marine Fisheries Service
- Washington Office
- Office of Ecology and Conservation
- Southeast Regional Office
- Southeast Fisheries Science Center

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Appendix A. Considered But Rejected Alternatives

Action 3. Adjust the bag limit for blueline tilefish for the recreational sector

OPTION 5. blueline tilefish vessel limit of 1/vessel/day May and June (closed rest of year).
OPTION 6. blueline tilefish vessel limit of 1/vessel/day in May (closed rest of year).
OPTION 7. blueline tilefish vessel limit of 1/vessel/day in June (closed rest of year).

Discussion:

The options above were removed from consideration because they would have implemented a recreational season that is shorter than what was in place under the No Action alternative and hence were not deemed reasonable alternatives to analyze and consider. Further, the alternatives had been considered during development of Amendment 32 to the Snapper Grouper FMP, which put in place a substantially lower total annual catch limit (ACL) for the South Atlantic region than what is being considered in Regulatory Amendment 25 to the Snapper Grouper FMP. The South Atlantic Fishery Management Council (South Atlantic Council) reasoned that since the ACL would increase as a result of a new acceptable biological catch (ABC) recommendation, there was no need to consider management measures that would be more restrictive.

Action 6. Revise Commercial Closure Accountability Measures for Yellowtail Snapper

Alternative 1. No Action. If commercial yellowtail snapper landings as estimated by the Science and Research Director reach or are projected to reach the commercial ACL the Regional Administrator shall publish a notice to close the commercial sector for the remainder of the fishing year. On and after the effective date of such a notification, all sale or purchase of yellowtail snapper is prohibited and harvest or possession of this species in or from the Atlantic exclusive economic zone (EEZ) is limited to the bag and possession limit. This bag and possession limit applies in the South Atlantic on board a vessel for which a valid Federal commercial or charter vessel/headboat permit for South Atlantic snapper grouper has been issued, without regard to where such species were harvested, i.e., in state or federal waters. If the commercial ACL is exceeded, the Regional Administrator shall publish a notice to reduce the commercial ACL in the following fishing year by the amount of the commercial overage, only if the species is overfished and the total ACL (commercial ACL and recreational ACL) is exceeded.

Alternative 2. If commercial yellowtail snapper landings in the South Atlantic, as estimated by the Science and Research Director, reach or are projected to reach the combined (South Atlantic

+ Gulf of Mexico) commercial yellowtail snapper ACL, the Regional Administrator shall publish a notice to close the South Atlantic commercial sector for the remainder of the fishing year. On and after the effective date of such a notification, all sale or purchase is prohibited and harvest or possession in or from the Atlantic EEZ is limited to the bag and possession limit. This bag and possession limit applies in the South Atlantic on board a vessel for which a valid Federal commercial or charter/headboat permit for South Atlantic Snapper Grouper has been issued, without regard to where the species was harvested, that is, state or federal waters.

Discussion:

Alternative 1 (No Action) would retain existing commercial accountability measures (AMs) for the South Atlantic, where an in-season closure is in place to prevent landings from exceeding the commercial ACL. In addition, should landings exceed the total ACL (commercial ACL+ recreational), a payback provision would be triggered but only if yellowtail snapper are overfished. Until 2015, commercial and recreational landings of yellowtail snapper had not reached their respective ACLs. However, commercial landings were projected to reach the commercial ACL and an in-season closure for the commercial sector went into effect on October 31, 2015. Alternative 2 would change the AMs for the commercial sector to help prevent another in-season closure. The proposed change would trigger a closure when commercial landings in the South Atlantic were projected to meet the total commercial ACL for yellowtail snapper in the Southeast U.S. (South Atlantic + Gulf of Mexico). Specifying a commercial ACL for the entire stock; however, would require that the Gulf of Mexico Fishery Management Council (Gulf Council) first specify sector allocations for its portion of the yellowtail snapper ABC. The combined commercial ACLs for both Councils would then be used as the threshold to trigger an in-season closure.

NOAA General Counsel (GC) Recommendation:
Leaving Action 6 in this amendment will greatly slow down the rulemaking, since it creates several legal and procedural hurdles outlined below:

- Yellowtail snapper is a single stock with one ABC, per the SEDAR stock assessment.
- The Gulf and South Atlantic Councils apportioned that ABC between the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region (Snapper Grouper FMP) and the Fishery Management Plan for Reef Fish Fishery of the Gulf of Mexico (Reef Fish FMP) in 2011 via the Gulf Council's Generic ACL Amendment and the South Atlantic Council's Comprehensive ACL Amendment. NOAA GC reviewed those amendments and their respective rulemakings, and each Council mirrored the approach and rationale of the other Council, with both Councils agreeing to apportion the ABC with 75% to the Snapper Grouper FMP and 25% to the Reef Fish FMP.
- In this instance, based on the record created thus far, Action 6 is akin to the South Atlantic Council deciding to take some of that 25% ABC/ACL from the Gulf's Reef Fish FMP.
- The Gulf Council has not agreed to give up some of their Reef Fish ACL to the South Atlantic Council, and will not have agreed to do that by the December meeting.

- At their October meeting the Gulf Council agreed to begin a separate amendment to address management issues with yellowtail snapper to address consolidating the ABC/ACL and AMs, the commercial fishing year start date and recreational/commercial allocations. At this point, it is not known how the Gulf Council will decide these issues.
- There was discussion at the October Gulf Council meeting about whether the South Atlantic Council was also considering reallocating some of the ACL from the recreational sector to increase the commercial sector's ACL.

The Interdisciplinary Planning Team (IPT) asked whether the South Atlantic Council could approve Action 6, with NMFS delaying its implementation until some later date, akin to what was done for the management of Nassau grouper. The record thus far for Action 6 and the record for Nassau grouper are very different. The Gulf Council took final action to remove Nassau grouper from the Reef Fish FMP so that the South Atlantic Council could extend their management of Nassau grouper into Gulf of Mexico waters. The Gulf Council had agreement (via a letter) from the South Atlantic Council in which the South Atlantic Council agreed to manage Nassau grouper in Gulf of Mexico waters, after the Secretary of Commerce (Secretary) allowed it under Magnuson-Stevens Fishery Conservation and Management Act section 304(f). The Secretary subsequently allowed it, and the South Atlantic Council extended its management for Nassau grouper in Amendment 27 to the Snapper Grouper FMP and its rulemaking. Harvest of Nassau grouper was not allowed in Gulf of Mexico waters under the Reef Fish FMP, and that prohibition was continued in Gulf of Mexico waters via the Snapper Grouper FMP. The current Action 6 situation is too different from the Nassau grouper situation to be treated the same with a delayed implementation date.

Appendix B. Glossary

Allowable 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.

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

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.

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 % 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 the federal 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.

Framework: An established procedure within a fishery management plan that has been approved and implemented by NMFS, which allows specific management measures to be modified via regulatory amendment.

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.

Highgrading: 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 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: % 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 C. Other Applicable Laws

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. Among other things under the APA, the National Marine Fisheries Service (NMFS) is required to publish notification of proposed rules in the *Federal Register* and to solicit, consider and respond to public comment on those rules before they are finalized. The APA also establishes a 30-day wait period from the time a final rule is published until it takes effect, with some exceptions. Regulatory Amendment 25 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region complies with the provisions of the APA through the South Atlantic Fishery Management Council's (South Atlantic Council) public hearing, requests for public comments, and consideration of comments. 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, unless the rule falls within an APA exception, there will be a 30-day wait period before the regulations are effective.

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. Amendment 37 has used the best available information and made a broad presentation thereof. The information contained in this document was developed using 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. 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. The South Atlantic Council believes the actions in this amendment are consistent to the maximum extent practicable with the Coastal Zone Management Plans of Florida, Georgia, South Carolina, and North Carolina. Pursuant to Section 307 of the CZMA, this determination will be submitted

to the responsible state agencies who administer the approved Coastal Zone Management Programs in the States of Florida, South Carolina, Georgia, and North Carolina.

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 are concluded 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 (NMFS 2006) on June 7, 2006, evaluating the impacts of the continued authorization of the South Atlantic snapper grouper fishery under the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region (Snapper Grouper FMP) and Amendment 13C to the Snapper Grouper FMP on ESA-listed species (see **Chapter 3**). In the opinion NMFS detetrmined that the snapper grouper fishery would adversely affect sea turtles and smalltooth sawfish, but would not jeopardize their continued existence. An incidental take statement was issued for green, hawksbill, Kemp's ridley, leatherback, and loggerhead sea turtles, as well as smalltooth sawfish. Reasonable and prudent measures to minimize the impact of these incidental takes were specified, along with terms and conditions to implement them. NMFS determined that the fishery was not likely to adversely affect other listed species and critical habitat in the SouthAtlantic Region (see NMFS 2006 for discussion on these species).

Table G-1. Three-year South Atlantic anticipated takes in the snapper grouper fishery.

Species	Amount of Take	Total
Green	Total Take	39
	Lethal Take	14
Hawksbill	Total Take	4
	Lethal Take	3
Kemp's Ridley	Total Take	19
	Lethal Take	8
Leatherback	Total Take	25
	Lethal Take	15
Loggerhead	Total Take	202
	Lethal Take	67
Smalltooth sawfish	Total Take	8
	Lethal Take	0

Source: NMFS 2006. NMFS (National Marine Fisheries Service). 2006. Endangered Species Act Section 7 consultation on the continued authorization of snapper grouper fishing under the Snapper Grouper FMP and Proposed Amendment 13C. Biological Opinion. June 7.

Sea turtles are vulnerable to capture by bottom longline and vertical hook-and-line gear. The magnitude of the interactions between sea turtles and the South Atlantic snapper grouper fishery was evaluated in NMFS (2006) using data from the Supplementary Discard Data Program (SDDP). Three loggerheads and three unidentified sea turtles were caught on vertical lines; one leatherback and one loggerhead were caught on bottom longlines, all were released alive. The effort reported in the program represented between approximately 5% and 14% of all South Atlantic snapper-grouper fishing effort. These data were extrapolated in NMFS (2006) to better estimate the number of interactions between the entire snapper-grouper fishery and ESA-listed sea turtles. The extrapolated estimate was used to project future interactions (**Table G-1**).

The SDDP does not provide data on recreational fishing interactions with ESA-listed sea turtle species. However, anecdotal information indicates that recreational fishermen occasionally take sea turtles with hook-and-line gear. NMFS (2006) used the extrapolated data from the SDDP to estimate the magnitude of recreational fishing on sea turtles (**Table G-1**).

Regulations implemented through Amendment 15B to the Snapper Grouper FMP (74 FR 31225; June 30, 2009) required all commercial or charter/headboat vessels with a South Atlantic snapper grouper permit, carrying hook-and-line gear on board, to possess required literature and release gear to aid in the safe release of incidentally caught sea turtles and smalltooth sawfish. These regulations are thought to decrease the mortality associated with accidental interactions with sea turtles and smalltooth sawfish.

Subsequent to the June 7, 2006, opinion, NMFS made modifications to the list of protected species for which they are responsible. LIstign actions pertinent to the South Atlantic Region EEZincluded (1) the listing of two species of *Acropora* coral (71 FR 26852, May 9, 2006), (2) the designation of *Acropora* critical habitat (73 FR 72210, November 26, 2008), (3) the determination that the loggerhead sea turtle population consists of nine DPSs (76 FR 58868, September 22, 201 1), (4) the listing of five DPSs of Atlantic sturgeon (77 FR 5914, February 6,

2012, and 77 FR 5880, February 6, 2012), (5) the listing of five additional coral species (79 FR 53851, September 10, 2014), and (6) the designation of of critical habitat for the northwest Atlantic Ocean (NWA) loggerhead sea turtle DPS (FR, July 10, 2014

NMFS addressed these ESA listing actions in a series of consultation memoranda. In separate memoranda, NMFS concluded the continued authorization of the South Atlantic snapper-grouper fishery is not likely to adversely affect elkhorn or staghorn coral (*Acropora* spp.; July 9, 2007), *Acropora* critical habitat (December 2, 2008), and Atlantic sturgeon (February 15, 2012). The February 15, 2012, memorandum also stated that because the 2006 biological opinion had evaluated the impacts of the snapper-grouper fishery on the loggerhead sea turtle subpopulations now wholly contained within the Northwest Atlantic DPS, the biological opinion's conclusion that the fishery is not likely to jeopardize the continued existence of loggerhead sea turtles remains valid. In a memorandum dated September 11, 2014, NMFS evaluated the effects of continued authorization of the snapper-grouper fishery on all seven listed coral species. NMFS concluded that any adverse effects on these species from the snapper-grouper fishery are extremely unlikely to occur and are therefore discountable. In a memorandum dated September 16, 2014, NMFS evaluated the potential impacts all federally managed fisheries in the Gulf of Mexico and South Atlantic regions may have on the NWA loggerhead sea turtle DPS critical habitat. The evaluation concluded the snapper-grouper fishery uses fishing methods and gear types that either will have no effect or are highly unlikely to adversely affect any of the PCEs; thus, any adverse effects from this fishery are discountable.

1.5 Executive Order 12612: Federalism

E.O. 12612 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 actions proposed in this document and associated regulations. 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. 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 G**.

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 alternatives being considered in this document are not expected to result in any disproportionate adverse human health or environmental effects to minority populations or low-income populations of Florida, North Carolina, South Carolina, or Georgia, rather the impacts would be spread across all participants in the snapper grouper fishery regardless of race or income. A detailed 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 document

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. 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 alternatives considered in this document 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 alternatives considered in this document 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 Marine Protected Areas. 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 alternatives considered in this document 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 required to obtain a marine mammal authorization by registering with the Marine Mammal Authorization Program (50 CFR 229.4). They are also required to accommodate an observer if requested (50 CFR 229.7(c)) and they must comply with any applicable take reduction plans. The commercial hook-and-line components of the South Atlantic snapper grouper fishery (i.e., bottom longline, bandit gear, and handline), which targets snapper grouper species are listed as part of a Category III fishery (79 FR 77919, December 29, 2014) because there have been no documented interactions between these gear and marine mammals. The black sea bass pot component of the South Atlantic snapper grouper fishery is part of the Atlantic mixed species trap/pot fishery, a Category II fishery, in the final 2015 LOF (79 FR 77919, December 29, 2014). The Atlantic mixed species trap/pot fishery designation was created in 2003 (68 FR 41725, July 15, 2003), by combining several separately listed trap/pot fisheries into a single group. This group was designated Category II as a precaution because of known interactions between marine mammals and gear similar to those included in this group. Prior to this consolidation, the black sea bass pot fishery in the South Atlantic was a part of the "U.S. Mid-Atlantic and Southeast U.S. Atlantic Black Sea Bass Trap/Pot" fishery (Category III). There has never been a documented interaction between marine mammals and black sea bass trap/pot gear in the South Atlantic. The actions in this EA are not expected to negatively impact the provisions of the MMPA.

1.12 National Environmental Policy Act (NEPA)

This document has been written and organized in a manner that meets NEPA requirements, and thus is a consolidated NEPA document, including an EA, as described in NOAA Administrative Order (NAO) 216- 6, Section 6.03.a.2.

Purpose and Need for Action

The purpose and need for this action are described in **Chapter 1**.

Alternatives

The alternatives for this action are described in **Chapter 2**.

Affected Environment

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

Impacts of the Alternatives

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

1.13 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 three sanctuaries in the South Atlantic exclusive economic zone are the USS Monitor, Gray's Reef, and Florida Keys National Marine Sanctuaries.

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

1.14 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. Actions in this document are not expected to affect PRA.

1.15 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 whether a proposed fishery regulation would 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**.

1.16 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.

1.17 Public Law 99-659: Vessel Safety

Public Law 99-659 amended the Magnuson-Stevens Fishery Conservation and Management Act to require that a 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 South 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 South Atlantic 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 D. History of Management

Document & Year Submitted	Effective Date	Proposed & Final Rules	Summary of Major Actions (Refer to Proposed and Final Rules for detailed changes)
FMP (1983)	8/31/83	PR: 48 FR 26843	12" total length (TL) limit for red snapper, yellowtail snapper, red grouper, Nassau grouper; 8" limit for black sea bass; 4" trawl mesh size; gear limitations: poisons, explosives, fish traps, trawls; designated modified habitats or artificial reefs as Special Management Zones (SMZs).
Regulatory Amendment #1 (1987)	3/27/87	PR: 51 FR 43937 FR: 52 FR 9864	Prohibited fishing in SMZs except with hand-held hook-and-line and spearfishing gear; prohibited harvest of goliath grouper in SMZs.
Amendment #1 (1988)	1/12/89	PR: 53 FR 42985 FR: 54 FR 1720	Prohibited trawl gear to harvest fish south of Cape Hatteras, NC and north of Cape Canaveral, FL; directed fishery as vessel with trawl gear and ≥200 lb sg on board; established rebuttable assumption that vessel with sg on board had harvested such fish in the EEZ.
Regulatory Amendment #2 (1988)	3/30/89	PR: 53 FR 32412 FR: 54 FR 8342	Established 2 artificial reefs off Ft. Pierce, FL as SMZs.
Emergency Rule	8/3/90	55 FR 32257	Added wreckfish to the fishery management unit; fishing year beginning 4/16/90; commercial quota of 2 million pounds; commercial trip limit of 10,000 pounds.
Fishery Closure Notice	8/8/90	55 FR 32635	Fishery closed because the commercial quota of 2 million pounds was reached.
Notice of Control Date	9/24/90	55 FR 39039	Anyone entering federal wreckfish fishery in the EEZ off S. Atlantic states after 09/24/90 was not assured of future access if limited entry program developed.

Document & Year Submitted	Effective Date	Proposed & Final Rules	Summary of Major Actions (Refer to Proposed and Final Rules for detailed changes)
Amendment #2 (1990)	10/30/90	PR: 55 FR 31406 FR: 55 FR 46213	Prohibited harvest/possession of goliath grouper in or from the EEZ; defined overfishing for goliath grouper and other species.
Emergency Rule Extension	11/1/90	55 FR 40181	Extended the measures implemented via emergency rule on 8/3/90.
Regulatory Amendment #3 (1989)	11/2/90	PR: 55 FR 28066 FR: 55 FR 40394	Established artificial reef at Key Biscayne, FL as SMZ; prohibited fish trapping, bottom longlining, spear fishing, and harvesting of Goliath grouper in SMZs.
Amendment #3 (1990)	1/31/91	PR: 55 FR 39023 FR: 56 FR 2443	Added wreckfish to the FMU; added wreckfish to the FMU; defined optimum yield and overfishing; required permit to fish for, land or sell wreckfish; required catch and effort reports from selected, permitted vessel; established control date of 03/28/90; established a fishing year for wreckfish starting April 16; established a process to set annual quota, with initial quota of 2 million pounds; established provisions for closure; established 10,000 pound trip limit; established a spawning season closure for wreckfish from January 15 to April 15; provided for annual adjustments of wreckfish management measures.
Notice of Control Date	7/30/91	56 FR 36052	Anyone entering federal snapper grouper fishery (other than for wreckfish) in the EEZ off S. Atlantic states after 07/30/91 is not assured of future access if limited entry program developed.

Document & Year Submitted	Effective Date	Proposed & Final Rules	Summary of Major Actions (Refer to Proposed and Final Rules for detailed changes)
Amendment #4 (1991)	1/1/92	PR: 56 FR 29922 FR: 56 FR 56016	Prohibited gear: fish traps except black sea bass traps north of Cape Canaveral, FL; entanglement nets; longline gear inside 50 fathoms; bottom longlines to harvest wreckfish; powerheads and bangsticks in designated SMZs off S. Carolina. Defined overfishing/overfished and established rebuilding timeframe: red snapper and groupers ≤ 15 years (year 1 = 1991); other snappers, greater amberjack, black sea bass, red porgy ≤ 10 years (year 1 = 1991). Required permits (commercial & for-hire) and specified data collection regulations. Established an assessment group and annual adjustment procedure (framework). Permit, gear, and vessel id requirements specified for black sea bass traps. No retention of snapper grouper spp. caught in other fisheries with gear prohibited in snapper grouper fishery if captured snapper grouper had no bag limit or harvest was prohibited. If had a bag limit, could retain only the bag limit; 8" TL limit – lane snapper; 10" TL limit – vermilion snapper (recreational only); 12" TL limit – red porgy, vermilion snapper (commercial only), gray, yellowtail, mutton, schoolmaster, queen, blackfin, cubera, dog, mahogany, and silk snappers; 20" TL limit – red snapper, gag, and red, black, scamp, yellowfin, and yellowmouth groupers; 28" fork length (FL) limit – greater amberjack (recreational only); 36" FL or 28" core length – greater amberjack (commercial only). Bag limits – 10 vermilion snapper, 3 greater amberjack. Aggregate snapper bag limit – 10/person/day, excluding vermilion snapper and allowing no more than 2 red snappers. Aggregate grouper bag limit – 5/person/day, excluding Nassau and goliath grouper, for which no retention (recreational & commercial) is allowed. Spawning season closure – commercial harvest greater amberjack > 3 fish bag prohibited in April south of Cape Canaveral, FL. Spawning season closure – commercial harvest mutton snapper >snapper aggregate prohibited during May and June. Charter/headboats and excursion boat possession limits extended
Amendment #5 (1992)	4/6/92	PR: 56 FR 57302 FR: 57 FR 7886	For wreckfish: Established limited entry system with individual transferable quotas (ITQs); Required dealer to have permit; Rescinded 10,000 lb. trip limit; Required off-loading between 8 am and 5 pm; Reduced occasions when 24-hour advance notice of offloading required for off-loading; Established procedure for initial distribution of percentage shares of total allowable catch (TAC).
Emergency Rule	8/31/92	57 FR 39365	For Black Sea Bass (bsb): Modified definition of bsb pot; allowed multi-gear trips for bsb; Allowed retention of incidentally caught fish on bsb trips.
Emergency Rule Extension	11/30/92	57 FR 56522	For Black Sea Bass (bsb): Modified definition of bsb pot; allowed multi-gear trips for bsb; allowed retention of incidentally caught fish on bsb trips.

Document & Year Submitted	Effective Date	Proposed & Final Rules	Summary of Major Actions (Refer to Proposed and Final Rules for detailed changes)
Regulatory Amendment #4 (1992)	7/6/93	FR: 58 FR 36155	For Black Sea Bass (bsb): Modified definition of bsb pot; allowed multi-gear trips for bsb; allowed retention of incidentally caught fish on bsb trips.
Regulatory Amendment #5 (1992)	7/31/93	PR: 58 FR 13732 FR: 58 FR 35895	Established 8 SMZs off South Carolina, where only hand-held, hook-and-line gear and spearfishing (excluding powerheads) was allowed.
Amendment #6 (1993)	7/27/94	PR: 59 FR 9721 FR: 59 FR 27242	Set up separate commercial TAC levels for golden tilefish and snowy grouper; Established commercial trip limits for snowy grouper, golden tilefish, speckled hind, and warsaw grouper; Included golden tilefish in grouper recreational aggregate bag limits; Prohibited sale of warsaw grouper and speckled hind; 100% logbook coverage upon renewal of permit; Creation of the Oculina Experimental Closed Area; Data collection needs specified for evaluation of possible future individual fishing quota system.
Amendment #7 (1994)	1/23/95	PR: 59 FR 47833 FR: 59 FR 66270	12" FL for hogfish; 16" TL for mutton snapper; required dealer, charter and headboat federal permits; allowed sale under specified conditions; specified allowable gear and made allowance for experimental gear; allowed multi-gear trips in NC; added localized overfishing to list of problems and objectives; adjusted bag limit and crew specs. for charter and head boats; modified management unit for scup to apply south of Cape Hatteras, NC; modified framework procedure.
Regulatory Amendment #6 (1994)	5/22/95	PR: 60 FR 8620 FR: 60 FR 19683	Established actions which applied only to EEZ off Atlantic coast of FL: Bag limits – 5 hogfish/person/day (recreational only), 2 cubera snapper/person/day > 30" TL; 12" TL for gray triggerfish.
Notice of Control Date	4/23/97	62 FR 22995	Anyone entering federal black sea bass pot fishery off South Atlantic states after 04/23/97 was not assured of future access if limited entry program developed.
Interim Rule Request	1/16/98		Council requested all Amendment 9 measures except black sea bass pot construction changes be implemented as an interim request under the Magnuson-Stevens Act.
Action Suspended	5/14/98		NMFS informed the Council that action on the interim rule request was suspended.

Document & Year Submitted	Effective Date	Proposed & Final Rules	Summary of Major Actions (Refer to Proposed and Final Rules for detailed changes)
Emergency Rule Request	9/24/98		Council requested Amendment 9 be implemented via emergency rule.
Amendment #8 (1997)	12/14/98	PR: 63 FR 1813 FR: 63 FR 38298	Established program to limit initial eligibility for snapper grouper fishery: Must have demonstrated landings of any species in the snapper grouper FMU in 1993, 1994, 1995 or 1996; and have held valid snapper grouper permit between 02/11/96 and 02/11/97. Granted transferable permit with unlimited landings if vessel landed ≥ 1,000 pounds (lb) of snapper grouper species in any of the years. Granted non-transferable permit with 225 lb trip limit to all other vessels. Modified problems, objectives, optimum yield (OY), and overfishing definitions. Expanded the Council's habitat responsibility. Allowed retention of snapper grouper species in excess of bag limit on permitted vessel with a single bait net or cast nets on board. Allowed permitted vessels to possess filleted fish harvested in the Bahamas under certain conditions.
Request not Implemented	1/22/99		NMFS informed the Council that the final rule for Amendment 9 would be effective 2/24/99; therefore emergency rule not implemented.
Regulatory Amendment #7 (1998)	1/29/99	PR: 63 FR 43656 FR: 63 FR 71793	Established 10 SMZs at artificial reefs off South Carolina.

Document & Year Submitted	Effective Date	Proposed & Final Rules	Summary of Major Actions (Refer to Proposed and Final Rules for detailed changes)
Amendment #9 (1998)	2/24/99	PR: 63 FR 63276 FR: 64 FR 3624	Red porgy: 14" TL (recreational and commercial); 5 fish rec. bag limit; no harvest or possession > bag limit, and no purchase or sale, in March and April; Black sea bass: 10" TL (recreational and commercial); 20 fish rec. bag limit; required escape vents and escape panels with degradable fasteners in bsb pots; Greater amberjack: 1 fish rec. bag limit; no harvest or possession > bag limit, and no purchase or sale, during April; quota = 1,169,931 lb; began fishing year May 1; prohibited coring; Specified size limits for several snapper grouper species (indicated in parentheses in inches TL) including: yellowtail snapper (12), mutton snapper (16), red snapper (20); red grouper, yellowfin grouper, yellowmouth grouper, and scamp (20) ; Vermilion snapper: 11" TL (recreational), 12" TL commercial; Gag: 24" TL (recreational); no commercial harvest or possession > bag limit, and no purchase or sale, during March and April; Black grouper: 24" TL (recreational and commercial); no harvest or possession > bag limit, and no purchase or sale, during March and April; Gag and Black grouper: within 5 fish aggregate grouper bag limit, no more than 2 fish may be gag or black grouper (individually or in combination); All snapper grouper without a bag limit: aggregate recreational bag limit 20 fish/person/day, excluding tomtate and blue runner; Vessels with longline gear aboard may only possess snowy, warsaw, yellowedge, and misty grouper, and golden, blueline and sand tilefish.
Emergency Action	9/3/99	64 FR 48326	Reopened the Amendment 8 permit application process.
Emergency Interim Rule	09/08/99, expired 08/28/00	64 FR 48324 and 65 FR 10040	Prohibited harvest or possession of red porgy.
Amendment #10 (Comprehensive Essential Fish Habitat Amendment) (1998)	7/14/00	PR: 64 FR 37082 and 64 FR 59152 FR: 65 FR 37292	Identified essential fish habitat (EFH) and established habitat areas of particular concern (HAPC) for species in the snapper grouper FMU.

Document & Year Submitted	Effective Date	Proposed & Final Rules	Summary of Major Actions (Refer to Proposed and Final Rules for detailed changes)
Amendment #11 (Comprehensive Sustainable Fisheries Act Amendment) (1998)	12/2/99	PR: 64 FR 27952 FR: 64 FR 59126	Maximum sustainable yield (MSY) proxy: goliath and Nassau grouper = 40% static spawning potential ratio (SPR); all other species = 30% static SPR; OY: hermaphroditic groupers = 45% static SPR; goliath and Nassau grouper = 50% static SPR; all other species = 40% static SPR Overfished/overfishing evaluations: BSB: overfished (minimum stock size threshold (MSST)=3.72 mp, 1995; biomass=1.33 mp); undergoing overfishing (maximum fishing mortality threshold (MFMT)=0.72, F1991-1995=0.95) Vermilion snapper: overfished (static SPR = 21-27%) Red porgy: overfished (static SPR = 14-19%). Red snapper: overfished (static SPR = 24-32%) Gag: overfished (static SPR = 27%); Scamp: no longer overfished (static SPR = 35%) Speckled hind: overfished (static SPR = 8-13%) Warsaw grouper: overfished (static SPR = 6-14%) Snowy grouper: overfished (static SPR = 5-15%) White grunt: no longer overfished (static SPR = 29-39%) Golden tilefish: overfished (couldn't estimate static SPR) Nassau grouper: overfished (couldn't estimate static SPR) Goliath grouper: overfished (couldn't estimate static SPR) Overfishing level: goliath and Nassau grouper = F>F40% static SPR; all other species: = F>F30% static SPR Approved definitions for overfished and overfishing. MSST = [(1-M) or 0.5 whichever is greater]*BMSY. MFMT = FMSY.
Amendment #12 (2000)	9/22/00	PR: 65 FR 35877 FR: 65 FR 51248	For Red porgy: MSY=4.38 mp; OY=45% static SPR; MFMT=0.43; MSST=7.34 mp; rebuilding timeframe=18 years (1999=year 1). No sale of red porgy during Jan-April; 1 fish bag limit; 50 lb. bycatch commercial trip limit May-December. Modified management options and list of possible framework actions.

Document & Year Submitted	Effective Date	Proposed & Final Rules	Summary of Major Actions (Refer to Proposed and Final Rules for detailed changes)
Amendment #9 (1998) resubmitted	10/13/00	PR: 63 FR 63276 FR: 65 FR 55203	Commercial trip limit for greater amberjack.
Regulatory Amendment #8 (2000)	11/15/00	PR: 65 FR 41041 FR: 65 FR 61114	Established 12 SMZs at artificial reefs off Georgia; revised boundaries of 7 existing SMZs off Georgia to meet CG permit specs; restricted fishing in new and revised SMZs.
Amendment #13A (2003)	4/26/04	PR: 68 FR 66069 FR: 69 FR 15731	Extended for an indefinite period the regulation prohibiting fishing for and possessing snapper grouper species within the *Oculina* Experimental Closed Area.
Notice of Control Date	10/14/05	70 FR 60058	Considered management measures to further limit participation or effort in the commercial fishery for snapper grouper species (excluding wreckfish).

Document & Year Submitted	Effective Date	Proposed & Final Rules	Summary of Major Actions (Refer to Proposed and Final Rules for detailed changes)
Amendment #13C (2006)	10/23/06	PR: 71 FR 28841 FR: 71 FR 55096	End overfishing of snowy grouper, vermilion snapper, black sea bass, and golden tilefish. Increase allowable catch of red porgy. Year 1 = 2006. Snowy Grouper - Commercial: Quota = 151,000 lb gutted weight (gw) in year 1, 118,000 lb gw in year 2, and 84,000 lb gw in year 3 onwards. Trip limit = 275 lb gw in year 1, 175 lb gw in year 2, and 100 lb gw in year 3 onwards. Recreational: Limit possession to one snowy grouper in 5 grouper per person/day aggregate bag limit. Golden Tilefish - Commercial: Quota of 295,000 lb gw, 4,000 lb gw trip limit until 75% of the quota is taken when the trip limit is reduced to 300 lb gw. Do not adjust the trip limit downwards unless 75% is captured on or before September 1; Recreational: Limited possession to 1 golden tilefish in 5 grouper per person/day aggregate bag limit. Vermilion Snapper - Commercial: Quota of 1,100,000 lb gw; Recreational: 12" TL size limit. Black Sea Bass - Commercial: Quota of 477,000 lb gw in year 1, 423,000 lb gw in year 2, and 309,000 lb gw in year 3 onwards; required use of at least 2" mesh for the entire back panel of black sea bass pots effective 6 months after publication of the final rule; required black sea bass pots be removed from the water when the quota is met; changed fishing year from calendar year to June 1 – May 31; Recreational: allocation of 633,000 lb gw in year 1, 560,000 lb gw in year 2, and 409,000 lb gw in year 3 onwards. Increase minimum size limit from 10" to 11" in year 1 and to 12" in year 2; reduced recreational bag limit from 20 to15 per person per day; changed fishing year from the calendar year to June 1 through May 31. Red Porgy - Commercial and recreational: Retained 14" TL size limit and seasonal closure (retention limited to the bag limit); specified a commercial quota of 127,000 lb gw and prohibited sale/purchase and prohibit harvest and/or possession beyond the bag limit when quota is taken and/or during January through April; increased commercial trip limit from 50 lb ww to 120 red porgy (210 lb gw) during May through December; increased recreational bag limit from one to three red porgy per person per day.

Document & Year Submitted	Effective Date	Proposed & Final Rules	Summary of Major Actions (Refer to Proposed and Final Rules for detailed changes)
Notice of Control Date	3/8/07	72 FR 60794	Considered measures to limit participation in the snapper grouper for-hire sector.
Notice of Control Date	12/4/08	74 FR 7849	Established a control date for the golden tilefish portion of the snapper grouper fishery in the South Atlantic.
Notice of Control Date	12/4/08	74 FR 7849	Established control date for black sea bass pot sector in the South Atlantic.
Amendment #14 (2007)	2/12/09	PR: 73 FR 32281 FR: 74 FR 1621	Established eight deepwater Type II marine protected areas (MPAs) to protect a portion of the population and habitat of long-lived deepwater snapper grouper species.
Amendment #15A (2008)	3/14/08	73 FR 14942	Established rebuilding plans and status determination criteria for snowy grouper, black sea bass, and red porgy.
Amendment #15B (2008)	2/15/10	PR: 74 FR 30569 FR: 74 FR 58902	Prohibited the sale of bag-limit caught snapper grouper species; reduced the effects of incidental hooking on sea turtles and smalltooth sawfish; adjusted commercial renewal periods and transferability requirements; implemented plan to monitor and assess bycatch; established reference points for golden tilefish; established allocations for snowy grouper (95% commercial & 5% recreational) and red porgy (50% commercial & 50% recreational).

Document & Year Submitted	Effective Date	Proposed & Final Rules	Summary of Major Actions (Refer to Proposed and Final Rules for detailed changes)
Amendment #16 (2009)	7/29/09	PR: 74 FR 6297 FR: 74 FR 30964	For gag: Specified interim allocations 51% commercial & 49% recreational; recreational and commercial shallow water grouper spawning closure January through April; directed commercial quota= 352,940 lb gw; reduced 5-fish aggregate grouper bag limit, including tilefish species, to a 3-fish aggregate; captain and crew on for-hire trips cannot retain the bag limit of vermilion snapper and species within the 3-fish grouper aggregate. For vermilion snapper: Specified interim allocations 68% commercial & 32% recreational; directed commercial quota split Jan-June=315,523 lb gw and 302,523 lb gw July-Dec; reduced bag limit from 10 to 5 and a recreational closed season November through March; required dehooking tools.
Amendment #19 (Comprehensive Ecosystem-Based Amendment 1) (2009)	7/22/10	PR: 75 FR 14548 FR: 75 FR 35330	Provided presentation of spatial information for EFH and EFH-HAPC designations under the Snapper Grouper FMP. Designated Deepwater Coral Habitat Areas of Particular Concern (HAPCs)
Amendment #17A (2010)	12/3/10 red snapper closure; circle hooks 3/3/2011	PR: 75 FR 49447 FR: 75 FR 76874	Required use of non-stainless steel circle hooks when fishing for snapper grouper species with hook-and-line gear north of 28 deg. N latitude in the South Atlantic EEZ; specified ACL and AM for red snapper with management measures to reduce the probability that catches will exceed the stocks' ACL; specified a rebuilding plan for red snapper; specified status determination criteria for red snapper; specified a monitoring program for red snapper; established an area closure for snapper grouper species.
Emergency Rule	12/3/10	75 FR 76890	Delayed the effective date of the area closure for snapper grouper species implemented through Amendment 17A.

Document & Year Submitted	Effective Date	Proposed & Final Rules	Summary of Major Actions (Refer to Proposed and Final Rules for detailed changes)
Amendment #17B (2010)	1/30/11	PR: 75 FR 62488 FR: 75 FR 82280	Specified ACLs, annual catch targets (ACT), and AMs, where necessary, for 9 species undergoing overfishing; modified management measures as needed to limit harvest to the ACL or ACT; updated the framework procedure for specification of total allowable catch; prohibited harvest of 6 deepwater species seaward of 240 feet to curb bycatch of speckled hind and warsaw grouper.
Regulatory Amendment #10 (2010)	5/31/11	PR: 76 FR 9530 FR: 76 FR 23728	Eliminated closed area for snapper grouper species approved in Amendment 17A.
Regulatory Amendment #9 (2011)	Bag limit: 6/22/11 Trip limits: 7/15/11	PR: 76 FR 23930 FR: 76 FR 34892	Established trip limits for vermilion snapper and gag; increased trip limit for greater amberjack; reduced bag limit for black sea bass.
Amendment #23 (Comprehensive Ecosystem-based Amendment 2) (2011)	1/30/12	PR: 76 FR 69230 FR: 76 FR 82183	Designated the Deepwater MPAs as EFH-HAPCs; limited harvest of snapper grouper species in SC SMZs to the bag limit; modified sea turtle release gear.
Amendment # 25 (Comprehensive Annual Catch Limit Amendment) (2011)	4/16/12	PR: 76 FR 74757 Amended PR: 76 FR 82264 FR: 77 FR 15916	Established ABC control rules, establish ABCs, ACLs, and AMs for species not undergoing overfishing; removed some species from South Atlantic FMU and designate others as ecosystem component species; specified allocations between the commercial and, recreational sectors for species not undergoing overfishing; limited the total mortality for federally managed species in the South Atlantic to the ACLs.
Regulatory Amendment #11 (2011)	5/10/12	PR: 76 FR 78879 FR: 77 FR 27374	Eliminated 240 ft harvest prohibition for six deepwater species.
Amendment #18A (2012)	7/1/12	PR: 77 FR 16991 FR: 77 FR3 2408	Limited participation and effort in the black sea bass sector; modifications to management of the black sea bass pot sector; improved the accuracy, timing, and quantity of fisheries statistics.

Document & Year Submitted	Effective Date	Proposed & Final Rules	Summary of Major Actions (Refer to Proposed and Final Rules for detailed changes)
Amendment #18A resubmitted action - Transferability	1/7/13	FR: 77 FR 72991	NMFS disapproved the action establishing transferability criteria for the black sea bass pot endorsement because the amendment identified the wrong preferred alternative and there were discrepancies in the record regarding the South Atlantic Council's discussion and the text describing and analyzing this alternative in the document. The Council re-submitted the action on July 5, 2012
Amendment #24 (2011)	7/11/12	PR: 77 FR 19169 FR: 77 FR 34254	Specified MSY, rebuilding plan (including ACLs, AMs, and OY, and allocations for red grouper.
Regulatory Amendment #12 (2012)	10/9/12	FR: 77 FR 61295	Adjusted the ACL and OY for golden tilefish; considered specifying a commercial ACT; Revised recreational AMs for golden tilefish.
Amendment #20A (2012)	10/26/12	PR: 77 FR 19165 FR: 77 FR 59129	Redistributed latent shares for the wreckfish individual transfer quota (ITQ) program.
Amendment #18B (2013)	5/23/13	PR: 77 FR 75093 FR: 77 FR 23858	Limited participation and effort in the golden tilefish commercial sector through establishment of a longline endorsement; modified trip limits; specified allocations for gear groups (longline and hook and line).
Regulatory Amendment #13 (2013)	7/17/13	PR: 78 FR 17336 FR: 78 FR 36113	Revised the ABCs, ACLs (including sector ACLs), and ACTs implemented by the Comprehensive ACL Amendment. The revisions may prevent a disjunction between the established ACLs and the landings used to determine if AMs are triggered.
Amendment #28 (2013)	8/23/13	PR: 78 FR 25047 FR: 78 FR 44461	Established equation to determine ACLs and allow limited harvest of red snapper in the South Atlantic.
Regulatory Amendment #18 (2013)	9/5/13	PR: 78 FR 26740 FR: 78 FR 47574	Adjusted ACLs for vermilion snapper and red porgy, and removed the 4-month recreational closure for vermilion snapper.

Document & Year Submitted	Effective Date	Proposed & Final Rules	Summary of Major Actions (Refer to Proposed and Final Rules for detailed changes)
Regulatory Amendment #15 (2013)	9/12/13	PR: 78 FR 31511 FR: 78 FR 49183	Modified the existing specification of OY and ACL for yellowtail snapper in the South Atlantic. Modified the existing gag commercial ACL and AM for gag that requires a closure of all other shallow water groupers (black grouper, red grouper, scamp, red hind, rock hind, graysby, coney, yellowmouth grouper, and yellowfin grouper) in the South Atlantic when the gag commercial ACL is met or projected to be met.
Regulatory Amendment #19 (2013)	ACL: 9/23/13 Pot closure: 10/23/13	PR: 78 FR 39700 FR: 78 FR 58249	Adjusted the ACL for black sea bass and implement an annual closure on the use of black sea bass pots from November 1 to April 30.
Amendment #27 (2014)	1/27/14	PR: 78 FR 78770 FR: 78 FR 57337	Established the South Atlantic Council as the responsible entity for managing Nassau grouper throughout its range including federal waters of the Gulf of Mexico; modified the crew member limit on dual-permitted snapper grouper vessels; modified the restriction on retention of bag limit quantities of some snapper grouper species by captain and crew of for-hire vessels; minimized regulatory delay when adjustments to snapper grouper species' ABC, ACLs, and ACTs are needed as a result of new stock assessments; addressed harvest of blue runner by commercial fishermen who do not possess a South Atlantic Snapper Grouper Permit.
Amendment #31 (Joint South Atlantic and Gulf of Mexico Generic Headboat Reporting Amendment) (2013)	1/27/14	PR: 78 FR 59641 FR: 78 FR 78779	Included under the Generic charter/headboat reporting amendment, that modified required logbook reporting for headboat vessels to require electronic reporting, regarding snapper grouper landings.
Blueline Tilefish Emergency Rule	4/17/2014 through 10/10/2014 or 4/18/2015	PR: 79 FR 21636 FR: 79 FR 61262	Removed blueline tilefish from Deepwater Complex ACL; established separate commercial and recreational ACLs and AMs for blueline tilefish.
Regulatory Amendment # 21 (2014)	11/6/14	PR: 79 FR 44735 FR: 79 FR 60379	Modified the definition of the overfished threshold (MSST) for red snapper, blueline tilefish, gag, black grouper, yellowtail snapper, vermilion snapper, red porgy, and greater amberjack
Regulatory Amendment #14 (2014)	12/8/14	PR: 79 FR 22936 FR: 79 FR 66316	Modified the fishing year for greater amberjack; modified the fishing year for black sea bass; modified the AMs for vermilion snapper and black sea bass; modified the trip limit for gag.

Document & Year Submitted	Effective Date	Proposed & Final Rules	Summary of Major Actions (Refer to Proposed and Final Rules for detailed changes)
Amendment #32 (2014)	3/30/15	PR: 80 FR 3207 FR: 80 FR 16583	Ended overfishing of blueline tilefish; separated blueline tilefish from the deepwater complex; specified ACLs for blueline tilefish and the deepwater complex; specified AMs for blueline tilefish; revised AMs for the deepwater complex; specified recreational ACTs for blueline tilefish.
Amendment #29 (2015)	7/1/15	PR: 79 FR 72567 FR: 80 FR 30947	Updated the Council's ABC control rule to incorporate methodology for determining the ABC of unassessed species, adjusted ABCs for fourteen unassessed snapper grouper species, adjusted ACLs and ACTs for three species complexes and four snapper grouper species based on revised ABCs; modified and implement gray triggerfish minimum size limits; established a commercial split season and commercial trip limits for gray triggerfish.
Regulatory Amendment #22 (2015)	9/11/15 except for the amendments to §§ 622.190(b) and 622.193(r)(1) which were effective 8/12/15	PR: 80 FR 31880 FR: 80 FR 48277	Adjusted ACLs and OY for gag and wreckfish; proposed modifications to gag bag limit.
Regulatory Amendment #20 (2015)	8/20/15	PR: 80 FR 18797 FR: 80 FR 43033	Increased the recreational and commercial ACLs for snowy grouper; adjusted the rebuilding strategy; increased the commercial trip limit; modified the recreational fishing season.
Amendment # 33 (and Dolphin Wahoo Amendment 7) (2015)	1/27/16	PR: 80 FR 60601 FR: 80 FR 80686	Allowed dolphin and wahoo fillets to enter the U.S. EEZ after lawful harvest in The Bahamas; specified the condition of any dolphin, wahoo, and snapper grouper fillets; described how the recreational bag limit is determined for any fillets; explicitly prohibited the sale or purchase of any dolphin, wahoo, or snapper grouper recreationally harvested in The Bahamas; specified the required documentation to be onboard any vessels that have these fillets; specified transit and stowage provisions for any vessels with fillets.

Document & Year Submitted	Effective Date	Proposed & Final Rules	Summary of Major Actions (Refer to Proposed and Final Rules for detailed changes)
Amendment #34 (Generic Accountability Measures and Dolphin Allocation Amendment) (2015)	2/22/16	PR: 80 FR 58448 FR: 81 FR 3731	Modified AMs for snapper grouper species; modified the AM for commercial golden crab fishery; adjusted sector allocations for dolphin.
Regulatory Amendment #16	TBD	TBD	Revised the prohibition of fishing with black sea bass pots from Nov.1-April 30.
Regulatory Amendment #17	Not developed	Not developed	Proposed designating MPAs for speckled hind and warsaw grouper.
Regulatory Amendment #23	TBD	TBD	
Regulatory Amendment #24	TBD	TBD	
Regulatory Amendment #25	TBD	TBD	Adjust the annual catch limits, optimum yield, and commercial and recreational management measures for the blueline tilefish stock, change fishing year for yellowtail snapper, and increase bag limit for black sea bass.
Amendment # 20B	TBD	TBD	Update wreckfish ITQ according to reauthorized Magnuson-Stevens Act.
Amendment # 22	Not Developed	Not Developed	Establish a recreational harvest tag program for snapper grouper species with small ACLs
Amendment # 26 (Comprehensive Ecosystem-Based Amendment 3)	TBD	TBD	Modify bycatch and discard reporting for commercial and for-hire vessels.
Amendment #35	TBD	TBD	Remove black snapper, dog snapper, mahogany snapper, and schoolmaster from the Snapper Grouper FMP. Clarify regulations governing the use of golden tilefish longline endorsements to align them with the Council's original intent when the endorsement program was implemented.
Amendment #36	TBD	TBD	Establish special management zones (Spawning SMZs) to enhance protection for snapper grouper species in spawning condition including speckled hind and warsaw grouper.

Document & Year Submitted	Effective Date	Proposed & Final Rules	Summary of Major Actions (Refer to Proposed and Final Rules for detailed changes)
Amendment #37	TBD	TBD	Modify the hogfish fishery management unit; Specify fishing levels for the two South Atlantic hogfish stocks; establish a rebuilding plan for the Florida Keys/East Florida stock; establish/revise management measures for both hogfish stocks in the South Atlantic Region, such as size limits, recreational bag limits, and commercial trip limits.
Amendment #38	TBD	TBD	Expand the management boundaries for species in the snapper grouper fishery management unit. Revise management measures for blueline tilefish.
Amendment #41	TBD	TBD	Update the acceptable biological catch, annual catch limit, maximum sustainable yield, minimum stock size threshold, optimum yield, and revise management measures for mutton snapper.
Amendment #43	TBD	TBD	Management measures for red snapper

Appendix E. Bycatch Practicability Analysis

Population Effects for the Bycatch Species

Background

The South Atlantic Fishery Management Council (South Atlantic Council) is considering management changes to blueline tilefish, yellowtail snapper, and black sea bass in the South Atlantic Region.

Blueline Tilefish

The regulatory amendment would increase the annual catch limit (ACL) and optimum yield (OY) for blueline tilefish based on a new acceptable biological catch (ABC) recommendation from the South Atlantic Council's Scientific and Statistical Committee. The South Atlantic Council is also considering both retaining the current buffer between ACL and the ABC (98%) and increasing the buffer (78-96%) to account for landings in the Greater Atlantic area (Maine through Virginia). Finally, the South Atlantic Council is proposing an increase to the current commercial trip limit and changing the recreational bag limit to respond to the proposed increase in ACL as they believe regulations may be relaxed as more fish are available for harvest.

Yellowtail Snapper

The current fishing year for yellowtail snapper is based on the calendar year. The South Atlantic Council is proposing a summer/early fall start date of the fishing year to increase the probability that an in-season closure from the ACL being met would occur during the spawning season. In addition, changing the start date of the fishing year could provide economic benefits for commercial fishermen because yellowtail snapper obtain a higher price per pound during winter months.

The South Atlantic Council is also proposing a change to the commercial accountability measure (AM) for yellowtail snapper. Currently, harvest of yellowtail snapper in the South Atlantic Region is prohibited by the commercial sector when the commercial ACL is met.

Black Sea Bass

The South Atlantic Council is considering an increase to the recreational bag limit to increase recreational harvest and help to achieve OY. In 2011, the South Atlantic Council reduced the bag limit for black sea bass from 15 fish to 5 fish. In 2013, the recreational ACL for black sea bass increased substantially (from 482,620 to 1,033,980 pounds whole weight) in response to a stock assessment, which indicated black sea bass in the South Atlantic are neither overfished nor undergoing overfishing, and are rebuilt.

Finfish Bycatch Mortality

The South Atlantic snapper grouper fisheries are characterized by moderately high discards, especially of yellowtail snapper and black sea bass (**Table E-1**). The most discards originate from handline/electric rig and trap gear, with some discards from trolling gear and relatively low discards from other gear. It is possible that trip-level reporting leads to the relatively high discard estimates from trolling gear; these may be sets using another gear on a trip declared as a trolling gear trip. It is difficult to compare the ratio of commercial landings to commercial discards **(Table E-1)**, because commercial landings are reported in pounds and discards are reported in numbers of fish; however, black sea bass, gray snapper, and yellowtail snapper discards appear to be high relative to landed commercial catch.

Table E-1. Top ten stocks with mean estimated South Atlantic commercial discards (#fish) during snapper grouper trips (defined as trips with >50% of landings from snapper grouper stocks), sorted from largest to smallest, by gear, for the 2009-2013 period. Source: SEFSC Commercial Logbook (accessed May 2015) and Commercial Discard Logbook (accessed November 2014).

Stock	Buoy Gear	Stock	Diver	Stock	Handline /Electric	Stock	Longline	Stock	Trap	Stock	Trolling
snowy grouper	1.9	black sea bass	27.7	yellowtail snapper	5483.2	shark dogfish smooth	52.6	black sea bass	3708.8	black sea bass	946.7
gag	1.9	red snapper	23.1	gray snapper	1887.4	shark sandbar	26.1	pinfish spottail	59.0	greater amberjack	771.9
red snapper	1.0	gag	12.5	black sea bass	1274.6	hake Atlantic red & white	4.5	gray triggerfish	54.8	black grouper	475.5
		red porgy	6.3	red snapper	1132.6	hammerhead	3.2	white grunt	43.6	almaco jack	423.0
		shark Atlantic sharpnose	4.7	vermilion snapper	721.6	snowy grouper	0.5	grunts	32.7	scamp	194.3
		almaco jack	3.6	red porgy	640.7	rays unc	0.3	scup	30.8	gag	68.4
		finfishes unc for food	3.4	gag	492.3	shark blue	0.2	red porgy	27.6	shark unc	56.5
		spanish mackerel	2.7	unc amberjack	172.2	skates	0.1	finfishes unc	8.3	barracuda	56.3
		vermilion snapper	1.7	unc groupers	143.9	shark unc	0.0	gag	8.2	red snapper	32.2
		unc amberjack	1.6	unc snappers	130.9	shark dogfish unc	0.0	vermilion snapper	5.8	red porgy	19.1

Source: SEFSC Commercial Logbook (accessed May 2015) and Commercial Discard Logbook (accessed November 2014).

Recreational discards of several snapper grouper stocks are higher than the landings for certain modes of fishing (**Table E-2**). Red grouper, black grouper, gag, and yellowtail snapper discards, especially, are many times higher than their landings across most modes. The magnitude of Private mode discards across all Reef Fish stocks is much higher than for the Headboat or Charter modes.

Table E-2. South Atlantic snapper grouper headboat, charter, private, and commercial mean estimates of landings and discards (2009-2013).

	HEADBOAT			CHARTER			PRIVATE			COMMERCIAL	
Species	Landings (N)	Discards (N)	Ratio (D:L)	Landings (N)	Discards (N)	Ratio (D:L)	Landings (N)	Discards (N)	Ratio (D:L)	Landings (lbs)	Discards (N)
Almaco jack	3,276	246	8%	2,581	1,211	47%	3,900	6,108	157%	197,432	800
Atlantic spadefish	133	35	27%	262	48	18%	101,741	114,598	113%	27,045	0
Banded rudderfish	15,614	2,665	17%	2,658	2,428	91%	7,603	6,474	85%	68,163	115
Bank sea bass	5,607	0	0%	792	2,084	263%	2,708	10,135	374%	540	0
Bar jack	341	59	17%	0	141		2,818	8,995	319%	4,457	0
Black grouper	337	1,339	397%	900	8,002	889%	6,589	24,499	372%	51,616	1,351
Black sea bass	165,443	553,232	334%	62,295	182,704	293%	257,417	2,682,646	1042%	510,102	60,568
Black snapper	0	0	0%	0	0		0	0		9	0
Blackfin snapper	79	59	75%	68	0	0%	1,843	0	0%	1,546	0
Blue runner	19,715	9,236	47%	10,749	15,023	140%	627,727	658,209	105%	227,134	1,762
Blueline tilefish	4,148	78	2%	9,576	459	5%	19,680	650	3%	341,160	234
Coney	50	51	101%	11	19	181%	723	174	24%	54	3
Cottonwick	13	0	0%	0	0		148	0	0%	0	0
Cubera snapper	367	19	5%	4	0	0%	1,960	111	6%	4,395	0
Dog snapper	48	12	25%	57	0	0%	822	0	0%	308	0
Gag	2,479	4,678	189%	2,688	16,025	596%	14,258	80,697	566%	471,689	7,004
Golden crab	0	0		0	0		0	0		634,192	0
Golden tilefish	8,868	0	0%	120,672	30,875	26%	904,657	520,822	58%	472,484	12
Goliath grouper	0	30	14966%	0	0		0	8,054		0	215
Gray snapper	43,916	6,465	15%	16,081	1,236	8%	279,017	1,292,452	463%	122,538	26,114
Gray triggerfish	57,539	12,135	21%	35,115	7,709	22%	92,990	111,012	119%	401,615	2,138
Graysby	1,604	1,306	81%	1,136	418	37%	5,467	10,518	192%	618	23
Greater amberjack	3,448	1,811	53%	16,390	6,814	42%	20,143	23,684	118%	897,173	1,635
~~Hogfish~~	140	231	165%	41	3	7%	29,102	3,190	11%	42,219	41

Species	HEADBOAT			CHARTER			PRIVATE			COMMERCIAL	
	Landings (N)	Discards (N)	Ratio (D:L)	Landings (N)	Discards (N)	Ratio (D:L)	Landings (N)	Discards (N)	Ratio (D:L)	Landings (lbs)	Discards (N)
Jolthead porgy	6,690	114	2%	3,014	0	0%	10,681	1,240	12%	5,055	0
Knobbed porgy	5,562	182	3%	727	0	0%	7,769	326	4%	22,913	0
Lane snapper	18,673	2,290	12%	11,644	3,506	30%	45,257	130,718	289%	3,057	210
Lesser amberjack	207	31	15%	12	0	0%	51	0	0%	17,374	23
Longspine porgy	6	0	0%	0	0		290	170	59%	0	0
Mahogany snapper	45	4	8%	0	0		35	0	0%	45	0
Margate	765	206	27%	188	59	32%	3,436	3,952	115%	3,876	23
Misty grouper	0	0		0	0		0	0		655	1
Mutton snapper	13,001	3,436	26%	19,547	8,826	45%	75,902	113,500	150%	73,908	597
Ocean triggerfish	729	0	0%	304	77	25%	4,107	3,769	92%	0	0
Queen snapper	5	0	0%	1	0	0%	0	0		3,087	84
Red grouper	1,373	10,547	768%	945	5,631	596%	18,781	52,502	280%	258,312	1,614
Red hind	212	64	30%	85	0	0%	460	564	123%	7,781	47
Red porgy	20,697	14,510	70%	9,527	3,034	32%	16,657	5,350	32%	170,004	9,800
Red snapper	5,398	44,889	832%	4,246	16,805	396%	20,521	94,894	462%	82,133	13,272
Rock hind	1,319	574	44%	83	18	22%	517	2,324	450%	13,147	11
Rock sea bass	8	0	0%	177	238	134%	2,524	6,330	251%	389	16
Sailors choice	286	0	0%	37	1,367	3740%	16,170	12,371	77%	0	0
Sand tilefish	796	952	120%	396	3,439	868%	4,863	22,423	461%	995	159
Saucereye porgy	148	1	0%	0	0		1,462	0	0%	0	0
Scamp	2,547	2,016	79%	2,275	1,361	60%	4,080	2,406	59%	194,931	740
Schoolmaster	244	0	0%	2	0	0%	4,873	2,435	50%	30	0
Scup	9,968	1,866	19%	294	28	9%	647	1,508	233%	0	414
Silk Snapper	1,322	108	8%	276	34	12%	153	855	558%	10,166	7

Species	HEADBOAT			CHARTER			PRIVATE			COMMERCIAL	
	Landings (N)	Discards (N)	Ratio (D:L)	Landings (N)	Discards (N)	Ratio (D:L)	Landings (N)	Discards (N)	Ratio (D:L)	Landings (lbs)	Discards (N)
Snowy grouper	151	51	34%	984	341	35%	861	331	38%	86,858	264
Tomtate	51,944	59,693	115%	1,159	6,544	565%	65,439	227,285	347%	176	620
Vermilion snapper	145,661	87,183	60%	37,198	18,308	49%	52,666	50,317	96%	966,504	9,033
White grunt	143,151	36,412	25%	19,706	9,601	49%	195,099	184,863	95%	108,712	389
Whitebone porgy	4,910	159	3%	2,893	9	0%	9,109	1,088	12%	13	0
Yellowedge grouper	20	2	9%	35	0	0%	44	0	0%	15,619	6
Yellowfin grouper	13	5	42%	0	0		97	0	0%	3,275	6
Yellowmouth grouper	12	5	43%	15	0	0%	0	0		204	0
Yellowtail snapper	99,863	33,144	33%	179,508	76,571	43%	287,217	715,637	249%	1,216,264	71,453

Sources: MRIP data from SEFSC Recreational ACL Dataset (Jan 2015), Headboat data from SEFSC Headboat Logbook CRNF files (expanded; July 2014), Commercial landings data from SEFSC Commercial ACL Dataset (July 2014) with discard estimates from expanded SEFSC Commercial Logbook (Nov 2014) and Commercial Discard Logbook (Nov 2014).

Note: Commercial gray triggerfish includes "triggerfishes, unclassified" category; commercial white grunt includes "grunts, unclassified" category.

Release Mortality Rates

Release mortality rates are unknown for many managed species. Recent Southeast Data, Assessment, and Review (SEDAR) assessments include estimates of release mortality rates based on published studies. Stock assessment reports can be found at http://www.sefsc.noaa.gov/sedar/.

SEDAR 32 (2013) estimates release mortality rates of 100% for blueline tilefish. SEDAR 17 (2008) recommended a release mortality rate for vermilion snapper of 41% for the commercial sector and 38% for the recreational sector. The recent stock assessment for yellowtail snapper chose a rate of 10% release mortality as an approximation for the lower bound on release mortality for yellowtail snapper (FWRI 2012). SEDAR 10 (2006) estimated release mortality rates of 40% and 25% for gag taken by commercial and recreational fishermen, respectively. SEDAR 24 (2010) used release mortality rates of 48% commercial; 41% for-hire, and 39% private recreational for red snapper. Commercial and recreational release mortality rates were estimated as 20% for black grouper and red grouper in SEDAR 19 (2010). SEDAR 15 (2008) estimated a 20% release mortality rate for greater amberjack. SEDAR 41, which is under development, assumes a 12.5% release mortality rate for gray triggerfish. Snowy grouper are primarily caught in water deeper than 300 feet and golden tilefish are taken at depths greater than 540 feet; therefore, release mortality of the species are probably near 100% (SEDAR 4 2004, SEDAR 25 2011). Release mortality of black sea bass is considered to be low (7% for the recreational sector and 1% for the commercial sector) (SEDAR 25 2011) indicating minimum size limits are probably an effective management tool for black sea bass. Commercial sector discard mortality for red porgy is 35%, and 8% for the recreational sector (SEDAR Update 2012). SEDAR 32 (2013), estimates discard mortality for blueline tilefish is 100%, consistent with other deep-water species (i.e., snowy grouper, and golden tilefish); however, if new management is implemented to reduce the discard mortality rate, it might be appropriate for population projections to consider something lower than 100% (SEDAR 32 2013).

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

Expected Impacts on Bycatch for the Proposed Action

Blueline Tilefish

For the commercial sector, since neither commercial trip limit alternative is expected to result in a commercial closure, there is little risk of regulatory discards. Therefore, little difference in the biological effects of the trip limit alternatives is expected.

For the recreational sector, the more restrictive the regulations for the recreational bag limit action, the shorter the expected season. **Alternatives 2-6** all project to have a shorter season than under **Alternative 1 (No Action)**. Bycatch could increase with **Alternatives 2-6** as blueline tilefish would have to be returned to the water over the longest period of time. The release mortality of blueline tilefish, a deepwater species, is nearly 100%. In addition, effective August 20, 2015, the National Marine Fisheries Service (NMFS) implemented a one-fish per vessel per day during May through August with no retention for the remainder of the year for both snowy grouper (Regulatory Amendment 20; SAFMC 2014) and blueline tilefish (Amendment 32;

SAFMC 2013). One of the goals of these actions was to align the seasons and regulations to minimize discard mortality. **Alternatives 2-6** would remove the aligned allowable fishing seasons and could increase discards if the two species are targeted in the same area.

Yellowtail Snapper

The South Atlantic Council is proposing a change to the start date of the fishing season. Since the allowable harvest amounts are not changing, the level of discards is expected to remain the same.

Black sea bass

Changes to the level of bycatch of black sea bass from an increase in the proposed bag limits are not expected to be discernable. None of the bag limit changes are expected to result in appreciable increases in harvest based on an analysis contained in **Appendix F**. Moreover, the amount of fish being discarded appears to be due to the current minimum size limit and not to anglers landing quantities of black sea bass above the current bag limit.

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

The Comprehensive Ecosystem-Based Amendment 2 (CE-BA 2; SAFMC 2011g) included actions that removed harvest of octocorals off Florida from the Coral, Coral Reefs, and Live/Hard Bottom Habitat Fishery Management Plan (Coral FMP); set the octocoral ACL for Georgia, South Carolina, and North Carolina equal to 0; modified management of special management zones (SMZs) off South Carolina; revised sea turtle release gear requirements for the snapper grouper fishery that were established in Amendment 15B to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region (Snapper Grouper FMP; SAFMC 2008); and designated new essential fish habitat (EFH) and EFH-Habitat Areas of Particular Concern in the South Atlantic. There is no bycatch associated with octocoral harvest within the management area of the Coral FMP since harvest is prohibited. CE-BA 2 also included an action that limited harvest and possession of snapper grouper and coastal migratory pelagics (CMP) species to the bag limit in special management zones (SMZs) off South Carolina. This action could reduce bycatch of regulatory discards around SMZs by restricting commercial harvest in the area, but it would probably have very little effect on the magnitude of overall bycatch of snapper grouper species in the South Atlantic.

Other actions have been taken in recently implemented amendments that could reduce bycatch of and bycatch mortality of federally-managed species in the South Atlantic. Amendment 13C to Snapper Grouper FMP (SAFMC 2006) required the use of 2-inch mesh in the back panel of black sea bass pots, which has likely reduced the magnitude of regulatory discards. Amendment 16 to the Snapper Grouper FMP (SAFMC 2009) required the use of dehooking devices, which could help reduce bycatch mortality of vermilion snapper, black sea bass, gag, red grouper, black grouper, and red snapper. Dehooking devices can allow fishermen to remove hooks with greater ease and more quickly from snapper grouper species without removing the fish from the water. If a fish does need to be removed from the water, dehookers could still reduce handling time in removing hooks, thus increasing survival (Cooke et al. 2001).

Furthermore, Amendment 17A to the Snapper Grouper FMP (SAFMC 2010a) required circle hooks for snapper grouper species north of 28 degrees latitude, which is expected to reduce bycatch mortality of snapper grouper species. Amendment 17B to the Snapper Grouper FMP (SAFMC 2010b) established ACLs and AMs and address overfishing for eight species in the snapper grouper management complex: golden tilefish, snowy grouper, speckled hind, warsaw grouper, black sea bass, gag, red grouper, black grouper, and vermilion snapper. Overfishing is no longer occurring for golden tilefish, black sea bass, gag, snowy grouper, red grouper, black grouper, and vermilion snapper.

The Comprehensive ACL Amendment (SAFMC 2011b) implemented ACLs and AMs for species not undergoing overfishing in the Fishery Management Plans for snapper grouper, dolphin and wahoo, golden crab and *Sargassum*, in addition to other actions such as allocations and establishing annual catch targets for the recreational sector. The Comprehensive ACL Amendment (SAFMC 2011b) also established additional measures to reduce bycatch in the snapper grouper fishery with the establishment of species complexes based on biological, geographic, economic, taxonomic, technical, social, and ecological factors. ACLs were assigned to these species complexes, and when the ACL for the complex is met or projected to be met, fishing for species included in the entire species complex is prohibited for the fishing year. ACLs and AMs will likely reduce bycatch of target species and species complexes as well as incidentally caught species.

Amendment 18A to the Snapper Grouper FMP (SAFMC 2011f), included actions that could reduce bycatch of black sea bass and the potential for interactions with protected species. Actions in Amendment 18A limited the number of participants in the black sea bass pot sector, required fishermen bring pots back to port at the completion of a trip, and limited the number of pots a fishermen can deploy. Amendment 24 to the Snapper Grouper FMP (SAFMC 2011h) established a rebuilding plan for red grouper, which was overfished and undergoing overfishing. Red grouper is no longer undergoing overfishing or overfished. Amendment 24 (SAFMC 2011h) also established ACLs and AMs for red grouper, which could help to reduce bycatch of red grouper and co-occurring species.

The final rule (78 FR 23858; April 23, 2013) for Amendment 18B to the Snapper Grouper FMP (SAFMC 2012), established an endorsement program for the commercial golden tilefish longline sector, which could have positive effects for habitat and protected species. The final rule for Regulatory Amendment 14 to the Snapper Grouper FMP (79 FR 66316); November 7, 2014), which adjusted management measures for a number of snapper grouper species, some of which could reduce the magnitude of discards. The final rule (78 FR 49183; September 12, 2013) for Regulatory Amendment 15 to the Snapper Grouper FMP included actions for yellowtail snapper and gag that are expected to reduce bycatch of snapper-grouper species. Amendment 36 to the Snapper Grouper FMP, which has been approved by the South Atlantic Council, includes actions to establish SMZs, and could reduce bycatch of many snapper grouper species, especially speckled hind and warsaw grouper.

The Council's For-Hire Reporting Amendment, which went into effect on January 27, 2014, has changed the reporting frequency for landings by headboats from monthly to weekly, and requires that reports be submitted electronically. The action is expected to provide more timely

information on landings and discards. Improved information on landings would help ensure ACLs are not exceeded. Furthermore, more timely and accurate information would be 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.

The South Atlantic Council is developing an amendment to require that all federally-permitted charter vessels reporting landings information to the Southeast Fisheries Science Center (SEFSC) electronically. Additionally, the South Atlantic Council and the Gulf of Mexico Fishery Management Council are beginning development of amendments to require that all federally-permitted commercial fishing vessels in the southeast also report their logbook landings information electronically. These future actions would help to improve estimates on the composition and magnitude of catch and bycatch of snapper grouper species, as well as all other federally-managed species in the southeast region.

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

Ecological Effects Due to Changes in the Bycatch

The ecological effects of bycatch mortality are the same as fishing mortality from directed fishing efforts. If not properly managed and accounted for, either form of mortality could potentially reduce stock biomass to an unsustainable level. As mentioned in the above section, actions have been taken, and are underway to reduce bycatch and enhance data reporting for snapper grouper species. Better bycatch and discard data would 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.

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

For the recreational sector, implementing a year round season for blueline tilefish in **Alternatives 2** and **3** could result in beneficial effects to the stock as regulatory discards may decrease if the sector is not closed during a portion of the year. The release mortality of blueline tilefish, a deepwater species, is nearly 100%. The South Atlantic Council implemented one fish per vessel per day during May through August (Amendment 32; SAFMC 2014c) with no retention for the remainder of the year for both snowy grouper and blueline tilefish. One of the goals of these actions was to align the seasons and regulations to minimize discard mortality.

Allowable harvest of blueline tilefish year-round (**Alternatives 2** and **3**) may increase discards of snowy grouper during the months they are closed.

Effects on Marine Mammals and Birds

Under Section 118 of the Marine Mammal Protection Act (MMPA), 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. Of the gear utilized within the snapper grouper fishery, only the black sea bass pot is considered to pose an entanglement risk to marine mammals. The southeast U.S. Atlantic black sea bass pot sector is included in the grouping of the Atlantic mixed species trap/pot fisheries, which the 2016 proposed LOF classifies as a Category II (80 FR 58427, September 29, 2015). Gear types used in these fisheries are determined to have occasional incidental mortality and serious injury of marine mammals. For the South Atlantic snapper grouper fishery, the best available data on protected species interactions are from the SEFSC Supplementary Discard Data Program (SDDP) initiated in July of 2000. The SDDP sub-samples 20% of the vessels with an active permit. Since August 2001, only three interactions with marine mammals have been documented; each was taken by handline gear and each released alive (McCarthy SEFSC database). The longline and hook-and-line gear components of the snapper grouper in the South Atlantic are classified in the 2016 proposed LOF as Category III fisheries.

Although the black sea bass pot sector can pose an entanglement risk to large whales due to their distribution and occurrence, sperm, fin, sei, and blue whales are unlikely to overlap with the black sea bass pot sector operated within the snapper grouper fishery since it is executed primarily off North Carolina and South Carolina in waters ranging from 70-120 feet deep (21.3-36.6 meters). There are no known interactions between the black sea bass pot sector and these large whales. NMFS' current biological opinion on the continued operation of the South Atlantic snapper grouper fishery determined the possible adverse effects resulting from the fishery are extremely unlikely. Thus, the continued operation of the snapper grouper fishery in the southeast U.S. Atlantic exclusive economic zone is not likely to adversely affect sperm, fin, sei, and blue whales (NMFS 2006).

North Atlantic right and humpback whales may overlap both spatially and temporally with the black sea bass pot sector. 2007 Revisions to the Atlantic Large Whale Take Reduction Plan folded the Atlantic mixed species trap/pot fisheries into the plan (72 FR 193; October 5, 2007).

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.

Fishing effort reductions have the potential to reduce the amount of interactions between the fishery and marine mammals and birds. Although, the Bermuda petrel and roseate tern occur within the action area, these species are not commonly found and neither has been described as associating with vessels or having had interactions with the snapper grouper fishery. Thus, it is believed that the snapper grouper fishery is not likely to negatively affect the Bermuda petrel and the roseate tern.

Changes in Fishing, Processing, Disposal, and Marketing Costs

Research and monitoring is ongoing to understand the effectiveness of proposed management measures and their effect on bycatch. In 1990, the SEFSC initiated a logbook program for vessels with federal permits in the snapper grouper fishery from the Gulf of Mexico and South Atlantic. Approximately 20% of commercial fishermen are asked to fill out discard information in logbooks; however, a greater percentage of fishermen could be selected with emphasis on individuals that dominate landings. The SEFSC is developing electronic logbooks, which could be used to enable fishery managers to obtain information on species composition, size distribution, geographic range, disposition, and depth of fishes that are released. Further, the Joint Commercial Logbook Reporting Amendment is being developed by the South Atlantic Council and the Gulf of Mexico Council, which would require electronic reporting of landings information by federally-permitted commercial vessels to increase the timeliness and accuracy of landings and discard data.

Recreational discards are obtained from the Marine Recreational Information Program (MRIP) and logbooks from the NMFS headboat program. Additional data collection activities for the recreational sector are being considered by the South Atlantic Council that could allow for a better monitoring of snapper grouper bycatch in the future. Some observer information has been provided by the Marine Fisheries Initiative and Cooperative Research Programs (CRP), but more is desired for the snapper grouper fishery. In December 2012, the Southeast Region Headboat Survey underwent a transition from paper logbooks to electronic logbooks, which is expected to improve the quality of data in that sector. As of January 1, 2013, the paper logbook form has been replaced by a new electronic logbook. The form is available through a password protected Web site on the Internet, which can be accessed by personal computer, computer tablet, or "smart phone". The South Atlantic Council approved the For-Hire Amendment at their March 2013 meeting, which was approved and implemented in January 2014. This amendment requires weekly electronic reporting by the headboat sector.

Cooperative research projects between science and industry are being used to a limited extent to collect bycatch information on the snapper grouper fishery in the South Atlantic. For example, Harris and Stephen (2005) characterized the entire (retained and discarded) catch of reef fishes from a selected commercial fisherman in the South Atlantic including total catch composition and disposition of fishes that were released. The Gulf and South Atlantic Fisheries Foundation, Inc. conducted a fishery observer program within the snapper grouper vertical hook-and-line (bandit rig) fishery of the South Atlantic United States. Through contractors they randomly placed observers on cooperating vessels to collect a variety of data quantifying the participation, gear, effort, catch, and discards within the fishery.

In the spring 2010, Archipelago Marine Research Ltd. worked with North Carolina Sea Grant and several South Atlantic Unlimited Snapper Grouper Permit holders to test the effectiveness of electronic video monitoring to measure catch and bycatch. A total of 93 trips were monitored with video monitoring, 34 by self-reported fishing logbooks, and 5 by observers. Comparisons between electronic video monitoring data and observer data showed that video monitoring was a reliable source of catch and bycatch data.

Research funds for observer programs, as well as gear testing and testing of electronic devices are also available each year in the form of grants from the Marine Fisheries Initiative, Saltonstall-Kennedy program, and the CRP. Efforts are made to emphasize the need for observer and logbook data in requests for proposals issued by granting agencies. A condition of funding for these projects is that data are made available to the Councils and NMFS upon completion of a study.

Additional administrative and enforcement efforts would help to implement and enforce fishery regulations. 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.

Changes in Fishing Practices and Behavior of Fishermen

Social effects of the proposed actions are addressed in **Chapter 4** of the amendment. Fishermen can be educated about methods to reduce bycatch and enhance survival of regulatory discards. While this may be advantageous for mid-shelf species, deepwater species experience nearly 100% mortality from depth related trauma. Furthermore, it is not clear that changes in behavior could substantially affect the amount of bycatch incurred. Gear changes such as hook type or hook size could have some effect on reducing bycatch mortality. Furthermore, closed seasons, new or reduced quotas, reduced trip limits, and increased size limits could cause some commercial and recreational fishermen to reduce effort.

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

Research and monitoring is ongoing to understand the effectiveness of proposed management measure and their effect on bycatch. In 1990, the SEFSC initiated a logbook program for vessels with federal permits in the snapper grouper fishery from the Gulf of Mexico and South Atlantic. In 1999, logbook reporting was initiated for vessels catching king and Spanish mackerel (Gulf of Mexico Fishery Management Council and South Atlantic Council). Approximately 20% of commercial fishermen from snapper grouper, dolphin wahoo, and CMP fisheries are asked to fill out discard information in logbooks; however, a greater percentage of fishermen could be selected with emphasis on individuals that dominate landings. Recreational discards are obtained from the MRIP and logbooks from the NMFS headboat program.

Additional data collection activities for the recreational sector of the snapper grouper, dolphin wahoo, and CMP fisheries are being considered by the Council that could allow for a better monitoring of bycatch in the future. The Council is also developing an amendment to improve commercial logbook reporting for these fisheries. Some observer information for the snapper grouper fishery has been provided by the SEFSC, Marine Fisheries Initiative, and CRP, but more is desired for the snapper grouper, dolphin wahoo, and CMP fisheries. Currently, for the snapper grouper fishery, headboats are required to carry observers, if selected.

Cooperative research projects between science and industry are being used to a limited extent to collect bycatch information on the snapper grouper fishery in the South Atlantic. For example, Harris and Stephen (2005) characterized the entire (retained and discarded) catch of reef fishes from a selected commercial fisherman in the South Atlantic including total catch composition and disposition of fishes that were released. The Gulf and South Atlantic Fisheries Foundation, Inc. (Foundation) conducted a fishery observer program within the snapper grouper vertical hook-and-line (bandit rig) fishery of the South Atlantic United States. Through contractors they randomly placed observers on cooperating vessels to collect a variety of data quantifying the participation, gear, effort, catch, and discards within the fishery.

In the spring 2010, Archipelago Marine Research Ltd. worked with North Carolina Sea Grant and several South Atlantic Unlimited Snapper Grouper Permit holders to test the effectiveness of electronic video monitoring to measure catch and bycatch. A total of 93 trips were monitored with video monitoring, 34 by self-reported fishing logbooks, and 5 by observers. Comparisons between electronic video monitoring data and observer data showed that video monitoring was a reliable source of catch and bycatch data.

Research funds for observer programs, as well as gear testing and testing of electronic devices are also available each year in the form of grants from the Foundation, Marine Fisheries Initiative, Saltonstall-Kennedy program, and the CRP. Efforts are made to emphasize the need for observer and logbook data in requests for proposals issued by granting agencies. A condition of funding for these projects is that data are made available to the Councils and NMFS upon completion of a study.

Stranding networks have been established in the Southeast Region. The NMFS 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 released 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.

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 from the proposed actions are discussed in **Chapter 4** of the environmental assessment.

Changes in the Distribution of Benefits and Costs

The distribution of benefits and costs expected from proposed actions in the environmental assessment are discussed in **Chapter 3**. Economic and social effects of the proposed actions are addressed in **Chapter 4** of this document.

Social Effects

The social effects of all the measures are described in **Chapter 4** of the environmental assessment.

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).

Blueline Tilefish

For the commercial sector, since neither commercial trip limit alternative is expected to result in a commercial closure, there is little risk of regulatory discards. Therefore, little difference in the biological effects of the trip limit alternatives is expected.

For the recreational sector, the more restrictive the regulations, the shorter the expected season under Action 1. **Alternatives 2-6** all project to have a shorter season than under **Alternative 1 (No Action)**. Bycatch could increase with **Alternatives 2-6** as blueline tilefish would have to be returned to the water over the longest period of time. The release mortality of blueline tilefish, a deepwater species, is nearly 100%. In addition, effective August 20, 2015, NMFS implemented a one-fish per vessel per day during May through August with no retention for the remainder of the year for both snowy grouper (Regulatory Amendment 20; SAFMC 2014) and blueline tilefish (Amendment 32; SAFMC 2013). One of the goals of these actions was to align the seasons and regulations to minimize discard mortality. **Alternatives 2-6** would remove the aligned allowable fishing seasons and could increase discards if the two species are targeted in the same area.

Yellowtail Snapper

The South Atlantic Council is proposing a change to the start date of the fishing season. Since the allowable harvest amounts are not changing, the level of discards is expected to remain the same.

Black sea bass

Changes to the level of bycatch of black sea bass from an increase in the proposed bag limits are not expected to be discernable. None of the bag limit changes are expected to result in appreciable increases in harvest based on an analysis contained in **Appendix F**. Moreover, the amount of fish being discarded appears to be due to the current minimum size limit and not to anglers landing quantities of black sea bass above the current bag limit.

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Appendix F. Data Analyses

1. Black Sea Bass Recreational Bag Limit Analysis

A New Proposed Methodology

Introduction

Analyzing the effect of reducing a bag limit on the estimated landings of a particular stock has become a fairly routine procedure in fisheries management. One simply analyzes the data on a trip-by-trip basis and reduces the catch of each trip that originally landed more than the proposed bag limit. However, analyzing bag limit increases isn't as straight forward. The problem is estimating by how much to increase the landings as the bag limit increases.
It may be safe to assume that if a trip did not reach the current bag limit, it would not reach a proposed bag limit that is higher than the current one. However, what about the trips that did reach the bag limit? One possible assumption of the bag limit increase analysis is that if a trip reached the current bag limit, it would reach whatever proposed increases were made to that bag limit without any limitations. Another, more refined approach limited the increase in landings to the reported discards per trip. However, there was no way to distinguish whether a fish was discarded because it was under the legal size limit or because the angler reached the bag limit. The new method proposed here is an attempt to solve this conundrum using the available information from the most recent stock assessment. The abundance at age, recreational selectivity, discard selectivity, and proportion of fish above and below the size limit at age are all used to estimate the proportion of the discards that are due to the size limit versus those that are due to reaching the bag limit.

This analysis examines increasing the recreational bag limit for Black Sea Bass from the current bag limit of 5 fish per angler to proposed bag limits ranging from 6 to 10 fish per angler. Two data sources are used in this analysis: the MRIP intercept data (Marine Recreational Information Program, which includes private recreational trips and charter boat trips) from 2013 and 2014, and the headboat data (obtained from the Southeast Region Headboat Survey) from 2013 and 2014. The data ranges from Cape Hatteras, NC down to the FL Keys and includes all trips that encountered at least one Black Sea Bass (either landed, discarded, or both).
2013 and 2014 were chosen because of the change in minimum size from 12 in to 13 in that went into effect in 2013. Also, 2013 was the first year the new MRIP sampling protocol was used. MRIP began using a new Access Point Angler Intercept Survey (APAIS) in Wave 2 of 2013 that was designed to better sample times of day outside of the peak activity times. Each year was analyzed individually and the average of 2013 and 2014 was also looked at to get a range of estimated landings values under each of the proposed bag limits. All assessment data came from the SEDAR 25 update for Black Sea Bass completed in 2013.

Preliminary Statistics

The data were analyzed on a trip basis and an angler basis (for the headboat data). A trip is defined as a party of anglers that were fishing together, usually on the same vessel. This is slightly different for Shore Mode, where a trip is comprised of a single angler. These parties of anglers are typically intercepted together as a group and their catch is added up to equal the total catch for that trip. Headboats were also examined on a per angler basis because it is unlikely all the anglers on a single headboat would know each other and be fishing together as a group, as is typically the case on private and charter trips.

The percent of trips (for both MRIP and headboat) that reached the bag limit in 2013 and 2014 ranged from 0.7% to 3.3% and the % of anglers (for headboat) that reached the bag limit ranged from 17.4% to 21.7% (**Table F-1.1** through **F-1.3**). On headboat trips that did not reach the bag limit, the total number of Black Sea Bass landed was divided by 5 to estimate the maximum number of anglers that could have reached the bag limit on each trip.

Tables F-1.1 through **F-1.3** and **Figure F-1.1** show a very small number of trips are reaching the bag on average in any given year. A look at the percentage of landed Black Sea Bass and discarded Black Sea Bass to the total encountered confirms that most of the Black Sea Bass caught in 2013 and 2014 were discarded (**Tables F-1.4 to F-1.7**). **Table F-1.2** does suggest that trips in federal waters (> 3 miles from shore) are almost 10 times as likely to reach their bag limits as those that occur in state waters (≤ 3 miles from shore). However, that still leaves only 2% of trips on average reaching the bag limit in federal waters.

The landings and discards per angler were calculated on a per trip basis. Then, the frequency of trips that fell within each landings and discards per angler category were plotted to evaluate the percent of trips that fell within each of the categories. **Figures F-1.2** to **F-1.4** show the distribution of trips by landings and discards per angler. These data combined the MRIP and headboat data.

For all trips that encountered Black Sea Bass, over 88% of them didn't land any Black Sea Bass per angler on average between 2013 and 2014, which means that every black sea bass they encountered was discarded. On trips that landed at least 1 Black Sea Bass, almost 60% of those landed less than 1 Black Sea Bass per angler on average between 2013 and 2014. Data on catch per angler can show landings in units of partial fish since the number of fish on a trip are divided among all the anglers associated with that trip. For example, if 3 anglers on a trip land 2 fish, the catch per angler will be 0.66. Of the trips that landed at least 1 Black Sea Bass, fewer than 7% achieved or exceeded the current bag limit of 5 Black Sea Bass per angler. About 2% of those trips landing at least 1 Black Sea Bass reported exceeding the 5 fish per person bag limit. Including all trips that either landed or discarded (or both) Black Sea Bass, less than 1% of trips had a landings rate of 5 or more Black Sea Bass per angler on average.

Approximately 85% of trips that encountered Black Sea Bass had 1 or more discards of Black Sea Bass per angler (**Figure F-1.4**). Over the 2 years analyzed, approximately 2,420,000 anglers on 1,350,000 trips landed 743,300 Blacks Sea Bass and discarded 9,139,000 of them. Only 0.3% of these anglers reached the 5 fish bag limit and on average kept 0.3 per angler and discarded 3.75 per angler. So, for every Black Sea Bass kept, about 12 were discarded.

The overall conclusion from these basic statistics is that the recreational black sea bass fishery is being limited by the size limit rather than the bag limit. Very few anglers are reaching the bag limit. In fact, 98% of anglers who even encounter a black sea bass are keeping one or less. This is not because anglers are not encountering black sea bass. These approximately 2,420,000 anglers encountered over 4 million sea bass on average, of which 93% were discarded.

Table F-1.1. Percent of MRIP trips that did and did not reach the bag limit by mode.

Year	% Trips Hit Bag			% Trips Did Not Hit Bag			
	Charter	Private	Total	Charter	Private	Shore	Total
2013	1.5%	0.9%	0.8%	98.5%	99.1%	100.0%	99.2%
2014	0.8%	0.8%	0.7%	99.2%	99.2%	100.0%	99.3%
Avg.	0.9%	0.8%	0.7%	99.1%	99.2%	100.0%	99.3%

Table F-1.2. Percent of MRIP trips that did and did not reach the bag limit by distance from shore.

Year	% Trips Hit Bag		% Trips Didn't Hit Bag	
	≤ 3 mi	> 3 mi	≤ 3 mi	> 3 mi
2013	0.2%	1.7%	99.8%	98.3%
2014	0.1%	2.2%	99.9%	97.8%
Avg.	0.2%	2.0%	99.8%	98.0%

Table F-1.3. Percent of Headboat trips and anglers that did and did not reach the bag limit.

Year	% Trips		% Anglers	
	Did Not Hit Bag	Hit Bag	Did Not Hit Bag	Hit Bag
2013	96.7%	3.3%	78.3%	21.7%
2014	96.8%	3.2%	82.6%	17.4%
Avg.	96.8%	3.2%	80.6%	19.4%

Table F-1.4. Number of Black Sea Bass that were landed and discarded on MRIP trips.

Year	Did Not Hit Bag			Hit Bag			All Trips		
	Landed	Discarded	Total	Landed	Discarded	Total	Landed	Discarded	Total
2013	150,047	2,756,115	2,906,162	88,255	55,059	143,314	238,302	2,811,174	3,049,476
2014	263,111	4,778,089	5,041,200	74,430	145,108	219,539	337,542	4,923,197	5,260,739
Avg.	206,579	3,767,102	3,973,681	81,343	100,084	181,426	287,922	3,867,185	4,155,107

Table F-1.5. Percent of Black Sea Bass that were landed and discarded on MRIP trips.

Year	Did Not Hit Bag		Hit Bag		All Trips	
	% Landed	% Discarded	% Landed	% Discarded	% Landed	% Discarded
2013	5.2%	94.8%	61.6%	38.4%	7.8%	92.2%
2014	5.2%	94.8%	33.9%	66.1%	6.4%	93.6%
Avg.	5.2%	94.8%	44.8%	55.2%	6.9%	93.1%

Table F-1.6. Number of Black Sea Bass that were landed and discarded on Headboat trips.

Year	Did Not Hit Bag			Hit Bag			All Trips		
	Landed	Discarded	Total	Landed	Discarded	Total	Landed	Discarded	Total
2013	75,258	719,624	794,882	11,453	21,593	33,046	86,711	741,217	827,928
2014	67,587	636,935	704,522	10,781	19,674	30,455	78,368	656,609	734,977
Avg.	71,423	678,280	749,702	11,117	20,634	31,751	82,540	698,913	781,453

Table F-1.7. Percent of Black Sea Bass that were landed and discarded on Headboat trips.

Year	Did Not Hit Bag		Hit Bag		All Trips	
	% Landed	% Discarded	% Landed	% Discarded	% Landed	% Discarded
2013	9.5%	90.5%	34.7%	65.3%	10.5%	89.5%
2014	9.6%	90.4%	35.4%	64.6%	10.7%	89.3%
Total	9.5%	90.5%	35.0%	65.0%	10.6%	89.4%

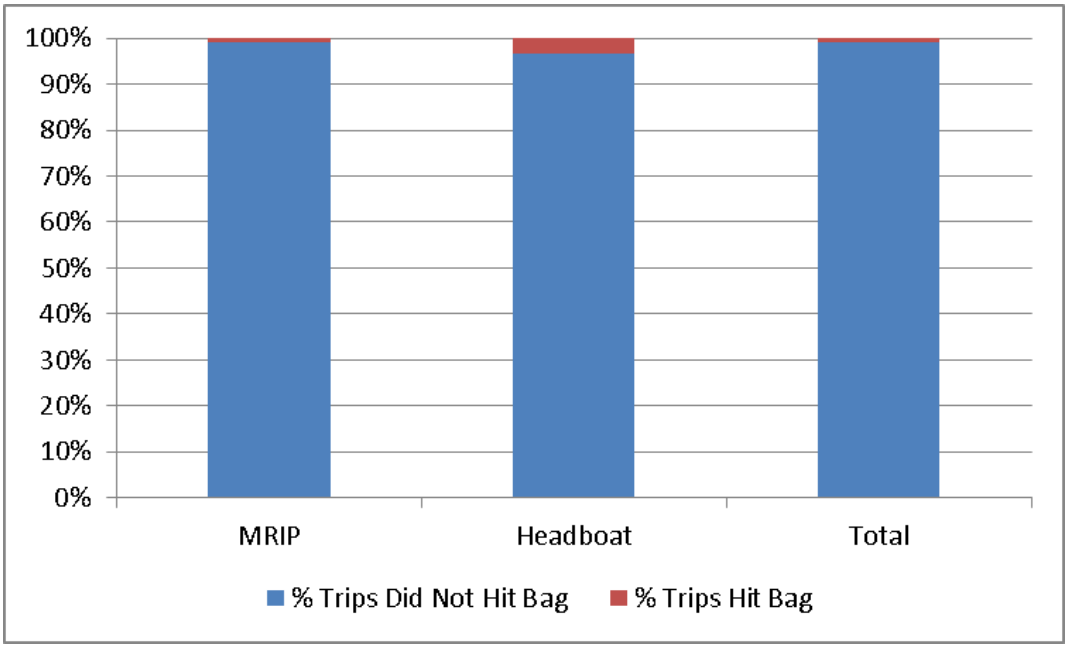

Figure F-1.1. Percent of MRIP (private recreational and charter) and headboat trips that did and did not retain the bag limit averaged across 2013 and 2014.

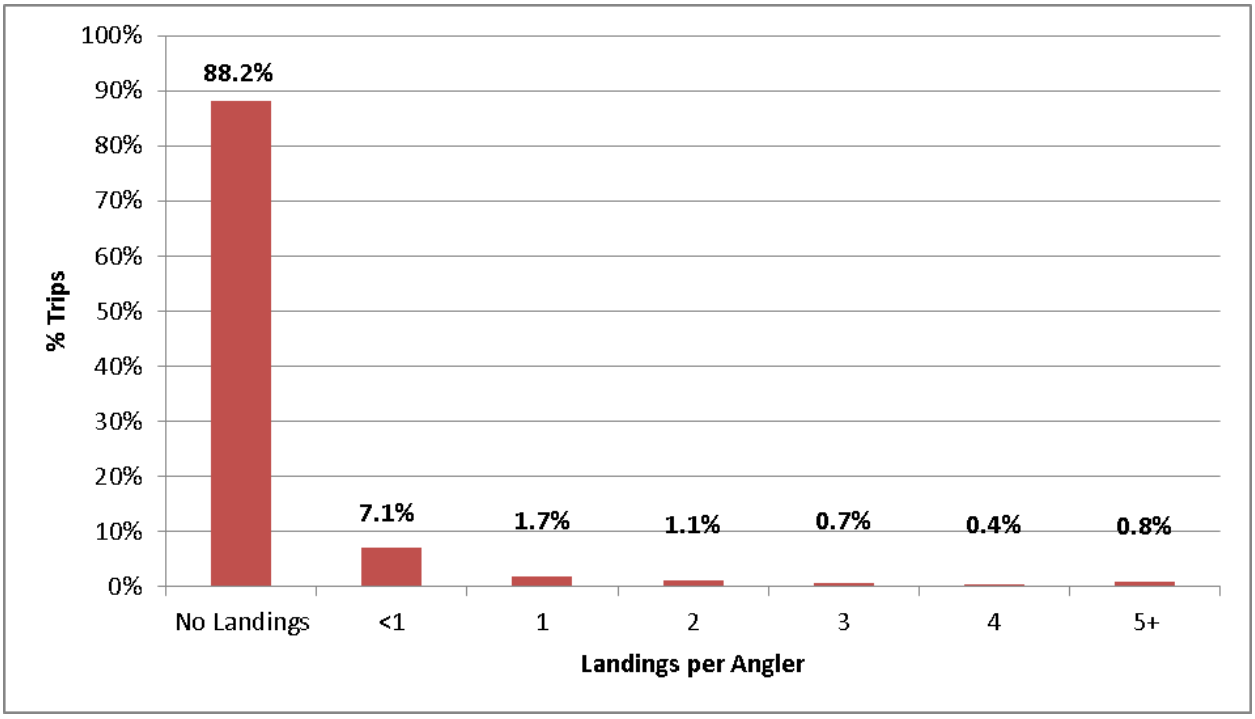

Figure F-1.2. Number of Black Sea Bass landed per angler on recreational trips that encountered Black Sea Bass. Landings per angler categories run from the listed number up to, but not including the next category number (i.e. 1 to 1.99= 1).

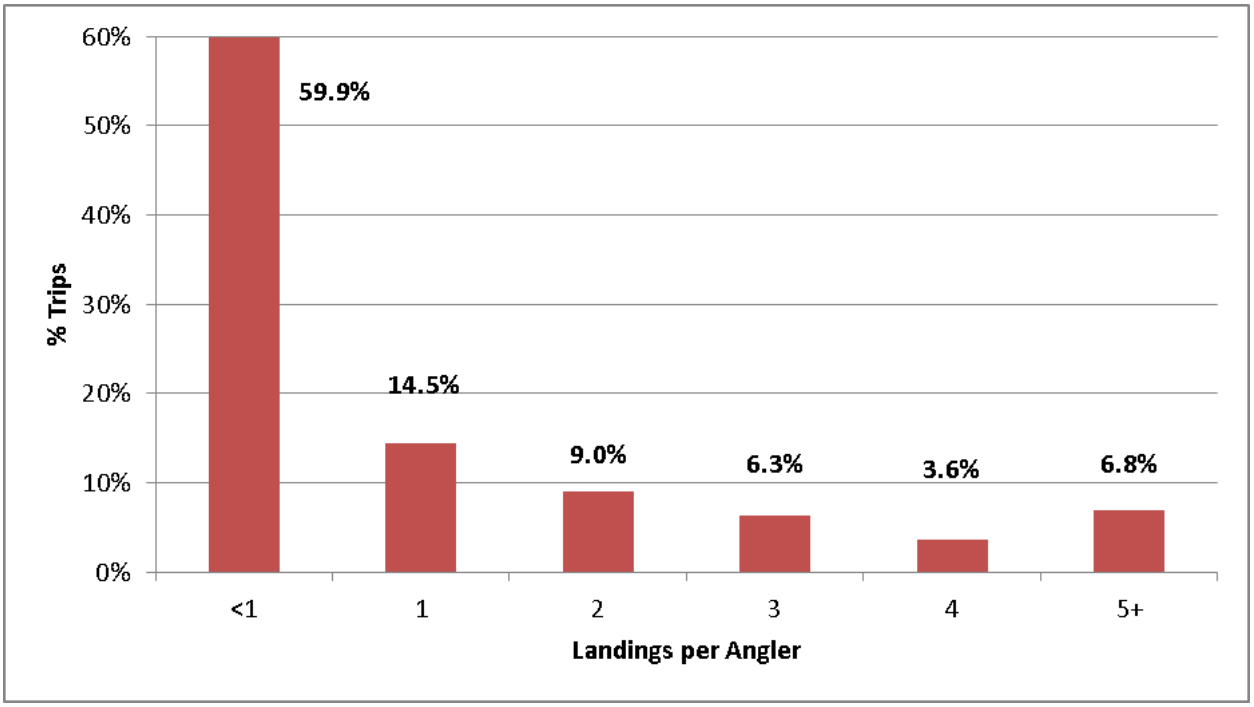

Figure F-1.3. Number of Black Sea Bass landed per angler on recreational trips that kept at least 1 Black Sea Bass. Landings per angler categories run from the listed number up to, but not including the next category number (i.e. 1 to 1.99= 1).

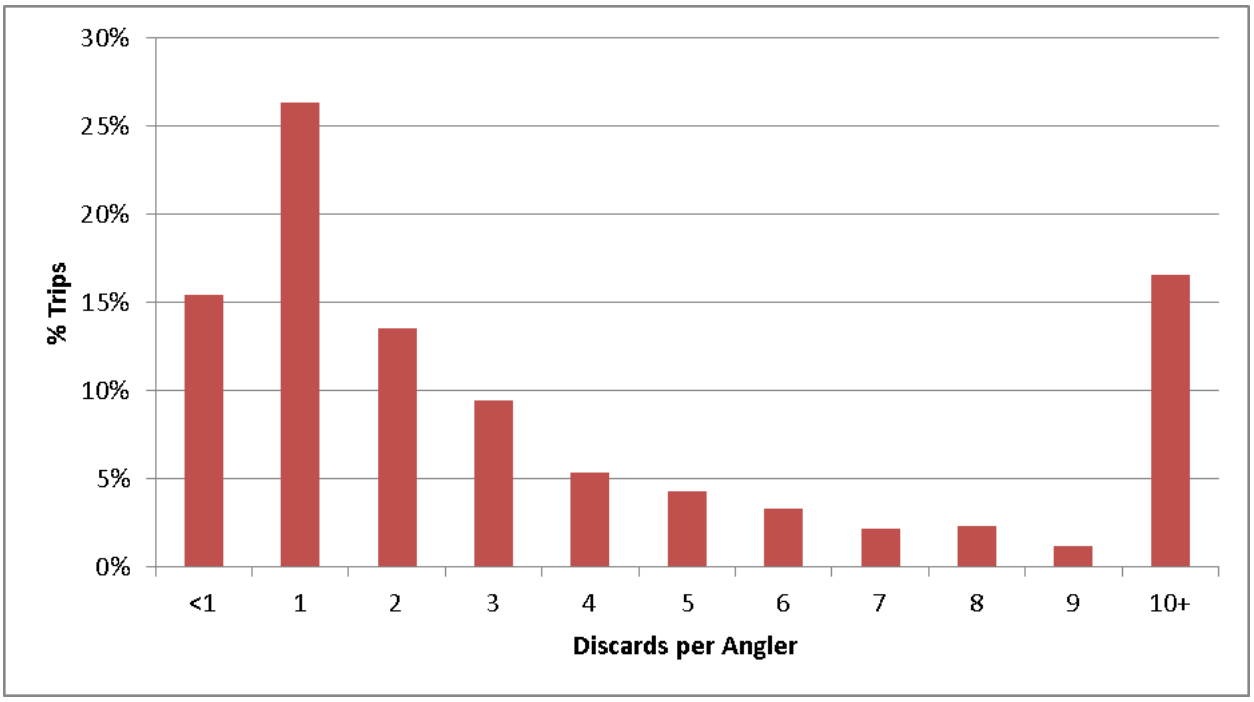

Figure F-1.4. Number of Black Sea Bass discarded per angler on recreational trips that encountered Black Sea Bass. Discards per angler categories run from the listed number up to, but not including the next category number (i.e., 1 to 1.99= 1).

New Proposed Methodology and Assumptions
MRIP (Private and Charter vessels)

1. Assumption: All discarded fish reported on trips that did not reach the bag limit at the trip level are below the minimum size limit.
2. Assumption: Fish discarded on trips that reached the bag limit could be both above and below the minimum size limit. In other words, discards on these trips could be due to the bag limit or the size limit.
3. Population estimates from the most recent stock assessment were used to estimate the size composition of discarded fish for trips that reached the bag limit. The intent is to determine the proportion of discarded fish above and below the size limit, which can be used to determine how many of the discarded fish can contribute to landings if the bag limit is increased.
4. Assumption: Trips that reach the bag limit discard some fish due to the bag limit. Therefore, some legal-sized Black Sea Bass are discarded.
    - The model estimated discard selectivity from the SEDAR 25 update for fish up to age 3 was used (**Tables F-1.8 & F-1.9**, **Figure F-1.7**). This estimated discard selectivity accounts for the recreational gear selectivity and the assumed size composition of fish up to age 3.
        - The SEDAR 25 update assumed no fish age 3 or less has yet reached the minimum size, therefore the model estimated discard selectivity was needed to estimate the proportion of fish age 3 and less that would be selected by the fishery to be discarded.
    - For ages 4+, the selectivity at age was multiplied by the proportion of fish at age below the minimum size, which was calculated using fishery independent samples (MARMAP/SEAMAP, **Tables F-1.8 & F-1.9**, **Figure F-1.7**).
        - **Figure F-1.5** shows the size at age samples for fishery dependent (black) and independent (orange) samples from the SEDAR 25 update. The fishery independent data were selected since the size at age distribution of the fishery dependent samples is truncated by the size limit.
        - MARMAP tends to sample outside of 3 miles on average so differences in discard rates, landings rates, and % trips in State waters vs. Federal waters was examined.
        - If more fish are discarded in State waters, then perhaps using the MARMAP data here would not be appropriate. However, the discard rate per angler is higher in Federal waters than in state waters, as well as the landings rate (**Table F-12**).
        - Although 70% of the trips that encountered Black Sea Bass are occurring in waters <= 3 miles, the total number of discarded Black Sea Bass is similar between State and Federal waters.
    - To calculate the discard selectivity of fish above the minimum size, the selectivity of age 4+ fish was multiplied by the proportion at age above the minimum size (**Tables F-1.8 & F-1.9**, **Figure F-1.8**).
    - To calculate the proportion of discards below or above the minimum size, an estimate of abundance at age was needed, and was obtained from SEDAR 25. Abundances at age are available through 2012 from SEDAR 25, so 2012 was chosen to represent 2013-2014.

    - Using the MARMAP/SEAMAP data to calculate the proportion of fish at age larger than 13 in, ~1.3% of the estimated 2012 population was greater than 13 in.
    - Using the estimated recreational selectivity, ~1.1% of the population is available to the rec sector for harvest (above the minimum size and able to be selected for retention).
    - This approach suggests that, of the almost 62,000,000 black sea bass estimated in the 2012 population older than age 1, approximately 700,000 were available to harvest by the recreational sector,
    - The average landings from 2013 and 2014 were ~370,000 Black Sea Bass, which is ~50% of the harvestable fish.
    - Also, discards are over 12 times larger than landings, on average between 2013 and 2014. Applying the SEDAR 25 discard mortality rate of 7% results in dead discards nearly equal to total landings (**Tables F-1.10 & F-1.11**)
- A time period with a representative proportion at age is needed to estimate the proportion of fish discarded due to the size limit vs. the bag limit.
- Multiplying the discard selectivities, for fish below and above the minimum size that were calculated above, by abundance at age gives the total number of discards above and below the minimum size.
    - Summing these discard estimates gives an estimate of total discards (**Tables F-1.8 & F-1.9**, **Figure F-1.10**).
- The sum of discards less than the minimum size limit was divided by the total discards. The sum of discards greater than the minimum size limit was also divided by the total discards. This gives an estimate of the appropriate proportion of discards above and below the minimum size limit (**Figures F-1.9 & F-1.10**).

5. As increasing bag limit alternatives were evaluated, the catch increased by the number of discarded Black Sea Bass reported on trips that reached the bag limit multiplied by the proportion of discards from those trips that are greater than the minimum size.

Headboat

1. Trips that reached the trip bag limit were treated the same as MRIP trips.
2. For trips that did not reach the trip bag limit, an additional step was needed to calculate the discard selectivity.
    - When calculating the proportion of fish above the minimum size, the added step of multiplying by the probability of being one of the anglers that reached the bag limit on that trip was done.
    - This was calculated simply by taking the proportion of anglers that reached the bag limit, on trips that did not reach the trip bag limit, to the total number of anglers on trips that did not reach the trip bag limit.
    - The maximum number of anglers that reached the bag limit on trips that did not reach the trip bag limit was estimated by dividing the number of fish landed by the bag limit for each trip.

i. For the current 5 fish bag limit, if 100 fish were landed and there are 50 anglers on board, a maximum of 20 anglers reached the bag limit.

3. The analysis continued as described above for the MRIP data.

Table F-1.8. MRIP calculated discard selectivities and 2012 estimated abundance from the SEDAR 25 update. Size limit refers to those fish discarded due to them being under the minimum size limit. Bag limit refers to those fish discarded due to reaching the bag and being above the minimum size.

Age	Rec Sel	Discard Selectivity		2012 Abundance (numbers)
		Size Limit	Bag Limit	
0	0	0.001	0	33,042,170
1	0.001	0.093	0	13,459,560
2	0.028	0.63	2.93E-05	8,842,770
3	0.563	1	0.019	4,277,590
4	0.983	0.780	0.203	1,542,900
5	1	0.638	0.362	516,580
6	1	0.398	0.602	145,210
7	1	0.329	0.671	33,720
8	1	0.274	0.726	8,310
9	1	0.333	0.667	3,840
10	1	0.042	0.958	1,490
11	1	0.041	0.959	900

Table F-1.9. Headboat discard selectivities for trips that did and did not reach the trip bag limit. Size limit refers to those fish discarded due to them being under the minimum size limit. Bag limit refers to those fish discarded due to reaching the bag and being above the minimum size. 2013 and 2014 Bag Lim Sel refer to the selectivity of fish discarded due to reaching the bag and being above the minimum size, but corrected for the proportion of anglers in that year on trips that did not reach the trip bag limit that reached their personal bag limit.

Age	Rec Sel	Trips Hit Bag		Trips Did Not Hit Bag				2012 Abundance (num)
		Size Limit Sel	Bag Limit Sel	Size Limit Sel	Bag Limit Sel	2013 Bag Lim Sel	2014 Bag Lim Sel	
0	0	0.001	0	0.001	0	0	0	33,042,170
1	0.001	0.093	0	0.093	0	0	0	13,459,560
2	0.028	0.63	2.93E-05	0.63	2.93E-05	5.73E-06	4.54E-06	8,842,770
3	0.563	1	0.019	1	0.0188	0.0037	0.0029	4,277,590
4	0.983	0.780	0.203	0.780	0.203	0.040	0.032	1,542,900
5	1	0.638	0.362	0.638	0.362	0.071	0.056	516,580
6	1	0.398	0.602	0.398	0.602	0.118	0.093	145,210
7	1	0.329	0.671	0.329	0.671	0.131	0.104	33,720
8	1	0.274	0.726	0.274	0.726	0.142	0.112	8,310
9	1	0.333	0.667	0.333	0.667	0.130	0.103	3,840
10	1	0.042	0.958	0.042	0.958	0.187	0.149	1,490
11	1	0.041	0.959	0.041	0.959	0.187	0.149	900

Table F-1.10. Landings and total discards of Black Sea Bass from all recreational trips in 2013 and 2014.

Year	Catch All Trips			% Catch All Trips	
	Landed	Discarded	Total	Landed	Discarded
2013	325,013	3,552,391	3,877,404	8.38%	91.62%
2014	415,910	5,579,806	5,995,716	6.94%	93.06%
Avg.	370,461	4,566,098	4,936,560	7.50%	92.50%

Table F-1.11. Landings and dead discards of Black Sea Bass from all recreational trips in 2013 and 2014.

Year	Killed All Trips			% Killed All Trips	
	Landed	Dead Disc	Total	Landed	Dead Disc
2013	326,303	249,005	575,308	56.72%	43.28%
2014	417,001	390,732	807,734	51.63%	48.37%
Avg.	371,652	319,869	691,521	53.74%	46.26%

Table F-1.12. Landings and discard rate per angler for trips occurring in waters less than or equal to 3 miles from shore and those occurring in waters greater than 3 miles from shore. LPA is landings per angler and DPA is discards per angler.

Dist Shore	All Trips		Trips Landed BSB		% Trips	
	LPA	DPA	LPA	DPA	All	Landed BSB
<= 3 mi	0.03	1.95	0.96	2.27	69.0%	29.8%
> 3 mi	0.35	2.30	1.47	2.82	31.0%	70.2%

Table F-1.13. Total number of discarded Black Sea Bass from trips that occurred inside and outside of 3 miles from shore.

Year	<= 3 mi	> 3 mi
2013	1,716,353	1,094,821
2014	2,060,023	2,863,174
Avg.	1,888,188	1,978,998

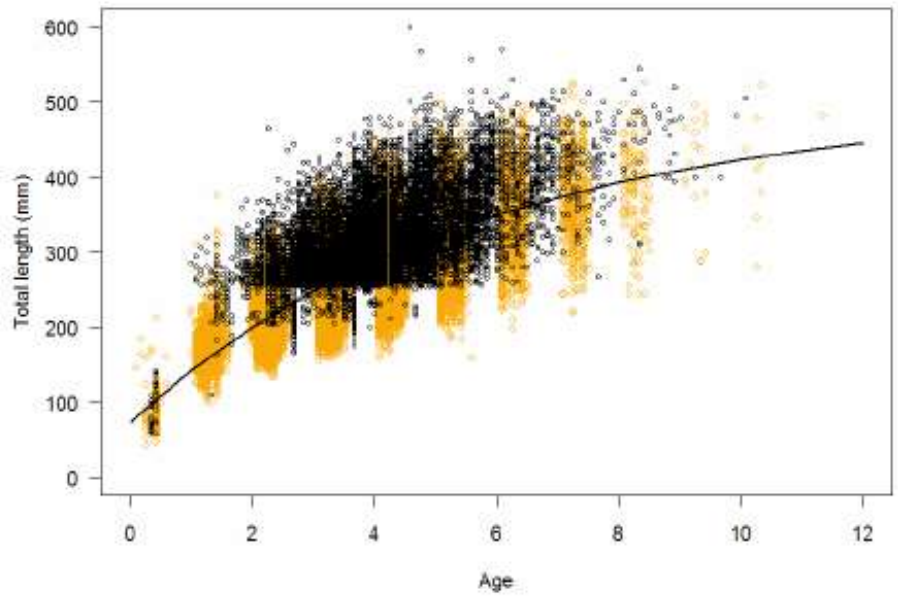

Figure F-1.5. Von Bertalanffy growth model for all combined length/age data from the SEDAR 25 update, corrected for minimum size limit bias. Black circles represent fishery dependent age samples, orange circles represent fishery-independent age samples.

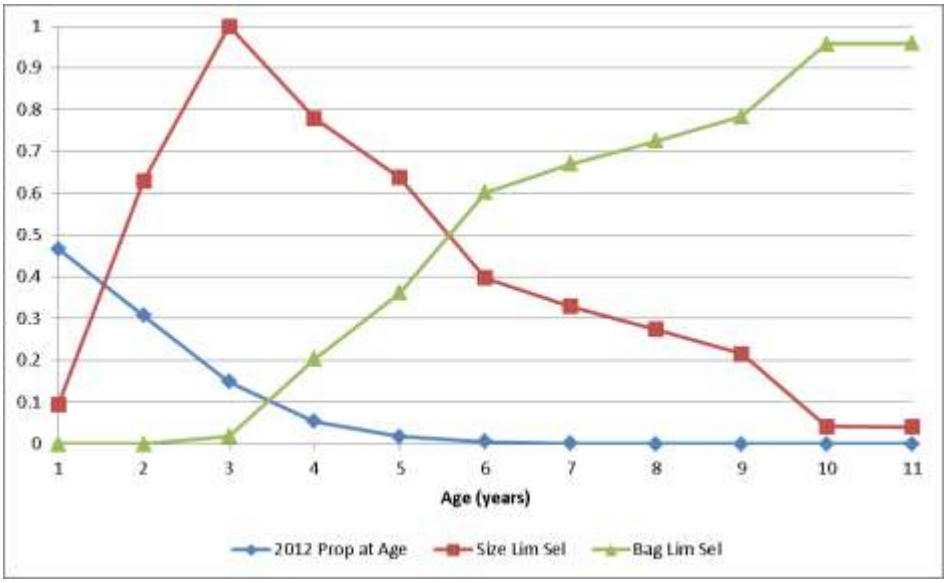

Figure F-1.6. The calculated discard selectivities and the estimated 2012 proportion of fish at age from the SEDAR 25 update used to estimate the proportion of fish discarded due to being under the minimum size limit vs. due to reaching the bag limit and being above the minimum size limit.

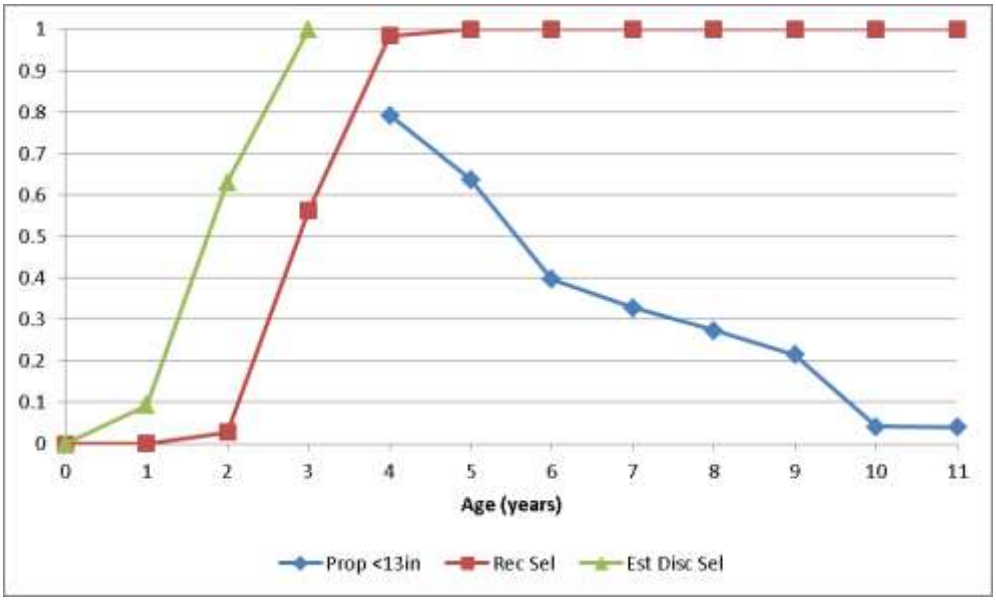

Figure F-1.7. Selectivities and proportion less than 13 in. at age used to calculate the size limit discard selectivity. The selectivities were estimated in the SEDAR 25 update. The proportion of fish < 13in. at age was calculated from MARMAP/SEAMAP data.

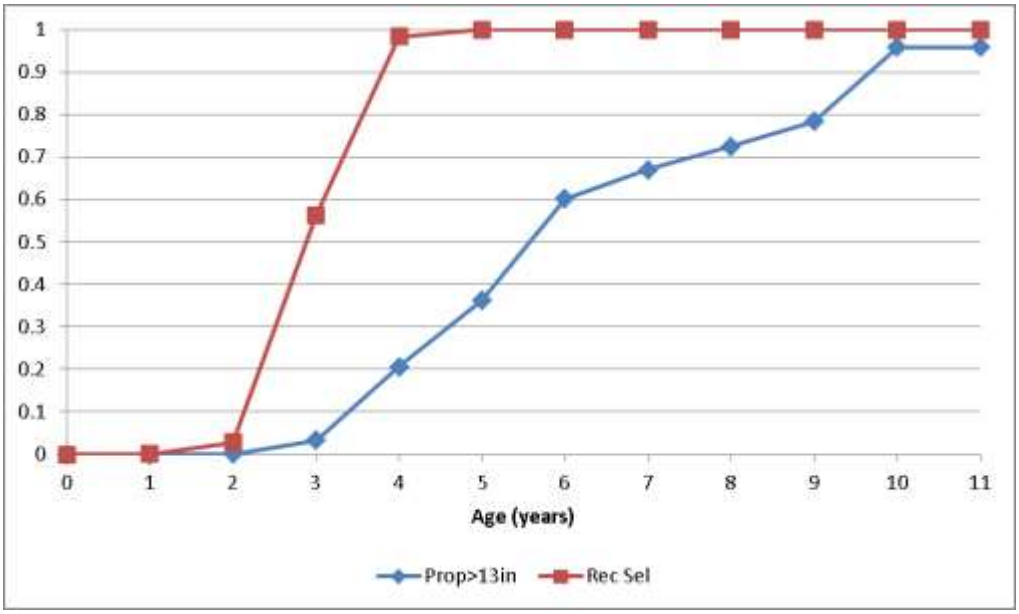

Figure F-1.8. Recreational fishery selectivity and proportion of fish at age above 13 in. used to calculate the bag limit discard selectivity. The recreational selectivity was estimated in the SEDAR 25 update. The proportion of fish > 13in. at age was calculated from MARMAP/SEAMAP data.

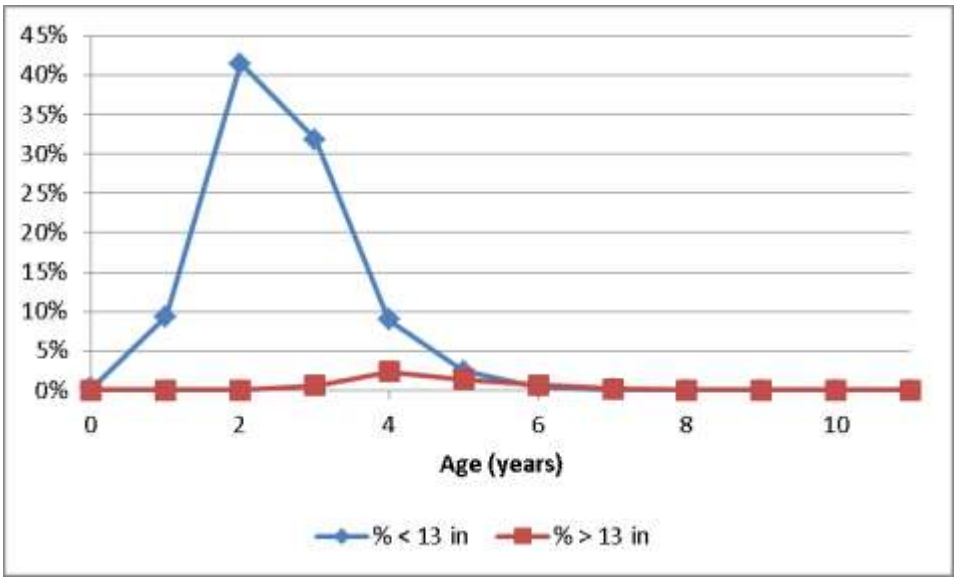

Figure F-1.9. Estimated percent of discards that are above and below 13 in. within each age class.

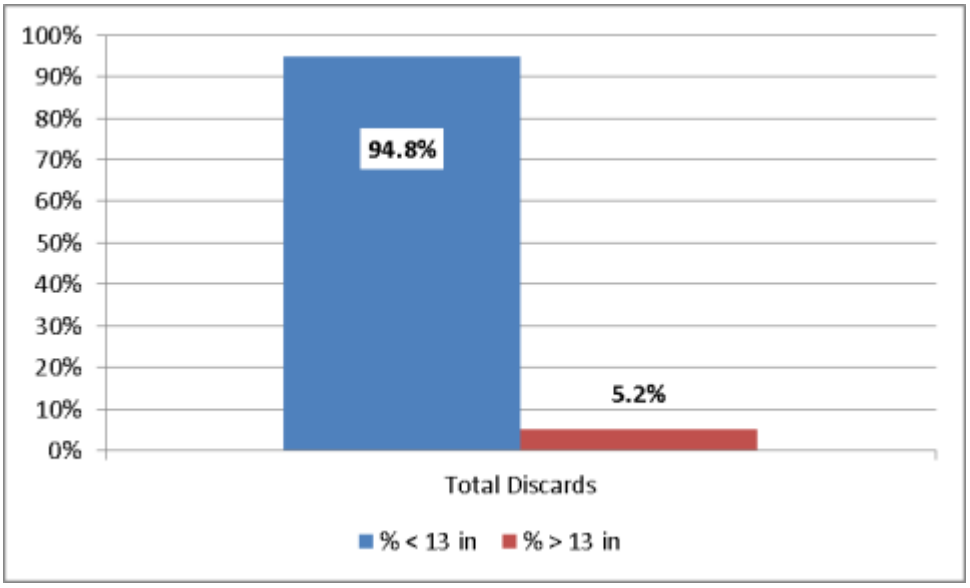

Figure F-1.10. Estimated percent of total discards that are above and below 13 in.

New Proposed Methodology Results

The overall result is that increasing the bag limit has a negligible impact on the recreational landings of Black Sea Bass (**Tables F-1.14** to **F-1.20**, **Figure F-1.12**). As seen in **Figure F-1.11** this is because almost 95% of the discarded Black Sea Bass are estimated to be below the minimum size of 13 in. This new methodology estimates that even under a bag limit of 10 fish, about 50% of the 2016 ACL will be taken, which is only about a 1.5% increase from the current bag limit of 5 (**Table F-1.20**) assuming fishing behavior does not change.

On average, recreational anglers are discarding 12 times more Black Sea Bass than they are landing. Even on trips that reached the bag limit, anglers are discarding 30% more Black Sea Bass on average than they are landing. Therefore, it doesn't seem reasonable to assume that on trips where anglers caught the bag limit, they would be able to retain all their discarded Black Sea Bass if the bag limit was high enough. This new methodology calculates the percentage of legal sized Black Sea Bass by estimating the proportion of the discarded fish that were discarded due to the size limit versus those that were discarded due to reaching the bag limit. It is due to this estimation of discard proportions that the results of the new methodology show almost no change in landings after a bag limit of 6 (**Tables F-1.14** to **F-1.19**). There are few discards above the minimum size to increase the landings by an appreciable amount.

Table F-1.14. Estimated MRIP landings and percent increase from current conditions in numbers of fish under different bag limit scenarios using the newly developed methodology.

Year	Estimated Landings (num)						% Increase from Current				
	Current	Bag 6	Bag 7	Bag 8	Bag 9	Bag 10	Bag 6	Bag 7	Bag 8	Bag 9	Bag 10
2013	238,302	239,489	240,467	241,687	243,685	243,715	0.5%	0.9%	1.4%	2.3%	2.3%
2014	337,542	344,556	347,868	348,597	348,597	348,728	2.1%	3.1%	3.3%	3.3%	3.3%
Avg.	**287,922**	**292,023**	**294,168**	**295,142**	**296,141**	**296,221**	**1.4%**	**2.2%**	**2.5%**	**2.9%**	**2.9%**

Table F-1.15. Estimated MRIP landings and percent increase from current conditions in lbs. ww under different bag limit scenarios using the newly developed methodology.

Year	Estimated Landings (lbs ww)						% Increase from Current				
	Current	Bag 6	Bag 7	Bag 8	Bag 9	Bag 10	Bag 6	Bag 7	Bag 8	Bag 9	Bag 10
2013	299,025	300,897	302,110	303,645	306,213	306,264	0.6%	1.0%	1.5%	2.4%	2.4%
2014	474,486	484,563	489,240	490,110	490,110	490,412	2.1%	3.1%	3.3%	3.3%	3.4%
Avg.	**386,755**	**392,730**	**395,675**	**396,878**	**398,162**	**398,338**	**1.5%**	**2.3%**	**2.6%**	**2.9%**	**3.0%**

Table F-1.16. Estimated headboat landings and percent increase from current conditions in numbers of fish under different bag limit scenarios using the newly developed methodology.

Year	Est. Landings (number)						% Increase from Current				
	Current	Bag 6	Bag 7	Bag 8	Bag 9	Bag 10	Bag 6	Bag 7	Bag 8	Bag 9	Bag 10
2013	84,642	85,904	85,904	85,904	85,904	85,904	1.5%	1.5%	1.5%	1.5%	1.5%
2014	75,170	76,304	76,304	76,304	76,304	76,304	1.5%	1.5%	1.5%	1.5%	1.5%
Avg.	79,906	81,104	81,104	81,104	81,104	81,104	1.5%	1.5%	1.5%	1.5%	1.5%

Table F-1.17. Estimated headboat landings and percent increase from current conditions in lbs. ww under different bag limit scenarios using the newly developed methodology.

Year	Est. Landings (lbs)						% Increase from Current				
	Current	Bag 6	Bag 7	Bag 8	Bag 9	Bag 10	Bag 6	Bag 7	Bag 8	Bag 9	Bag 10
2013	115,457	117,178	117,178	117,178	117,178	117,178	1.5%	1.5%	1.5%	1.5%	1.5%
2014	103,481	105,042	105,042	105,042	105,042	105,042	1.5%	1.5%	1.5%	1.5%	1.5%
Avg.	109,469	111,110	111,110	111,110	111,110	111,110	1.5%	1.5%	1.5%	1.5%	1.5%

Table F-1.18. Estimated landings and percent increase from current conditions for combined MRIP and headboat data in numbers of fish under different bag limit scenarios using the newly developed methodology.

Year	Est. Landings (number) from Different Bag Limits						% Increase from Current				
	Current	Bag 6	Bag 7	Bag 8	Bag 9	Bag 10	Bag 6	Bag 7	Bag 8	Bag 9	Bag 10
2013	326,303	330,084	331,366	332,659	334,687	334,735	1.2%	1.6%	1.9%	2.6%	2.6%
2014	417,001	426,765	430,363	431,173	431,211	431,379	2.3%	3.2%	3.4%	3.4%	3.4%
Avg.	371,652	378,425	380,864	381,916	382,949	383,057	1.8%	2.5%	2.8%	3.0%	3.1%

Table F-1.19. Estimated landings and percent increase from current conditions for combined MRIP and headboat data in lbs. ww under different bag limit scenarios using the newly developed methodology.

Year	Est. Landings (lbs) from Different Bag Limits						% Increase from Currrent				
	Current	Bag 6	Bag 7	Bag 8	Bag 9	Bag 10	Bag 6	Bag 7	Bag 8	Bag 9	Bag 10
2013	415,888	421,233	422,861	424,497	427,106	427,182	1.3%	1.7%	2.1%	2.7%	2.7%
2014	579,164	592,845	597,913	598,896	598,951	599,307	2.4%	3.2%	3.4%	3.4%	3.5%
Avg.	497,526	507,039	510,387	511,696	513,028	513,245	1.9%	2.6%	2.8%	3.1%	3.2%

Table F-1.20. Percent of 2016 ACL estimated to be landed under different bag limit scenarios.

Year	2016 Rec ACL (lbs)	% of 2016 ACL (lbs)					
		Current	Bag 6	Bag 7	Bag 8	Bag 9	Bag 10
2013	1,001,177	41.5%	42.1%	42.2%	42.4%	42.7%	42.7%
2014		57.8%	59.2%	59.7%	59.8%	59.8%	59.9%
Avg.		49.7%	50.6%	51.0%	51.1%	51.2%	51.3%

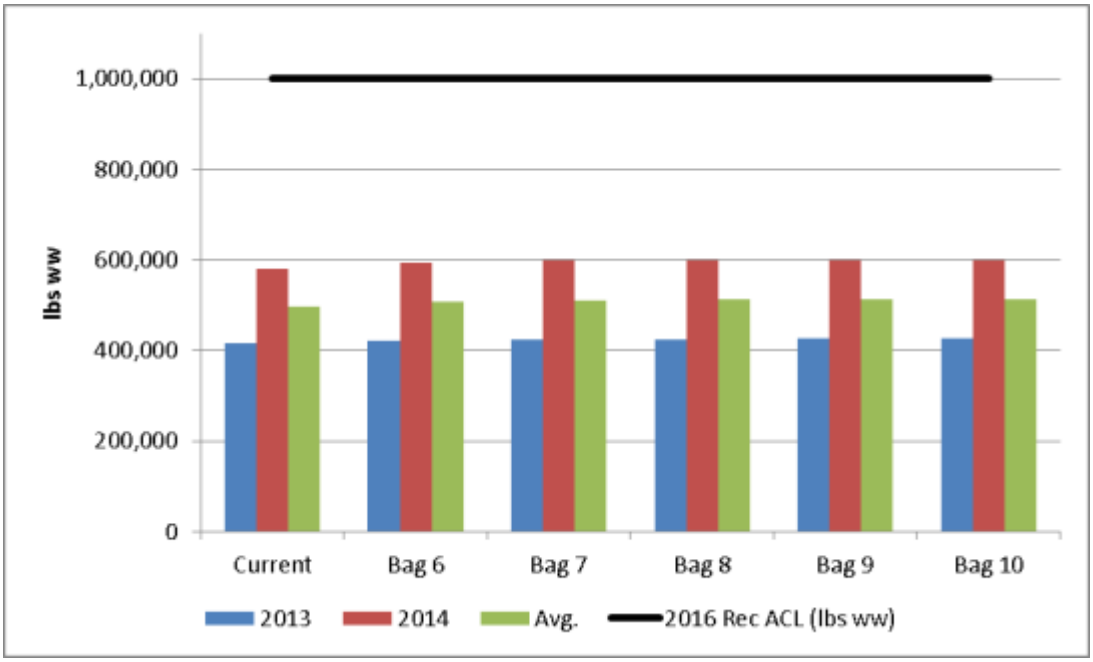

Figure F-1.11. Total estimated recreational landings (lbs. ww) for 2013 (blue), 2014 (red), and the average (green) for different bag limit scenarios against the 2016 Black Sea Bass recreational ACL.

Current Methodology and Assumptions

This is the methodology that has been used in previous amendments and analyses to determine the effects of proposed increases in the bag limit. It is presented here as a comparison to the new proposed methodology.

MRIP (Private and Charter vessels)

1. Assumption: All discarded Black Sea Bass on trips that reached the bag limit were discarded due to the bag limit, not the size limit.
2. Assumption: All discarded Black Sea Bass on trips that did not reach the bag limit were discarded due to the size limit.
3. Private and charter trips (MRIP data) were analyzed at the trip (rather than angler) level.

- Assumption: Anglers likely all know each other on a trip and are fishing together, adding their bag limits.
    i. Under a 5 fish bag limit, 3 anglers on a trip would have a 15 fish bag limit for that trip.
    ii. No "partial fish" catch rates

4. Bag limit increases are evaluated by increasing landings per trip to achieve the bag limit, up to the total number of black sea discarded on the trip.
    - Consider 3 anglers on a private boat landing 15 fish and reporting 5 discards under a 5 fish per person bag limit.
        i. Evaluating a 6 fish bag limit for this same trip will result in 18 fish landed with the remaining 2 fish discarded.
        ii. Evaluating a 7 fish bag limit (21 fish trip bag limit) for this trip results in landings of 20 fish, since that is the total assigned to it in the observed data, with no fish discarded.
        iii. These evaluations assume that total effort for that trip does not change. In other words, the anglers do not fish just a little longer to get that last fish under the 7 (or higher) bag limit alternatives, nor do they fish longer and increase their discarded fish.
        iv. As noted above, these analyses also assume that all of the observed discarded fish are of legal size and can be retained if the bag limit changes.
    - Consider 3 anglers on a private boat landing 12 fish and reporting 8 discards under a 5 fish per person bag limit.
        i. Under this scenario, the landings for this trip will not change under any of the bag limit alternatives due to assumption 2.
        ii. It is assumed that all discards on this trip are under the size limit, otherwise 3 of them would have been retained to meet the 5 fish per person (15 fish trip) bag limit.

Headboat

Two methodologies were used when analyzing the Southeast Region Headboat Survey data. The first followed the MRIP methodology. The second methodology and assumptions are detailed below.

1. Headboat (SRHS data) bag limits were analyzed at the angler level. Note, this is different than the Private data which are analyzed at the trip level.
    - Assumption: Anglers likely do not know each other and are fishing individually or in small groups.
    - The size of these small angler groups can vary and are unknown.
    - The maximum number of anglers that reached the bag on trips that did not reach the trip bag limit was estimated by dividing the number of fish landed by the bag limit for each trip.

- Trips where all anglers reached the bag limit were treated as the MRIP data were treated.
- For the current 5 fish bag limit, if 100 fish were landed and there are 50 anglers on board, a maximum of 20 anglers reached the bag limit (40%).

2. For discards, the proportion of anglers that reached the bag was multiplied by the discards to get the discards of the anglers who reached the bag limit.
    - If 200 fish were discarded on the previous trip and 40% of the anglers reached the bag, then 80 fish were available to be caught, as each bag limit alternative was analyzed, to those anglers that reached the bag limit.

Current Methodology Model Results

All the analyses by trip show only a small increase in the overall landed catch of Black Sea Bass (**Tables F-1.21** to **F-1.24**, **Tables F-1.27 & F-1.28**, **Figure F-1.12**). The headboat analysis by angler shows a much higher increase (**Tables F-1.25 & F-1.26**), but the difference is relatively small in comparison to the total landings (**Tables F-1.29 & F-1.30**, **Figure F-1.13**). Also, this is a maximum estimate of the number of anglers that reached the bag limit in 2013 and 2014 and so should be viewed as the maximum increase in landings that might be expected from the headboat sector.

Although the two methodologies have similar results, the current method does estimate the total landings to be higher, on average, than the new proposed methodology does. At a bag limit of 10, the current method estimates the landings to be anywhere from 31,000 fish to 63,000 fish more than the new method on average, depending on whether the headboat data is analyzed on a trip basis or angler basis.

This is almost entirely due to the assumption that all discarded fish on trips that reached the bag limit can be retained under higher bag limits. One issue with these analyses is that they do not have any way of partitioning out the discards into those that are above the size limit and those that are below the size limit. The new proposed methodology attempts to get at that exact problem.

Table F-1.21. MRIP estimated landings in numbers under different bag limit scenarios and % increase in landings from current landings under a bag limit of 5.

Year	Estimated Landings (num)						% Increase				
	Current	Bag = 6	Bag = 7	Bag = 8	Bag = 9	Bag = 10	Bag = 6	Bag = 7	Bag = 8	Bag = 9	Bag = 10
2013	238,302	240,073	242,127	244,564	254,919	264,758	0.7%	1.6%	2.6%	7.0%	11.1%
2014	337,542	347,188	356,870	366,319	374,814	384,638	2.9%	5.7%	8.5%	11.0%	14.0%
Avg.	**287,922**	**293,631**	**299,499**	**305,441**	**314,867**	**324,698**	**2.0%**	**4.0%**	**6.1%**	**9.4%**	**12.8%**

Table F-1.22. MRIP estimated landings in lbs. ww under different bag limit scenarios and % increase in landings from current landings under a bag limit of 5.

Year	Estimated Landings (lbs ww)						% Increase				
	Current	Bag = 6	Bag = 7	Bag = 8	Bag = 9	Bag = 10	Bag = 6	Bag = 7	Bag = 8	Bag = 9	Bag = 10
2013	299,025	301,827	304,806	307,995	321,329	334,245	0.9%	1.9%	3.0%	7.5%	11.8%
2014	474,486	488,297	502,139	515,663	527,241	542,069	2.9%	5.8%	8.7%	11.1%	14.2%
Avg.	**386,755**	**395,062**	**403,473**	**411,829**	**424,285**	**438,157**	**2.1%**	**4.3%**	**6.5%**	**9.7%**	**13.3%**

Table F-1.23. Headboat estimated landings in numbers, analyzed by trip, under different bag limit scenarios and % increase in landings from current landings under a bag limit of 5.

Year	Est. Landings (number)						% Increase from Bag Limit 5				
	Current	Bag 6	Bag 7	Bag 8	Bag 9	Bag 10	Bag 6	Bag 7	Bag 8	Bag 9	Bag 10
2013	88,001	89,194	90,581	91,939	93,243	94,434	1.4%	2.9%	4.5%	6.0%	7.3%
2014	79,459	80,483	81,853	83,231	84,544	85,762	1.3%	3.0%	4.7%	6.4%	7.9%
Avg.	83,730	84,839	86,217	87,585	88,893	90,098	1.3%	3.0%	4.6%	6.2%	7.6%

Table F-1.24. Headboat estimated landings in lbs. ww, analyzed by trip, under different bag limit scenarios and % increase in landings from current landings under a bag limit of 5.

Year	Est. Landings (lbs)						% Increase from Bag Limit 5				
	Current	Bag 6	Bag 7	Bag 8	Bag 9	Bag 10	Bag 6	Bag 7	Bag 8	Bag 9	Bag 10
2013	116,864	118,495	120,376	122,216	123,978	125,597	1.4%	3.0%	4.6%	6.1%	7.5%
2014	104,678	106,047	107,895	109,763	111,541	113,189	1.3%	3.1%	4.9%	6.6%	8.1%
Avg.	110,771	112,271	114,136	115,989	117,759	119,393	1.4%	3.0%	4.7%	6.3%	7.8%

Table F-1.25. Headboat estimated landings in numbers, analyzed by angler, under different bag limit scenarios and % increase in landings from current landings under a bag limit of 5.

Year	Est. Landings (number)						% Increase from Bag Limit 5				
	Current	Bag 6	Bag 7	Bag 8	Bag 9	Bag 10	Bag 6	Bag 7	Bag 8	Bag 9	Bag 10
2013	88,001	99,733	108,659	115,692	121,426	126,081	13.3%	23.5%	31.5%	38.0%	43.3%
2014	79,459	90,184	98,705	105,607	111,282	116,055	13.5%	24.2%	32.9%	40.0%	46.1%
Avg.	83,730	94,958	103,682	110,649	116,354	121,068	13.4%	23.8%	32.1%	39.0%	44.6%

Table F-1.26. Headboat estimated landings in lbs. ww, analyzed by angler, under different bag limit scenarios and % increase in landings from current landings under a bag limit of 5.

Year	Est. Landings (lbs)						% Increase from Bag Limit 5				
	Current	Bag 6	Bag 7	Bag 8	Bag 9	Bag 10	Bag 6	Bag 7	Bag 8	Bag 9	Bag 10
2013	116,864	132,601	144,511	153,938	161,603	167,843	13.5%	23.7%	31.7%	38.3%	43.6%
2014	104,678	118,798	129,960	139,026	146,501	122,866	13.5%	24.2%	32.8%	40.0%	17.4%
Avg.	110,771	125,699	137,235	146,482	154,052	145,354	13.5%	23.9%	32.2%	39.1%	31.2%

Table F-1.27. Combined MRIP and headboat estimated landings in numbers, analyzing headboat by trip, under different bag limit scenarios and % increase in landings from current landings under a bag limit of 5.

Year	Est. Landings (number) from Different Bag Limits by Trip						% Increase from Bag Limit 5				
	Current	Bag 6	Bag 7	Bag 8	Bag 9	Bag 10	Bag 6	Bag 7	Bag 8	Bag 9	Bag 10
2013	326,303	329,268	332,709	336,503	348,162	359,192	0.9%	2.0%	3.1%	6.7%	10.1%
2014	417,001	427,671	438,723	449,550	459,358	470,400	2.6%	5.2%	7.8%	10.2%	12.8%
Avg.	371,652	378,469	385,716	393,026	403,760	414,796	1.8%	3.8%	5.8%	8.6%	11.6%

Table F-1.28. Combined MRIP and headboat estimated landings in lbs. ww, analyzing headboat by trip, under different bag limit scenarios and % increase in landings from current landings under a bag limit of 5.

Year	Est. Landings (lbs) from Different Bag Limits by Trip						% Increase from Bag Limit 5				
	Current	Bag 6	Bag 7	Bag 8	Bag 9	Bag 10	Bag 6	Bag 7	Bag 8	Bag 9	Bag 10
2013	415,888	420,322	425,182	430,211	445,307	459,842	1.1%	2.2%	3.4%	7.1%	10.6%
2014	579,164	594,344	610,035	625,426	638,782	655,258	2.6%	5.3%	8.0%	10.3%	13.1%
Avg.	497,526	507,333	517,608	527,818	542,044	557,550	2.0%	4.0%	6.1%	8.9%	12.1%

Table F-1.29. Combined MRIP and headboat estimated landings in numbers, analyzing headboat by angler, under different bag limit scenarios and % increase in landings from current landings under a bag limit of 5.

Year	Est. Landings (number) from Different Bag Limits by Angler						% Increase from Bag Limit 5				
	Current	Bag 6	Bag 7	Bag 8	Bag 9	Bag 10	Bag 6	Bag 7	Bag 8	Bag 9	Bag 10
2013	326,303	339,806	350,786	360,256	376,345	390,839	4.1%	7.5%	10.4%	15.3%	19.8%
2014	417,001	437,372	455,576	471,926	486,097	500,692	4.9%	9.3%	13.2%	16.6%	20.1%
Avg.	371,652	388,589	403,181	416,091	431,221	445,766	4.6%	8.5%	12.0%	16.0%	19.9%

Table F-1.30. Combined MRIP and headboat estimated landings in lbs. ww, analyzing headboat by angler, under different bag limit scenarios and % increase in landings from current landings under a bag limit of 5.

Year	Est. Landings (lbs) from Different Bag Limits by Angler						% Increase from Bag Limit 5				
	Current	Bag 6	Bag 7	Bag 8	Bag 9	Bag 10	Bag 6	Bag 7	Bag 8	Bag 9	Bag 10
2013	415,888	434,427	449,317	461,933	482,931	502,088	4.5%	8.0%	11.1%	16.1%	20.7%
2014	579,164	607,095	632,099	654,689	673,742	664,934	4.8%	9.1%	13.0%	16.3%	14.8%
Avg.	497,526	520,761	540,708	558,311	578,337	583,511	4.7%	8.7%	12.2%	16.2%	17.3%

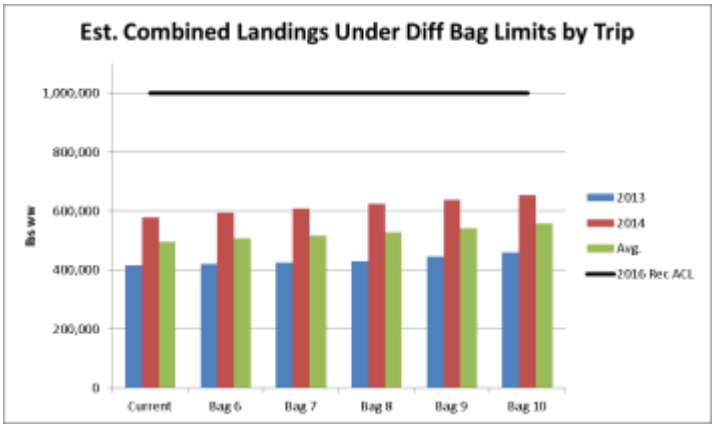

Figure F-1.12. Estimated landings for combined MRIP and headboat data in lbs ww under different bag limit scenarios, analyzing headboat by trip.

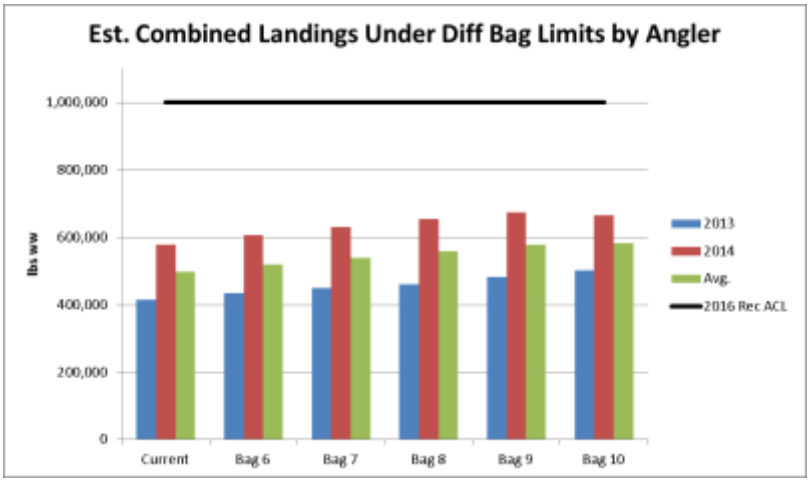

Figure F-1.13. Estimated landings for combined MRIP and headboat data in lbs ww under different bag limit scenarios, analyzing headboat by angler.

2. Blueline Tilefish Recreational Bag Limit Analysis

NOAA Fisheries Service
Southeast Regional Office

South Atlantic Fishery Management Council (SAFMC)'s Regulatory Amendment 25 to the Snapper Grouper Fishery Management Plan (Reg 25) has proposed the following recreational bag limits for blueline tilefish:

- Alternative 1: 1 fish per vessel (May-Aug) [status quo]
- Alternative 2: 1 fish per person
- Alternative 3: 1 fish per vessel
- Alternative 4: 1 fish per person (May-Aug)
- Alternative 5: 3 fish per person
- Alternative 6: 3 fish per person (May-Aug)

The statutory baseline is 1 fish per vessel (May-Aug) but this was only enacted in March 2015. Prior to March 2015, the bag limit was 3 fish per person (i.e., IPT suggested Alternative 5). Bag limit reduction tables are provided relative to both of these baselines. The biological and economic effects of Reg 25 would follow the table that shows increased landings from the proposed bag limits, as they are increased from the status quo; however, the data used to model season length projections must follow the table that shows reduced landings from the proposed bag limits, because the data used to model the season length projections is from the 2012-2014 period.

Bag limit computations were performed as follows: SEFSC Southeast Headboat Survey and MRIP Catch Effort files were obtained. These files were filtered for blueline tilefish landings in the South Atlantic from 2010-2014. Bag limit impacts were modeled by modifying trip records when catch-per-angler on the trip exceeded a given bag limit. For example, if catch per angler on a trip was 3 fish/angler and the bag limit being simulated was 1 fish/angler, the catch per trip was adjusted to reflect a 1 fish/angler catch rate. The total landings in pounds whole weight were summarized by season (Jan-Apr, May-Aug, Sept-Dec), bag limit alternative, year, and mode of fishing. There were insufficient samples for the MRIP Private mode to allow seasonal trends to be modeled; thus, MRIP Private bag limit impacts were treated annually. Headboat catches were adjusted for unreported trips using SEFSC-generated K-factors for equivalent vessels. This methodology is consistent to how headboat catches are monitored for ACL tracking. Summarized catches were averaged across years and compared to the baseline catch at either the statutory baseline (1 fish/vessel May-Aug) or the 2010-2014 baseline (3 fish/person). Because bag limit impacts would be computed as increases under the first baseline and as decreases under the second baseline, they are presented as scalars to baseline catch in the tables below. **Table F-2.1** presents the projected scalar increases in recreational harvest relative to the statutory baseline of 1 fish/vessel May-Aug. **Table F-2.2** presents the projected scalar reductions in recreational harvest relative to the 2010-2014 baseline of 3 fish/person.

To evaluate the impacts of the bag limit alternatives upon recreational fishing season length, projections were developed based on mean catch rates (catch in pounds per open day of fishing) observed from 2012-2014 (**Table F-2.3**). Catches were projected on a daily basis and subjected

to the relevant mode- and season-specific bag limit reductions. Cumulative landings were tracked, and the ACL overage date was noted (**Table F-2.4**). Under ACL **Alternatives 2-7**, only Alternatives 2 and 5 (year-round 1-fish and 3-fish per-person limits), were projected to result in an ACL overage. **Alternative 6**, a May-August 3-fish per person bag limit, was projected to catch approximately 80,000 lbs (**Table F-2.5**). It should be noted that based on annual landings, only 2013 annual landings exceeded the highest ACLs proposed in Reg 25 (**Figure F-2.1**), due to extremely high MRIP Private catch rates estimated for Wave 1 and Wave 4.

Table F-2.1. Projected South Atlantic recreational blueline tilefish scalar changes in landings under various Reg-25 proposed bag limit alternatives, **relative to statutory baseline of 1 fish/vessel May-Aug**, based on simulations using mean 2010-2014 data.

Season	Charter Boat						Private						Headboat					
	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	**Alt. 6**	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	**Alt. 6**	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	**Alt. 6**
	1 per vessel (May-Aug)	1 per person	1 per vessel	1 per person (May-Aug)	3 fish per person	**3 fish per person (May-Aug)**	1 per vessel (May-Aug)	1 per person	1 per vessel	1 per person (May-Aug)	3 fish per person	**3 fish per person (May-Aug)**	1 per vessel (May-Aug)	1 per person	1 per vessel	1 per person (May-Aug)	3 fish per person	**3 fish per person (May-Aug)**
Jan-Apr	0%	132%	34%	0%	291%	**0%**	0%	200%	100%	0%	323%	**0%**	0%	859%	77%	0%	1643%	**0%**
May-Aug	100%	464%	100%	464%	873%	**873%**	100%	200%	100%	200%	323%	**323%**	100%	1524%	100%	1524%	3401%	**3401%**
Sept-Dec	0%	254%	60%	0%	541%	**0%**	0%	200%	100%	0%	323%	**0%**	0%	777%	66%	0%	1552%	**0%**

Sources: SEFSC MRIP Catch-Effort Files (2015) and SEFSC Southeast Headboat Survey Catch-Effort Files (2015)

Table F-2.2. Projected South Atlantic recreational blueline tilefish scalar changes in landings under proposed bag limit alternatives, **relative to 2009-2014 baseline of 3 fish/person**, based on simulations using mean 2010-2014 data.

Season	Charter Boat						Private						Headboat					
	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	**Alt. 6**	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	**Alt. 6**	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	**Alt. 6**
	1 per vessel (May-Aug)	1 per person	1 per vessel	1 per person (May-Aug)	3 fish per person	**3 fish per person (May-Aug)**	1 per vessel (May-Aug)	1 per person	1 per vessel	1 per person (May-Aug)	3 fish per person	**3 fish per person (May-Aug)**	1 per vessel (May-Aug)	1 per person	1 per vessel	1 per person (May-Aug)	3 fish per person	**3 fish per person (May-Aug)**
Jan-Apr	0%	15%	4%	0%	100%	**0%**	0%	62%	31%	0%	100%	**0%**	0%	25%	2%	0%	100%	**0%**
May-Aug	11%	53%	11%	53%	100%	**100%**	31%	62%	31%	62%	100%	**100%**	3%	45%	3%	45%	100%	**100%**
Sept-Dec	0%	29%	7%	0%	100%	**0%**	0%	62%	31%	0%	100%	**0%**	0%	23%	2%	0%	100%	**0%**

Sources: SEFSC MRIP Catch-Effort Files (2015) and SEFSC Southeast Headboat Survey Catch-Effort Files (2015)

Table F-2.3. Landings (pounds, whole weight) per open day, for recreational blueline tilefish, based on mean 2012-2014 data. Note the bag limit was 3 fish per angler during this time period.

Month	MRIP Charter	MRIP Private	Headboat
1	23.19	886.25	16.60
2	23.19	886.25	113.06
3	50.08	60.59	10.60
4	50.08	60.59	20.18
5	129.68	163.73	33.39
6	129.68	163.73	101.48
7	214.16	635.03	84.20
8	214.16	635.03	87.10
9	164.14	10.28	81.80
10	164.14	10.28	31.83
11	45.98	229.43	6.46
12	45.98	229.43	0.12

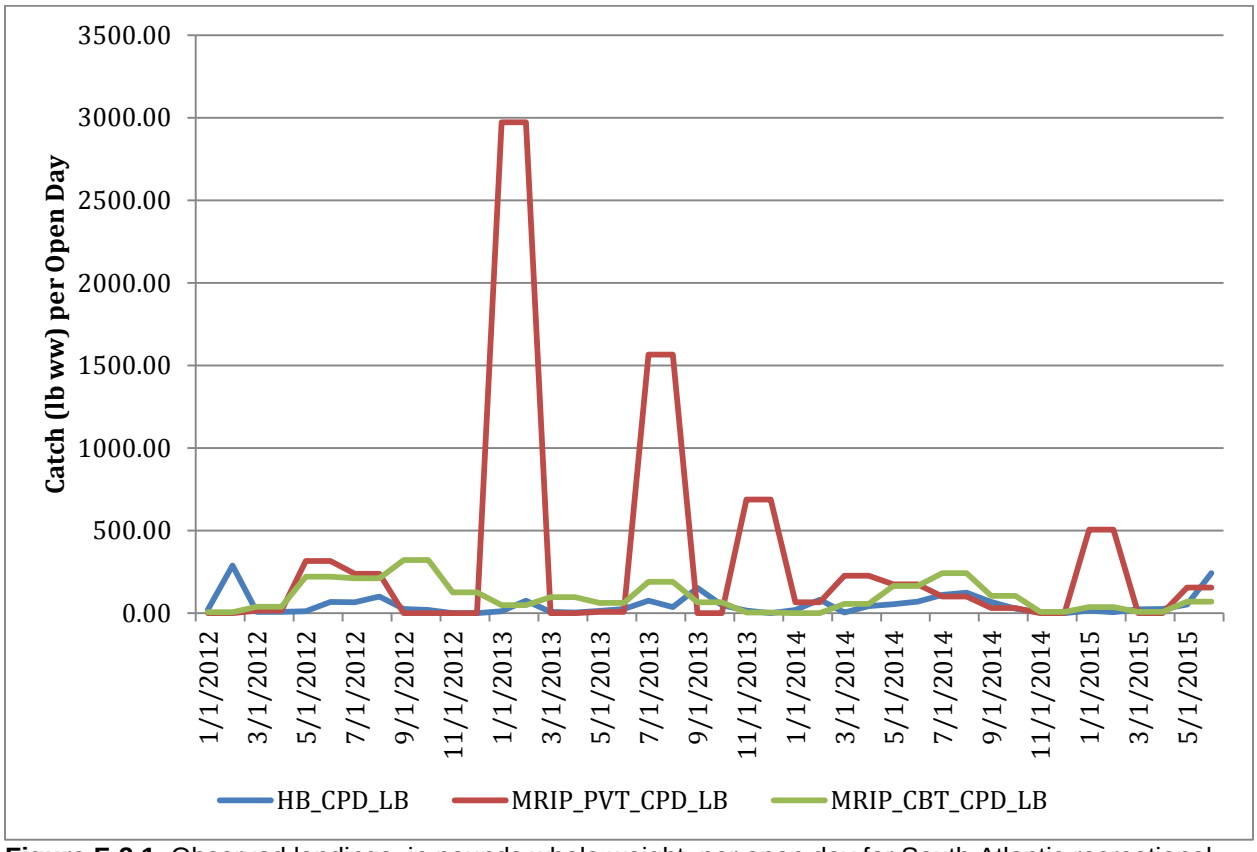

Figure F-2.1. Observed landings, in pounds whole weight, per open day for South Atlantic recreational blueline tilefish, by month, from 2012-2015. Note spikes in Waves 1 and 4 of 2013.

Table F-2.4. Projected closure dates and season lengths in days for South Atlantic recreational blueline tilefish prior to reaching annual catch limit (ACL) for each proposed ACL alternative and bag limit alternative in Reg 25. Note analysis is forward projected for 2016 (a leap year).

Alternative		Closure Date							Days in Season						
	ACL=	26,691	109,655	107,417	104,061	99,585	98,466	**87,277**	26,691	109,655	107,417	104,061	99,585	98,466	**87,277**
	Bag Limit	ACL Alt1	ACL Alt2	ACL Alt3	ACL Alt4	ACL Alt5	ACL Alt6	**ACL Alt7**	ACL Alt1	ACL Alt2	ACL Alt3	ACL Alt4	ACL Alt5	ACL Alt6	**ACL Alt7**
1	1 per vessel (May-Aug)	31-Aug	31-Aug	31-Aug	31-Aug	31-Aug	31-Aug	**31-Aug**	123	123	123	123	123	123	**123**
2	1 per person	17-Feb	31-Dec	31-Dec	31-Dec	28-Dec	21-Dec	**1-Sep**	48	366	366	366	363	356	**245**
3	1 per vessel	7-Jul	31-Dec	31-Dec	31-Dec	31-Dec	31-Dec	**31-Dec**	189	366	366	366	366	366	**366**
4	1 per person (May-Aug)	31-Jul	31-Aug	31-Aug	31-Aug	31-Aug	31-Aug	**31-Aug**	92	123	123	123	123	123	**123**
5	3 per person	28-Jan	23-Jul	20-Jul	17-Jul	12-Jul	11-Jul	**28-Jun**	28	205	202	199	194	193	**180**
6	**3 per person (May-Aug)**	**5-Jul**	**31-Aug**	**31-Aug**	**31-Aug**	**31-Aug**	**31-Aug**	**31-Aug**	**66**	**123**	**123**	**123**	**123**	**123**	**123**

Table F-2.5. Projected landings by mode and for all recreational modes combined under each proposed bag limit alternative for Action 1 ACL Preferred Alternative 7 of 87,277 lb ww.

Bag Limit	Headboat	Private	Charter	All	%ALT1
ALT1	276	15,302	2,427	18,005	100%
ALT2	9,390	65,869	11,991	87,250	485%
ALT3	6,231	37,464	3,481	47,177	262%
ALT4	276	30,603	11,270	42,149	234%
ALT5	8,604	66,531	12,097	87,232	484%
ALT6	**9,390**	**49,360**	**21,188**	**79,938**	**444%**

Appendix G. Regulatory Impact Review

Introduction

The National Marine Fisheries Service (NMFS) requires a Regulatory Impact Review (RIR) for all regulatory actions that are of public interest. The RIR does three things: (1) It provides a comprehensive review of the level and incidence of impacts associated with a 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.

Problems and Objectives

The purpose and need, issues, problems, and objectives of these actions are presented in **Chapter 1**, **Section 1.4**, and is incorporated herein by reference.

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.

Description of the Fishery

A description of the snapper grouper fishery is contained in Chapter 3 and is incorporated herein by reference.

Effects of Management Measures

These actions will directly apply to the businesses that own and/or operate commercial and recreational fishing vessels that harvest blueline tilefish and yellowtail snapper, and recreational

harvest of black sea bass, all of which are parts of the larger snapper grouper fishery in the South Atlantic Exclusive Economic Zone (EEZ).

Commercial vessels that harvest blueline tilefish, yellowtail snapper and black sea bass must have a valid commercial snapper-grouper permit, either an unlimited permit or a 225 pounds (lbs) limited permit. Recreational angler catching any of the three species must have a federally-approved, state fishing license.

Action 1

The **Preferred Alternative 7** for **Action 1** will increase the annual catch limit (ACL) for the commercial sector by 60,755 lbs whole weight (ww) with an expected increase in dockside value of $150,065 (in 2014 dollars). The annual catch limit for the recreational sector will increase by 60,586 lbs ww resulting in an estimated increase in consumer surplus of $29,864.

Action 2

Preferred Alternative 3 for Action 2 would increase the commercial trip limit from the current 100 lbs gutted weight (gw) to 300 lbs gw. By increasing the trip limit, trip costs, as well as the number of trips that it would take to harvest the entire commercial sector ACL are both reduced. Based on historical trip and landings characteristics, there have been approximately 526 commercial trips taken annually that land blueline tilefish. However, it is estimated that given the new commercial sector ACL from Action 1, 612 trips would need to be taken to land the entire ACL. Not knowing exactly how many trips would be taken in a given year, it is reasonable to assume that the 300 lbs gw trip limit established in this action may not result in the entire commercial sector ACL being caught. The amount of that reduction cannot accurately be estimated.

Action 3

Preferred Alternative 6 for Action 3 establishes a blueline tilefish bag limit of 3 fish per person per day from May through August within the aggregated grouper bag limit. From September through April each year recreational anglers will not be allowed to keep blueline tilefish. Historical landings data from 2010 through 2014 indicate that approximately 4% of anglers who catch blueline tilefish are able to catch more than one blueline tilefish in a day. There are no specific economic data on the consumer surplus value to anglers for catching the first blueline tilefish compared to another species. However, it is logical to assume that being allowed to catch and keep a blueline tilefish has more value to the angler than not being allowed to catch a blueline tilefish altogether.

Action 4

Preferred Alternative 3 for Action 4 increases the recreational bag limit for black sea bass from 5 fish per person per day to 7 fish per person per day. Few recreational black sea bass fishing trips occur where anglers catch the 5 fish bag limit. However, the increased bag limit will increase the likelihood that some recreational anglers will catch additional black sea bass.

The consumer surplus associated with increasing the bag limit is estimated to be $37,032 (in 2014 dollars) per year.

Action 5

Preferred Alternative 2, Sub-alternative 2c and **Preferred Alternative 3, Sub-alternative 3c** of Action 5 will shift the start of the fishing year for yellowtail snapper from January 1 to August 1 for both the commercial and recreational sectors. Shifting the start of the commercial season to begin August 1 each year is likely to increase annual landings of yellowtail snapper by 43,065 lbs ww compared to the status quo resulting in an expected increase in value of $137,808 (in 2014 dollars). Shifting the start of the recreational season to begin August 1 each year is likely to increase annual landings of yellowtail snapper by 130,417 lbs ww compared to the status quo resulting in an expected increase in consumer surplus of $525,276 (in 2014 dollars).

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 action include, but are not limited to Council costs of documentation preparation, meeting, and other costs; NMFS administration costs of document preparation, meetings and review, and annual law enforcement costs. A preliminary estimate is up to from $100,000 to $150,000 before annual law enforcement costs, if any.

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.

This rule would not have an adverse economic effect of $100 million or more, create a serious inconsistency or otherwise interfere with an action taken by another agency, materially alter the budgetary impact of programs or rights or obligations of recipients, or raise novel legal or policy issues. Hence, it is not a significant regulatory action.

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

With certain exceptions, the RFA requires agencies to conduct a regulatory flexibility analysis for each proposed rule. The regulatory flexibility analysis is designed to assess the impacts various regulatory alternatives would have on small entities, including small businesses, and to determine ways to minimize the adverse impacts. The following regulatory flexibility analysis was conducted to determine if the proposed rule would have a significant adverse economic impact on a substantial number of small entities or not.

Statement of the need for, objective of, and legal basis for the rule

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

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

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

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

The rule would directly apply to anglers that harvest blueline tilefish, black sea bass, and yellowtail snapper in the South Atlantic Exclusive Economic Zone (EEZ). Anglers are not considered small entities as that term is defined in 5 U.S.C. 601(6), whether fishing from for-hire fishing, private or leased vessels.

The rule would also directly apply to businesses that commercially harvest blueline tilefish and yellowtail snapper in the South Atlantic EEZ. Every one of the vessels those businesses use to harvest the species must have a valid South Atlantic commercial snapper-grouper permit, which is a limited access permit for either an unlimited quantity of pounds (lbs) landed per trip or up to 225 lbs landed per trip. As of December 10, 2015, there were 556 unlimited lbs permits (530 valid and 26 renewable) and 116 valid 225-lbs permits (107 valid and 9 renewable). Consequently, up to 672 vessels may harvest blueline tilefish or yellowtail snapper in the South Atlantic EEZ.

As stated in the description of the commercial fishing sector (Section 3.3.3.1), an annual average of 123 vessels harvested blueline tilefish from 2010 through 2014. These vessels represent approximately 18% of all vessels with snapper-grouper permits. The 123 vessels had combined average annual dockside revenues from blueline tilefish landings of $575,075 (2014 $) and combined average annual dockside revenues from all landings of $9,213,584 (2014 $). From those figures, it is estimated that blueline tilefish landings account for an average of approximately 6% of these vessels' annual dockside revenue, and the average annual dockside revenue from all landings is $74,907 (2014 $) per vessel. Using the ratio of permitted snapper-grouper vessels to businesses that held those permits as of July 31, 2014, it is estimated that the 123 vessels represent 107 businesses. The Small Business Administration defines a small business in the commercial finfish fishing industry (North American Industry Classification System (NAICS) code 114111) to have annual receipts are no more than $20.5 million. All of these businesses are expected to have annual revenues less than the size standard and, therefore, are expected to be small businesses. Consequently, 107 small commercial fishing businesses are expected to harvest blueline tilefish annually and be directly affected by the rule.

As also stated in the description of the commercial sector, an annual average of 256 vessels landed yellowtail snapper from 2010 through 2014. These vessels represent approximately 38% of all vessels with a snapper-grouper permit. The 256 vessels had combined average annual dockside revenues from yellowtail snapper landings of $3,118,426 (2014 $) and combined average annual dockside revenues from all landings of $10,060,926 (2014 $). From those figures, it is estimated that yellowtail snapper landings account for an average of approximately 31% of these vessels' annual dockside revenue, and the average annual dockside revenue from all landings is $39,300 (2014 $) per vessel. Using the ratio of permitted snapper-grouper vessels to businesses as above, it is estimated that the 256 vessels represent 223 businesses. All of these businesses are expected to have annual revenues less than the size standard and, therefore, are expected to be small businesses. Consequently, 223 small commercial fishing businesses are expected to harvest yellowtail snapper annually and be directly affected by the rule.

Description and economic impacts of compliance requirements of the rule

Action 1 (**Preferred Alternative 7)** would revise the commercial ACL for blueline tilefish. Currently, the commercial ACL is set to be 26,766 lbs whole weight (ww) in 2016, then increase to 44,048 lbs ww by 2018 and remain at that level thereafter (**Table H.1**). The rule would increase the commercial ACL to 87,521 lbs ww in 2016 and keep it at that level. Action 1 would

allow for increases in average annual landings of blueline tilefish of up to 48,582 lbs ww and average annual dockside revenues of $107,366 as show in **Table H-1**. Divided across 107 small businesses, the average annual benefit would be increases of annual landings and dockside revenue of approximately 454 lbs ww and $1,003 (2014 $) per small business.

Table H-1. Comparison between Alternative 1 (No Action) and **Preferred Alternative 7** of Action 1.

Alt.	Commercial ACL (lbs ww) in Year						Average Annual Dockside Revenue
	2016	2017	2018	2019	2020	Annual Average	
1 (No-Action)	26,766	35,785	44,048	44,048	44,048	38,939	$86,055
Preferred	87,521	87,521	87,521	87,521	87,521	87,521	$193,421
Difference	60,755	51,736	43,473	43,473	43,473	48,582	$107,366

Action 2 (**Preferred Alternative 3**) would increase the commercial trip limit for blueline tilefish from 100 to 300 lbs gutted weight (gw). Since March 2015, there has been a commercial trip limit of 100 lb gw. Prior to that, there was no commercial trip limit for blueline tilefish; however, a vessel with a 225-lbs snapper-grouper permit was limited to no more than 225 lbs ww of blueline tilefish per trip. An annual average of 364 trips landed no more than 100 lbs gw from 2010 through 2014 (**Table H-2**). Those trips were made by 82 vessels and an estimated 71 small businesses. The 71 businesses represent approximately 67% of the 107 small businesses that annually harvest blueline tilefish. Action 2 would have no impact on the 82 vessels and 71 small businesses that land no more than 100 lbs gw per trip.

Table H-2. Number of trips by pounds landed of blueline tilefish, 2010 – 2014.

Year	Number of Trips by Pounds (gw) of Blueline Tilefish Landed					
	1 to 100	101 - 200	201 - 300	Over 300	Total	% Over 100
2010	434	45	18	208	705	38.40%
2011	216	16	11	77	320	32.50%
2012	382	26	11	118	537	28.90%
2013	440	39	23	138	640	31.30%
2014	350	41	28	95	514	31.90%
Average	**364**	**33**	**18**	**127**	**543**	**32.60%**

Source: SEFSC Online Economic Query System.

An annual average of 41 vessels and an estimated 36 small businesses made 178 fishing trips that landed more than 100 lbs gw from 2010 through 2014. Twelve vessels combined to make an average of 33 trips that landed from 101 to 200 lbs gw of blueline tilefish, seven vessels combined to make an average of 18 trips that landed from 201 to 300 lbs gw, and 22 vessels combined to make an average of 127 trips that landed more than 300 lbs gw of the species. From those averages, it is estimated that Action 2 would increase landings of 33 trips from one to 100 lbs gw, of 18 trips by 101 to 200 lbs gw, and 127 trips by 200 lbs gw. The combined annual increase in landings would range from 27,251 to 32,300 lbs gw (**Table H-3**).

Table H-3. Estimated average annual benefits of Action 2 alternatives.

Increases in Landings	Vessels	Small Businesses	Total Landings (lbs gw)	Total Dockside Revenue	Benefit per Small Business
1 - 100 lbs gw	12	11	33 -3,300	$80 - $8,019	$7 - $729
101 - 200 lbs gw	7	6	1,818 - 3,600	$4,418 - $8,748	$736 - $1,458
200 lbs gw	22	19	25,400	$61,722	$3,249
0 lbs gw	82	71	0	$0	$0
Total	**123**	**107**	**27,251 - 32,300**	**$66,200 - $78,489**	

The 12 vessels and estimated 11 small businesses that would land from 101 to 200 lbs gw would have combined increases in average annual dockside revenue from $80 to $8,019, and their average benefit would range from $7 and $729 (**Table H-3**). The 7 vessels and estimated six small businesses that would land from 201 to 300 lbs gw would have combined increases in average dockside revenue from $4,418 to $8,748. The average annual benefit for each of these six small businesses would range from $736 to $1,458. The 22 vessels and estimated 19 small businesses that would land 300 lbs gw would have combined increases in average dockside revenue of $61,722. The average annual benefit for each of these 19 small businesses would be $3,249.

Actions 3 and 4 directly apply only to anglers. Therefore, the impacts of these two actions are not relevant to this analysis because anglers are not small entities as explained earlier.

Action 5 (**Preferred Alternative 2c**) would change the timing of the 12-month commercial fishing year (season) for yellowtail snapper from January 1 through December 31 to August 1 through July 31. Since 2012, the commercial ACL for yellowtail snapper has been and continues to be 1,596,501 lbs ww. From 2012 through 2014, the commercial season did not close early because annual landings did not reach the commercial ACL; however, that was not the case in 2015 when the commercial season closed on October 31. This analysis presumes the 2015 commercial fishing year is indicative of future annual landings and future seasons will close by the end of the tenth month. Consequently, Action 5 would change the two months when the season is expected to be closed: from November and December to June and July. **Figure H-1** shows the average dockside price (dollars per lb) of yellowtail snapper by month from 2010 to 2014. Over the course of a calendar year, dockside prices were, on average, lowest in May, June and July, and higher in November and December. That suggests that the rule could benefit the 223 small businesses that harvest yellowtail snapper because the two months of the season that are expected to be closed (June and July) would have lower dockside prices than November and December.

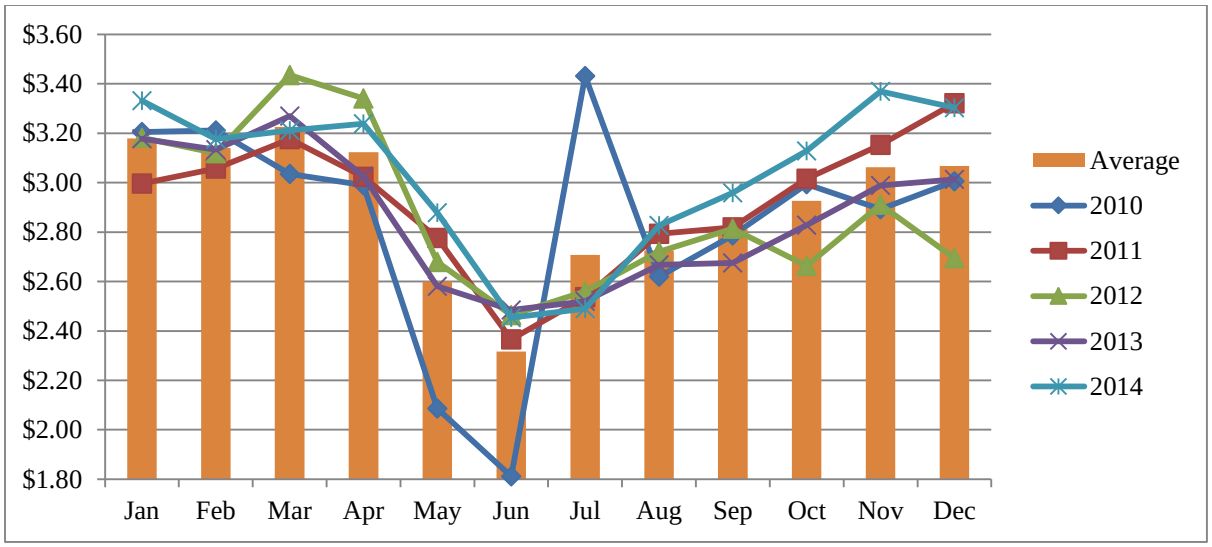

Figure H-1. Average price of yellowtail snapper by month, 2010 – 2014.
Source: NMFS SERO ACL

None of the actions add or revise record-keeping or reporting requirements.

Significance of economic impacts on a substantial number of small entities

In summary, the rule would have a net beneficial economic impact on 107 small businesses that harvest blueline tilefish and the 36 small businesses that harvest yellowtail snapper. Therefore, it is concluded that this rule would not have a significant economic impact on a substantial number of small entities under the RFA, 5 U.S.C. 601 et seq. In making this determination, the impact of concern is any significant adverse economic impact on small entities. An agency may certify that a rule would not have a significant economic impact on a substantial number of small entities if the rule relieves regulatory burden, has no net burden or otherwise has a positive economic effect on the small entities subject to the rule.

Appendix I. Essential Fish Habitat and 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. It 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 development of Fishery Ecosystem Plan II, will update and refine information supporting designation and future review of EFH and EFH-HAPCs for managed species and support the Councils move to Ecosystem Based Management. The Council's Habitat Protection and Ecosystem Based Management Advisory Panel members in cooperation with other regional experts, serve on writing/review teams in the FEP II development process which utilizes innovative coordination, facilitation and interactive online capabilities supporting completion by the end of 2016. To refine and update snapper grouper and other managed species information for FEP II, the Council will operationalize the SAFMC Ecospecies online species information system cooperatively developed with FWRI. Having information primarily online will make the habitat and species specific information more useful and accessible during the stock assessment process, during EFH policy development and permit review and by the Council and other regional partners. Updating the core EFH support and policy information through FEP II, is critical to advancing the regional EFH conservation directive and meeting the needs identified in the past 5 Year EFH Review. In addition, this more concise and focused Fishery Ecosystem Plan II addresses key new issue areas including the complexity and connectivity of South Atlantic food webs and the implications of climate variability and change as the basis for further policy development, consideration in habitat and fish stock assessment and future management of fisheries and habitat supporting a more comprehensive view of conservation and management in the South Atlantic Region.

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 IOOS whose primary source of funding is through a 5-year cooperative agreement titled "Coordinated Monitoring, Prediction, and Assessment to Support Decision-Makers Needs for Coastal and Ocean Data and Tools". However, SECOORA 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, 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 SECOORAs 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 seabass, 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 has 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 need 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/Home/EcosystemHome/tabid/435/Default.aspx 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://atoll.floridamarine.org/EcoSpecies

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 Protection and Ecosystem Based Management Advisory Panel, as part of their role in providing continued habitat and ecosystem policy guidance to the Council, reviewed, updated and refined standing EFH policy statements through 2015. By December 2015, the Council approved the refined EFH Policy Statements to be highlighted and included into FEP II. The Advisory Panel is cooperatively developing additional new statements for Council consideration during 2016 for inclusion into FEP II. The overall effort is enhancing the value of the statements and supports cooperation and collaboration with NOAA Fisheries Habitat Conservation Division and State, Federal and regional partners and better addresses 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 shall 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).

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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.

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