Amendment 32

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

Actions to End Overfishing and Rebuild the Blueline Tilefish (*Caulolatilus microps*) Stock in the South Atlantic

Including an Environmental Assessment

November 12, 2014

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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

Amendment 32 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region with an Environmental Assessment

Proposed action:	End overfishing and rebuild the blueline tilefish stock in South Atlantic
Lead agency:	FMP Amendment – South Atlantic Fishery Management Council Environmental Assessment – National Marine Fisheries Service (NMFS), Southeast Regional Office
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of
AMENDMENT 32
to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region

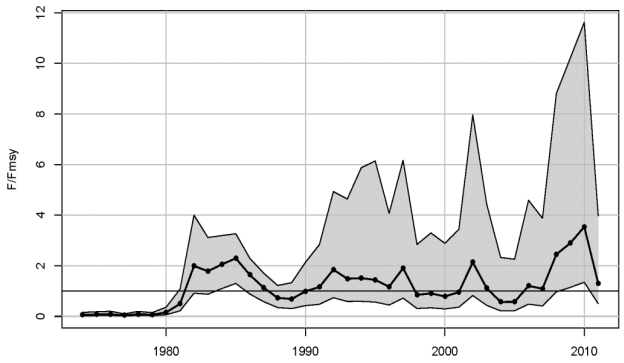
The Southeast Data, Assessment, and Review (SEDAR) assessment of the blueline tilefish stock in the South Atlantic was completed in 2013 with data through 2012. The assessment showed that blueline tilefish are overfished (population biomass or pounds in the water is too low) based on the current overfished definition, and are undergoing overfishing (rate of removal or numbers of fish removed from the water is too high). However, Regulatory Amendment 21 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region, which will become effective on November 6, 2014 (79 FR 60379) will change the overfished definition of the Minimum Stock Size Threshold (MSST) for species with very low natural mortality, including blueline tilefish. Under the new definition of MSST, the blueline tilefish stock in the South Atlantic will not be overfished.

The South Atlantic Fishery Management Council (Council) and National Marine Fisheries Service (NMFS) are required by law to end overfishing. The primary purpose of Amendment 32 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region (Amendment 32) is to implement measures to reduce harvest and end overfishing of blueline tilefish. The Council is also required to specify management benchmarks such as maximum sustainable yield (MSY) and optimum yield (OY).

This section is intended to serve as a SUMMARY for all the actions and alternatives in Amendment 32. It also provides background information and includes a summary of the expected biological, social, and economic effects from the management measures.

Why are the Council and NMFS Considering Action?

The health of the blueline tilefish stock in the South Atlantic was assessed in 2013. The results of the assessment indicated that the blueline tilefish stock in the South Atlantic is experiencing overfishing (**Figure S-1**). Biomass is less than that which is needed to achieve Maximum Sustainable Yield (SSB_{MSY}), and the stock is overfished according to the current definition of the minimum stock size threshold (**Figure S-2**). However, effective November 6, 2014, (79 FR 60379), blueline tilefish will not be overfished based on the overfished definition in Regulatory Amendment 21. The specification of annual catch limits (ACLs) and accountability measures (AMs) for blueline tilefish would end overfishing of blueline tilefish. Ending overfishing would allow the blueline tilefish biomass to increase to SSB_{MSY}.



SFigure S-1. The overfishing ratio for blueline tilefish over time. The stock is undergoing overfishing when the F/F_{MSY} is greater than one (SEDAR 32 2013).

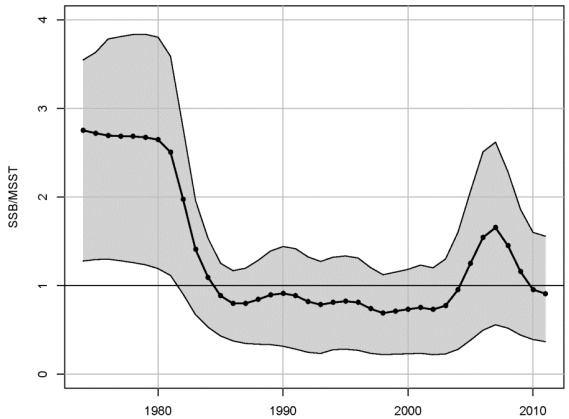


Figure S-2. The overfished ratio for blueline tilefish over time. The stock is overfished when the SSB/MSST is less than one (SEDAR 32 2013).

Didn't the Council Request Emergency Action to Reduce Harvest of Blueline Tilefish?

At their December 2013 meeting, the Council began development of Amendment 32. At that same meeting, the Council determined that reducing overfishing of blueline tilefish while Amendment 32 is being developed was in the best interest of the stock and fishermen. Therefore, the Council requested that the NMFS take emergency action to reduce overfishing of blueline tilefish. The Council requested an extension of the emergency rule at their September 2014 meeting.

What is an Emergency Rule?

If the Council determines that an emergency exists, NMFS may implement temporary regulations necessary to address the emergency. If the Council vote is unanimous, NMFS must implement the temporary actions. If the vote is not unanimous, NMFS may implement the actions. The Council voted 12 to 1 (NMFS Regional Administrator voted No to preserve the Secretary's flexibility) to request emergency action at their December 2013 meeting. The temporary regulations may remain in effect for no more than 180 days, but may be extended for an additional 186 days.

Although the actions in the emergency rule, which was implemented on April 17, 2014, were likely to have adverse socio-economic effects in 2014, the Council determined that the short-term effects would be justified to minimize long-term reductions in harvest that may be required if the current levels of unsustainable harvest continue to reduce the biomass of the blueline tilefish stock. Landings in 2012 (477,126 pounds (lbs) whole weight (ww)) were significantly greater than the maximum sustainable yield at equilibrium (226,500 lbs ww). Continued exploitation at levels similar to the 2012 landings could negatively affect the health of the blueline tilefish stock.

Purpose for Action

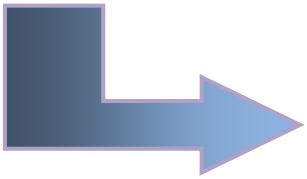
Reduce the current level of fishing mortality of the blueline tilefish stock in the South Atlantic. Revise the annual catch limits and targets for the Deepwater Complex to respond to changes in the acceptable biological catch of silk snapper and yellowedge grouper.

Need for Action

End overfishing and rebuild the blueline tilefish stock, while minimizing, to the extent practicable, adverse social and economic effects. Specify annual catch limits and targets for blueline tilefish and species in the Deepwater Complex based upon the best available information.

What Are the Proposed Actions?

There are 8 actions in Amendment 32. Each *action* has a range of *alternatives*, including a "no action alternative" and a "preferred alternative".



Proposed Actions in Amendment 32

1. Composition of the Deepwater Complex
2. Maximum sustainable yield (MSY)
3. Annual catch limits (ACL) and optimum yield (OY)
4. Recreational annual catch target (ACT)
5. Commercial accountability measures (AM)
6. Recreational AMs
7. Commercial trip limit
8. Recreational bag limit

Action 1. Revise the Composition of the Deepwater Complex and Adjust the Deepwater Complex Annual Catch Limits, Optimum Yield, and Annual Catch Targets

Alternative 1. (No Action). The current Deepwater Complex temporarily includes yellowedge grouper, silk snapper, misty grouper, queen snapper, sand tilefish, black snapper, and blackfin snapper. Blueline tilefish has been temporarily removed from the Deepwater Complex via an emergency rule issued under the Magnuson-Stevens Fishery Conservation and Management Act. Retain ACL=OY=ABC and the recreational annual catch target equal to ACL*(1-PSE) or ACL*0.5, whichever is greater, for the Deepwater Complex.

Alternative 2 (Preferred). Remove blueline tilefish from the Deepwater Complex. Revise the Deepwater Complex annual catch limits, optimum yield, and recreational annual catch targets to reflect the removal of blueline tilefish. **Retain ACL=OY=ABC for the Deepwater Complex.** Retain the recreational annual catch target equal to ACL*(1-PSE) or ACL*0.5, whichever is greater for the Deepwater Complex.

Alternative 3. Remove blueline tilefish from the Deepwater Complex. Revise the Deepwater Complex annual catch limits, optimum yield, and recreational annual catch targets to reflect the removal of blueline tilefish. **Establish ACL=OY=95%ABC for the Deepwater Complex.** Retain the recreational annual catch target equal to ACL*(1-PSE) or ACL*0.5, whichever is greater for the Deepwater Complex.

Alternative 4. Remove blueline tilefish from the Deepwater Complex. Revise the Deepwater Complex annual catch limits, optimum yield, and recreational annual catch targets to reflect the removal of blueline tilefish. **Establish ACL=OY=90%ABC for the Deepwater Complex.** Retain the recreational annual catch target equal to ACL*(1-PSE) or ACL*0.5, whichever is greater for the Deepwater Complex.

Alternative 5. Remove blueline tilefish from the Deepwater Complex. Revise the Deepwater Complex annual catch limits, optimum yield, and recreational annual catch targets to reflect the removal of blueline tilefish. **Establish ACL=OY=80%ABC for the Deepwater Complex.** Retain the recreational annual catch target equal to ACL*(1-PSE) or ACL*0.5, whichever is greater for the Deepwater Complex.

Discussion

The values for the Deepwater Complex ACLs, optimum yield, and recreational ACT are listed below. **Alternatives 2** through **5** assume Amendment 29 is implemented. The actions in Amendment 29 would change the acceptable biological catch (ABC) for silk snapper and yellowedge grouper, which are contained within the Deepwater Complex.

Alternative	Deepwater Complex ACL, OY, and Recreational ACT (lbs whole weight)			
	Total ACL	Commercial ACL	Recreational ACL	Recreational ACT
Alternative 1 (no action)				
--Current: Temporary rule	79,684	60,371	19,313	197,100[1]
--When temporary rule expires	711,025	376,469	334,556	197,100
--If Amendment 29 implemented	801,619	447,732	353,887	200,577
Alternative 2 (Preferred) (ACL=OY=ABC)	**170,278**	**131,634**	**38,644**	**13,134**
Alternative 3 (ACL=OY=95%ABC)	161,764	125,052	36,712	12,477
Alternative 4 (ACL=OY=90%ABC)	153,250	118,471	34,780	11,821
Alternative 5 (ACL=OY=80%ABC)	136,222	105,307	30,915	10,507

[1]The Deepwater Complex recreational annual catch targets were not temporarily changed through the emergency rule.

Impacts

Biological: Removal of blueline tilefish under **Alternative 2 (Preferred)** would make it less likely that an in-season closure of the Deepwater Complex would occur because, other than blueline tilefish, species in the Deepwater Complex are not generally targeted and their landings are minor. Thus, compared to **Alternative 1 (No Action)**, **Alternatives 2 (Preferred)-5** would be expected to have positive biological effects for blueline tilefish because AMs would be triggered when the blueline tilefish ACL is met rather than when the Deepwater Complex ACL is met. Furthermore, because **Alternatives 2 (Preferred)-5** would set the ACL equal to or below the ABC recommendations of the Council's SSC, negative biological effects would not be expected for stocks in the complex.

Since AMs would be put in place (**Actions 5 and 6**) to retain landings below the ACL, biological impacts for the Deepwater Complex would differ little among the proposed alternatives.

Economic: Alternative 2 (Preferred) would result in highest short-term landings and ex-vessel revenues. The expected biological benefits under **Preferred Alternative 2** would result in long-term economic benefits through higher future landings due to improved stock health.

Social: Changes to management of blueline tilefish and access to the resource could affect fishermen who target blueline tilefish, and associated communities and businesses. The proposed changes to management of the blueline tilefish stock are expected to especially impact the North Carolina community of Wanchese. **Section 3.3.3** of the document provides more detailed information on communities that could potentially be affected.

Action 2. Re-define Maximum Sustainable Yield for Blueline Tilefish

	Equation	F_{MSY}	MSY Values (pounds whole weight)
Alternative 1. No Action	Do not change the current definition of MSY for blueline tilefish. Currently, MSY equals the yield produced by F_{MSY}. $F_{30\%SPR}$ is used as the F_{MSY} proxy.	$F_{30\%SPR}$=0.356	not specified
Alternative 2. Preferred	MSY equals the yield produced by F_{MSY} or the F_{MSY} proxy. MSY and F_{MSY} are recommended by the most recent SEDAR/SSC.	0.302	226,500

Impacts

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

Biological: Alternative 2 (Preferred) would redefine MSY for the blueline tilefish stock based on the recommendation of the SEDAR 32 (2013) Review Panel and the Council's Scientific and Statistical Committee (SSC) to equal the value associated with the yield at F_{MSY} (226,500 lbs ww). Implementation of a MSY equation would have beneficial effects on the blueline tilefish stock as it provides a reference point to monitor the long-term performance of the stock.

Economic: Alternative 2 (Preferred), which is recommended in the most recent SEDAR and by the SSC, has a better scientific basis for specification of MSY than **Alternative 1 (No Action)**. Hence, **Alternative 2 (Preferred)** provides a more solid ground for management actions that have economic implications. Since there would be no direct effects on resource harvest or use, there would be no direct effects on fishery participants, associated industries, or communities.

Social: Social effects of management specifications such as MSY for a stock would be associated with both the biological and economic effects of the MSY value. A MSY level that reflects the best available information (**Preferred Alternative 2**) could result in lower values for fishing mortality and consequently lower ACLs, which would likely affect fishermen targeting blueline tilefish.

What Does SPR Mean?

SPR stands for **S**pawning **P**otential **R**atio. It is defined as the average fecundity of a recruit over its lifetime when the stock is fished divided by the average fecundity of a recruit over its lifetime when the stock is unfished. The yield at F_{SPR} may serve as a proxy, or substitute, for F_{MSY} if the spawner-recruit relationship cannot be estimated reliably.

Action 3. Establish Annual Catch Limits and Optimum Yield for Blueline Tilefish

Alternative 1 (No Action). Annual catch limits and optimum yield for blueline tilefish are temporarily in place. The National Marine Fisheries Service has temporarily removed blueline tilefish from the Deepwater Complex and established the following annual catch limits for blueline tilefish for the commercial and recreational sectors: total ACL = 224,100 pounds whole weight (lbs ww); commercial ACL = 112,207 lbs ww; and recreational ACL = 111,893 lbs ww. The temporary measures will be in place for 180 days (through October 14, 2014) and may be extended for 186 additional days.

Note: Blueline tilefish is in the Deepwater Complex and there is an annual catch limit for the complex. The Deepwater Complex annual catch limit is 711,025 lbs ww and blueline tilefish accounts for 631,341 lbs ww of the annual catch limit. Action 1 proposes to remove blueline tilefish from the complex. If Action 1 is implemented and the temporary annual catch limit expires, there would not be an annual catch limit for blueline tilefish.

Alternative 2. Establish annual catch limits for blueline tilefish. The blueline tilefish ACL = OY = ABC. Specify commercial and recreational annual catch limits for blueline tilefish for 2015, 2016, 2017, and 2018 and beyond. The annual catch limit for 2018 will remain in effect until modified. Annual catch limits in 2016, 2017, and 2018 will not increase automatically in a subsequent year if present year projected catch has exceeded the total annual catch limit. Specify commercial and recreational annual catch limits based on existing sector allocations (50.07% commercial and 49.93% recreational).

	Blueline Tilefish ACL (lbs ww)		
Year	**Total**	**Commercial**	**Recreational**
2015	36,359	18,205	18,154
2016	54,548	27,312	27,236
2017	72,928	36,515	36,413
2018 and beyond until modified	89,769	44,947	44,822

Alternative 3 (Preferred). Establish annual catch limits for blueline tilefish. The blueline tilefish ACL = OY = 98%ABC. Specify commercial and recreational annual catch limits for blueline tilefish for 2015, 2016, 2017, and 2018 and beyond. The annual catch limit for 2018 will remain in effect until modified. Annual catch limits in 2016, 2017, and 2018 will not increase automatically in a subsequent year if present year projected catch has exceeded the total annual catch limit. Specify commercial and recreational annual catch limits based on existing sector allocations (50.07% commercial and 49.93% recreational).

	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

Alternative 4. Establish annual catch limits for blueline tilefish. The blueline tilefish ACL = OY = 90%ABC. Specify commercial and recreational annual catch limits for blueline tilefish for 2015, 2016, 2017, and 2018 and beyond. The annual catch limit for 2018 will remain in effect until modified. Annual catch limits in 2016, 2017, and 2018 will not increase automatically in a subsequent year if present year projected catch has exceeded the total annual catch limit. Specify commercial and recreational annual catch limits based on existing sector allocations (50.07% commercial and 49.93% recreational).

	Blueline Tilefish ACL (lbs ww)		
Year	Total	Commercial	Recreational
2015	32,723	16,384	16,339
2016	49,093	24,581	24,512
2017	65,635	32,864	32,772
2018 and beyond until modified	80,792	40,453	40,339

Impacts

Biological: The biomass of blueline tilefish, already in a depressed state, would likely further decrease if harvest levels are not reduced to or below the catch level recommendations of the Council's SSC. **Alternatives 2** through **4**, which would reduce harvest of blueline tilefish relative to **Alternative 1 (No Action)** to or below the catch level recommendations of the Council's SSC, would be expected to have positive biological effects on the stock.

Economic: The differences in the range of ACLs between **Alternatives 2, 3 (Preferred),** and **4** differ by about 3,600 lbs ww for 2015 and 9,000 lbs ww for 2018 and beyond. Therefore, differences in resulting economic impacts among **Alternative 2**, **Alternative 3 (Preferred)**, and **Alternative 4** are relatively small. However, comparisons between the resulting economic effects of the proposed alternatives and **Alternative 1 (No Action)** are large. Making a comparison between the proposed ACL with the current ACL, **Alternative 2** could result in commercial annual ex-vessel losses ranging from approximately $196,000 to $141,000 from 2015 to 2018 (in 2012 U.S. Dollars). The recreational sector would suffer similar losses (94,000 to 67,000 lbs ww) but these cannot be quantified in lost consumer surplus or net operating revenues at this

time due to lack of data regarding the willingness-to-pay for blueline tilefish. **Alternative 3 (Preferred)** could result in commercial annual ex-vessel losses ranging from approximately $197,000 to $143,000 from 2015 to 2018, and recreational annual losses from 94,000 to 68,000 lbs ww over the same time period.

Social: Blueline tilefish is an important component to the commercial species landed in Wanchese, North Carolina in addition to potentially being an important recreational species in communities such as Key West, Florida (see **Section 3.3.3**). Changes to the ACL and access to the resource could affect individuals and businesses in these communities. In general, adjustments in an ACL based on updated information from a stock assessment would be the most beneficial in the long term to fishermen and communities because ACLs would be based on the current condition of the stock, even if the updated information indicates that a lower ACL is appropriate to sustain the stock over the long term.

Action 4. Establish a Recreational Annual Catch Target for Blueline Tilefish

Alternative 1 (No Action). Do not establish an individual annual catch target for blueline tilefish for the recreational sector.

Note: Blueline tilefish is in the Deepwater Complex and there is an annual catch target for the complex. Action 1 proposes to remove blueline tilefish from the complex. If Action 1 is implemented and the temporary annual catch target expires, there would not be an annual catch target for blueline tilefish.

Alternative 2 (Preferred). Establish an annual catch target for blueline tilefish for the recreational sector that equals the recreational ACL*(1-PSE) or ACL*0.5, whichever is greater.

	Blueline Tilefish ACT (lbs ww)		
Year	**Action 3; Preferred Alternative 2 (ACL=ABC)**	**Action 3; Alternative 3 (ACL=98%ABC)**	**Action 3; Alternative 4 (ACL=90%ABC)**
2015	11,368	11,141	10,231
2016	17,055	16,714	15,350
2017	22,802	22,346	20,522
2018 and beyond until modified	28,067	27,506	25,261

Note: Calculations use the most recent 5 years of recreational landings to obtain the PSE.

	Blueline Tilefish PSE
Year	
2009	35.6
2010	27.8
2011	43.6
2012	27.8
2013	52.1
Average	37.38

Alternative 3. Establish an annual catch target for blueline tilefish for the recreational sector that equals 85% of the recreational annual catch limit.

	Blueline Tilefish ACT (lbs ww)		
Year	**Action 3; Alternative 2 (ACL=ABC)**	**Action 3; Alternative 3 (ACL=98%ABC)**	**Action 3; Alternative 4 (ACL=90%ABC)**
2015	15,431	15,122	13,888
2016	23,150	22,687	20,835
2017	30,951	30,332	27,856
2018 and beyond until modified	38,098	37,336	34,289

Note: Blueline tilefish is in the Deepwater Complex and there is an ACL for the complex. Action 1 proposes to separate blueline tilefish from the complex.

Impacts

Biological: At present, ACTs are used as a management reference point to track performance of the management measures imposed on the recreational sector. No AMs are triggered if recreational landings reach the recreational ACT. Hence, biological effects are neutral for all alternatives considered, including **Alternative 1 (No Action)**.

Economic: If the ACT were used to trigger AMs for the recreational sector, economic effects would be similar in nature to those under **Action 3**, though not necessarily in magnitude. Under that scenario, **Alternative 1 (No Action)** would have the same economic effects as any of the ACL alternatives under **Action 3**.

Social: Establishment of a recreational ACT for blueline tilefish apart from the Deepwater Complex recreational ACT would likely have little effect on recreational fishermen targeting blueline tilefish.

Action 5. Specify Accountability Measures for Blueline Tilefish and the Deepwater Complex for the Commercial Sector

Alternative 1 (No Action). Accountability measures are temporarily in place for blueline tilefish for the commercial sector. The National Marine Fisheries Service has temporarily removed blueline tilefish from the Deepwater Complex and established an in-season accountability measure for blueline tilefish for the commercial sector. The accountability measure is as follows: If commercial landings for blueline tilefish reach or are projected to reach the commercial annual catch limit, National Marine Fisheries Service will file a notification with the Office of the Federal Register to close the commercial sector for blueline tilefish for the remainder of the fishing year. The temporary measures will be in place for 180 days (through October 14, 2014) and may be extended for 186 additional days.

Accountability measures are in place for the Deepwater Complex for the commercial sector. The accountability measures are as follows: **In-season**: If commercial landings for the Deepwater Complex, as estimated by the Science and Research Director, reach or are projected to reach the commercial annual catch limit, the Assistant Administrator for Fisheries will file a notification with the Office of the Federal Register to close the commercial sector for this complex for the remainder of the fishing year. **Post-season**: If commercial landings exceed the ACL and at least one species overfished, reduce the ACL in following year by overage amount.

Note: Blueline tilefish is in the Deepwater Complex and there is an accountability measure for the commercial sector for the complex. Action 1 proposes to remove blueline tilefish from the complex. If Action 1 is implemented and the temporary accountability measure for the commercial sector expires, there would not be an accountability measure for blueline tilefish.

Alternative 2 (Preferred). Specify the following in-season and post-season accountability measures for blueline tilefish and the Deepwater Complex for the commercial sector: If commercial landings as estimated by the Science and Research Director reach or are projected to reach the commercial annual catch limit, 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 is prohibited and harvest or possession of this species in or from the South Atlantic exclusive economic zone 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 as appropriate, without regard to where such species were harvested, i.e., in state or Federal waters. Additionally,

> **Sub-alternative 2a.** If the commercial annual catch limit is exceeded, the Regional Administrator shall publish a notice to reduce the commercial annual catch limit in the following fishing year by the amount of the commercial overage, only if the species* is overfished.

Sub-alternative 2b. If the commercial annual catch limit is exceeded, the Regional Administrator shall publish a notice to reduce the commercial annual catch limit in the following fishing year by the amount of the commercial overage, only if the total annual catch limit (commercial annual catch limit and recreational annual catch limit) is exceeded.

Sub-alternative 2c (Preferred). If the commercial annual catch limit 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 annual catch limit (commercial annual catch limit and recreational annual catch limit) is exceeded.

*Note: For the Deepwater Complex, at least one of the species would need to be overfished.

Impacts

Biological: Alternative 2 (Preferred) would prohibit commercial harvest of blueline tilefish and the Deepwater Complex when the commercial ACL is met or is projected to be met and would be expected to have positive beneficial effects when compared to **Alternative 1 (No Action)**. The sub-alternatives for **Alternative 2 (Preferred)** would enhance the biological effects of the in-season closure by specifying commercial payback provisions for blueline tilefish and the Deepwater Complex if the ACL is exceeded. Currently, there is no mechanism to correct an ACL overage if one were to occur. Therefore, biological benefits would be realized under any of the three sub-alternatives considered when compared to **Alternative 1 (No Action)**. **Sub-alternative 2c (Preferred)** would implement a commercial payback under infrequently encountered simultaneous events of the stock being overfished and the total ACL being exceeded. Therefore, **Sub-alternative 2c (Preferred)** may be associated with the lowest level of biological benefits compared to **Sub-alternatives 2a** and **2b**.

Economic: All options under **Alternative 2 (Preferred)** would result in short-term ex-vessel revenue losses to the commercial sector compared to recent landings. Over the long-term, however, these alternatives would provide a beneficial economic scenario for the commercial sector by addressing issues related to overfishing of the stock.

Social: Preferred Sub-alternative 2c would provide the most flexibility for triggering the payback AM, in that the most critical conditions must be met before the payback is triggered, and would be expected to be most beneficial to commercial fishermen in that it would be less likely that a payback is required for an overage. Additionally, **Preferred Sub-alternative 2c** would be more consistent with AMs implemented for other species such as king mackerel and Spanish mackerel.

Action 6. Specify Accountability Measures for Blueline Tilefish and the Deepwater Complex for the Recreational Sector

Alternative 1 (No Action). Accountability measures are temporarily in place for blueline tilefish for the recreational sector. The National Marine Fisheries Service has temporarily removed blueline tilefish from the Deepwater Complex and established an in-season accountability measure for blueline tilefish for the recreational sector. The accountability measure is as follows: If recreational landings for blueline tilefish reach or are projected to reach the recreational annual catch limit, National Marine Fisheries Service will file a notification with the Office of the Federal Register to close the recreational sector for blueline tilefish for the remainder of the fishing year. The temporary measures will be in place for 180 days (through October 14, 2014) and may be extended for 186 additional days.

Accountability measures are in place for the Deepwater Complex for the recreational sector. The accountability measures are as follows: **In-season:** none. **Post-season:** If recreational landings for the Deepwater Complex exceed the recreational annual catch limit then during the following fishing year, recreational landings will be monitored for a persistence in increased landings and, if necessary, the National Marine Fisheries Service will reduce the length of the following recreational fishing season by the amount necessary to ensure recreational landings do not exceed the recreational annual catch limit in the following fishing year.

Note: Blueline tilefish is in the Deepwater Complex and there is an accountability measure for the recreational sector for the complex. Action 1 proposes to remove blueline tilefish from the complex. If Action 1 is implemented and the temporary accountability measures for the recreational sector expire, there would not be accountability measures for blueline tilefish.

Alternative 2 (Preferred). Specify the following post-season accountability measures for blueline tilefish and the Deepwater Complex for the recreational sector: If recreational landings, as estimated by the Science and Research Director, exceed the recreational annual catch limit, then during the following fishing year, recreational landings will be monitored for a persistence in increased landings.

> **Sub-alternative 2a.** If necessary, the Regional Administrator shall publish a notice to reduce the length of fishing season and the recreational annual catch limit in the following fishing year by the amount of the recreational overage, only if the species* is overfished. The length of the recreational season and recreational annual catch limit will not be reduced if the Regional Administrator determines, using the best scientific information available, that a reduction is unnecessary.
>
> **Sub-alternative 2b.** If necessary, the Regional Administrator shall publish a notice to reduce the length of fishing season and the recreational annual catch limit in the following fishing year by the amount of the recreational overage, only if the total annual catch limit (commercial annual catch limit and recreational annual catch limit) is exceeded. The length of the recreational season and

recreational annual catch limit will not be reduced if the Regional Administrator determines, using the best scientific information available, that a reduction is unnecessary.

Sub-alternative 2c (Preferred). If necessary, the Regional Administrator shall publish a notice to reduce the length of fishing season and the recreational annual catch limit in the following fishing year by the amount of the recreational overage, only if the species* is overfished **and** the total annual catch limit (commercial annual catch limit and recreational annual catch limit) is exceeded. The length of the recreational season and recreational annual catch limit will not be reduced if the Regional Administrator determines, using the best scientific information available, that a reduction is unnecessary.

Alternative 3. Specify the following in-season accountability measures for blueline tilefish and the Deepwater Complex for the recreational sector: If recreational landings for blueline tilefish and the Deepwater Complex reach or are projected to reach the recreational annual catch limit, National Marine Fisheries Service will file a notification with the Office of the Federal Register to close the recreational sector for blueline tilefish for the remainder of the fishing year.

Alternative 4 (Preferred). If recreational landings reach or are projected to reach the recreational annual catch limit for blueline tilefish and the Deepwater Complex, National Marine Fisheries Service will file a notification with the Office of the Federal Register to close the recreational sector for the remainder of the fishing year, unless, using the best scientific information available, the Regional Administrator determines that a closure is unnecessary.

Sub-alternative 4a. If the species* is overfished.

Sub-alternative 4b (Preferred). Regardless of stock status.

*Note: For the Deepwater Complex, at least one of the species would need to be overfished.

Impacts

Biological: Alternative 4 (Preferred) and **Sub-alternative 4b (Preferred)** would allow for an in-season recreational closure for blueline tilefish and specify this same AM for the Deepwater Complex, regardless of stock status. Thus, **Alternative 4 (Preferred)** and **Sub-alternative 4b (Preferred)** would provide positive biological benefits for blueline tilefish and the Deepwater Complex relative to **Alternative 1 (No Action)**. **Sub-alternatives 2a, 2b,** and **2c (Preferred)** would enhance the biological benefits provided by **Alternative 4 (Preferred)** and **Sub-alternative 4b (Preferred)** by providing a payback provision if the recreational ACL is exceeded. Similar to **Action 5**, under **Sub-alternative 2c (Preferred)**, no action would be taken to correct for a recreational ACL overage unless both criteria are met: the stock is overfished and the total ACL has been exceeded. Therefore, **Sub-alternative 2c (Preferred)** may be the least biologically beneficial compared to the other **Alternative 2** sub-alternatives considered. **Alternative 4 (Preferred)** would allow a more timely response to recreational landings data that may

indicate a species' recreational ACL is going to be met or exceeded while the fishing season is still open. Biologically, it is preferable to prevent overexploitation of a resource rather than correcting for it after overharvest has occurred.

Economic: Among the alternatives, **Alternative 1 (No Action)** would allow for the largest recreational landings and associated economic benefits from blueline tilefish fishing in the short-run; however, it would yield the smallest recreational landings and associated economic benefits in the long run. Among the **Alternative 2 (Preferred)** sub-alternatives, which would establish post-season AMs for the recreational sector, **Sub-alternative 2c (Preferred)** would allow for larger recreational landings of blueline tilefish and Deepwater Complex species than **Sub-alternatives 2a** and **2b** in the short and long run. Economic benefits from recreational fishing for the Deepwater Complex would be the same under **Alternatives 1 (No Action)** and **3**. **Alternative 3** would yield the smallest recreational landings and associated economic benefits from blueline tilefish fishing because it would close the recreational season for blueline tilefish regardless of whether the best available science indicates the season has to be closed or not. **Sub-alternative 4b (Preferred)** would generate the smallest recreational landings and associated economic benefits in the short-run; however, it would generate the largest recreational landings and associated economic benefits in the long run, especially from recreational fishing for blueline tilefish. **Sub-alternative 4a** would allow for larger recreational landings and associated economic benefits than **Sub-alternative 4b (Preferred)** in the short-run, but not in the long run.

Social: The in-season closure AMs for the Deepwater Complex and blueline tilefish for the recreational sector in **Alternative 3** and **Alternative 4 (Preferred)** could have negative effects on recreational fishing opportunities and for-hire businesses because there has not been an in-season recreational AM in place for the Deepwater Complex and only a temporary one has been in place for blueline tilefish. However, the in-season closure would likely help prevent the frequency of paybacks, along with additional protection for the blueline tilefish resource and the Deepwater Complex. Under **Preferred Alternative 4**,the Regional Administrator, using the best scientific information available, may determine that a closure is unnecessary. Therefore, **Preferred Alternative 4** would provide flexibility for when the AM is triggered if information is available that indicates that the closure is not necessary, which could help reduce the likelihood of an in-season closure. **Preferred Sub-alternative 2c** is the least likely to trigger a payback affecting recreational fishing opportunities in the subsequent year for both the Deepwater Complex and for blueline tilefish.

Action 7. Establish a Trip Limit for Blueline Tilefish for the Commercial Sector

Alternative 1 (No Action). Do not establish a trip limit for blueline tilefish for the commercial sector.

Preferred Alternative 2. Establish a commercial trip limit for blueline tilefish of 100 pounds gutted weight (lbs gw).

Alternative 3. Establish a commercial trip limit for blueline tilefish of 200 pounds gutted weight (lbs gw).

Alternative 4. Establish a commercial trip limit for blueline tilefish of 300 pounds gutted weight (lbs gw).

Table S-1. Trip Limit Analysis Results for ACL = 98% of ABC (Preferred under Action 3).

Alternatives	Days Fishing	
	Total	Predicted End date
Alternative 1: No Limit	19	January 20
Alternative 2: 100-lb limit	166	June 5
Alternative 3: 200-lb limit	129	April 26
Alternative 4: 300-lb limit	102	April 11

Impacts

Biological: The biological effects of **Alternatives 2 (Preferred)** through **4** would be expected to be neutral compared to **Alternative 1 (No Action)**, because ACLs and AMs are in place to cap harvest, and take 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 have been made to the quota monitoring system, and the Council has approved a Dealer Reporting Amendment (effective August 7, 2014), which should enhance 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%, which would not be beneficial 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.

Economic: A larger trip limit could result in more profitable trips because fishermen would be able to take larger amounts of fish for similar operating costs. However, these potential short-term economic benefits depend on the geographic location of fishing and would likely lead to long-term adverse economic effects. Distance to fishing grounds for

blueline tilefish likely differs depending on the port. Therefore, lower trip limits would likely be more appealing to hook-and-line fishermen located closer to fishing grounds while higher trip limits would likely appeal more to longline fishermen located further away from fishing grounds where blueline tilefish can be accessed. 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.

Social: Alternative 1 (No Action) would be most beneficial for vessels that wish to maximize trip efficiency and have other species to target when blueline tilefish is not available. This could change fishing behavior for fishermen harvesting blueline tilefish, and could affect associated businesses and communities such as Wanchese, North Carolina, and possibly Murrells Inlet and Little River in South Carolina. However, with a low proposed commercial ACL in **Action 3**, it is likely that the commercial season would be much shorter than in recent years with no trip limit in place. **Alternatives 2 (Preferred)-4** could also be considered a bycatch allowance and allow fishermen to keep some blueline tilefish caught on trips targeting other species, which could improve profitability and efficiency of the trip.

Action 8. Adjust the Bag Limit for Blueline Tilefish for the Recreational Sector

Alternative 1 (No Action). Retain blueline tilefish in the aggregate grouper bag limit of 3/person/day. 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. Remove blueline tilefish from the aggregate grouper bag limit.

Alternative 3. Establish a bag limit of blueline tilefish of 1/person/day.

Alternative 4. Establish a vessel limit of blueline tilefish of 1/vessel/day.

Preferred Alternative 5. Establish a vessel limit of blueline tilefish of 1/vessel/day May through August and no retention during the remainder of the year.

Alternative 6. Establish a vessel limit of blueline tilefish of 1/vessel/day year during May and June with no retention during the remainder of the year.

Alternative 7. Establish a vessel limit of blueline tilefish of 1/vessel/day during May with no retention during the remainder of the year.

Alternative 8. Establish a vessel limit of blueline tilefish of 1/vessel/day during June with no retention during the remainder of the year.

Impacts

Biological: The biological effects of **Alternatives 3** through **8** are expected to be neutral compared with **Alternative 1 (No Action)**, because ACLs and AMs are in place to cap harvest, and take action if ACLs are exceeded. Alternatives with larger bag limits could present a greater biological risk to blueline tilefish in terms of exceeding the ACL since the rate of harvest would be greater. For example, **Alternative 3** would implement a bag limit of one per person per day, and the expected closure date is January 26th. If this alternative was implemented, and the recreational ACL was reached in January, fishery managers would not be aware that the ACL was reached until later in the fishing season. In this scenario, it is possible that the recreational ACL could be exceeded unless meeting the ACL was anticipated and NMFS implemented an in-season closure in late January. If less conservative bag limits increase the probability of an overage of the ACL, then more conservative bag limit alternatives (**Alternatives 6** through **8**) would have greater beneficial effects to the resource than less conservative alternatives (**Alternatives 3** through **5 (Preferred)**).

Economic: The bag limit analysis results in **Table 4.8.2** shows that **Alternative 1 (No Action)** could result in a January 5th closure date with a recreational fishing season of four days. The remaining alternatives (other than **Alternative 2**), have projected season lengths of 25 days (**Alternative 3**), approximately 30 days (**Alternatives 7 and 8**), 61 days (**Alternative 6**), 123 days (**Preferred Alternative 5**), and 195 days (**Alternative 4**). Season lengths would be extended based on a sensitivity analysis that substitutes 2014 data for data from Waves 1 and 2 in 2013 (**Table 4.8.4**). **Alternative 4**, which proposes one fish per vessel per day is expected to result in the greatest number of days available for recreational fishermen to access the resource. **Alternative 4** is also expected to result in the greatest capture of the recreational ACL. Therefore, **Alternative 4** is expected to result in the largest short-term economic benefits to the recreational fishery. **Alternatives 6**, **7**, and **8** offer the least amount the ACL to be taken (3.3%, 1.6%, and 1.6%, respectively). These last three alternatives are among the least economically beneficial in the short-term (due to lower number of days with access to the resource) but possibly the most long-term economic benefits (if there is a decreased incidence of an overage) for the recreational fishery after **Alternative 2**.

Social: 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 4.8.1**), as well as the effects on current recreational fishing opportunities. The aggregate bag limit (**Alternative 1 (No Action)**) would not contribute to directed management of blueline tilefish. Additionally, as shown in **Appendix L**, **Alternative 1 (No Action)** could result in the shortest projected season (four days). **Alternative 2** could have negative long-term social effects associated with any biological effects of no bag limit for blueline tilefish, such as lower ACLs or limited access to the resource. **Alternatives 3-8** would limit recreational fishing opportunities for blueline tilefish but would also be expected to contribute to successful rebuilding of the stock. Establishing a recreational season for blueline tilefish under **Alternatives 5 (Preferred)-8** could contribute to rebuilding the stock and reducing discards of blueline tilefish by confining recreational landings in a small time period each year.

Chapter 1.
Introduction

1.1 What Action Is Being Proposed?

Fishery managers are proposing changes to regulations through Amendment 32 to the Fishery Management Plan (FMP) for the Snapper Grouper Fishery of the South Atlantic Region (Amendment 32). Amendment 32 proposes measures to immediately end overfishing of the blueline tilefish stock in the South Atlantic through a revision of annual catch limits (ACL), management reference points, accountability measures (AM), and management measures that include commercial trip limits and modifications to recreational bag limits. The most recent stock assessment is the basis for the changes. See **Section 1.7** for a complete list of the management actions in this amendment.

1.2 Who is Proposing the Action?

The South Atlantic Fishery Management Council (Council) is proposing the actions. The Council develops the amendment and submits it to the National Marine Fisheries Service (NMFS) who approves, disapproves, or partially approves, and implements the measures in the 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 Mackerel 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 Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region (Snapper Grouper FMP, SAFMC 1983) (**Figure 1.3.1**). Blueline tilefish is one of fifty-nine species managed by the Council under the Snapper Grouper FMP.

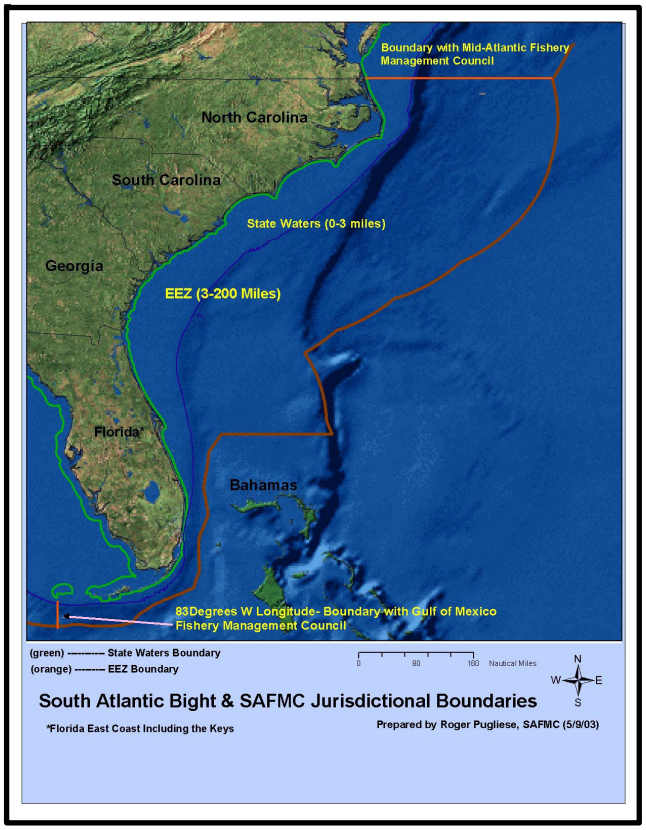


Figure 1.3.1. Jurisdictional boundaries of the South Atlantic Fishery Management Council.

1.4 Why is the Council and NMFS Considering Action (Purpose and Need)?

The health of the blueline tilefish stock in the South Atlantic was assessed in 2013 with data through 2011. The results of the assessment indicate that the blueline tilefish stock in the South Atlantic is experiencing overfishing (**Figure 1.4.1**). Biomass is less than the spawning stock biomass when fishing at the maximum sustainable yield (SSB_{MSY}), and the stock is overfished according to the current definition of the minimum stock size threshold (**Figure 1.4.2**). However, effective November 6, 2014 (79 FR 60379), blueline tilefish is not overfished based on the overfished definition approved by the Council in Regulatory Amendment 21 to the Snapper Grouper FMP (SAFMC 2014a). Ending overfishing would allow biomass to increase to SSB_{MSY}.

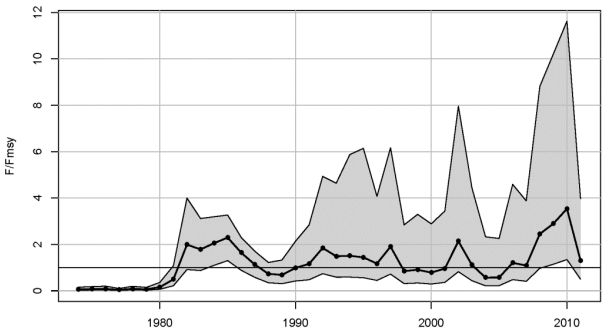


Figure 1.4.1. The overfishing ratio for blueline tilefish over time. The stock is undergoing overfishing when the F/F_{MSY} is greater than one (SEDAR 32 2013).

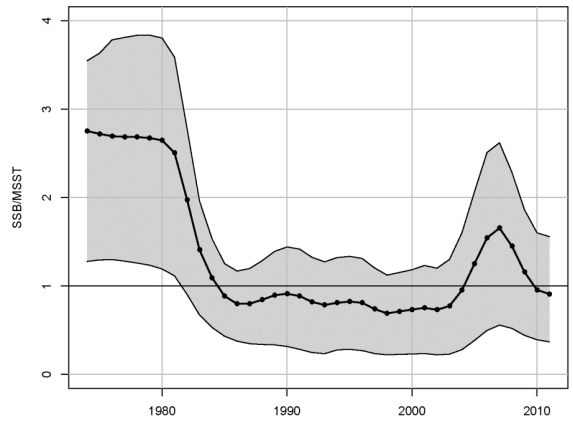


Figure 1.4.2. The overfished ratio for blueline tilefish over time. The stock is overfished when the SSB/MSST is less than one (SEDAR 32 2013).

NMFS notified the Council of the stock status of blueline tilefish in a letter dated December 6, 2013. As mandated by the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), NMFS and the Council must, by December 6, 2015, prepare a plan amendment and implement regulations to end overfishing immediately and rebuild the stock. NMFS and the Council, through Amendment 32, plan to implement management measures to respond to the best scientific information available. These management measures include changes to current fishing regulations that are expected to end overfishing immediately and rebuild the blueline tilefish stock.

Purpose for Action

Reduce the current level of fishing mortality of the blueline tilefish stock in the South Atlantic. Revise the annual catch limits and targets for the Deepwater Complex to respond to changes in the acceptable biological catch of silk snapper and yellowedge grouper.

Need for Action

End overfishing and rebuild the blueline tilefish stock, while minimizing, to the extent practicable, adverse social and economic effects. Specify annual catch limits and targets for blueline tilefish and species in the Deepwater Complex based upon the best available information.

1.5 Didn't the Council Request Emergency Action to Reduce Harvest of Blueline Tilefish?

At their December 2013 meeting, the Council initiated development of Amendment 32. At that same meeting, the Council determined that reducing overfishing of the stock while Amendment 32 is being developed was in the best interest of the fish stock and fishermen. As such, the Council voted to request emergency action under the Magnuson-Stevens Act to reduce overfishing of blueline tilefish at their December meeting and sent their request to NMFS in a December 10, 2013, letter.

The Council's goal through their request for emergency action was to minimize adverse biological effects to the blueline tilefish stock and adverse socio-economic effects to fishermen and fishing communities that utilize the blueline tilefish portion of the snapper grouper fishery. Although the actions in the emergency rule, which was implemented on April 17, 2014, are likely to have adverse socio-economic effects beginning in 2014, the Council determined that the short-term effects would be justified to minimize even larger long-term reductions in harvest that may be required if the current levels of unsustainable harvest continue to reduce the biomass of the blueline tilefish stock. Landings in 2012 (477,126 lbs (lbs) whole weight (ww)) were significantly greater than the maximum sustainable yield at equilibrium (226,500 lbs ww). Continued exploitation at levels similar to

the 2012 landings could negatively affect the health of the blueline tilefish stock.

1.6 What is an Emergency Rule?

Under the Magnuson-Stevens Act, if the Council determines that an emergency exists, NMFS may implement temporary regulations necessary to address the emergency. If the Council vote is unanimous, NMFS must implement the temporary actions. If the vote is not unanimous, NMFS may implement the actions. The Council voted 12 to 1 to request emergency action at their December 2013 meeting; the NMFS Regional Administrator voted No to preserve the Secretary's flexibility. The temporary regulations may remain in effect for no more than 180 days, but may be extended for an additional 186 days as described in section 305(c) of the Magnuson-Stevens Act. The Council requested an extension of the emergency rule at their September 2014 meeting.

1.7 What Are the Proposed Actions in the Amendment?

The Council is proposing implementation or revision of the following items through this amendment. All items listed below apply to just blueline tilefish for the exception of 1, 5, and 6 which apply to both blueline tilefish and species in the Deepwater Complex.

1) composition of the Deepwater Complex
2) maximum sustainable yield (MSY)
3) ACLs and optimum yield (OY)
4) recreational annual catch target (ACT)
5) commercial accountability measures (AM)
6) recreational AMs
7) commercial trip limit
8) recreational bag limit

1.8 What Are Annual Catch Limits and Accountability Measures and Why are They Required?

A reauthorization of the Magnuson-Stevens Act in 2007 required implementation of new tools to end and prevent overfishing to achieve the optimum yield from a fishery. The tools are ACLs and AMs. An ACL is the level of annual catch of a stock that, if met or exceeded, triggers

Definitions

Annual Catch Limits
The level of annual catch (lbs or numbers) that triggers accountability measures to ensure that overfishing is not occurring.

Annual Catch Targets
The level of annual catch (lbs or numbers) that is the management target of the fishery, and accounts for management uncertainty in controlling the actual catch at or below the ACL.

Accountability Measures
Management controls to prevent ACLs, including sector ACLs, from being exceeded, and to correct or mitigate overages of the ACL if they occur.

Allocations
A division of the overall ACL among sectors (e.g., recreational and commercial) to create sector ACLs.

Maximum Sustainable Yield
Largest long-term average catch or yield that can be taken from a stock or stock complex under prevailing ecological and environmental conditions.

Optimum Yield
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.

Minimum Stock Size Threshold
A status determination criterion. If current stock size is below MSST, the stock is overfished.

some corrective action. The AMs are the corrective action, and they are management controls to prevent ACLs from being exceeded and to correct overages of ACLs if they occur. Two examples of AMs include an in-season closure if catch is projected to reach the ACL and reducing the ACL by an overage that occurred the previous fishing year. Amendment 32 includes alternatives that would revise the current ACLs and AMs for blueline tilefish and species in the Deepwater Complex in the South Atlantic region.

1.9 How Does the Council Determine the Annual Catch Limits?

ACLs are derived from the overfishing limit (OFL) and the ABC **(Figure 1.9.1)**. The Council's Scientific and Statistical Committee (SSC) determines the OFL from the stock assessment and the ABC (based on the Council/SSC's ABC control rule), and recommends those to the Council. The OFL is an estimate of the catch level above which overfishing is occurring. The ABC is defined as the level of a stock or stock complex's annual catch that accounts for the scientific uncertainty in the estimate of OFL and any other scientific uncertainty. Using the ABC as a start, the Council is proposing a total ACL for the blueline tilefish stock in the South Atlantic. The total ACL is then divided into sector ACLs using the allocation currently in place for blueline tilefish (50.07% commercial and 49.93% recreational).

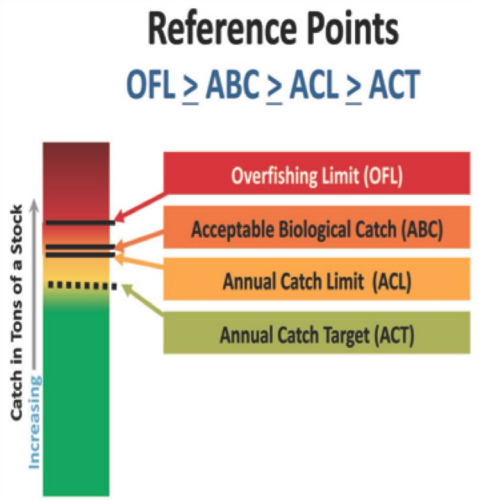


Figure 1.9.1. The relationship of the reference points to each other.

SSC Recommendations for Blueline Tilefish

OFL
Yield at P*=50%

ABC
Yield at P*=30%

Maximum Overfishing Risk (P*)
30%

Minimum Probability of Rebuilding Success
70%

The SSC recommended an OFL equal to the yield at P*=50%. P* is the probability of overfishing. The ABC was determined by applying the ABC control rule. The SSC recommended an OFL equal to the yield at P*=50%.

1.10 How is the Council Modifying the Overfishing Definition for Blueline Tilefish?

The Magnuson-Stevens Act National Standard 1 Guidelines provide a definition of overfishing that allows overfishing to be determined in two ways, by a fishing mortality rate or by a level of catch:

50 C.F.R § 600.310 (e)(2)(i)(B)

"Overfishing (to overfish) occurs whenever a stock or stock complex is subjected to a level of fishing mortality or annual total catch that jeopardizes the capacity of a stock or stock complex to produce maximum sustainable yield (MSY) on a continuing basis."

The National Standard 1 Guidelines provide more detail about these two methods, and require that FMPs describe which method will be used to determine an overfishing status:

50 C.F.R. § 600.310 (e)(2)(ii)(A)

Status Determination Criteria to determine overfishing status. Each fishery management plan (FMP) must describe which of the following two methods will be used for each stock or stock complex to determine an overfishing status.

(1) Fishing mortality rate exceeds maximum fishing mortality threshold (MFMT). Exceeding the MFMT for a period of 1 year or more constitutes overfishing. The MFMT or reasonable proxy may be expressed either as a single number (a fishing mortality rate or F value), or as a function of spawning biomass or other measure of reproductive potential.

(2) Catch exceeds the overfishing limit (OFL). Should the annual catch exceed the annual OFL for 1 year or more, the stock or stock complex is considered subject to overfishing.

The OFL is defined as an annual level of catch that corresponds directly to the MFMT, and is the best estimate of the catch level above which overfishing is occurring. Biomass is below SSB_{MSY}. The stock is considered to be overfished according to the current overfished definition ($1-M*SSB_{MSY}$) but it is not overfished based on the overfished definition for eight snapper grouper species in Regulatory Amendment 21, which will become effective on November 9, 2014 (79 FR 60379). As biomass of the blueline tilefish stock increases in response to measures to end overfishing, the SSC has indicated OFL should be equal to the yield at P*=0.50.

P*

The uncertainty buffer, or difference between an overfishing limit and ABC, is expressed in terms of a reduction in the probability of overfishing, or P*.

MFMT Method - Overfishing occurring if fishing mortality exceeds the MFMT

Currently, the MFMT method is being used to determine if the blueline tilefish stock is undergoing overfishing. This method is a more direct way of comparing the fishing rate to the maximum allowed rate of fishing, and it is less sensitive to recent fluctuations in recruitment than the OFL method. The estimates of fishing mortality are based on the maximum annual fishing mortality at any age. However, fishing mortality rates cannot be directly measured.

They must be calculated as part of a stock assessment or assessment update, thus fishing mortality rates are only available for years when assessments are conducted.

The current fishing mortality rate for blueline tilefish in SEDAR 32 (2013) is from 2011, which is the last year of data used in the assessment. Therefore, use of the "current fishing mortality" rate may not reflect the true status of the stock in years following a stock assessment, particularly if actions are taken to constrain effort and harvest.

OFL Method - Overfishing occurring if annual landings exceed the OFL

The OFL method is based on catch levels that are more easily understood by constituents than fishing mortality. Unlike fishing mortality rates, a determination can be made on an annual basis as soon as catch totals are available. However, the use of the OFL method might not be appropriate for stocks with highly variable recruitment that cannot be predicted and therefore incorporated into the forecast of stock condition on which the OFL is based.

Overfishing Definition for Blueline Tilefish

Each of the two methods for determining overfishing has benefits and drawbacks with MFMT being a better estimate of overfishing status in a year in which a stock is assessed and OFL a better estimate of overfishing status in years when a current estimate of fishing mortality is not available. Therefore, the Council proposes the use of both the MFMT and OFL as metrics to determine the overfishing status of blueline tilefish.

For blueline tilefish, overfishing will be determined on an annual basis by the MFMT and OFL methods. The estimate of F_{MSY} (MFMT) for blueline tilefish from SEDAR 32 is 0.302, while the corresponding OFL values increase as the stock rebuilds (Table 1.10.1). If either the MFMT (during an assessment year) or the OFL method (during a non-assessment year) is exceeded, the stock will be considered to be undergoing overfishing. Two examples are below:

Example 1. As a stock assessment was not conducted in 2014, the Council does not receive an updated estimate of fishing mortality that can be compared to F_{MSY} (MFMT). The OFL for 2015 is 54,612 lbs ww and provides the basis for the overfishing definition. Total landings in 2015 are 32,000 lbs ww and below the OFL (54,612 lbs ww). Overfishing in 2015 is not occurring.

Example 2. A SEDAR assessment is completed in 2015 and provides an updated estimate of fishing mortality that can be compared to the MFMT. The assessment changes the F_{MSY} (MFMT) value to 0.205. The current estimate of the fishing mortality, termed $F_{CURRENT}$, is 0.302. Landings in 2015 are 32,000 lbs ww, below OFL. However, even though landings are below OFL, $F_{CURRENT}$ is greater than MFMT. Overfishing in 2015 is occurring.

Table 1.10.1. Blueline tilefish estimates of F_{MSY} and OFL from SEDAR 32.

Year	OFL (yield P*=50% in lbs ww)	Fishing Mortality Rate at F_{MSY} (MFMT)
2015	54,612	0.302
2016	77,289	0.302
2017	98,970	0.302
2018	117,863	0.302

1.11 What is the Acceptable Biological Catch for Blueline Tilefish?

Through Amendment 32, the Council would be adopting the ABC recommendation from the SSC using the Council/SSC ABC Control Rule. The SSC's ABC recommendation is the yield at P*=0.30. The Southeast Fisheries Science Center (SEFSC) provided projections at P*=0.30, dated November 25, 2013. Two additional projections, as requested by the Council, were reviewed by the SSC at their April 2014 meeting (**Appendix M**).

The projections used 2013 recreational landings provided by the SEFSC and 2013 recreational landings that were an imputed average of landings from 2010 and 2012. The imputed average was done because of concerns associated with the 2013 recreational landings data from the SEFSC. The concerns were that landings in 2013 were an order of magnitude higher than in recent years and Florida landings dominated the catch. Landings of blueline tilefish are typically highest north of Cape Hatteras, North Carolina.

The SSC ultimately decided to use the landings estimate for the general recreational fleet generated by the Marine Recreational Information Program (MRIP) in the projections for ABC and OFL. It was determined that the trend line of the new projections would fall between the two projections already available since all other landings and discards would remain constant, and since the MRIP landings are intermediate between the SEFSC's estimate and the imputed average. The SSC decided to interpolate the new projections using the new level of landings from MRIP and the already available projections. The methodology for this interpolation is described in **Appendix E**. **Table 1.11.1** presents the recommended ABCs based on the interpolated projections.

Table 1.11.1. ABC (lbs ww) for blueline tilefish recommended by the Council's SSC in April 2014.

Year	ABC
2015	36,359
2016	54,548
2017	72,928
2018	89,769

1.12 How Does Amendment 29 Affect Amendment 32 Concerning the Deepwater Complex?

The Council, based upon the SSC's input, developed the ABC control rule for species in the Snapper Grouper fishery management unit through the Comprehensive ACL Amendment (SAFMC 2011c). The Council also specified ACLs for many snapper grouper species in this amendment, which were based on the ABCs. NMFS implemented the actions in the Comprehensive ACL Amendment through the final rule for the amendment (77 FR 15916); the regulations were effective on April 16, 2012.

The Council is proposing a revision to the ABC control rule for certain unassessed snapper grouper species in Amendment 29 to the Snapper Grouper FMP (SAFMC 2014b). The Council is adopting the SSC's recommended approach to determine ABC values for Only Reliable Catch Stocks (ORCS). See **Section 1.6** of Amendment 29 for a description of the ORCS approach. The actions in Amendment 29 would change the ABC for silk snapper and yellowedge grouper, which are contained within the Deepwater Complex. The Council approved Amendment 29 for review by the Secretary of Commerce at their September 2014 Council meeting and the amendment is currently under review by the Secretary of Commerce. The changes in the ACLs for the Deepwater Complex proposed in **Action 1** reflect the revisions to the ABCs for silk snapper and yellowedge grouper.

1.13 What is the History of Management for Blueline Tilefish?

The Council and NMFS first implemented regulations affecting blueline tilefish in the South Atlantic Region in 1983 (**Table 1.13.1)**. See **Appendix D** for a detailed history of management of blueline tilefish.

Table 1.13.1. Select regulations for blueline tilefish.

Date Implemented	Regulations Implemented
2/24/1999	Establishment of 5-fish aggregate grouper bag limit, which includes blueline tilefish
2/12/2009	Establishment of eight deepwater marine protected areas to protect a portion of the population and habitat of long-lived deepwater snapper grouper species
7/29/2009	Reduction of 5-fish aggregate grouper bag limit to a 3-fish aggregate.
1/31/2011	Prohibition on possession of deepwater snapper grouper species, including blueline tilefish, seaward of 240 feet in the South Atlantic EEZ.
4/16/2012	Creation of the Deepwater Complex. For Deepwater Complex, acceptable biological catch/annual catch limit = 675,908 lbs whole weight and established accountability measures
5/10/2012	Elimination of the harvest prohibition for six deepwater species, including blueline tilefish in depths greater than 240 feet

Chapter 2. Proposed Actions and Alternatives

2.1 Action 1. Revise the Composition of the Deepwater Complex and Adjust the Deepwater Complex Annual Catch Limits, Optimum Yield, and Annual Catch Targets

Alternative 1. (No Action). The current Deepwater Complex temporarily includes yellowedge grouper, silk snapper, misty grouper, queen snapper, sand tilefish, black snapper, and blackfin snapper. Blueline tilefish has been temporarily removed from the Deepwater Complex via an emergency rule issued under the Magnuson-Stevens Fishery Conservation and Management Act. Retain ACL=OY=ABC and the recreational annual catch target equal to ACL*(1-PSE) or ACL*0.5, whichever is greater, for the Deepwater Complex.

Alternative 2 (Preferred). Remove blueline tilefish from the Deepwater Complex. Revise the Deepwater Complex annual catch limits, optimum yield, and recreational annual catch targets to reflect the removal of blueline tilefish. **Retain ACL=OY=ABC for the Deepwater Complex.** Retain the recreational annual catch target equal to ACL*(1-PSE) or ACL*0.5, whichever is greater for the Deepwater Complex.

Alternative 3. Remove blueline tilefish from the Deepwater Complex. Revise the Deepwater Complex annual catch limits, optimum yield, and recreational annual catch targets to reflect the removal of blueline tilefish. **Establish ACL=OY=95%ABC for the Deepwater Complex.** Retain the recreational annual catch target equal to ACL*(1-PSE) or ACL*0.5, whichever is greater for the Deepwater Complex.

Alternative 4. Remove blueline tilefish from the Deepwater Complex. Revise the Deepwater Complex annual catch limits, optimum yield, and recreational annual catch targets to reflect the removal of blueline tilefish. **Establish ACL=OY=90%ABC for the Deepwater Complex.** Retain the recreational annual catch target equal to ACL*(1-PSE) or ACL*0.5, whichever is greater for the Deepwater Complex.

Alternative 5. Remove blueline tilefish from the Deepwater Complex. Revise the Deepwater Complex annual catch limits, optimum yield, and recreational annual catch targets to reflect the removal of blueline tilefish. **Establish ACL=OY=80%ABC for the Deepwater Complex.** Retain the recreational annual catch target equal to ACL*(1-PSE) or ACL*0.5, whichever is greater for the Deepwater Complex.

Discussion

The values for the Deepwater Complex annual catch limits (ACLs), optimum yield (OY), and recreational annual catch target (ACT) are listed below. **Alternatives 2 (Preferred)** through **5** assume Amendment 29 (SAFMC 2014b) is implemented. The actions in Amendment 29 would change the acceptable biological catch (ABC) for silk snapper and yellowedge grouper, which are contained within the Deepwater Complex.

Alternative	Deepwater Complex ACL, OY, and Recreational ACT (lbs whole weight)			
	Total ACL	Commercial ACL	Recreational ACL	Recreational ACT
Alternative 1 (no action)				
--Current: Temporary rule	79,684	60,371	19,313	197,100[1]
--When temporary rule expires	711,025	376,469	334,556	197,100
--If Amendment 29 implemented	801,619	447,732	353,887	200,577
Alternative 2 (Preferred) (ACL=OY=ABC)	170,278	131,634	38,644	13,134
Alternative 3 (ACL=OY=95%ABC)	161,764	125,052	36,712	12,477
Alternative 4 (ACL=OY=90%ABC)	153,250	118,471	34,780	11,821
Alternative 5 (ACL=OY=80%ABC)	136,222	105,307	30,915	10,507

[1]The Deepwater Complex recreational annual catch targets were not temporarily changed through the emergency rule.

2.1.1 A Summary of the Effects of the Alternatives

Alternative 1 (No Action) would not change the current species composition of the Deepwater Complex. The blueline tilefish portion of Deepwater Complex ACL is 89%. Therefore, landings of blueline tilefish have, by far, the greatest influence on triggering AMs for the Deepwater Complex. **Alternatives 2 (Preferred)** through **5** would remove blueline tilefish from the Deepwater Complex when temporary measures expire or are replaced by measure proposed in Amendment 32. Relative to **Alternative 1 (No Action)**, **Alternatives 2 (Preferred)-5** would be expected to have positive biological effects on the stock because AMs would be triggered when the blueline tilefish ACL is met rather than when the Deepwater Complex ACL is met. Removal of blueline tilefish under **Alternative 2 (Preferred)** would make it less likely that AMs would be triggered because, other than blueline tilefish, species in the Deepwater Complex are not generally targeted and their landings are minor.

Alternatives 3 through **5** would specify lower ACLs for the Deepwater Complex than **Alternatives 1 (No Action)** and **2 (Preferred)** and would likely result in positive biological effects on the stocks in the complex since allowable harvest would be reduced from current levels. **Alternative 5** would impart the greatest biological benefits as the ACL for the Deepwater Complex would be set 10% below the ABC to account for management uncertainty. Such a buffer would ensure that landings do not go above the ABC thus preventing overfishing. However, AMs would be in place (**Actions 5 and 6**) to retain landings below the ACL; hence, biological impacts would differ little among the proposed alternatives.

The highest short-term landings and ex-vessel revenues are expected to result from **Alternative 2 (Preferred). Alternatives 3-5** provide for a buffer between the ABC and the ACL, which would result in long-term economic benefits due to a greater likelihood of landings staying below the ACL. However, since the species in the Deepwater Complex (once blueline tilefish is removed) are not typically targeted, annual landings that exceed the ACL are unlikely. By removing blueline tilefish from the Deepwater Complex, **Alternative 2 (Preferred)** reduces the likelihood of an in-season closure and therefore results in long-term economic benefits due the greater possibility of a healthy stock.

Changing the species included in the Deepwater Complex is primarily administrative and would be expected to have little direct effects on fishermen and communities. Retaining blueline tilefish in the Deepwater Complex (**Alternative 1**) could affect fishermen targeting blueline tilefish by removing some flexibility. However, **Preferred Alternative 2** would allow more precise management of blueline tilefish without affecting management of the other deepwater species, which would be expected to result in long-term social benefits due to rebuilding of the blueline tilefish stock.

2.2 Action 2. Re-define Maximum Sustainable Yield for Blueline Tilefish

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

MSY for blueline tilefish was established through Amendment 11 to the Snapper Grouper FMP (Amendment 11; SAFMC 1998b). At that time, a stock assessment for blueline tilefish had not been conducted to estimate MSY. Therefore, the Council used a "proxy", or substitute, value for MSY at 30% of the Spawning Potential Ratio (SPR). Now that a stock assessment has been conducted that provides an estimate of MSY, the Council needs to take action to adopt the new value and continue to adopt recommended MSY values as they are obtained from the Southeast Data, Review, and Assessment (SEDAR) process and the Scientific and Statistical Committee (SSC).

	Equation	F_{MSY}	MSY Values (lbs whole weight)
Alternative 1. No Action	Do not change the current definition of MSY for blueline tilefish. Currently, MSY equals the yield produced by F_{MSY}. $F_{30\%SPR}$ is used as the F_{MSY} proxy.	$F_{30\%SPR}$=0.356	not specified
Alternative 2. Preferred	MSY equals the yield produced by F_{MSY} or the F_{MSY} proxy. MSY and F_{MSY} are recommended by the most recent SEDAR/SSC.	0.302	226,500

2.2.1 A Summary of the Effects of the Alternatives

MSY is a reference point used by managers to assess fishery performance over the long term. Defining MSY for blueline tilefish does not alter the current harvest or use of the resource. Specification of this metric merely establishes a benchmark for resource evaluation on which additional management actions would be based, if necessary. MSY in **Alternative 1 (No Action)** is defined as the yield produced by F_{MSY} where $F_{30\%SPR}$ is used as a proxy for F_{MSY} and represents the overfishing level defined in Amendment 11 (SAFMC 1998b). In **Alternative 1 (No Action)**, a poundage for MSY is not specified since one was not specified in Amendment 11. **Alternative 2 (Preferred)** would redefine MSY for the blueline tilefish stock based on the recommendation of the SEDAR 32 (2013) Review Panel and the Council's SSC to equal the value associated with the yield at F_{MSY} (226,500 lbs ww). The specification

of a MSY equation would have beneficial effects on blueline tilefish as it provides a reference point to monitor the long-term performance of the stock.

Since there would be no direct effects on resource harvest or use, there would be no direct effects on fishery participants, associated industries or communities. Direct effects only accrue to actions that alter harvest or other use of the resource. However, **Alternative 2 (Preferred)**, which is recommended in the most recent SEDAR and by the SSC, has a better scientific basis and thus provides a more solid ground for management actions that have economic and social implications.

2.3 Action 3. Establish Annual Catch Limits and Optimum Yield for Blueline Tilefish

Alternative 1 (No Action). Annual catch limits and optimum yield for blueline tilefish are temporarily in place. The National Marine Fisheries Service has temporarily removed blueline tilefish from the Deepwater Complex and established the following annual catch limits for blueline tilefish for the commercial and recreational sectors: total ACL = 224,100 pounds whole weight (lbs ww); commercial ACL = 112,207 lbs ww; and recreational ACL = 111,893 lbs ww. The temporary measures will be in place for 180 days (through October 14, 2014) and may be extended for 186 additional days.

Note: Blueline tilefish is in the Deepwater Complex and there is an annual catch limit for the complex. The Deepwater Complex annual catch limit is 711,025 lbs ww and blueline tilefish accounts for 631,341 lbs ww of the annual catch limit. Action 1 proposes to remove blueline tilefish from the complex. If Action 1 is implemented and the temporary annual catch limit expires, there would not be an annual catch limit for blueline tilefish.

Alternative 2. Establish annual catch limits for blueline tilefish. The blueline tilefish ACL = OY = ABC. Specify commercial and recreational annual catch limits for blueline tilefish for 2015, 2016, 2017, and 2018 and beyond. The annual catch limit for 2018 will remain in effect until modified. Annual catch limits in 2016, 2017, and 2018 will not increase automatically in a subsequent year if present year projected catch has exceeded the total annual catch limit. Specify commercial and recreational annual catch limits based on existing sector allocations (50.07% commercial and 49.93% recreational).

	Blueline Tilefish ACL (lbs ww)		
Year	**Total**	**Commercial**	**Recreational**
2015	36,359	18,205	18,154
2016	54,548	27,312	27,236
2017	72,928	36,515	36,413
2018 and beyond until modified	89,769	44,947	44,822

Alternative 3 (Preferred). Establish annual catch limits for blueline tilefish. The blueline tilefish ACL = OY = 98%ABC. Specify commercial and recreational annual catch limits for blueline tilefish for 2015, 2016, 2017, and 2018 and beyond. The annual catch limit for 2018 will remain in effect until modified. Annual catch limits in 2016, 2017, and 2018 will not increase automatically in a subsequent year if present year projected catch has exceeded the total annual catch limit. Specify commercial and recreational annual catch limits based on existing sector allocations (50.07% commercial and 49.93% recreational).

	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

Alternative 4. Establish annual catch limits for blueline tilefish. The blueline tilefish ACL = OY = 90%ABC. Specify commercial and recreational annual catch limits for blueline tilefish for 2015, 2016, 2017, and 2018 and beyond. The annual catch limit for 2018 will remain in effect until modified. Annual catch limits in 2016, 2017, and 2018 will not increase automatically in a subsequent year if present year projected catch has exceeded the total annual catch limit. Specify commercial and recreational annual catch limits based on existing sector allocations (50.07% commercial and 49.93% recreational).

	Blueline Tilefish ACL (lbs ww)		
Year	Total	Commercial	Recreational
2015	32,723	16,384	16,339
2016	49,093	24,581	24,512
2017	65,635	32,864	32,772
2018 and beyond until modified	80,792	40,453	40,339

2.3.1 A Summary of the Effects of the Alternatives

Prior to April 17, 2014, blueline tilefish was included in the Deepwater Complex. The blueline tilefish portion of the Deepwater Complex ACL was 631,341 pounds whole weight (lbs ww). However, effective April 17, 2014, the National Marine Fisheries Service (NMFS) temporarily removed blueline tilefish from the Deepwater Complex through a Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) emergency rule and specified an individual ACL for blueline tilefish. Although NMFS implemented a temporary ACL to reduce overfishing as specified in **Alternative 1 (No Action)**, this alternative would not reduce fishing mortality levels to those necessary to end overfishing on a long-term basis. **Alternatives 2** through **4** would be expected to have positive biological effects on the stock since allowable harvest levels would be reduced to levels that reflect the current status of the stock. **Alternative 4** would have greater positive effects on the blueline tilefish stock compared to **Alternatives 2** and **3 (Preferred)** as **Alternative 4** would establish the lowest catch levels.

Alternative 2, **Alternative 3 (Preferred)**, and **Alternative 4** propose more conservative ACLs than **Alternative 1 (No Action)** and could result in short-term economic losses. However, these alternatives would potentially result in long-term economic benefits once the stock is rebuilt through higher landings

and ex-vessel revenues for the commercial sector and higher total consumer surplus and net operating revenues over time for the recreational sector. The range of proposed ACLs among **Alternatives 2, 3 (Preferred),** and **4** differ by about 3,600 lbs ww and 9,000 lbs ww for 2015 and for 2018 and beyond, respectively. Therefore, differences in resulting economic impacts among these alternatives are relatively small. However, differences between the proposed alternatives and **Alternative 1 (No Action)** are large. For 2015, the expected annual ex-vessel loss to the commercial sector from **Alternatives 2**, **3 (Preferred)** and **4**, would be between $196,000 to $200,000 (in 2012 U.S. dollars). For the recreational sector, landings in 2015 are expected to decrease by 94,000 pounds. Commercial landings (based on logbooks) of blueline tilefish in 2012 were approximately 294,000 lbs ww (**Table 3.3.11**) while recreational landings were estimated at 89,000 lbs ww (**Table 4.3.2**) but were projected to be much higher (over 300,000 lbs ww) for 2013 (see **Appendix M**). Therefore, the actual commercial annual ex-vessel revenue losses and recreational consumer surplus, and net operating revenue losses could be three times the amount calculated here if landings are not maintained at or below the ACL. The differences in expected long-term economic benefits are minor among **Alternatives 2**, **3 (Preferred)**, and **4**. **Alternative 1 (No Action)**, however, is expected to result in the smallest long-term economic benefits.

Blueline tilefish is an important component to the commercial species landed in Wanchese, North Carolina, in addition to potentially being an important recreational species in communities such as Key West, Florida (see **Section 3.3.3**). Changes to the ACL and access to the resource could affect individuals and businesses in these communities. However, in Wanchese, the overall importance to the community is not as great as that of other species. The importance to specific vessels is unknown but the primary effect would likely be vessels substituting other species for blueline tilefish, if available, when access to the blueline tilefish resource is limited or prohibited. In general, the higher the ACL, the greater the short-term social and economic benefits that would be expected to accrue, assuming long-term recovery is met. 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 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.

2.4 Action 4. Establish a Recreational Annual Catch Target for Blueline Tilefish

Alternative 1 (No Action). Do not establish an individual annual catch target for blueline tilefish for the recreational sector.

Note: Blueline tilefish is in the Deepwater Complex and there is an annual catch target for the complex. Action 1 proposes to remove blueline tilefish from the complex. If Action 1 is implemented and the temporary annual catch target expires, there would not be an annual catch target for blueline tilefish.

Alternative 2 (Preferred). Establish an annual catch target for blueline tilefish for the recreational sector that equals the recreational ACL*(1-PSE) or ACL*0.5, whichever is greater.

	Blueline Tilefish ACT (lbs ww)		
Year	**Action 3; Preferred Alternative 2 (ACL=ABC)**	**Action 3; Alternative 3 (ACL=98%ABC)**	**Action 3; Alternative 4 (ACL=90%ABC)**
2015	11,368	11,141	10,231
2016	17,055	16,714	15,350
2017	22,802	22,346	20,522
2018 and beyond until modified	28,067	27,506	25,261

Note: Calculations use the most recent 5 years of recreational landings to obtain the PSE.

	Blueline Tilefish PSE
Year	
2009	35.6
2010	27.8
2011	43.6
2012	27.8
2013	52.1
Average	37.38

Alternative 3. Establish an annual catch target for blueline tilefish for the recreational sector that equals 85% of the recreational annual catch limit.

	Blueline Tilefish ACT (lbs ww)		
Year	**Action 3; Alternative 2 (ACL=ABC)**	**Action 3; Alternative 3 (ACL=98%ABC)**	**Action 3; Alternative 4 (ACL=90%ABC)**
2015	15,431	15,122	13,888
2016	23,150	22,687	20,835
2017	30,951	30,332	27,856
2018 and beyond until modified	38,098	37,336	34,289

Note: Blueline tilefish is in the Deepwater Complex and there is an annual catch limit for the complex. Action 1 proposes to separate blueline tilefish from the complex.

2.4.1 A Summary of the Effects of the Alternatives

If the recreational sector were managed by comparing landings to the ACT, then **Alternative 2 (Preferred)** would have the greatest biological benefit of the three alternatives considered since the ACT is lower than that under **Alternative 3**. By using the proportional standard error (PSE) in **Preferred Alternative 2**, more precaution is taken with increasing variability and uncertainty in the landings data since the lower the PSE value, the more reliable the landings data. If AMs were triggered when landings reached or were projected to reach the ACT, the need to close or implement post-season AMs that are meant to correct for an ACL overage would be diminished. However, at present, ACTs are used as a reference point to track performance of the management measures imposed on the recreational sector. No AMs are triggered if recreational landings reach the recreational ACT. Hence, biological effects are neutral for all alternatives considered, including **Alternative 1 (No Action)**.

If ACTs were used to trigger control measures, they would serve as "cushions" to effectively limit harvests and thus contribute to rebuilding of the stock. Long-term economic benefits would then ensue from a healthy stock. As long as long-term economic benefits outweigh short-term costs, the fishing industry, and society in general, would be better off. If the ACT were used to trigger AMs for the recreational sector, economic effects would be similar in nature to those under **Action 3**, though not necessarily in magnitude. Under that scenario, **Alternative 1 (No Action)** would have the same economic effects as any of the ACL alternatives under **Action 3**.

Because the ACT is used for monitoring only, it is expected that the social effects of **Alternative 1 (No Action)**, **Preferred Alternative 2**, and **Alternative 3** would be the same.

2.5 Action 5. Specify Accountability Measures for Blueline Tilefish and the Deepwater Complex for the Commercial Sector

Alternative 1 (No Action). Accountability measures are temporarily in place for blueline tilefish for the commercial sector. The National Marine Fisheries Service has temporarily removed blueline tilefish from the Deepwater Complex and established an in-season accountability measure for blueline tilefish for the commercial sector. The accountability measure is as follows: If commercial landings for blueline tilefish reach or are projected to reach the commercial annual catch limit, National Marine Fisheries Service will file a notification with the Office of the Federal Register to close the commercial sector for blueline tilefish for the remainder of the fishing year. The temporary measures will be in place for 180 days (through October 14, 2014) and may be extended for 186 additional days.

Accountability measures are in place for the Deepwater Complex for the commercial sector. The accountability measures are as follows: **In-season**: If commercial landings for the Deepwater Complex, as estimated by the Science and Research Director, reach or are projected to reach the commercial annual catch limit, the Assistant Administrator for Fisheries will file a notification with the Office of the Federal Register to close the commercial sector for this complex for the remainder of the fishing year. **Post-season**: If commercial landings exceed the ACL and at least one species overfished, reduce the ACL in following year by overage amount.

Note: Blueline tilefish is in the Deepwater Complex and there is an accountability measure for the commercial sector for the complex. Action 1 proposes to remove blueline tilefish from the complex. If Action 1 is implemented and the temporary accountability measure for the commercial sector expires, there would not be an accountability measure for blueline tilefish.

Alternative 2 (Preferred). Specify the following in-season and post-season accountability measures for blueline tilefish and the Deepwater Complex for the commercial sector: If commercial landings as estimated by the Science and Research Director reach or are projected to reach the commercial annual catch limit, 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 is prohibited and harvest or possession of this species in or from the South Atlantic exclusive economic zone 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 as appropriate, without regard to where such species were harvested, i.e., in state or Federal waters. Additionally,

Sub-alternative 2a. If the commercial annual catch limit is exceeded, the Regional Administrator shall publish a notice to reduce the commercial annual catch limit in the following fishing year by the amount of the commercial overage, only if the species* is overfished.

Sub-alternative 2b. If the commercial annual catch limit is exceeded, the Regional Administrator shall publish a notice to reduce the commercial annual catch limit in the following fishing year by the amount of the commercial overage, only if the total annual catch limit (commercial annual catch limit and recreational annual catch limit) is exceeded.

Sub-alternative 2c (Preferred). If the commercial annual catch limit 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 annual catch limit (commercial annual catch limit and recreational annual catch limit) is exceeded.

*Note: For the Deepwater Complex, at least one of the species would need to be overfished.

2.5.1 A Summary of the Effects of the Alternatives

Alternative 1 (No Action) allows the Regional Administrator to close the commercial sector in-season if the blueline tilefish ACL is met or projected to be met. However, this measure is only temporarily in place. An in-season closure AM is currently in place for the Deepwater Complex. After the temporary rule expires, **Alternative 2 (Preferred)** would prohibit commercial harvest of blueline tilefish when the ACL is projected to be met. **Alternative 2 (Preferred)** would also continue the in-season closure for the Deepwater Complex when the commercial ACL is met or is projected to be met. Thus, **Alternative 2 (Preferred)** would be expected to have beneficial effects when compared to **Alternative 1 (No Action)**. The sub-alternatives for **Alternative 2 (Preferred)** would specify commercial payback provisions for blueline tilefish and the Deepwater Complex, and enhance the biological benefits provided by an in-season closure. Currently, there is no mechanism to correct an ACL overage if one were to occur. Therefore, biological benefits would be realized under any of the three sub-alternatives considered when compared to **Alternative 1 (No Action)**. **Sub-alternative 2a** is associated with only one criterion for triggering implementation of a payback of the ACL, and it would ensure that paybacks are triggered when they are most needed, i.e., when the species is overfished. However, if a species is not overfished and the commercial ACL is exceeded, no payback would be required. Thus, **Sub-alternative 2a** would only result in biological benefits if the species is overfished. **Sub-alternative 2b** is likely to have similar or greater beneficial biological impacts than **Sub-alternative 2a**, as the AM would be triggered when both the recreational and commercial ACLs have been exceeded regardless of overfished status. **Sub-alternative 2c (Preferred)** would be triggered the least frequently of the sub-alternatives under consideration, because the payback would only be required if two criteria are met: (1) blueline tilefish is overfished, and (2) the total ACL has been exceeded. Since **Sub-alternative 2c (Preferred)** would implement a commercial payback under infrequently encountered simultaneous events, it would have fewer biological benefits than **Sub-alternatives 2a** and **2b**.

All options under **Alternative 2** would result in short-term ex-vessel revenue losses to the commercial sector compared to recent landings. Over the long-term, however, these alternatives would provide a beneficial economic scenario for the commercial sector by addressing issues related to overfishing of the stock. With a relatively stable stock over time, future harvest would increase or at least would be stable. This stability could benefit the commercial sector financially by paving the way for more confident business planning with more predictable landings that could result in improvements in reliability of landings to dealers and their markets.

In general, the most beneficial in the long term for the stock and for sustainable fishing opportunities is a combination of an in-season closure and a payback provision. However, some flexibility in how these AMs are triggered, such as conditions of the stock being overfished or the total ACL being exceeded, can help to mitigate the negative short-term impacts on fishermen and associated businesses and communities. **Sub-alternatives 2a, 2b,** and **2c (Preferred)** would provide some flexibility and specifics for triggering payback provisions if the ACL is exceeded. **Preferred Sub-alternative 2c** would provide the most flexibility for triggering the payback AM, in that the most critical conditions must be met before the payback is triggered, and would be expected to be most beneficial to commercial fishermen in that it would be less likely that a payback is required for an overage. Additionally, **Preferred Sub-alternative 2c** would be more consistent with AMs implemented for other species such as king mackerel and Spanish mackerel.

2.6 Action 6. Specify Accountability Measures for Blueline Tilefish and the Deepwater Complex for the Recreational Sector

Alternative 1 (No Action). Accountability measures are temporarily in place for blueline tilefish for the recreational sector. -The National Marine Fisheries Service has temporarily removed blueline tilefish from the Deepwater Complex and established an in-season accountability measure for blueline tilefish for the recreational sector. The accountability measure is as follows: If recreational landings for blueline tilefish reach or are projected to reach the recreational annual catch limit, National Marine Fisheries Service will file a notification with the Office of the Federal Register to close the recreational sector for blueline tilefish for the remainder of the fishing year. The temporary measures will be in place for 180 days (through October 14, 2014) and may be extended for 186 additional days.

Accountability measures are in place for the Deepwater Complex for the recreational sector. The accountability measures are as follows: **In-season:** none. **Post-season:** If recreational landings for the Deepwater Complex exceed the recreational annual catch limit then during the following fishing year, recreational landings will be monitored for a persistence in increased landings and, if necessary, the National Marine Fisheries Service will reduce the length of the following recreational fishing season by the amount necessary to ensure recreational landings do not exceed the recreational annual catch limit in the following fishing year.

Note: Blueline tilefish is in the Deepwater Complex and there is an accountability measure for the recreational sector for the complex. Action 1 proposes to remove blueline tilefish from the complex. If Action 1 is implemented and the temporary accountability measures for the recreational sector expire, there would not be AMs for blueline tilefish.

Alternative 2 (Preferred). Specify the following post-season accountability measures for blueline tilefish and the Deepwater Complex for the recreational sector: If recreational landings, as estimated by the Science and Research Director, exceed the recreational annual catch limit, then during the following fishing year, recreational landings will be monitored for a persistence in increased landings.

Sub-alternative 2a. If necessary, the Regional Administrator shall publish a notice to reduce the length of fishing season and the recreational annual catch limit in the following fishing year by the amount of the recreational overage, only if the species* is overfished. The length of the recreational season and recreational annual catch limit will not be reduced if the Regional Administrator determines, using the best scientific information available, that a reduction is unnecessary.

Sub-alternative 2b. If necessary, the Regional Administrator shall publish a notice to reduce the length of fishing season and the recreational annual catch limit in the following fishing year by the amount of the recreational overage, only if the total annual catch limit (commercial annual catch limit and recreational annual catch limit) is exceeded. The length of the recreational season and recreational annual catch limit will not be reduced if the Regional Administrator determines, using the best scientific information available, that a reduction is unnecessary.

Sub-alternative 2c (Preferred). If necessary, the Regional Administrator shall publish a notice to reduce the length of the fishing season and the recreational annual catch limit in the following fishing year by the amount of the recreational overage, only if the species* is overfished **and** the total annual catch limit (commercial annual catch limit and recreational annual catch limit) is exceeded. The length of the recreational season and recreational annual catch limit will not be reduced if the Regional Administrator determines, using the best scientific information available, that a reduction is unnecessary.

Alternative 3. Specify the following in-season accountability measures for blueline tilefish and the Deepwater Complex for the recreational sector: If recreational landings for blueline tilefish reach or are projected to reach the recreational annual catch limit, National Marine Fisheries Service will file a notification with the Office of the Federal Register to close the recreational sector for blueline tilefish for the remainder of the fishing year.

Alternative 4 (Preferred). If recreational landings reach or are projected to reach the recreational annual catch limit for blueline tilefish and the Deepwater Complex, National Marine Fisheries Service will file a notification with the Office of the Federal Register to close the recreational sector for the remainder of the fishing year, unless, using the best scientific information available, the Regional Administrator determines that a closure is unnecessary.

Sub-alternative 4a. If the species* is overfished.

Sub-alternative 4b (Preferred). Regardless of stock status.

*Note: For the Deepwater Complex, at least one of the species would need to be overfished.

2.6.1 A Summary of the Effects of the Alternatives

Alternative 4 (Preferred) and **Sub-alternative 4b (Preferred)** would allow for an in-season recreational closure of blueline tilefish and the Deepwater Complex, regardless of stock status. Thus, **Alternative 4 (Preferred)** and **Sub-alternative 4b (Preferred)** would provide positive biological benefits for blueline tilefish and the Deepwater Complex relative to **Alternative 1 (No Action)**. **Sub-alternatives 2a, 2b,** and **2c (Preferred)** would enhance the biological benefits provided by **Alternative 4 (Preferred)** and **Sub-alternative 4b (Preferred)** by providing a payback provision. **Sub-alternatives 2a, 2b,** and **2c (Preferred)** would maintain the ability of the Regional Administrator to interpret landings data to determine whether a payback is needed. These Sub-alternatives would all allow the payback to take the form of a recreational ACL reduction and a season length reduction, compared to **Alternative 1 (No Action),** which is a temporary in-season closure if landings are projected to reach the ACL for blueline tilefish and the Deepwater Complex.

Sub-alternative 2a would require payback of a recreational overage and a reduction in the length of the season but only if the species is overfished. This scenario could lead to negative biological impacts, especially if the recreational ACL is exceeded repeatedly without an overfished determination. **Sub-alternative 2b** requires a reduction in the length of the fishing season and the recreational ACL if the total ACL (commercial and recreational ACL combined) is exceeded. It is expected that the AM under **Sub-alternative 2b** would be triggered more frequently and have a greater biological benefit than **Sub-alternative 2a**. **Sub-alternative 2c (Preferred)** differs from **Sub-alternative 2b** in that the ACL payback and reduction in the length of the season would only take place if the species is overfished and the total ACL is exceeded. In the case of the Deepwater Complex, at least one species within the Complex would need to be overfished. This AM is the least likely to be triggered considering that two criterial, instead of one, would need to be met for a payback to occur. Under **Sub-alternative 2c (Preferred)**, no action would be taken to correct for a recreational ACL overage unless both of those criteria are met. Therefore, **Sub-alternative 2c (Preferred)** may be the least biologically beneficial compared to the other **Alternative 2** sub-alternatives.

Alternatives 3 and **4 (Preferred)** would implement in-season measures to prevent the ACL from being exceeded thus preventing the need for implementation of a post season AM specified under **Alternative 2**. Biologically, it is preferable to prevent overexploitation of a resource rather than correcting for it after overharvest has occurred. **Alternatives 3** and **4 (Preferred)** may not be practicable by themselves; however, for species with extremely small recreational ACLs, such as blueline tilefish. For this reason, the most biologically beneficial option would be to implement a system of recreational AMs that combines **Alternatives 2 (Preferred)** and **3** or **4 (Preferred)**. The difference between **Sub-alternatives 4a** and **4b (Preferred)** is that the former would only require an in-season closure if a species is overfished, whereas the latter would require an in-season closure regardless of stock status. As mentioned previously, for the Deepwater Complex, at least one species within the Complex would need to be overfished. **Sub-alternative 4b (Preferred)** is the biologically preferable Sub-alternative under **Alternative 4 (Preferred)**. However, under **Alternative 4 (Preferred)**, the Regional Administrator would have the option to not implement an in-season closure for a species that is not overfished, if the best scientific information indicates a closure is not necessary. In that scenario, the biological benefits of **Sub-alternative 4b (Preferred)** may be equal to those under **Sub-alternative 4a**.

Under **Alternative 1 (No Action)**, an in-season closure is temporarily in place for the blueline tilefish recreational sector. When the temporary rule expires, there will be no AM for blueline tilefish. The recreational AM for the Deepwater Complex is to reduce the length of the following fishing season if the ACL is exceeded. **Alternative 1 (No Action)** would not economically benefit the blueline tilefish recreational sector in the long-term because it would not help to prevent overfishing. Overfishing leads to long-term economic losses in terms of consumer surplus and revenues for headboat and charter operations due to decreases in available harvest as a result of decreased stock health. **Alternative 3** and **Alternative 4 (Preferred)** would prohibit harvest of blueline tilefish or the Deepwater Complex when the recreational ACL is projected to be met. **Sub-alternatives 2a, 2b,** and **2c (Preferred)** would enhance the biological benefits provided by **Alternative 4 (Preferred)** and **Sub-alternative 4b (Preferred)** by providing a payback provision if the recreational ACL is exceeded. Thus, the combined effects of an in-season closure and payback provision under **Alternatives 2 (Preferred)-4 (Preferred)** are more restrictive than **Alternative 1 (No Action)** and provide a beneficial economic outcome for the recreational sector by addressing issues related to overfishing of the stock but allowing for greater access to the resource than under **Alternative 1 (No Action)**.

For the recreational sector, **Alternative 1 (No Action)** would have minimal social effects but also would not establish necessary AMs for blueline tilefish and the Deepwater Complex, which could have negative social effects if the long-term health of the stock or complex is affected. Establishment of a payback provision for the recreational sector for stocks without an in-season AM under **Preferred Alternative 2** could increase the likelihood that an overage of the recreational ACL would reduce fishing opportunities in the following year. However **Sub-alternatives 2a, 2b,** and **Preferred 2c** provide some flexibility in how a post-season payback would be triggered, with **Preferred Sub-alternative 2c** being the least likely to trigger a payback and affecting recreational fishing opportunities in the subsequent year for both the Deepwater Complex and for blueline tilefish. The in-season AMs proposed under **Alternative 3** and **Alternative 4 (Preferred)** could have negative effects on recreational fishing opportunities and for-hire businesses because there has not been an in-season recreational AM in place for blueline tilefish or the Deepwater Complex. However, the in-season closure would likely help reduce the frequency of paybacks, along with offering additional protection for the resource. **Preferred Alternative 4** would provide flexibility for when the in-season AM is triggered if information is available that

indicates that the closure is not necessary, which could help reduce the likelihood of an in-season closure. **Preferred Sub-alternative 4b** would provide additional flexibility and is expected to further reduce the likelihood of an in-season closure, more so than **Sub-alternative 4a**.

2.7 Action 7. Establish a Trip Limit for Blueline Tilefish for the Commercial Sector

Alternative 1 (No Action). Do not establish a trip limit for blueline tilefish for the commercial sector.

Preferred Alternative 2. Establish a commercial trip limit for blueline tilefish of 100 pounds gutted weight (lbs gw).

Alternative 3. Establish a commercial trip limit for blueline tilefish of 200 pounds gutted weight (lbs gw).

Alternative 4. Establish a commercial trip limit for blueline tilefish of 300 pounds gutted weight (lbs gw).

2.7.1 A Summary of the Effects of the Alternatives

The biological effects of proposed **Alternatives 2 (Preferred)** through **4** 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 have been made to the quota monitoring system, and the Council has approved a Dealer Reporting Amendment (GMFMC and SAFMC 2013b) effective August 7, 2014, which should enhance 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. The use of longlines has steadily increased since 2007, peaking in 2011 when approximately 81% of the commercial catch of blueline tilefish was with this gear. 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.

Overall, it would be expected that fishermen and crew working on vessels in Wanchese, North Carolina would be the most affected by the proposed trip limits in **Preferred Alternative 2**. **Alternative 1 (No Action)** would be most beneficial for vessels that wish to maximize trip efficiency and have other species to target when blueline tilefish is not available. However, with the proposed commercial ACL in **Action 3**, it is likely that the commercial season would be much shorter than in recent years with no trip

limit in place (see **Table 4.7.1**). For fishing businesses that would benefit more from a higher trip limit than a longer season, **Alternative 4** would be the most beneficial, followed by **Alternative 3** and **Preferred Alternative 2**. Any changes to fishing trips could affect captains, crew, fish houses and dealers, and businesses associated with blueline tilefish harvest.

The trip limits proposed in **Alternatives 2 (Preferred)-4** would likely prohibit a vessel from making a trip only to target blueline tilefish, and would require multi-species trips. This could change fishing behavior for fishermen harvesting blueline tilefish, and could affect associated businesses and communities such as Wanchese, North Carolina, and possibly Murrells Inlet and Little River in South Carolina. However, **Alternatives 2 (Preferred)-4** could also be considered a bycatch allowance and allow fishermen to keep some blueline tilefish caught on trips targeting other species, which could improve profitability and efficiency of the trip. The negative effects of trip limits on fishermen using longline gear is expected to be more severe than on fishermen using hook and line, due to time and effort required for the longline sector.

2.8 Action 8. Adjust the Bag Limit for Blueline Tilefish for the Recreational Sector

Alternative 1 (No Action). Retain blueline tilefish in the aggregate grouper bag limit of 3/person/day. 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. Remove blueline tilefish from the aggregate grouper bag limit.

Alternative 3. Establish a bag limit of blueline tilefish of 1/person/day.

Alternative 4. Establish a vessel limit of blueline tilefish of 1/vessel/day.

Preferred Alternative 5. Establish a vessel limit of blueline tilefish of 1/vessel/day May through August and no retention during the remainder of the year.

Alternative 6. Establish a vessel limit of blueline tilefish of 1/vessel/day year during May and June with no retention during the remainder of the year.

Alternative 7. Establish a vessel limit of blueline tilefish of 1/vessel/day during May with no retention during the remainder of the year.

Alternative 8. Establish a vessel limit of blueline tilefish of 1/vessel/day during June with no retention during the remainder of the year.

2.8.1 A Summary of the Effects of the Alternatives

The biological effects of **Alternatives 3** through **8** are expected to be neutral compared with **Alternative 1 (No Action)**, because ACLs and AMs are in place to cap harvest, and take action if ACLs are exceeded. However, alternatives with larger bag limits could present a greater biological risk to blueline tilefish in terms of exceeding the ACL since the rate of harvest would be greater. For example, **Alternative 3** would implement a bag limit of one per person per day and the expected closure date is January 26th. If this alternative is implemented, fishery managers would not be aware that the ACL was reached until later in the fishing season. In this scenario, it is possible that the recreational ACL would be exceeded, unless meeting the ACL was anticipated through landings projections, and NMFS implemented an in-season closure. If less conservative bag limits increase the probability of an overage of the ACL, then more conservative bag limit alternatives (**Alternatives 6** through **8**) would have greater beneficial effects to the resource than less conservative alternatives (**Alternatives 3** through **5 (Preferred)**).

The bag limit analysis results in **Table 4.8.2** show that **Alternative 1 (No Action)** could result in a January 5th closure date with a recreational fishing season of four days. The remaining alternatives (other than **Alternative 2**), have projected season lengths of 25 days (**Alternative 3**), approximately 30 days (**Alternatives 7 and 8**), 61 days (**Alternative 6**), 123 days (**Preferred Alternative 5**), and 195 days (**Alternative 4**). Season lengths would be extended based on a sensitivity analysis that substitutes 2014 data for data from Waves 1 and 2 in 2013 (**Table 4.8.4**). **Alternative 4**, which proposes 1 fish per vessel per day is expected to result in the greatest number of days available for recreational fishermen to access the resource. **Alternative 4** is also expected to result in the greatest capture of the recreational ACL. Therefore, **Alternative 4** is expected to result in the largest short-term economic benefits to the recreational sector. **Alternatives 6**, **7**, and **8** offer the least amount of the ACL to be taken (3.3%, 1.6%, and 1.6%, respectively). These last three alternatives are among the least economically beneficial in the short-term (due to lower number of days with access to the resource) but possibly the most long-term economic benefits (if there is a decreased incidence of an overage) for the recreational sector after **Alternative 2**.

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 4.8.1**), as well as the effects on current recreational fishing opportunities. The aggregate bag limit (**Alternative 1 (No Action)**) would not contribute to directed management of blueline tilefish. Additionally, as shown in **Appendix L**, **Alternative 1 (No Action)** could result in the shortest projected season (4 days). **Alternative 2** could have negative long-term social effects associated with any biological effects of no bag limit for blueline tilefish, such as lower ACLs or limited access to the resource. The biological and social effects of removing blueline tilefish from the grouper aggregate under **Alternative 2** would not be different from **Alternative 1 (No Action)** because the grouper aggregate is rarely met. **Alternatives 3-8** would limit recreational fishing opportunities for blueline tilefish but would also be expected to contribute to successful rebuilding of the stock. Establishing a recreational season for blueline tilefish under **Alternatives 5 (Preferred)-8** could contribute to rebuilding the stock and reducing discards of blueline tilefish by confining recreational landings in a small time period each year.

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

- **Human 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 2009b) 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 (Council) online map services provided by the newly developed Council 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 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.

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 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 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.

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. The fact that these fish populations congregate together dictates the nature of the fishery (multi-species) and further forms the type of management regulations proposed in this document.

3.2.1 Fish Stocks

3.2.1.1 Blueline Tilefish, *Caulolatilus microps*

Life History

Blueline tilefish 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 lbs) (Dooley 1978). Maximum reported age is

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 fish caught off of VA are considered a part of the South Atlantic stock.
- The spawning season extends from March to October, peaking May.
- Age for oldest fish discovered is 43 years.

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).

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 (See **Sections 3.2.1.2-3.2.1.4** for a discussion of the deepwater species).

Biomass and Landings

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.

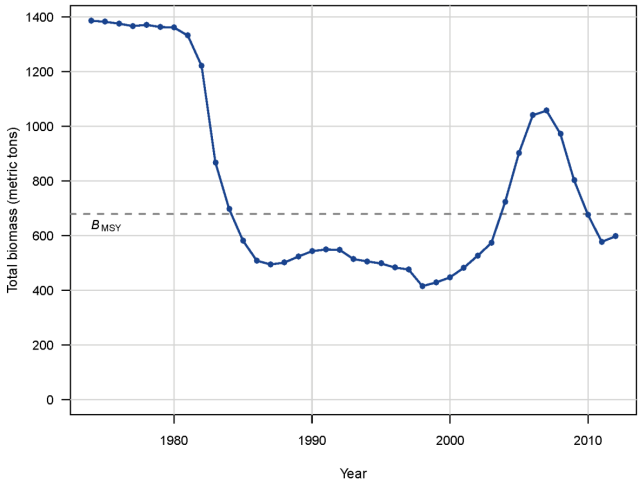


Figure 3.2.1. Estimated total biomass (metric tons) at start of year (SEDAR 32 2013).

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**).

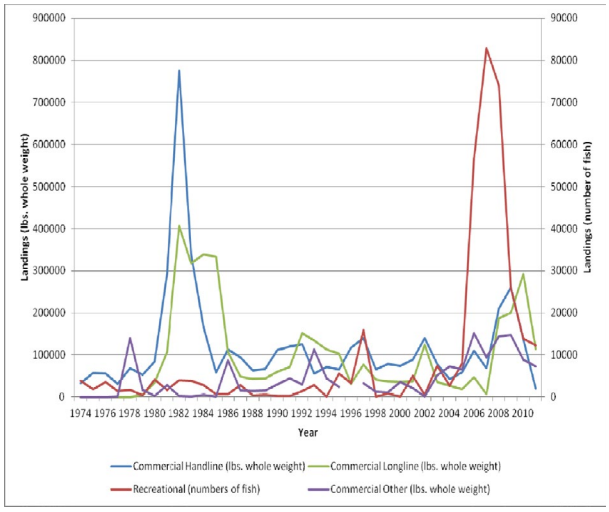


Figure 3.2.2. South Atlantic blueline tilefish commercial and recreational landings by fleet. Commercial landings are in lbs of whole weight. Recreational landings are in numbers of fish. (SEDAR 32 2013).

The 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 fishery.

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.

Stock Status

Stock assessments, through the evaluation of biological and statistical information, provide an evaluation of stock health under the current management regime and other potential future harvest conditions. More specifically, the assessments provide an estimation of maximum sustainable yield (MSY) and a determination of stock status (whether *overfishing* is occurring and whether the stock is *overfished*).

The Southeast Data, Assessment, and Review (SEDAR) process, initiated in 2002, is a cooperative Fishery Management Council process intended to improve the quality, timeliness, and reliability of fishery stock assessments in the South Atlantic, Gulf of Mexico, and US Caribbean. SEDAR is managed by the Caribbean, Gulf of Mexico, and South Atlantic Fishery Management Councils in coordination with NMFS and the Atlantic and Gulf States Marine Fisheries Commissions. SEDAR emphasizes constituent and stakeholder participation in assessment development,

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

Following an assessment, the South Atlantic Fishery Management Council's (Council) Scientific and Statistical Committee (SSC) reviews the stock assessment information and advises the Council on whether the stock assessment was performed utilizing the best available data and whether the outcome of the assessment is suitable for management purposes.

The results of SEDAR 32, utilizing the most recent data from 2011, determined the blueline tilefish stock to be **undergoing overfishing** and **to be overfished** according to the current definition of MSST **(Table 3.2.1).** However, effective November 6, 2014, (79 FR 60379), blueline tilefish will **not be overfished** based on the overfished definition in Regulatory Amendment 21 to the Snapper Grouper FMP (SAFMC 2014a). The SSC reviewed the assessment at their October 2013 meeting and approved it as the best available science and usable for management purposes. The Council, through Amendment 32 to the Snapper Grouper FMP, intends to implement management measures to end overfishing and rebuild the stock. See **Appendix D** for a history of management of blueline tilefish.

Table 3.2.1. Stock status of blueline tilefish.

	SEDAR 32 (2011 most recent data)
Overfishing (F_{CURR}/MFMT value)	Yes (1.30)
Overfished (B_{CURR}/MSST value)	Yes (0.909)

- $F_{CURR} = F_{2011}$
- If F_{CURR}>MFMT, then undergoing overfishing. The higher the number, the greater degree of overfishing.
- If B_{CURR}<MSST, then overfished. The lower the number, the greater degree of overfished.
- Note: The stock status is from the base run. Changing the base run changes the level of overfishing/overfished.

3.2.1.2 Golden tilefish, *Lopholatilus chamaeleonticeps*

Life History

Golden tilefish (*Lopholatilus chamaeleonticeps*) are distributed throughout the Western Atlantic, occurring as far north as Nova Scotia, to southern Florida, and in the eastern Gulf of Mexico (Robins and Ray 1986). According to Dooley (1978), golden tilefish occurs at depths of 80-540 meters (263-1,772 feet). Robins and Ray (1986) report a depth range of 82-275 meters (270-900 feet) for golden tilefish. They are most commonly found at about 200 meters (656 feet), usually over mud or sand bottom but, occasionally, over rough bottom (Dooley 1978).

Maximum reported size is 125 centimeters (50") total length and 30 kilograms (66 lbs) (Dooley 1978; Robins and Ray 1986). Maximum reported age is 40 years (Harris et al. 2001). Radiocarbon aging indicates golden tilefish may live for at least 50 years (Harris, South Carolina Department of Natural Resources, personal communication). A recent Southeast Data Assessment and Review (SEDAR) assessment estimated natural mortality (M) at 0.08 (SEDAR 4 2004). Golden tilefish spawn off the southeast coast of the U.S. from March through late July, with a peak in April (Harris et al. 2001). Grimes et al. (1988) indicate peak spawning occurs from May through September in waters north of Cape Canaveral. Golden tilefish primarily prey upon shrimp and crabs, but also eat fishes, squid, bivalves, and holothurians (Dooley 1978).

Biomass and Landings

Biomass of golden tilefish decreased beginning in 1980 and has been increasing since 2001 **(Figure 3.2.1).**

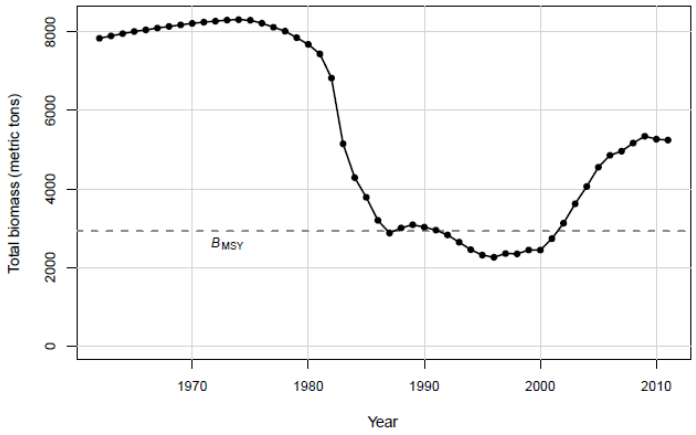


Figure 3.2.1. Estimated total biomass (metric tons) for golden tilefish.
Source: SEDAR 25 2011.

Stock Status

The SEDAR 25 (2011) assessment of the golden tilefish stock indicated that the U.S. southeast stock of tilefish is currently **not overfished** and **overfishing is not occurring**. The stock assessment results show that the biomass of golden tilefish has increased substantially since the last assessment and is now above B_{MSY}. Current fishery status in the terminal year, with current F represented by the geometric mean from 2008-2010, is estimated to be $F_{2008-2010}/F_{MSY}$= 0.36.

3.2.1.3 Snowy Grouper, *Epinephelus niveatus*

Life History

The snowy grouper, *Epinephelus niveatus*, is a commercially important deepwater species that occurs in the western Atlantic from Massachusetts to Brazil, including Bermuda, Cuba, the Bahamas, and the Gulf of Mexico (Carpenter 2002). Along the coast of the southeast United States, adult snowy grouper are predominantly found on the upper continental slope (> 75 m; Lee et al. 1985) at depths of 116-259 m (Low and Ulrich 1983; Moore and Labisky 1984; Parker and Ross 1986), whereas juveniles are more common at shallower depths (Moore and Labisky 1984). Low and Ulrich (1983) and Wyanski et al. (2000) noted a positive correlation between total length (TL) and water depth off South Carolina. Snowy Grouper feed on fish, crabs and other crustaceans, squid, and snails (Heemstra and Randall 1993).

Snowy grouper is a protogynous hermaphrodite that reaches sexual maturity between the ages of 3 and 8 years (Wyanski et al. 2000), most by the age of 5 yrs (Moore and Libisky 1984) to 7 years (Wyanski et al. 2000). Wyanski et al. (2000) found evidence that the number of males in the population decreased between the 1970s and the 1990s off North Carolina and South Carolina. The maximum age reported by Wyanski et al. (2013) is 35 years for a mature female and 32 years for a mature male. Populations of protogynous fishes would not be expected to have females older than males. The authors noted that some of the oldest specimens do not transition to male and omitted the age 35-year old female from the analyses. The spawning season for snowy grouper is from April through September (Wyanski et al. 2000, 2013). Snowy grouper is slow growing, with the estimates of 'k' in the von Bertalanffy growth model ranging from 0.07 to 0.12 in life history studies (Matheson and Huntsman 1984; Moore and Labisky 1984; Wyanski et al. 2000). Snowy grouper are capable of reaching a size of 1.2 m (4 ft) in length and 30 kg (66 lb) in weight (Heemstra and Randall 1993). SEDAR 36 (2013) determined natural mortality (M) = 0.12, and is constant over time, but decreasing with age.

Biomass and Landings

Most fishing for this species occurs in habitats characterized by rocky ledges, cliffs, and swift currents (Matheson and Huntsman 1984). Snowy grouper in the South Atlantic Region is

harvested by hook-and-line gear and bottom longline gear. Annual commercial landings of snowy grouper in the South Atlantic ranged from about 37,000 lb gw to 89,000 lb gw from 2009 through 2013 **(Figure 3.2.2)**. Commercial landings of snowy grouper peaked in 2012 and troughed in 2011 by both weight and revenue. On average, the private mode dominated in the harvest of snowy grouper; however, the for-hire mode landed more snowy grouper than the private mode in 2010 and 2011 **(Figure 3.2.3)**.

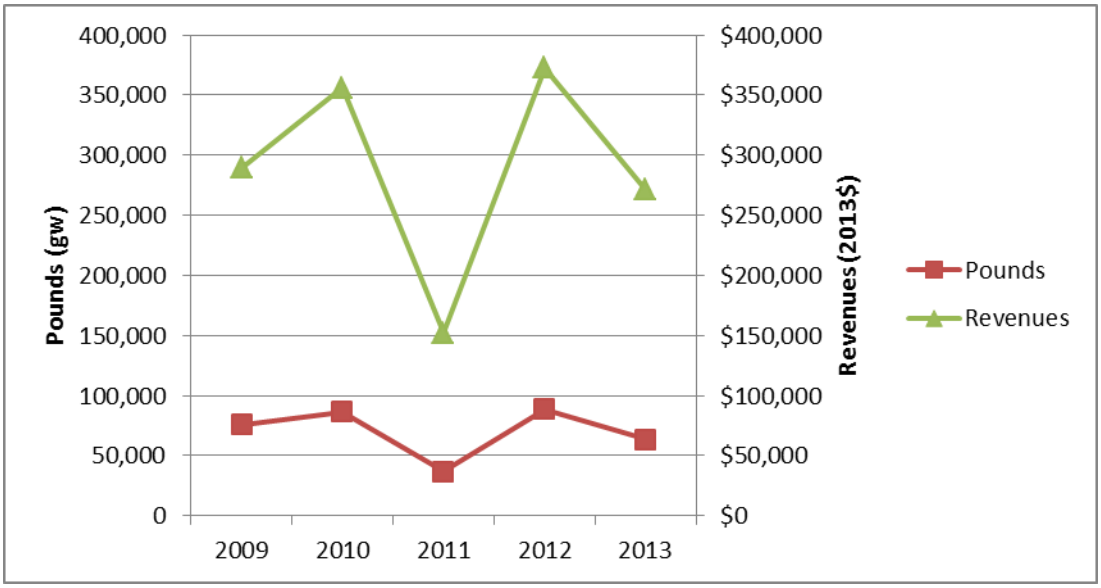


Figure 3.2.2. Annual commercial landings of snowy grouper by weight (lb gw) and dockside revenue (2013 $).
Source: SEFSC Commercial ACL Dataset, excluding confidential data.

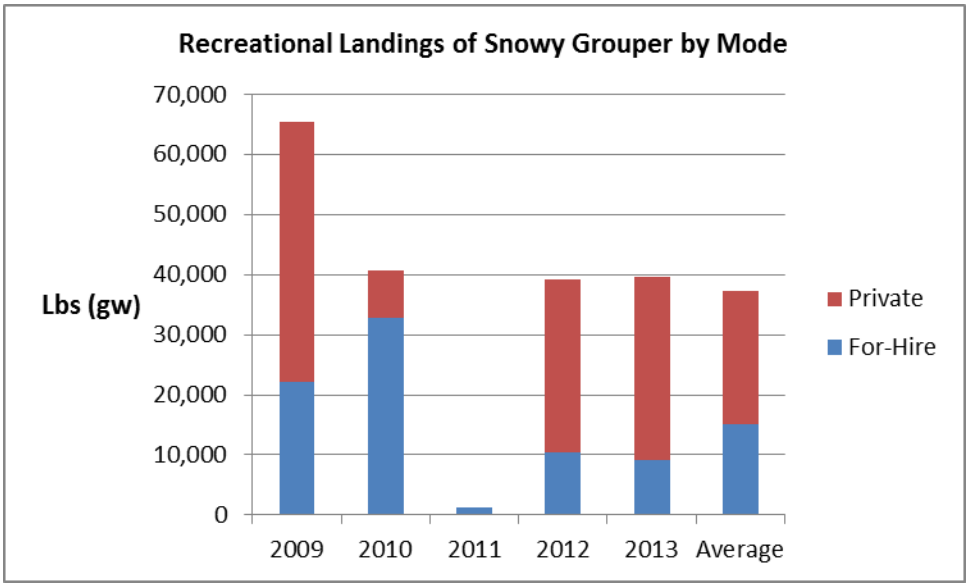


Figure 3.2.3. Recreational landings (gw) of snowy grouper by fishing mode, 2009-2013.
Source: SEFSC ACL Recreational Dataset (mrfssassess_rec81_13wv6_24feb14).

The following description of the snowy grouper biomass was reported in the SEDAR 36 assessment report: "In general, estimated abundance at age showed truncation of the older ages through most of the assessment period, but with some signs of increase during the last decade. Total estimated abundance was at its lowest value in the mid-2000s, but more recently was estimated to be near levels comparable to those in the 1980s and 1990s. The highest recruitment values were predicted to have occurred in the mid-1970s. The most recent strong recruitment events (age-1 fish) were predicted to have occurred in 2000-2003."

Estimated biomass at age followed a similar pattern as abundance at age. Total biomass and spawning biomass showed similar trends-general decline through the mid-1980s, and relatively stable or slowly increasing patterns since the mid-1990s **(Figure 3.2.4)**.

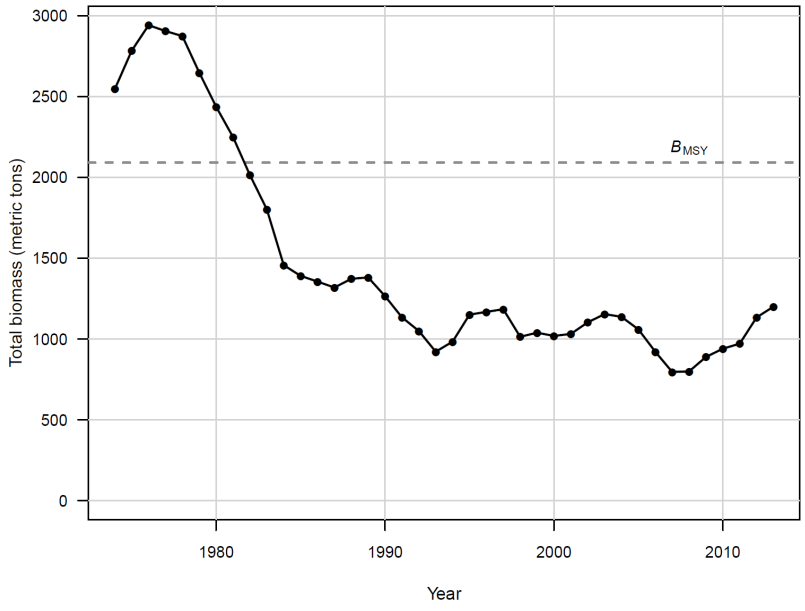


Figure 3.2.4. Estimated total biomass (metric tons) at start of year. Horizontal line indicates B_{MSY} (SEDAR 36 2013).

Stock Status

In 2004, the snowy grouper stock was assessed through Southeast Data Assessment and Review (SEDAR) process as a benchmark assessment (SEDAR 4 2004), which indicated that it was overfished and undergoing overfishing. In 2008, Amendment 15A to the Snapper Grouper Fishery Management Plan (Amendment 15A; SAFMC 2008a) defined a rebuilding schedule as the maximum recommended period to rebuild if $T_{MIN} > 10$ years. The maximum recommended period equaled T_{MIN} + one generation time = 34 years for snowy grouper, where 2006 was Year 1. Amendment 15A also defined a rebuilding strategy for snowy grouper that maintained a modified/constant fishing mortality rate throughout the rebuilding timeframe. The total

allowable catch (TAC) specified for 2009 would remain in effect beyond 2009 until modified = 102,960 lbs whole weight (ww).

In 2013, the snowy grouper stock was assessed through SEDAR as a standard assessment (SEDAR 32 2013), and the snowy grouper stock was determined to be **overfished, but not undergoing overfishing**. SEDAR 2013 also recommended revised stock status criteria for snowy grouper. The Council, through Regulatory Amendment 20, intends to implement management measures prevent overfishing and rebuild the snowy grouper stock. **Table 3.2.2** summarizes the results of the most recent stock assessment for snowy grouper, as well as the status determination criteria for this species.

Table 3.2.2. Stock status of snowy grouper. Values in pounds whole weight (lbs ww).

	SEDAR 36 (2012 most recent data)
Overfishing ($F_{2010-2012}/F_{MSY}$)	No (0.59)
Overfished ($SSBF_{2012}$/MSST(75%))	Yes (0.65)
F_{MSY} (proxy for MFMT)	0.14
MSY	418,600
MSST	1,442,264
OFL*	2015 -- 216,894 2016 -- 229,595 2017 -- 242,296 2018 -- 253,043 2019 -- 265,744
ABC	2015 -- 164,136 2016 -- 178,791 2017 -- 192,469 2018 -- 205,170 2019 -- 218,848

*OFL at equilibrium = 418,600 lb ww. OFL values for the years 2015 through 2019 are from Table 21 in SEDAR 36; values shown do not include discards.

3.2.1.4 Deepwater Complex

Black Snapper
(Apsilus dentatus)

Black snapper occur in the Western Central Atlantic, off the Florida Keys, and in the western Caribbean Sea. A demersal species, the black snapper is primarily found over rocky bottom habitat, although juveniles are sometimes found near the surface. It moves offshore to deep-water reefs and rocky ledges as it matures (SAFMC 1999). Allen (1985) reported the depth range as 100-300 m (328-984 ft). Off Jamaica, it is most abundant at depths of 60-100 m (197-328 ft) (Thompson and Munro 1974).

Maximum reported size is 65.0 cm (25.7 in) TL (male) and 3.2 kg (7.1 lbs) (Allen 1985). Observed maximum fork lengths are 56.0 cm (22.2 in) FL and 54cm (21.4 in) FL for males and females, respectively (Thompson and Munro 1974).

Black snapper have separate sexes throughout their lifetime. Size and age at maturity estimated in Froese and Pauly (2003) is 34.9 cm (13.8 in) TL and 1 year, respectively. Estimated mean size at maturity for fish collected off Jamaica is 43.0-45.0 cm (17.0-17.8 in) FL and 39.0-31.0 (15.4-16.2 in) cm FL for males and females, respectively (Thompson and Munro 1974). In the northeastern Caribbean, individuals in spawning condition have been observed from February through April and in September (Erdman 1976). Off Jamaica, the greatest proportions of ripe fishes were found from January to April and from September to November. Large catches occasionally obtained over a short period suggest a schooling habit for this species (Thompson and Munro 1974). Prey includes fishes and benthic organisms, including cephalopods, tunicates, and crustaceans (Thompson and Munro 1974; Allen 1985).

Blackfin Snapper
(Lutjanus buccanella)

Blackfin snapper occur in the Western Atlantic, generally ranging from North Carolina, south throughout the Bahamas to southeast Brazil (Robins and Ray 1986). This is a demersal species, with adults occurring in deeper waters over sandy or rocky bottoms, and near drop-offs and ledges (Allen 1985) ranging from 50-91 m (164-300 ft) depth. Juveniles occur in shallower waters, often associated with reefs in depths of 35-50 m (115-164 ft) (Allen 1985). Male blackfin snapper can reach sizes of 75.0 cm (29.8 in) and 14 kg (30.9 lbs). Blackfin snapper do not change sex. Off Jamaica, the length at first maturity for males is 25.0-27.0 cm (9.9-10.7 in) FL and the mean length of females is 23.0-25.0 cm (9.1-9.9 in) FL (Thompson and Munro 1983). Allen (1985) identified fishes as the primary prey item of blackfin snapper.

Yellowedge Grouper
(Epinephelus flavolimbatus)

Yellowedge grouper occur in the Western Atlantic from North Carolina to southern Brazil, including the Gulf of Mexico. A solitary, demersal, deepwater species, the yellowedge grouper occurs in rocky areas and on sand mud bottom, at depths ranging from 64 to 275 m (210 to 902 ft). On soft bottom habitats, this fish is often seen in or near trenches or burrow-like excavations (Heemstra and Randall 1993). Maximum reported size is 114 cm (45.3 in) TL (male) and 18.6 kg (41 lbs). Cass-Calay and Bahnick (2002) observed a maximum age of 85 years that was validated by the use of radiocarbon dating. M is estimated to be 0.05 (Cass-Calay and Bahnick 2002). Bullock et al. (1996) in the Gulf of Mexico reported that 50% of fishes are mature at 22.4 in, and that 50% of females transform into males by 81 cm (32.2 in) TL. Spawning occurs from April through October in the South Atlantic (Manooch 1984; Parker and Mays 1998). Ripe females were found in the eastern Gulf of Mexico from May through September (Bullock et al. 1996). Yellowedge grouper eat a wide variety of invertebrates (mainly brachyuran crabs) and fishes (Bullock and Smith 1991; Heemstra and Randall 1993).

Silk Snapper
(Lutjanus vivanus)

Silk snapper occur in the Western Atlantic, from North Carolina to Brazil, including the Bahamas and northern Gulf of Mexico. It is commonly found along rocky ledges, in depths of 91-242 m (299-794 ft) (Robins and Ray 1986). Adults are generally found further offshore than juveniles (SAFMC 1999), and usually ascend to shallow water at night (Allen 1985). Silk snapper form moving aggregations of similar-sized individuals (Boardman and Weiler 1980). Maximum reported size is 83.0 cm (32.9 in) TL and 8.3 kg (18.3 lbs) (Allen 1985). Size at maturity and age at first maturity are estimated at 43.4 cm (17.2 in) TL and 6.3 years, respectively (Froese and Pauly 2003). Silk snapper do not change sex. Spawning occurs in June, July, and August in waters off North and South Carolina (Grimes 1987). Silk snapper eat primarily fishes, shrimps, crabs, gastropods, cephalopods, tunicates, and some pelagic items, including urochordates (Allen 1985).

Misty Grouper
(Epinephelus mystacinus)

Misty grouper occur in the Western and Eastern Atlantic Ocean (Heemstra and Randall 1993). In the Western Atlantic, it ranges from Bermuda, the Bahamas, and to Brazil (Robins and Ray 1986). The misty grouper is a solitary, bathydemersal species. Adults generally occur at depths from about 100 to 55 m (328 to 180 ft) (Robins 1967). Juveniles occur in shallower waters (e.g., 30 m; 98 ft). Little is known about the age, growth, and reproduction of this species. Maximum reported size is 160 cm (63 in) and 100 cm (39 in) TL for males and females, respectively. Maximum reported weight is 107 kg (236 lbs) (Heemstra and Randall 1993). The estimated size at maturity is 81.1 cm

(31.9 in), and M is 0.14 (Froese and Pauly 2003). This species feeds primarily on fishes, crustaceans, and squids (Heemstra and Randall 1993).

Sand Tilefish
(Malacanthus plumieri)

Sand tilefish occur in the Western and Southeast Atlantic. In the Western Atlantic, the species ranges from North Carolina to Brazil, including the Gulf of Mexico and Caribbean Sea. The sand tilefish occurs at depths of 10-153 m (33-502 ft), but is described as primarily a shallow-water benthic species. It generally occurs on sand and rubble bottoms, and it well known to build mounds of rubble and shell fragments near reefs and grass beds. Maximum reported size is 70.0 cm (27.7 in) SL (male) and 1.1 kg (2.4 lbs) (Dooley 1978). There is little information on the life history of this species. Since blueline tilefish and other tilefish species are not hermaphroditic (Harris and Wyanski In Review; Palmer et al. 2004), it is likely that sand tilefish is also a gonochorist. Prey items include stomatopods, fishes, polychaete worms, chitons, sea urchins, sea stars, amphipods, and shrimps (Dooley 1978).

Queen Snapper
(Etelis oculatus)

The queen snapper occurs in the Western Atlantic, ranging from North Carolina to Brazil, including the Gulf of Mexico and Caribbean Sea. It is commonly found near oceanic islands, and is particularly abundant in the Bahamas and the Antilles. This species is bathydemersal species (Allen, 1985) and moves offshore to deep-water reefs and rocky ledges as it grows and matures (SAFMC 1999). Allen (1985) indicates it is primarily found over rocky bottom habitat, in depths of 100 to 450 m (327 to 1,475 ft). Thompson and Munro (1974) report it was caught on mud slopes of the south Jamaica shelf at a depth of 460 m (1,508 ft). Maximum reported size is 100 cm TL (39 inches, male). Maximum reported weight is 5,300 g (11.7 lbs) (Allen 1985). Size at maturity and age at first maturity are estimated as 53.6 cm TL (21 inches) and 1 year, respectively. Spawning is reported to occur during April and May off St. Lucia (Murray et al. 1998). Approximate life span is 4.7 years; natural mortality rate, 0.76 (Froese and Pauly 2003). Primary prey items include small fishes and squids (Allen 1985).

3.2.2 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 they seriously injure or kill. 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, are also listed as endangered under the Endangered Species Act (ESA). In addition to those six marine mammals, five species of sea turtles (green, hawksbill, Kemp's ridley, leatherback, and loggerhead); the smalltooth sawfish; five DPSs of Atlantic sturgeon; and two *Acropora* coral species (elkhorn [*Acropora palmata*] and staghorn [*A. cervicornis*]) are also protected under the ESA. Portions of designated critical habitat for North Atlantic right whales, the Northwest Atlantic (NWA) DPS of loggerhead sea turtles, and *Acropora* corals occur within the Council's jurisdiction. Two species of coral found in the South Atlantic region are listed as threatened (*Acropora cervicornis* and *Acropora palmata*) under the Endangered Species Act (ESA) of 1973, as amended. In addition, on August 27, 2014, NMFS published a final rule to implement a determination to list 20 species of coral as threatened, five of which are found in the Caribbean. 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 most likely to interact with the snapper grouper fishery. The species potentially affected by the hook-and-line portion of the fishery are discussed below.

3.2.2.1 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. The following sections are a brief overview of the general life history characteristics of the sea turtles found in the South Atlantic region. Several volumes exist that cover the biology and ecology of these species more thoroughly (i.e., Lutz and Musick 1997; Lutz et al. 2002).

Green sea turtle hatchlings are thought to occupy pelagic areas of the open ocean and are often associated with *Sargassum* rafts (Carr 1987; Walker 1994). Pelagic stage green sea turtles are thought to be carnivorous. Stomach samples of these animals found ctenophores and pelagic

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

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

Kemp's ridley hatchlings are also pelagic during the early stages of life and feed in surface waters (Carr 1987, Ogren 1989). Once the juveniles reach approximately 20 cm carapace length they move to relatively shallow (less than 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. Although they will enter coastal waters and are seen over the continental shelf on a seasonal basis to feed in areas where jellyfish are concentrated. Leatherbacks feed primarily on cnidarians (medusae, siphonophores) and tunicates. Unlike other sea turtles, leatherbacks' diets 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).

3.2.2.2 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 Human Environment

3.3.1 Economic Description of the Commercial Sector

3.3.1.1 Snapper grouper fishery as a whole

The South Atlantic snapper grouper fishery is one of eight fisheries managed by the South Atlantic Fishery Management Council (Council): coastal migratory pelagics, coral and live bottom habitat, dolphin & wahoo, golden crab, shrimp, snapper grouper, spiny lobster, and *Sargassum*. Three of the eight managed fisheries are comprised of finfish (coastal migratory pelagics, dolphin & wahoo, and snapper grouper) and three are shellfish (golden crab, shrimp and spiny lobster). The snapper grouper fishery is the Council's only managed fishery with overfished stocks. According to the National Marine Fisheries Service (NMFS) 4th Quarter 2013 Update on stock status for Fish Stock Sustainability Index (FSSI) stocks, three stocks within the snapper grouper fishery were overfished (red porgy, red snapper, and snowy grouper) and five were experiencing overfishing (gag grouper, red snapper, snowy grouper, speckled hind, and warsaw grouper). Gag grouper was approaching an overfished condition.

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 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**).

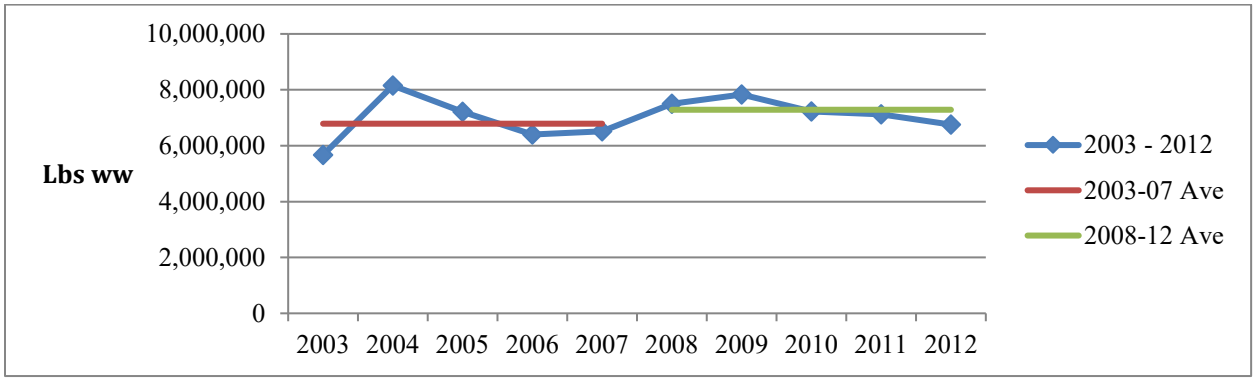


Figure 3.3.1. Annual commercial landings by weight (lbs ww) of snapper grouper species, 2003 – 2012. Source: SERO ACL.

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-lb permits have declined annually since 2008 resulting in increased concentration of the commercial sector of the fishery (**Table 3.3.2**). These permits do not allow fishing for wreckfish. To commercial 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 - 2014.

Year	Valid permits		Change		% Change	
	Unlimited	225-lb	Unlimited	225-lb	Unlimited	225-lb
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%

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

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-lb permits were not renewed/transferred.

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-lb			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 reside 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-lb 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 US Coast Guard (USCG) documents approximately 30% of the vessels with a 225-lb 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-lb permit have a USCG hailing port in Florida and 94% of the undocumented vessels with a 225-lb 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 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-lb 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-lb 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	0.00%	0.00%
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 (**Table 3.3.8**). The Deepwater, Grunts, Jacks, Porgies, Shallow Water Grouper, and Snappers Complexes are composed of multiple species. Eight species have comprised the Deepwater Complex: two species of groupers (misty grouper and yellowedge grouper), four species of snappers, (black snapper, blackfin snapper, queen snapper, and silk snapper) and two species of tilefishes (blueline tilefish and sand tilefish). However, a temporary rule (79 FR 21636) removed blueline tilefish from the Deepwater Complex from April 17, 2014 through October 14, 2014; the rule was extended until April 2015. Action taken through this amendment would permanently remove it from the complex. Consequently, the remainder of the description of the commercial sector focuses exclusively on blueline tilefish and the Deepwater Complex. 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.

Table 3.3.8. Snapper grouper species and complexes with ACLs and AMs.

Atlantic spadefish	Bar jack	Black grouper	Black sea bass
Blueline Tilefish	Deepwater Complex[1]	Gag	Gag
Goliath grouper	Gray triggerfish	Greater amberjack	Grunts Complex
Jacks Complex	Mutton snapper	Nassau grouper	Porgies Complex
Red grouper	Red porgy	Red snapper	Scamp
Shallow Water Grouper Complex	Speckled hind	Snappers Complex	Snowy grouper
Vermilion snapper	Warsaw grouper	Wreckfish	Yellowtail snapper

[1] Blueline tilefish was temporarily removed from the Deepwater Complex. Both have temporary ACLs and blueline tilefish has temporary AMs.

Deepwater Complex

The Deepwater Complex has been composed of black snapper, blackfin snapper, blueline tilefish, misty grouper, queen snapper, sand tilefish, silk snapper, and yellowedge grouper. The commercial fishing season for the Deepwater Complex begins January 1 and ends December 31; however, it closes early when landings reach or are projected to exceed the commercial ACL for the year. The 2012 season closed on September 8th when landings were projected to have reached the complex's commercial ACL. In 2012, commercial landings reached 383,951 lbs ww and exceeded the ACL of 343,869 lbs ww (SERO ACL).

Blueline tilefish has comprised the majority of annual commercial landings of the Deepwater Complex from 2003 through 2012 and its landings and share increased significantly after 2007 (**Figure 3.3.2**). From 2003 through 2007, average annual landings of blueline tilefish represented approximately 67% of average annual landings (lbs ww) of the complex and approximately 91% from 2008 through 2012. Also, its share of the complex's average annual dockside revenue rose from approximately 50% (2003 – 2007) to approximately 86% (2008 – 2012).

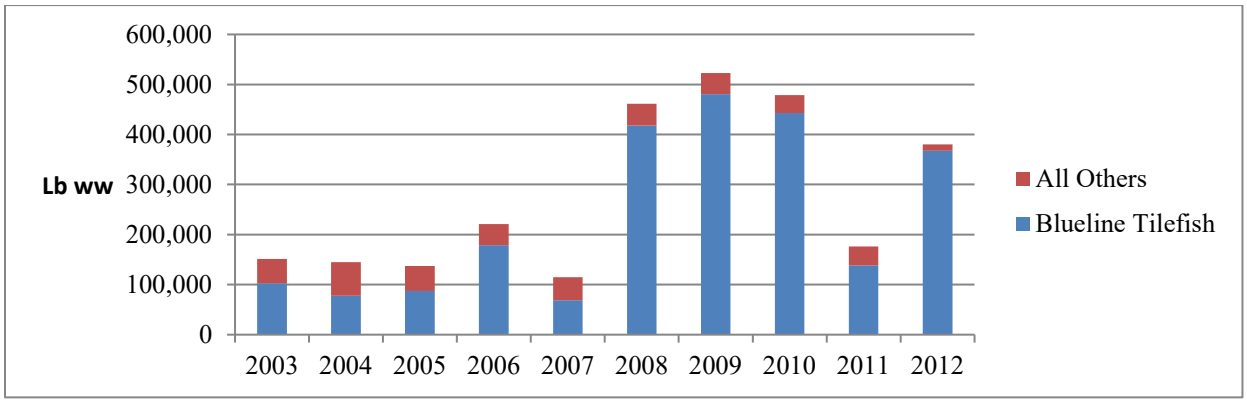


Figure 3.3.2. Annual commercial landings of Deepwater Complex with and without blueline tilefish, 2003 - 2012.
Source: SERO ACL.

Annual dockside revenue from Deepwater Complex landings varied from approximately $0.24 million to $1.01 million (2012 $) from 2003 through 2012, and landings of blueline tilefish have accounted for an increasing percentage of annual revenue from landings of the complex (**Figure 3.3.3**). Dockside revenue from blueline tilefish landings represented, on average, 48% of annual dockside revenue (2012 $) of complex landings from 2003 through 2007 and 85% from 2008 through 2012.

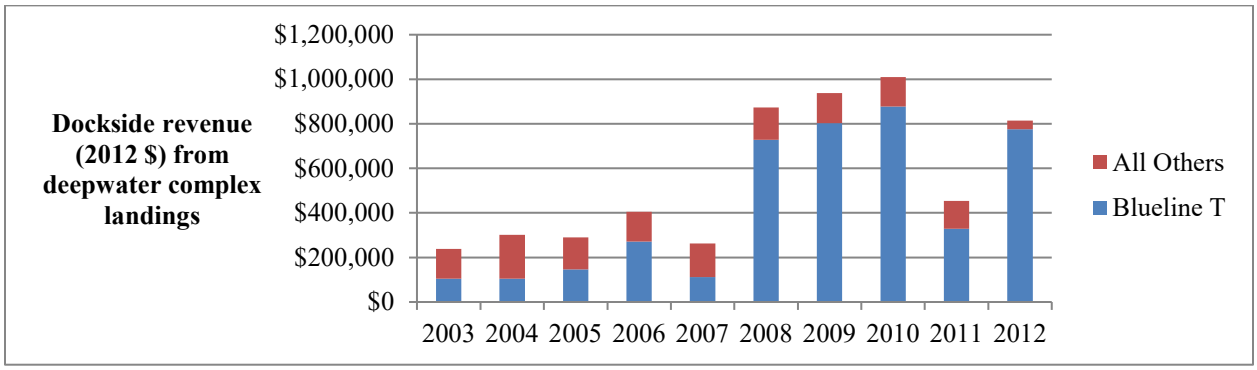


Figure 3.3.3. Annual dockside revenue (2012 $) from Deepwater Complex landings, with and without blueline tilefish, 2003 - 2012.
Source: SERO ACL.

Average dockside price of blueline tilefish has ranked second to last among the Deepwater Complex species (**Figure 3.3.4**). Snappers and groupers typically yield a significantly higher price at the dock, which motivates an exploration as to why commercial landings of blueline tilefish would increase so dramatically after 2007 and what happened to commercial landings of other species within what has been the Deepwater Complex.

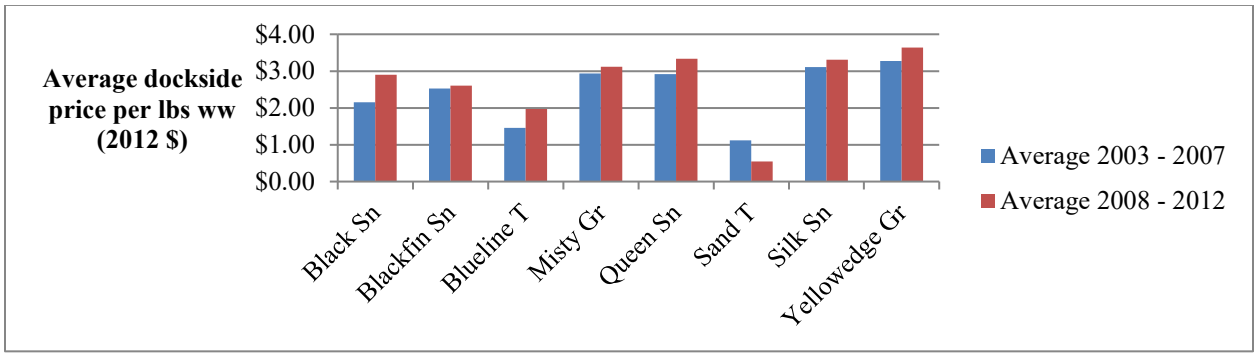


Figure 3.3.4. Average dockside price (2012 $) of Deepwater Complex species, 2003-2007 and 2008-2012.
Source: NMFS ALS, excluding confidential data.

Black snapper

Commercial landings of black snapper represent a very small portion of commercial landings of the Deepwater Complex and it ranks last in commercial landings (lbs ww) among the species in the complex. Total commercial landings of black snapper from 2003 through 2007 represented 0.1% of total commercial landings by weight of the complex for those years and 0.02% of the complex's commercial landings by weight from 2008 through 2012 (SERO ACL).

From 2003 through 2012, annual commercial landings of black snapper varied from zero to less than 400 lbs ww (**Figure 3.3.5**). Over the five years from 2003 through 2007, an annual average of 156 lbs ww was landed and, in the second 5-year period, an annual average of 85 lbs ww of black snapper was landed. Prior to 2010, vessels without a valid Federal commercial snapper grouper permit could harvest and sell snapper grouper species, such as black snapper.

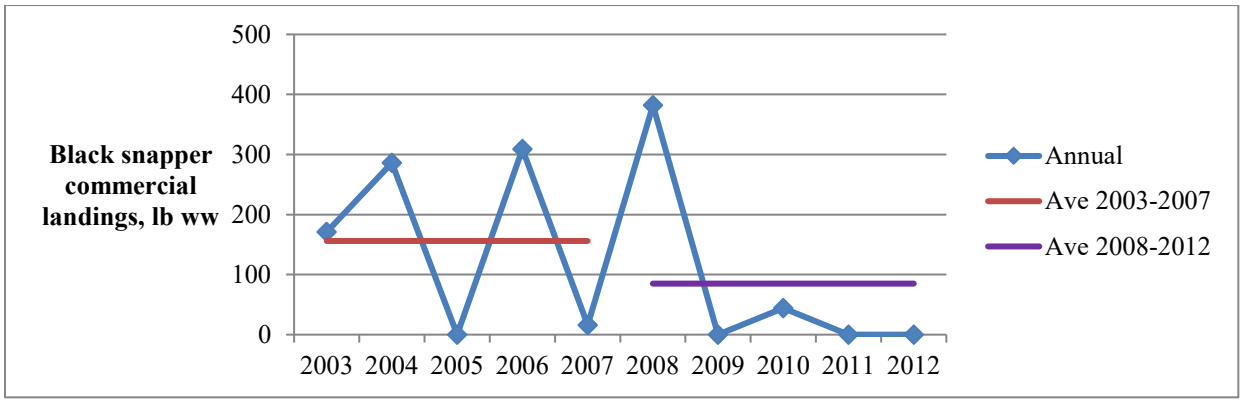


Figure 3.3.5. Annual and average commercial landings of black snapper (lb ww), 2003 – 2012. Source: SERO ACL.

Dockside revenue (2012 $) from annual commercial landings of black snapper varied from zero to $813 from 2003 through 2012. Average annual revenue from 2003 through 2007 and from 2008 through 2012 was $385 and $160, respectively. The average price ranged from $1.61 to $4.19 per pound ww. Total revenue from black snapper landings represented 0.13 % and 0.02% of total dockside revenue from landings of the Deepwater Complex from 2003 through 2007 and 2008 through 2012, respectively.

Over the 5-year period from 2003 through 2007, November and March were the top two months for commercial landings (lbs ww) of black snapper, but during the 5-year period from 2008 through 2012, those two months ranked at the bottom by percent of those commercial landings. From 2008 through 2012, August and September ranked first and second.

During the 10-year period from 2003 through 2012, all of the commercial landings of black snapper occurred off Florida's east coast. Hook-and-line gear has been and is the most popular gear used to harvest black snapper. Both hand and power-assisted hook-and-line gear accounted

for 71% of all commercial landings of black snapper from 2003 through 2012. Black snapper must be landed with head and fins intact, and its minimum size limit is 12 inches TL.

Blackfin snapper

Commercial landings of blackfin snapper represent a very small portion of commercial landings of the Deepwater Complex, and from 2003 through 2012 blackfin snapper ranked second to last among the Deepwater Complex's species. From 2003 through 2007, blackfin snapper commercial landings represented 0.77% of commercial landings of the Deepwater Complex by weight (lbs ww) and 0.99% by dockside revenue (2012 $). Its contribution to the complex's landings declined from 2008 through 2012. During those latter five years, commercial landings of blackfin snapper represented 0.40% of commercial landings of the complex by weight and 0.54% by dockside revenue (SERO ACL).

From 2008 through 2012, annual commercial landings of blackfin snapper varied from 611 to 2,857 lbs gw (**Figure 3.3.6**). There was a sharp rise in annual landings in 2009, then a less but almost equally sharp decline in 2012. During the 5-year period from 2008-2012, an annual average of 1,719 lbs gw of blackfin snapper with an average annual value of $4,871 ($2012) was landed. Annual dockside revenue varied from $1,489 to $8,008 (2012 $) (**Figure 3.3.7).** The average dockside price varied from $2.24 to $3.34 (2012 $)

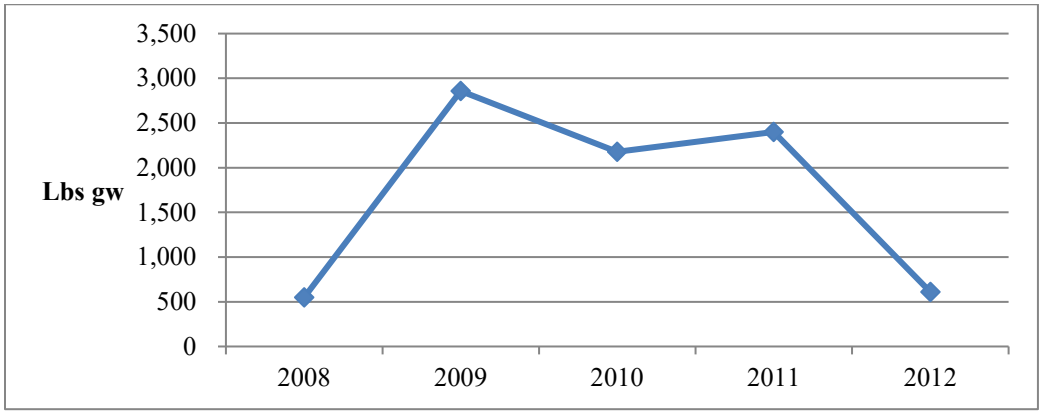


Figure 3.3.6. Annual commercial landings of blackfin snapper by weight (lbs ww). Source: SEFSC.

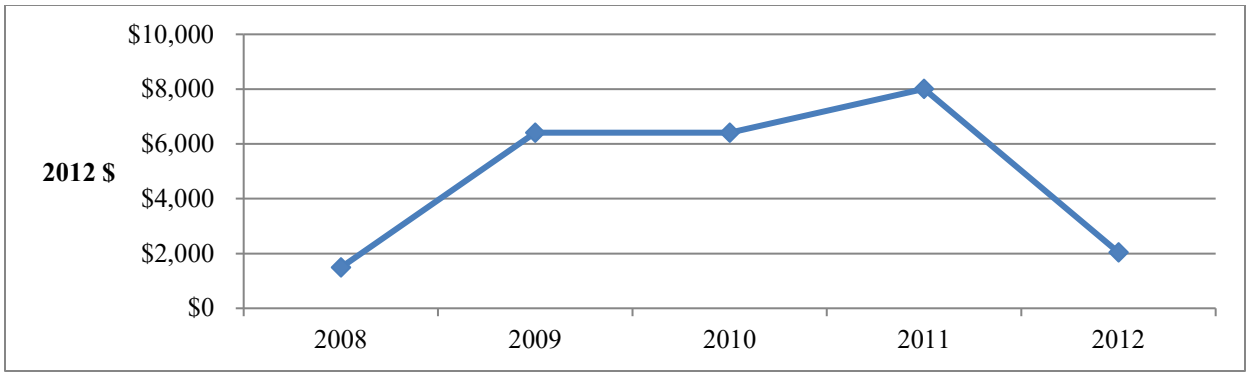


Figure 3.3.7. Annual dockside revenue (2012 $) from blackfin snapper commercial landings (lb ww), 2008 – 2012.
Source: SEFSC

Over the 5-year period from 2003 through 2007, May and June contributed 77% of commercial landings (lbs ww) of blackfin snapper. Landings during any one of the other 10 months never represented more than 5% of landings. From 2008 through 2012, landings had a greater spread through the calendar year, although October and November combined to account for approximately 48% of the commercial landings during that time.

During the 10-year period from 2003 through 2012, approximately 93% of the commercial landings of blackfin snapper occurred off Florida's East Coast. North Carolina and South Carolina's shares of commercial landings rose from 2003-2007 to 2008-2012, while Florida East Coast's share dropped during the latter five years, but remained at or above 90%.

From 2008 through 2012, an annual average of 20 vessels made 25 commercial trips that combined landed an average of 1,719 lbs gw of blackfin snapper annually with a dockside value (2012 dollars) of $4,871 (**Table 3.3.9**). That is an average trip with approximately 69 lbs gw of blackfin snapper yielding an average dockside revenue of $195. Average annual dockside revenue from blackfin snapper landings represented approximately 6% of total dockside revenue from trips that landed blackfin snapper from 2008 through 2012.

Table 3.3.9. Vessels and trips with blackfin snapper landings (weight and revenue), 2008 – 2012.

Year	No. vessels that landed blackfin snapper	Number of trips that landed blackfin snapper	Blackfin snapper landings (lb gw)	Dockside revenue (2012 $) from blackfin snapper landings	Other species' landings jointly caught with blackfin snapper (lb gw)	Dockside revenue (2012 $) from other species caught during same trip	Total dockside revenue (2012 $) from trips with blackfin snapper landings
2008	16	20	549	$1,489	17,862	$47,229	$48,718
2009	11	13	2,857	$6,409	8,915	$25,668	$32,077
2010	25	29	2,177	$6,407	33,546	$82,547	$88,955
2011	22	30	2,401	$8,008	49,015	$120,154	$128,161
2012	26	33	611	$2,041	32,698	$95,319	$97,360
5-Year Average	20	25	1,719	$4,871	28,407	$74,183	$79,054
4-year Average[1]	20	24	1,549	$4,087	23,255	$62,691	$66,777

[1]. Excluding 2011.
Source: SEFSC Coastal Fisheries Logbook for weight and NMFS ALS for revenues.

On average, the 20 vessels that harvested blackfin snapper from 2008 through 2012 also took 579 trips per year without blackfin snapper landings (**Table 3.3.10**). The 25 average annual trips that these vessels took with blackfin snapper landings represented approximately 4% of the average of all annual commercial trips of those vessels in the South Atlantic Region during the five years. Average annual dockside revenue per vessel from all 2008 through 2012 landings was $67,584 as compared to $3,818 per vessel from blackfin snapper only (**Table 3.3.10**).

Table 3.3.10. Average annual dockside revenue from blackfin snapper landings per vessel, average revenue from all landings for vessels that had reported blackfin snapper landings, and trips that landed blackfin snapper or only other species, 2008 – 2012.

Year	Average annual dockside revenue (2012 $) from blackfin snapper landings per vessel	Average annual dockside revenue (2012 $) from all landings per vessel	Number of trips that landed blackfin snapper	Number of trips that only landed other species
2008	$3,045	$68,086	20	489
2009	$2,916	$58,836	13	308
2010	$3,558	$68,837	29	788
2011	$5,826	$78,227	30	602
2012	$3,745	$63,933	33	708
5-Year Average	$3,818	$67,584	25	579
4-Year Average[1]	$3,316	$64,923	24	573

Source: SEFSC

Hook-and-line gear has been and is the most popular gear used to commercially harvest blackfin snapper. Power-assisted hook-and-line and longline gear accounted for approximately 92% of all commercial landings (lbs ww) of blackfin snapper from 2003 through 2007 and 93% from 2008 through 2012. However, while power-assisted hook-and-line gear ranked second from 2003 through 2007 with approximately 40% of commercial landings, it ranked first from 2008 through 2012 with approximately 87% of commercial landings. Blackfin snapper must be landed with head and fins intact, and its minimum size limit is 12 inches TL.

Blueline Tilefish

Annual commercial landings of blueline tilefish in the South Atlantic Region from 2003 through 2012 varied from 69,135 lbs ww to approximately 460,000 lbs ww. Average annual landings rose from 101,216 lbs ww with a dockside value of $147,798 (2012 $) during the 5-year period from 2003-2007 to 370,021 lbs ww with a dockside value of $702,874 from 2008-2012.

As shown in **Figure 3.3.8a**, commercial landings of blueline tilefish greatly increased after 2007, although 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. An explanation for the increase after 2007 can be found in the 100-lb trip limit placed on commercial snowy grouper landings established in 2008. Prior to that snowy grouper trip limit, blueline tilefish was primarily bycatch, caught while targeting the higher priced snowy grouper. Now, once fishermen reach the trip limit for snowy grouper, they harvest blueline tilefish, which has no trip limit and is found in more areas than snowy grouper. The switch of blueline tilefish from bycatch to targeted species is illustrated in the relationship of dockside revenues of blueline tilefish and snowy grouper (**Figure 3.3.8b**). This is not to suggest, however, that trips that land blueline tilefish target or land only snowy grouper and blueline tilefish.

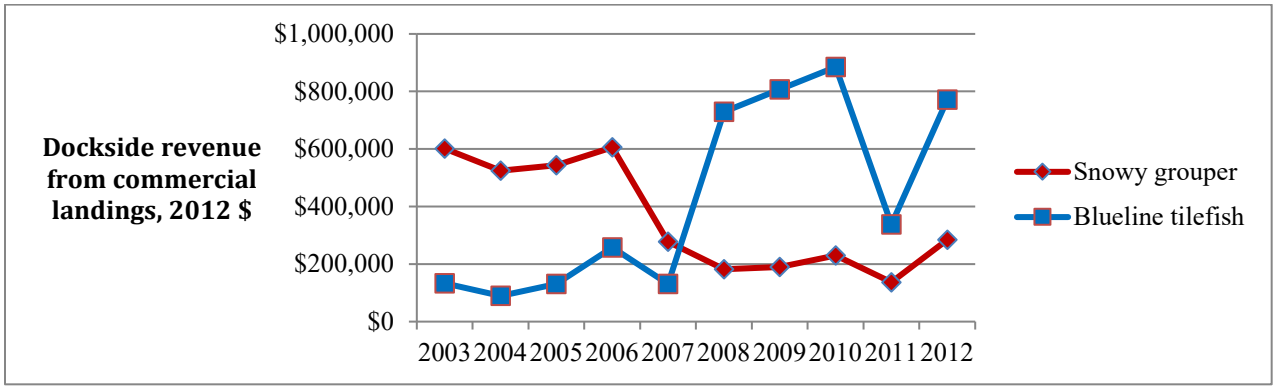


Figure 3.3.8b. Annual dockside revenue (2012 $) from blueline tilefish and snowy grouper commercial landings, 2003 – 2012.
Source: NMFS ALS, confidential data excluded.

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. Consequently, the following discussion of landings by trip is presented in pounds gutted weight (lbs gw).

From 2008 through 2012, an annual average of 124 vessels made 611 commercial trips that combined landed an average of 321,237 lbs gw of blueline tilefish annually with a dockside value (2012 $) of $679,289 (**Table 3.3.11**). Average annual dockside revenue from landings of blueline tilefish was $5,462 (2012 $) per vessel. The average trip with landings of the species sold 526 lbs gw of blueline tilefish yielding an average dockside revenue of $1,112. If 2011 is excluded, an average of 131 vessels made 684 trips that collectively landed an average of 372,271 lbs gw with a value of $772,738 (2012 dollars) annually. Average annual dockside revenue from blueline tilefish landings represented approximately 34% of total dockside revenue from trips that landed blueline tilefish from 2008 through 2012, and when 2011 is excluded the 4-year average share is approximately 36%. The 5-year average annual dockside revenue from blueline tilefish landings per vessel is $5,460 ($679,289/124 vessels) and 4-year average (excluding 2011) is $5,898 ($772,738 divided by 131 vessels).

Table 3.3.11. Vessels and trips with blueline tilefish landings (weight and revenue), 2008 – 2012.

Year	No. vessels that landed blueline tilefish	Number of trips that landed blueline tilefish	Blueline tilefish landings (lbs gw)	Dockside revenue (2012 $) from blueline tilefish landings	Other species' landings jointly caught with blueline tilefish (lbs gw)	Dockside revenue (2012 $) from other species caught during same trip	Total dockside revenue (2012 $) from trips with blueline tilefish landings
2008	119	714	362,562	$711,302	564,485	$1,462,798	$2,174,100
2009	149	795	435,104	$817,298	688,642	$1,680,922	$2,498,220
2010	131	705	397,165	$879,655	557,226	$1,362,821	$2,242,475
2011	98	320	117,102	$305,491	355,018	$946,502	$1,251,993
2012	125	523	294,254	$682,699	383,616	$1,042,293	$1,724,992
5-Year Average	124	611	321,237	$679,289	509,797	$1,299,067	$1,978,356
4-Year Average[1]	131	684	372,271	$772,738	548,492	$1,387,208	$2,159,947

[1]. Excluding 2011 when fishing for blueline tilefish in waters seaward of 240 feet was prohibited.
Source: SEFSC Coastal Fisheries Logbook for weight and NMFS ALS for revenues.

Excluding 2011 because of the 240-ft prohibition, the 131 vessels that harvested blueline tilefish took an average of 3,612 trips per year without blueline tilefish landings (**Table 3.3.12**). The 684 average annual trips that these vessels took with blueline tilefish landings represented approximately 16% of all the annual commercial trips of those vessels in the South Atlantic Region during the four years. When 2011 trips are included, the 5-year average annual percentage is approximately 15%.

Table 3.3.12. All annual trips by vessels that landed blueline tilefish, 2008 – 2012.

Year	Number of trips that landed blueline tilefish	Number of trips that only landed other species	Total trips	Percent trips with blueline tilefish landings
2008	714	3,244	3,958	18.04%
2009	795	3,806	4,601	17.28%
2010	705	3,788	4,493	15.69%
2011	320	2,974	3,294	9.71%
2012	523	3,611	4,134	12.65%
5-Year Average	611	3,485	4,096	14.93%
4-Year Average	684	3,612	4,297	15.93%

1. Excluding 2011.
Source: SEFSC Coastal Fisheries Logbook.

Trips made by the above vessels without landings of blueline tilefish landings had higher landings by weight and value from 2008 through 2012 than the trips with blueline tilefish landings; however, the average weight and value per trip are less for trips without blueline tilefish landings (**Table 3.3.13**).

Table 3.3.13. Weight and value of landings from trips with and without blueline tilefish landings, 2008 – 2012.

Year	Total lb gw from trips with blueline tilefish landings	Total lb gw from trips without blueline tilefish landings	Dockside revenue (2012 $) from trips with blueline tilefish landings	Dockside revenue (2012 $) from trips without blueline tilefish landings	Average lb gw per trip with blueline tilefish landings	Average lb gw per trip without blueline tilefish landings	Average dockside revenue (2012 $) per trip with blueline tilefish landings	Average dockside revenue (2012 $) per trip without blueline tilefish landings
2008	927,047	2,931,841	$2,174,100	$7,492,040	1,298	903	$3,044	$2,309
2009	1,123,745	3,526,472	$2,498,220	$8,079,124	1,413	926	$3,142	$2,122
2010	954,391	3,439,819	$2,242,475	$7,601,958	1,353	908	$3,180	$2,006
2011	472,120	2,794,739	$1,251,993	$6,161,852	1,475	939	$3,912	$2,071
2012	677,870	2,652,061	$1,724,992	$6,813,035	1,296	734	$3,298	$1,886
5-Year Average	831,035	3,068,986	$1,978,356	$7,229,602	1,359	880	$3,235	$2,074
4-Year Average[1]	920,763	3,137,548	$2,159,947	$7,496,539	1,345	868	$3,156	$2,075

[1]. Excluding 2011.
Source: SEFSC Coastal Fisheries Logbook for weight and NMFS ALS for revenues.

Misty grouper

During the 5-year period from 2003 through 2007, misty grouper accounted for almost 1% of non-confidential landings of the Deepwater Complex commercial landings by weight (lbs ww) and approximately 2% by dockside revenue (2012 $) (NMFS ALS, excluding confidential data). Over the following five years from 2008 through 2012, misty grouper represented approximately 0.2% of non-confidential Deepwater Complex commercial landings by weight and 0.3% by dockside revenue (NMFS ALS, excluding confidential data).

Average annual commercial landings of misty grouper fell from 1,998 lbs ww ($5,956) during 2003-2007 to 971 lbs ww ($2,870) from 2008-2012 (**Figure 3.3.9**). From 2003 through 2012, almost all of the misty grouper commercial landings were from Florida's East Coast. Hook and line gear was also the sole type of gear used.

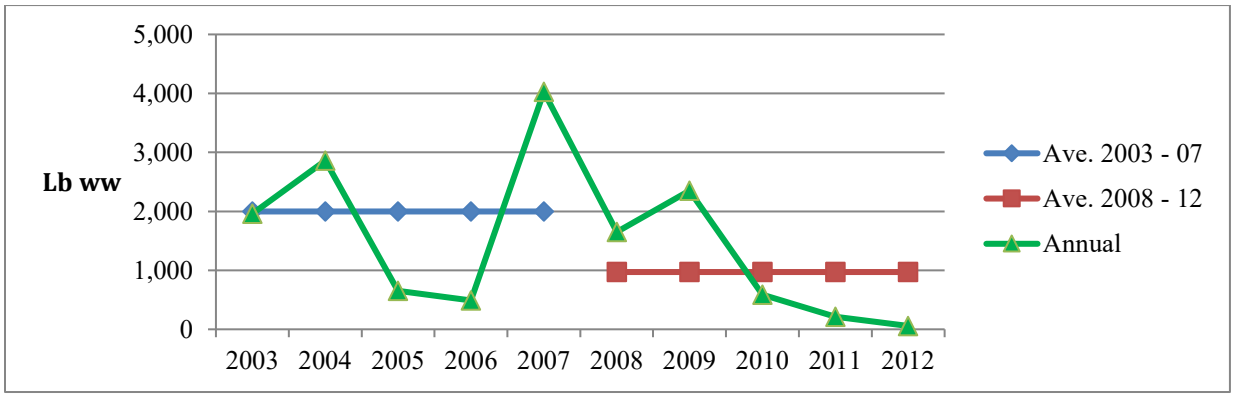


Figure 3.3.9. Annual commercial landings of misty grouper, 2003 – 2012.
Source: NMFS ALS, excluding confidential landings.

An annual average of 1,845 lbs gw with a dockside value of $6,471 was landed from 2008 through 2012 (SEFSC Coastal Fisheries Logbook for weight and NMFS ALS for revenues). During that period, the number of commercial vessels that annually landed misty grouper declined significantly, falling approximately 79% in 2010 (from the previous year) and to zero in 2012.

Queen snapper

During the 5-year period from 2003 through 2007, queen snapper accounted for almost 3.3% of landings of the Deepwater Complex commercial landings by weight and approximately 5% by dockside revenue (2012 $) (NMFS ALS, excluding confidential data). Over the following five years from 2008 through 2012, queen snapper accounted for approximately 1% of Deepwater Complex commercial landings by weight and 2% by dockside revenue.

Hook and line gear is essentially the only gear used to commercially harvest queen snapper. Over the 5-year period from 2008 through 2012, over 99% of the commercial landings were from Florida's East Coast.

From 2008 through 2012, from 7 to 17 commercial vessels had queen snapper landings and collectively their annual trips landed an average of 6,442 lbs gw of queen snapper annually with a dockside value (2012 $) of $21,892 (**Table 3.3.14**). The average trip with landings of the species sold 179 lbs gw of queen snapper yielding an average dockside revenue of $608. If 2011 is excluded an average 43 trips collectively landed an average of 7,031 lbs gw with a value of $24,174 (2012 dollars) annually. Average annual dockside revenue from queen snapper landings represented approximately 15% of total dockside revenue from trips that landed queen snapper from 2008 through 2012, and when 2011 is excluded, the 4-year average share is approximately 17%. An annual average of approximately 6% of all trips made by these vessels from 2008 through 2012 had queen snapper landings.

Table 3.3.14. Average of trips with queen snapper landings (weight and revenue), 2008 – 2012.

Year	Number of trips that landed queen snapper	Queen snapper landings (lb gw)	Dockside revenue (2012 $) from queen snapper landings	Other species' landings jointly caught with queen snapper (lb gw)	Dockside revenue (2012 $) from other species caught during same trip	Total dockside revenue (2012 $) from trips with queen snapper landings
5-Year Average	36	6,442	$21,892	39,496	$119,756	$141,648
4-Year Average[1]	43	7,031	$24,174	39,497	$115,997	$140,171

1. Excluding 2011.
Source: SEFSC Coastal Fisheries Logbook for weight and NMFS ALS for revenues.

Sand tilefish

During the 5-year period from 2003 through 2007, sand tilefish accounted for approximately 2% of landings of the Deepwater Complex commercial landings by weight (lbs ww) and approximately 1% by dockside revenue (2012 $) (NMFS ALS, excluding confidential data). Over the following five years from 2008 through 2012, sand tilefish accounted for approximately two-tenths of a percent of Deepwater Complex commercial landings by weight and less than a tenth of percent by dockside revenue. As shown in **Figure 3.3.4**, sand tilefish yields the lowest dockside price among the deepwater species.

Commercial landings of sand tilefish fell significantly from 2005 through 2008 (**Figure 3.3.10**). However, they began to rise in 2009-2012.

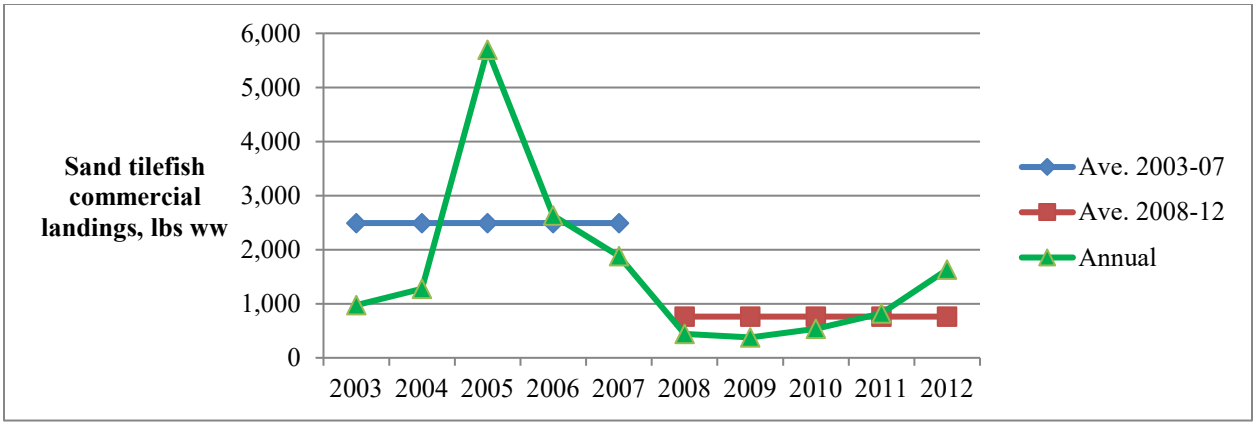


Figure 3.3.10. Annual commercial landings (lbs ww) of sand tilefish, 2003 – 2012.
Source: NMFS ALS, excluding confidential data.

Hook and line gear is essentially the only gear used to commercially harvest sand tilefish. Over the 10-year period from 2003 through 2012, slightly less than 58% of the commercial landings were in North Carolina and approximately 42% from Florida's East Coast.

Silk snapper

During the 5-year period from 2003 through 2007, silk snapper accounted for almost 13% of non-confidential landings of the Deepwater Complex commercial landings by weight and approximately 20% by dockside revenue (2012 $) (NMFS ALS, excluding confidential data). Over the following five years from 2008 through 2012, silk snapper accounted for approximately 3% of non-confidential Deepwater Complex commercial landings by weight and 5% by dockside revenue.

Commercial landings (lbs ww) of silk snapper show a general decline from 2005 through 2010, but then spiked up in 2011 and returned back to the 2010 level in 2012 (**Figure 3.3.11**). This can be attributed in part to the 240-ft prohibition in 2011.

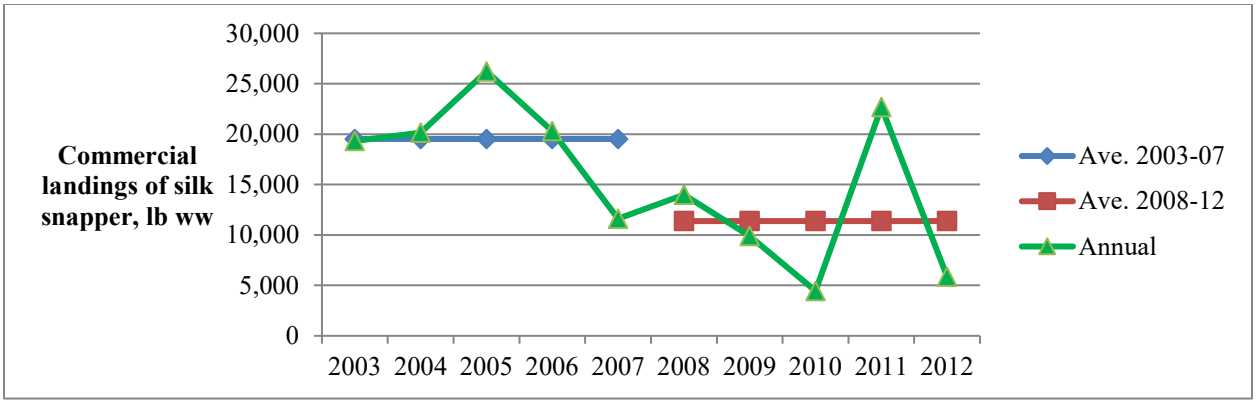


Figure 3.3.11. Annual commercial landings (lbs ww) of silk snapper, 2003 – 2012. Source: NMFS ALS, excluding confidential data.

Hook and line gear is essentially the only gear used to commercially harvest silk snapper. Over the 10-year period from 2003 through 2012, slightly less than 92% of the commercial landings were on Florida's East Coast and slightly over 8% was landed in the Carolinas and Georgia.

From 2008 through 2012, an annual average of 64 vessels made 130 commercial trips that combined landed an average of 33,524 lbs gw of silk snapper annually with a dockside value (2012 $) of $114,468 (**Table 3.3.15**). The average trip with landings of the species sold 258 lbs gw of silk snapper yielding an average dockside revenue of $881. If 2011 is excluded, an average of 63 vessels made trips that collectively landed an average of 31,566 lbs gw with a value of $107,252 (2012 dollars) annually. Average annual dockside revenue from silk snapper landings represented approximately 23% of total dockside revenue from trips that landed silk snapper from 2008 through 2012, and when 2011 trips and landings are excluded, the 4-year average share is approximately 22%.

Table 3.3.15. Vessels and trips with silk snapper landings (weight and revenue), 2008 – 2012.

Year	Number of vessels that landed silk snapper	Number of trips that landed silk snapper	Silk snapper landings (lb gw)	Dockside revenue (2012 $) from silk snapper landings	Other species' landings jointly caught with silk snapper (lb gw)	Dockside revenue (2012 $) from other species caught during same trip	Total dockside revenue (2012 $) from trips with silk snapper landings
2008	51	106	40,681	$136,588	74,804	$217,842	$354,430
2009	57	106	28,931	$94,318	107,365	$273,080	$367,398
2010	70	133	51,031	$177,509	180,559	$465,985	$643,494
2011	72	136	41,352	$143,330	169,309	$435,148	$578,478
2012	72	171	5,623	$20,592	218,556	$578,754	$599,347
5-Year Average	64	130	33,524	$114,468	150,118	$394,162	$508,630
4-Year Average[1]	63	129	31,566	$107,252	145,321	$383,915	$491,167

[1] Excluding 2011.
Source: SEFSC Coastal Fisheries Logbook for weight and NMFS ALS for revenues.

The average of 64 vessels that landed silk snapper annually from 2008 through 2012 took an average of 1,726 trips per year without silk snapper landings (**Table 3.3.16**). The 130 average annual trips that these vessels took with silk snapper landings represented approximately 7% of all the annual commercial trips of those vessels in the South Atlantic Region during the five years. When 2011 trips are excluded, the 4-year average annual percentage is slightly larger, but also approximately 7%.

Table 3.3.16. All annual trips by vessels that landed silk snapper, 2008 – 2012.

Year	Number of trips that landed silk snapper	Number of trips that only landed other species	Total trips	Percent of trips that landed silk snapper
2008	106	1,416	1,522	6.96%
2009	106	1,653	1,759	6.03%
2010	133	1,824	1,957	6.80%
2011	136	1,981	2,117	6.42%
2012	171	1,754	1,925	8.88%
5-Year Average	130	1,726	1,856	7.03%
4-Year Average[1]	129	1,662	1,791	7.20%

[1] Excluding 2011.
Source: SEFSC Coastal Fisheries Logbook.

Trips made by the same 64 vessels that were without landings of silk snapper landings – that is landed only other (non-silk snapper) species -- had higher landings by weight and value from 2008 through 2012 than the trips with silk snapper landings; however, the average weight and value per trip are less for trips without silk snapper landings (**Table 3.3.17**). Silk snapper landings represented 2.3% of average annual dockside revenue (from all landings) from 2008 through 2012, and when 2011 is excluded, silk snapper landings represent 2.2% of all average annual dockside revenues.

Table 3.3.17. Weight and value of landings from trips with and without silk snapper landings, 2008 – 2012.

Year	Total lbs gw from trips with silk snapper landings	Total lbs gw from trips without silk snapper landings	Dockside revenue (2012 $) from trips with silk snapper landings	Dockside revenue (2012 $) from trips without silk snapper landings	Average lbs gw per trip with silk snapper landings	Average lbs gw per trip without silk snapper landings	Average dockside revenue (2012 $) per trip with silk snapper landings	Average dockside revenue (2012 $) per trip without silk snapper landings
2008	115,485	1,130,709	$354,430	$2,715,751	1,089	799	$3,344	$1,918
2009	136,295	1,445,929	$367,398	$3,718,158	1,286	875	$3,466	$2,249
2010	231,590	2,056,962	$643,494	$5,508,723	1,741	1,128	$4,838	$3,020
2011	210,660	1,928,411	$578,478	$5,050,207	1,549	973	$4,254	$2,549
2012	224,179	1,700,753	$599,347	$5,335,334	1,311	970	$3,505	$3,042
5-Year Average	183,642	1,652,553	$508,630	$4,465,635	1,395	949	$3,881	$2,556
4-Year Average[1]	176,887	1,583,588	$491,167	$4,319,492	1,357	943	$3,788	$2,557

[1] Excluding 2011.
Source: SEFSC Coastal Fisheries Logbook for weight and NMFS ALS for revenues.

Yellowedge grouper

During the 5-year period from 2003 through 2007, yellowedge grouper accounted for almost 13% of landings of the Deepwater Complex commercial landings by weight and approximately 21% by dockside revenue (2012 $) (NMFS ALS, excluding confidential data). Over the following five years from 2008 through 2012, yellowedge grouper accounted for approximately 4% of Deepwater Complex commercial landings by weight and 7% by dockside revenue.

Commercial landings (lbs ww) of yellowedge grouper varied considerably from 2003 through 2012, but showed the largest decline after 2010 (**Figure 3.3.12**). In part, this can be attributed to the 240-ft prohibition of 2011. During the 5-year periods from 2003 – 2007 and 2008-2012, April through June were the top three months by landings.

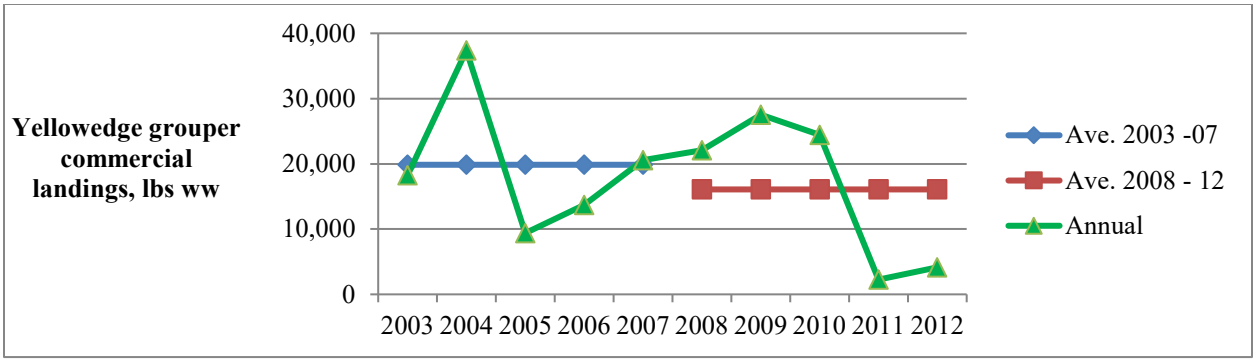


Figure 3.3.12. Annual commercial landings (lbs ww) of yellowedge grouper, 2003 – 2012.
Source: NMFS ALS, excluding confidential data.

Hook-and-line gear is essentially the only gear used to commercially harvest yellowedge grouper. From 2003 through 2012, approximately 81% of the annual landings occurred on Florida's East Coast, followed in turn by South Carolina with approximately 13% and North Carolina with the remainder (NMFS ALS, excluding confidential data).

From 2008 through 2012, an annual average of 40 vessels made 139 commercial trips that combined landed an average of 13,600 lbs gw of yellowedge grouper annually with a dockside value (2012 $) of $45,260 (**Table 3.3.18**). The average trip with landings of the species sold 98 lbs gw of yellowedge grouper yielding an average dockside revenue of $326. If 2011 is excluded, an average of 44 vessels made 165 trips that collectively landed an average of 16,716 lbs gw with a value of $55,221 (2012 dollars) annually. Average annual dockside revenue from yellowedge grouper landings represented approximately 15% of total dockside revenue from trips that landed silk snapper from 2008 through 2012, and when 2011 trips and landings are excluded, the 4-year average share is approximately 16%.

Table 3.3.18. Vessels and trips with yellowedge grouper snapper landings (weight and revenue), 2008 – 2012.

Year	Number of vessels that landed yellowedge grouper	Number of trips that landed yellowedge grouper	Yellowedge grouper landings (lbs gw)	Dockside revenue (2012 $) from yellowedge grouper landings	Other species' landings jointly caught with yellowedge grouper (lbs gw)	Dockside revenue (2012 $) from other species caught during same trip	Total dockside revenue (2012 $) from trips with yellowedge grouper landings
2008	47	167	14,984	$58,261	120,351	$310,433	$368,694
2009	44	184	15,819	$60,907	160,067	$380,101	$441,009
2010	49	219	21,077	$89,181	151,612	$367,072	$456,253
2011	24	37	1,135	$5,417	36,790	$109,189	$114,606
2012	36	88	14,984	$12,533	46,523	$125,836	$138,369
5-Year Average	40	139	13,600	$45,260	103,069	$258,526	$303,786
4-Year Average[1]	44	165	16,716	$55,221	119,638	$295,861	$351,081

1. Excluding 2011.
Source: SEFSC Coastal Fisheries Logbook for weight and NMFS ALS for revenues.

The 40 vessels that harvested yellowedge grouper took an average of 1,434 trips per year without yellowedge grouper landings (**Table 3.3.19**). The 139 average annual trips that these vessels took with yellowedge grouper landings represented almost 9% of all the annual commercial trips of those vessels in the South Atlantic Region during the five years. When 2011 trips are included, the 4-year average annual percentage is slightly over 9%.

Table 3.3.19. All annual trips by vessels that landed yellowedge grouper, 2008 – 2012.

Year	No. trips that landed yellowedge grouper	No. trips that only landed other species	Total trips	Percent of trips that landed yellowedge grouper
2008	167	1,832	1,999	8.35%
2009	184	1,493	1,677	10.97%
2010	219	1,584	1,803	12.15%
2011	37	640	677	5.47%
2012	88	1,621	1,709	5.15%
5-Year Average	139	1,434	1,573	8.84%
4-Year Average	165	1,633	1,797	9.15%

1. Excluding 2011.
Source: SEFSC Coastal Fisheries Logbook.

Trips made by the above 139 vessels without landings of yellowedge grouper had higher landings by weight and dockside revenue from 2008 through 2012 than the trips made by those vessels with yellowedge grouper landings (**Table 3.3.20**). However, that is not to say that average dockside revenue per trip with yellowedge grouper landings was always less than the average dockside revenue per trip without those landings. For example, the 5-year average of dockside revenue per trip is less for trips without yellowedge grouper landings. Yellowedge grouper landings represented 1.3% of average annual dockside revenue (from all landings) from 2008 through 2012, and when 2011 is excluded, yellowedge grouper landings represent 1.4% of all average annual dockside revenues.

Table 3.3.20. Weight and value of landings from trips with and without yellowedge grouper landings, 2008 – 2012.

Year	Total lbs gw from trips with yellowedge grouper landings	Total lbs gw from trips without yellow-edge grouper landings	Dockside revenue (2012 $) from trips with yellow-edge grouper landings	Dockside revenue (2012 $) from trips without yellow-edge grouper landings	Average lbs gw per trip with yellow-edge grouper landings	Average lbs gw per trip without yellow-edge grouper landings	Average dockside revenue (2012 $) per trip with yellow-edge grouper landings	Average dockside revenue (2012 $) per trip without yellowedge grouper landings
2008	135,335	1,858,144	$368,694	$3,761,731	810	1,014	$2,208	$2,053
2009	175,886	1,808,154	$441,009	$3,298,227	956	1,211	$2,397	$2,209
2010	172,689	1,845,916	$456,253	$4,076,574	789	1,165	$2,083	$2,574
2011	37,925	620,354	$114,606	$1,557,556	1,025	969	$3,097	$2,434
2012	49,427	1,183,290	$138,369	$3,267,977	562	730	$1,572	$2,016
5-Year Average	114,252	1,463,172	303,786	3,192,413	828	1,018	$2,272	$2,257
4-Year Average[1]	133,334	1,673,876	351,081	3,601,127	779	1,030	$2,065	$2,213

[1] Excluding 2011.
Source: SEFSC Coastal Fisheries Logbook for weight and NMFS ALS for revenues.

3.3.2 Economic Description of the Recreational Sector

As stated previously, blueline tilefish is part of the Deepwater Complex. The recreational sector is allocated 52.61% of the Deepwater Complex ACL. In 2012, recreational landings reached 32% of the recreational ACL for the year, and in 2013 97% for the year. Ninety-nine percent of the recreational ACL had been landed by the end of August. If that rate of harvest continued through the end of the year, 498,399 lbs ww of the Deepwater Complex would have been landed, which would exceed the ACL (334,556 lbs ww) by 163,843 lbs ww. Blueline tilefish recreational landings represented approximately 82% of recreational landings of the

Deepwater Complex in 2012. The recreational ACL for blueline tilefish is presently 111,893 lbs ww. Recreational landings of Deepwater Complex species in 2013 reached 97% of the ACL. The current accountability measure for the Deepwater Complex is to reduce the length of the following fishing season if the ACL is exceeded; no in-season accountability measures are currently in place for the Deepwater Complex.

There is a 3-fish bag limit for grouper/tilefish, including blueline tilefish, and captain and crew cannot retain any blueline tilefish caught during a for-hire trip. Additional information about recreational fishing for the Deepwater Complex and the snapper grouper fishery as a whole is contained in previous amendments [Amendment 13C (SAFMC 2006), Amendment 15A (SAFMC 2008a), Amendment 15B (SAFMC 2008b), Amendment 16 (SAFMC 2009a), and Amendment 18A (SAFMC 2012a)] and is incorporated herein by reference.

Permits

For-hire vessels that harvest blueline tilefish and other snapper grouper stocks from federal waters must have a Charter/Headboat Snapper Grouper Permit, which is an open access permit. As of January 6, 2014, there are 1,364 valid permits.

Landings

Recreational landings of blueline tilefish varied considerably from 2003 through 2013, with substantially higher landings from 2006 through 2008 (**Figure 3.3.13**). This is thought to have resulted from increased effort. Regulation of blueline tilefish harvest began in 1998. The average annual harvest over 2006-2008 was 306,895 lbs ww. Excluding those three years, the annual recreational harvest drops to 50,576 lbs ww from 2003 through 2013. North Carolina leads the South Atlantic Region in recreational landings of blueline tilefish, averaging approximately 89% of annual recreational landings during those 11 years.

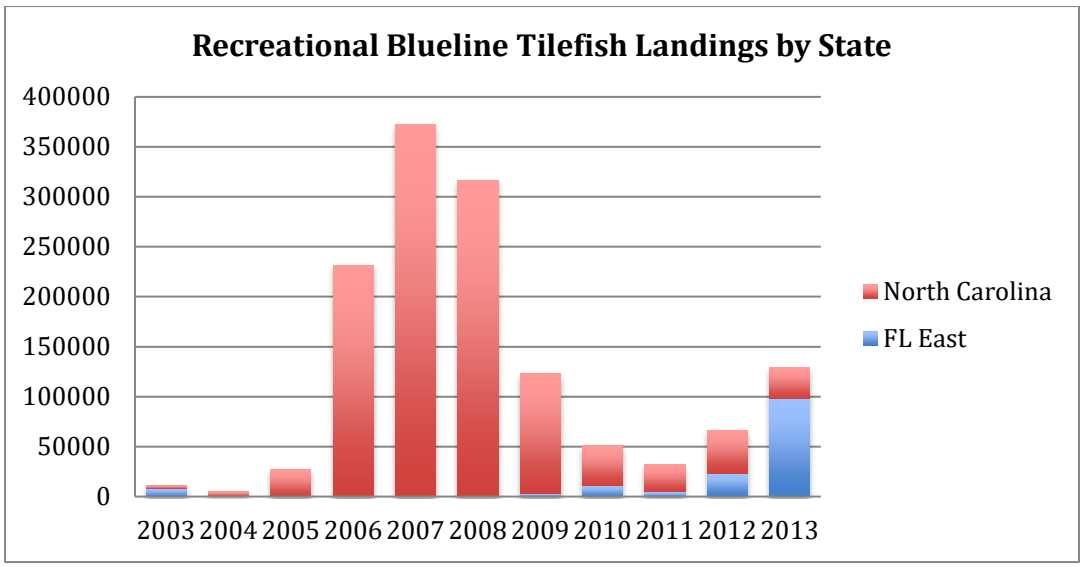


Figure 3.3.13. Recreational landings (lbs ww) of blueline tilefish, 2002 – 2013.
Source: NOAA Science and Technology website (www.st.nmfs.noaa.gov).

The recreational sector is comprised of anglers engaged in private and for-hire fishing. Private fishing for deepwater species, such as blueline tilefish, is performed by anglers fishing offshore in private/rental boats and for-hire fishing is performed by anglers fishing offshore in charter vessels and headboats (also called party boats). From 2003 through 2013, for-hire fishing accounted for from 25% to 100% of annual recreational landings (lbs ww) of blueline tilefish, and averaged 66% over this period (**Figure 3.3.14**). On average, charter boats accounted for 99.8% of the for-hire sector's annual blueline tilefish landings (SEDAR 32 2013).

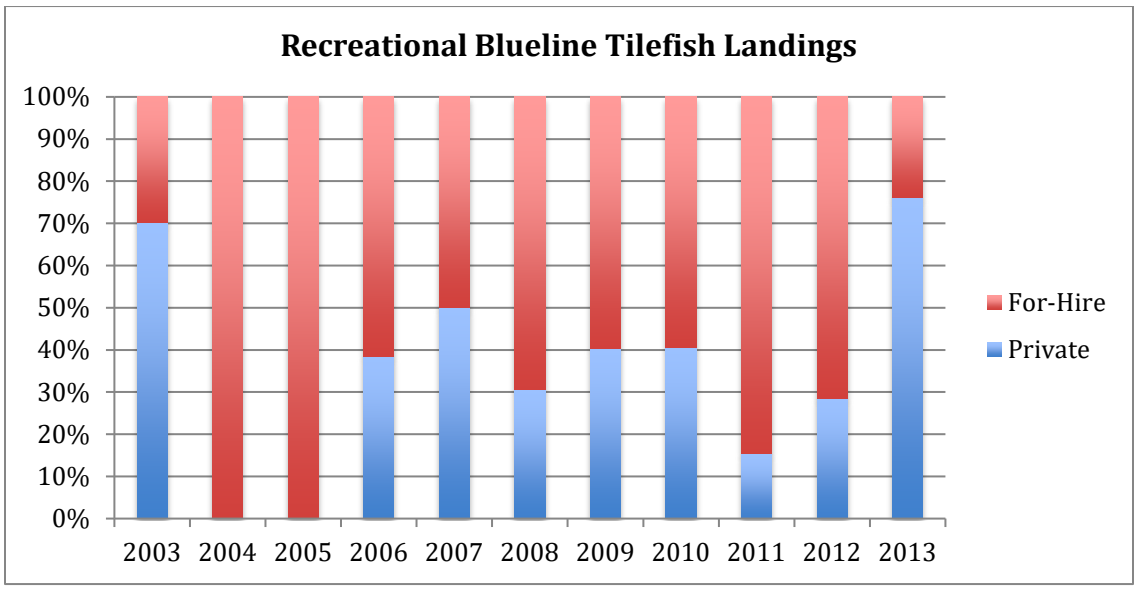


Figure 3.3.14. Percent of recreational landings (lbs ww) by private and for-hire recreational fishing from private and for-hire sources, 2003 - 2013.
Source: NOAA Science and Technology website (www.st.nmfs.noaa.gov).

3.3.3 Social Environment

More detailed descriptions of the social environment for the snapper grouper fishery appear in Amendments 16 (SAFMC 2009a), Amendment 17A (SAFMC 2010a) and Regulatory Amendment 11 (SAFMC 2011b), which include demographic information at the county level for areas of substantial snapper grouper fishing activity and are incorporated here by reference. Communities with substantial landings of snapper grouper species were identified in Amendment 17B (SAFMC 2010b) with demographic descriptions for those communities. **Figure 3.3.15** below provides a depiction of blueline tilefish regional quotient pounds and value of landings for South Atlantic communities. A regional quotient is the amount of local landings and/or value divided by the total landings and value for the region. For this analysis, total landings for Florida Keys communities were included as we are unable to disaggregate landings at the community level to Gulf or Atlantic. The community of Wanchese, North Carolina leads all other communities in terms of RQ for blueline tilefish by a wide margin in 2011. The values for the Y-axis in **Figure 3.3.15** are not included to avoid revealing confidential information.

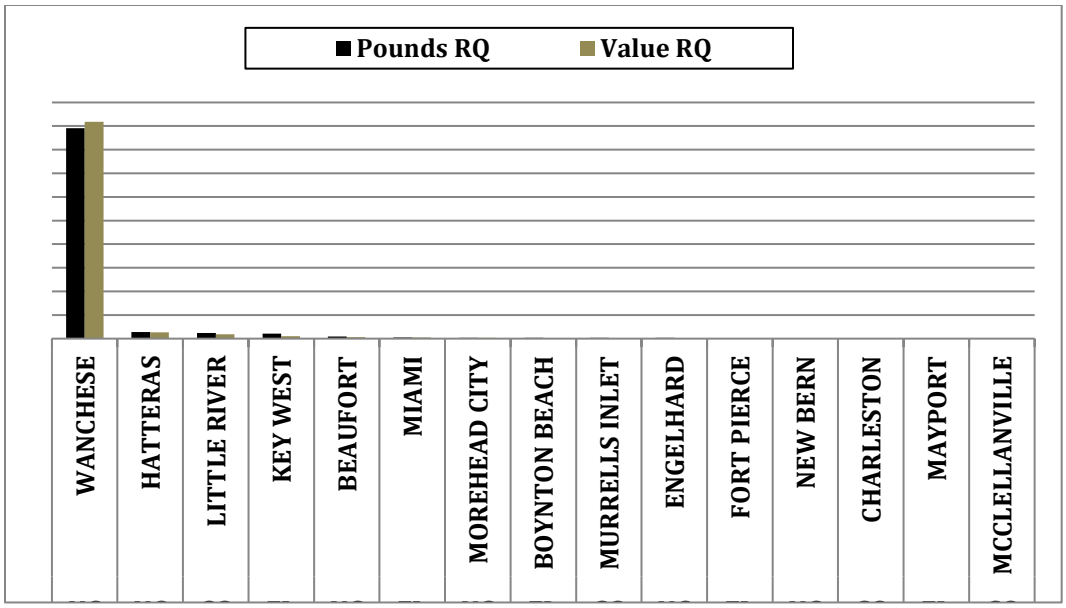


Figure 3.3.15. Top 15 blueline tilefish commercial fishing communities by regional quotient (RQ) for 2011. Source: SEFSC accumulated landings system (2011).

By 2012, there had been a shift in the amount of blueline tilefish landings for several communities depicted in **Figure 3.3.16**. While Wanchese still outpaces the other communities in terms of regional quotient, Hatteras, North Carolina saw an increase in the amount of landings and value it contributed to the regional quotient. Furthermore, the community of Avon, North Carolina is now third in terms of regional quotient, whereas in 2011 it was not listed in the top 15. There have also been comments received by Council staff from the public that in the most recent years landings in the South Carolina communities of Murrell's Inlet and Little River have increased substantially, however, landings are not available at the community level for 2013 or 2014 to substantiate that claim.

Because Wanchese 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. **Figure 3.3.17** 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 2% of value and less than 1% in terms of landings local quotient for Wanchese in 2011 and is ranked 11th out of the top 15.

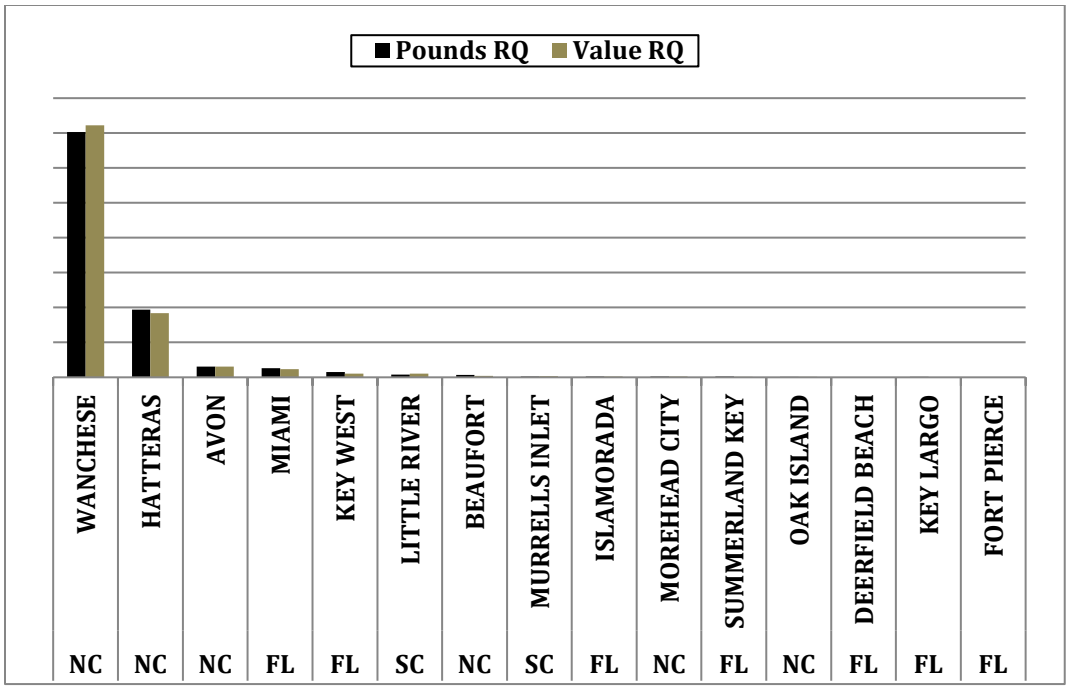


Figure 3.3.16. Top 15 blueline tilefish commercial fishing communities by regional quotient (RQ) for 2012. Source: SEFSC accumulated landings system (2012).

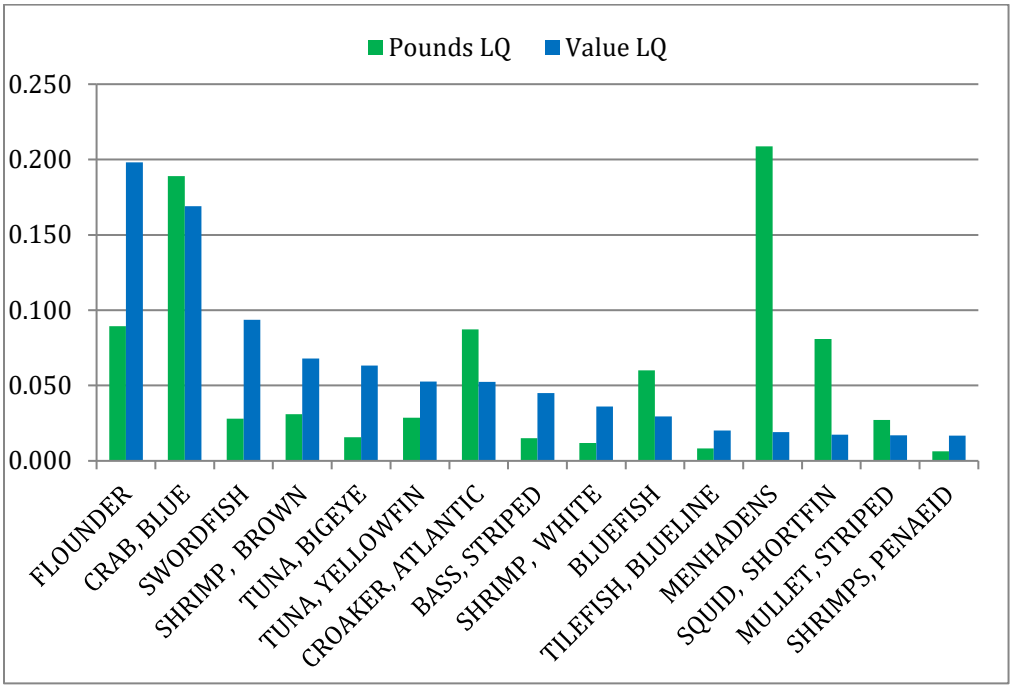


Figure 3.3.17. Top 15 species landed in Wanchese, NC by local quotient (LQ) value for 2011. Source: SEFSC accumulated landings system (2011).

In 2012, there was a shift in how much blueline tilefish contributed to the local quotient of landings for Wanchese as shown in **Figure 3.3.18**. Blueline tilefish moved up in rank to sixth and contributed over 5% to the local quotient. While this shift in local quotient importance for Wanchese is reflective of a similar shift in the regional quotient for other communities, when examining their local quotients, blueline tilefish still does not appear in the top fifteen species for communities, such as Hatteras or Avon, North Carolina, or Murrells Inlet and Little River, South Carolina. However, as discussed earlier, the above landings at the community level do not account for recent shifts in fishing behavior that may have occurred in 2013 or 2014.

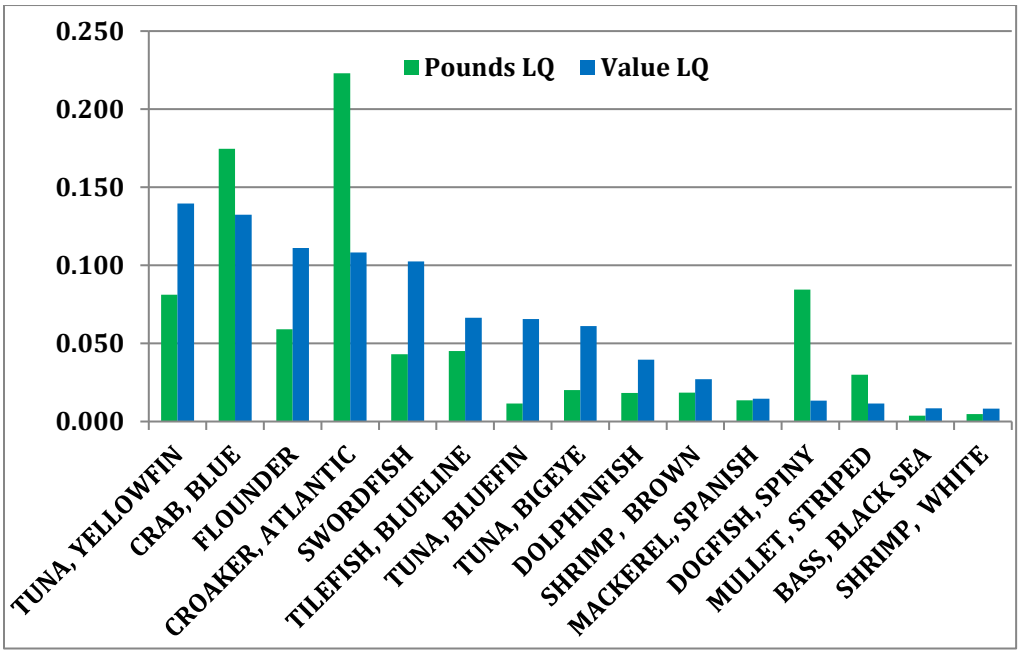


Figure 3.3.18. Top 15 species landed in Wanchese, NC by local quotient (LQ) value for 2012. Source: SEFSC accumulated landings system (2012).

To better understand how South Atlantic blueline tilefish fishing communities are engaged and reliant on fishing, indices were created using secondary data from permit and landings information for the commercial sector and permit information for the recreational sector (Colburn and Jepson 2012; Jacob et al. 2012). Fishing engagement is primarily the absolute numbers of permits, landings, and value of fishing activity within a community. For commercial fishing, the analysis used the number of vessels designated commercial by homeport and owner address, value of landings, and total number of commercial permits for each community. For receational engagement we used the number of recreational permits, vessels designated as recreational by homeport and owners address. Fishing reliance has the same variables as engagement divided 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. Taking the fifteen communities in **Figure 3.3.19**, factor scores of both engagement and reliance for both commercial and

recreational fishing were plotted onto radar graphs. Factor scores are represented by the colored bars and are standardized, therefore the mean is zero. Two thresholds of one and ½ standard deviation above the mean are plotted onto the graphs to help determine a threshold for significance. The factor scores are standardized; therefore, a score above 1 is also above one standard deviation. Those communities with factor scores above one or both thresholds are considered to be substantially reliant or engaged and if both probably dependent upon that type of fishing.

In **Figure 3.3.19**, several communities have factor scores that exceed 1/2 standard deviation above the mean for commercial engagement and reliance. The communities of Wanchese, North Carolina; Morehead City, North Carolina; and Key West, Florida exceed both thresholds for commercial and recreational engagement and reliance. The communities of Little River and Murrell's Inlet, South Carolina exceed both thresholds for commercial and recreational engagement and for recreational reliance.

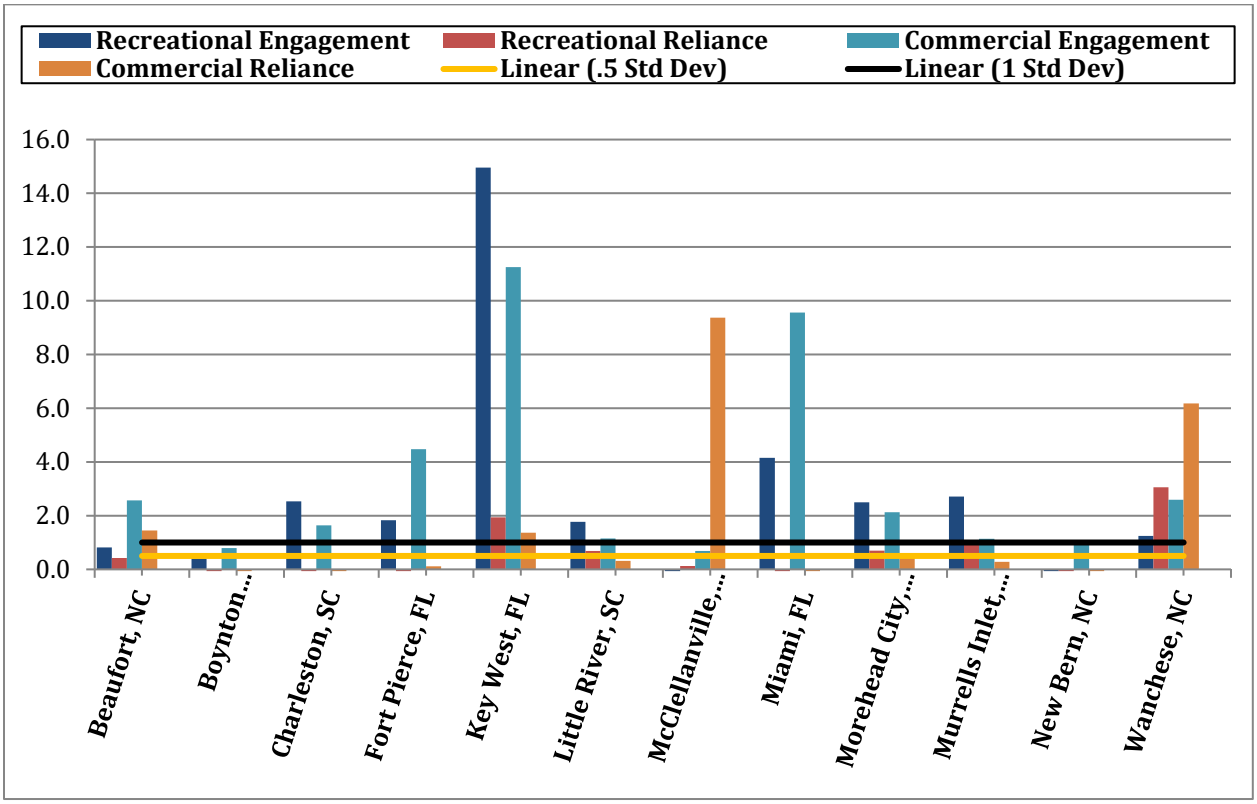


Figure 3.3.19. Recreational and commercial engagement and reliance for blueline tilefish communities. Source: SERO social indicator database (2011).

As Wanchese is the primary commercial fishing community affected under the action, it is clear that the community is substantially engaged and reliant upon both commercial and recreational fishing. Although, it has the highest regional quotient for blueline tilefish value and landings, the species is not particularly high in terms of the local quotient for the community, although it has gained importance more recently. Unfortunately, we are not able at this time to

identify recreational fishing communities by their regional or local quotient for a particular species. Instead, we can only assume that those communities where there are high commercial landings of blueline tilefish, there will also be high recreational landings. Because Wanchese is also engaged and reliant upon recreational fishing, we assume that sector will also be affected in similar ways as the commercial sector.

The communities discussed here are those that have been identified as being engaged and reliant on commercial and recreational fishing and are those communities that have substantial landings of the species addressed in this amendment. While we lack the ability to specifically identify the impacts on businesses and vessels within these communities at this time, we have developed analyses that measure some of the social vulnerabilities these communities may be experiencing which are discussed below. The link between commercial and recreational fishing and these social vulnerabilities may not be direct, but we suggest that placing this fishing activity within a community and then recognizing the social vulnerabilities is the most comprehensive measure we have at this time of how some communities may be more affected by negative social effects than others.

3.3.4 Environmental Justice Considerations

Executive Order 12898 requires federal agencies conduct their programs, policies, and activities in a manner to ensure individuals or populations are not excluded from participation in, or denied the benefits of, or subjected to discrimination because of their race, color, or national origin. In addition, and specifically with respect to subsistence consumption of fish and wildlife, federal agencies are required to collect, maintain, and analyze information on the consumption patterns of populations who principally rely on fish and/or wildlife for subsistence. The 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.

Another suite of indices created to examine the social vulnerability of coastal communities is depicted in **Figure 3.3.20**. 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. Again, for those communities that exceed the threshold it would be expected that they would exhibit vulnerabilities to sudden changes or social disruption that might accrue from regulatory change.

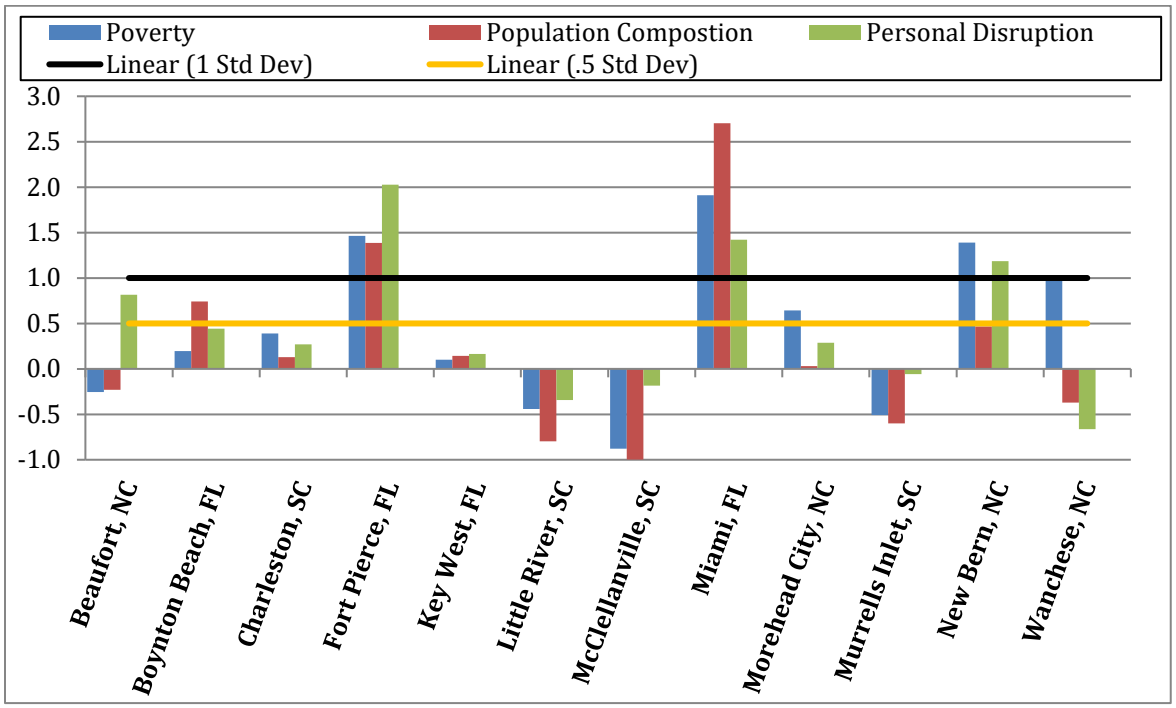


Figure 3.3.20. Social Vulnerability Indices for Blueline Tilefish Fishing Communities. Source: SERO social indicator database (2011).

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 (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 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 Council has adopted procedures whereby the non-voting members serving on the Council Committees have full voting rights at the Committee level but not at the full Council level. 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 Council uses its Scientific and Statistical Committee (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 Environment and Natural Resources. 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 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 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 ASFMC 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 Council regulations. NOAA/OLE agents, who specialize in living marine resource violations, provide fisheries expertise and investigative support for the overall fisheries mission. The USCG is a multi-mission agency, which provides at-sea patrol services for the fisheries mission.

Neither NOAA/OLE nor the USCG can provide a continuous law enforcement presence in all areas due to the limited resources of NOAA/OLE and the priority tasking of the USCG. To

supplement at-sea and dockside inspections of fishing vessels, NOAA entered into Cooperative Enforcement Agreements with all but one of the states in the Southeast Region (North Carolina), which granted authority to state officers to enforce the laws for which NOAA/OLE has jurisdiction. In recent years, the level of involvement by the states has increased through Joint Enforcement Agreements, whereby states conduct patrols that focus on federal priorities and, in some circumstances, prosecute resultant violators through the state when a state violation has occurred.

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. Revise the Composition of the Deepwater Complex and Adjust the Deepwater Complex Annual Catch Limits, Optimum Yield, and Annual Catch Targets

Alternatives
(preferred alternatives in bold)

1. No action. Blueline tilefish has been temporarily removed from the Deepwater Complex.

2. Remove blueline tilefish from Deepwater Complex and adjust ACLs, OY, and ACTs accordingly. Retain ACL=OY=ABC and recreational ACT=ACL*(1-PSE) or ACL*0.5, whichever is greater for the Deepwater Complex.

3. Remove blueline tilefish from Deepwater Complex and adjust ACLs, OY, and recreational ACTs accordingly. ACL=OY=95%ABC, and retain recreational ACT=ACL*(1-PSE) or ACL*0.5, whichever is greater for the Deepwater Complex.

4. Remove blueline tilefish from Deepwater Complex and adjust ACLs, OY, and recreational ACTs accordingly. ACL=OY=90%ABC, and retain recreational ACT=ACL*(1-PSE) or ACL*0.5, whichever is greater for the Deepwater Complex.

5. Remove blueline tilefish from Deepwater Complex and adjust ACLs, OY, and recreational ACTs accordingly. ACL=OY=80%ABC, and retain recreational ACT=ACL*(1-PSE) or ACL*0.5, whichever is greater for the Deepwater Complex.

4.1.1 Biological Effects

Blueline tilefish has been temporarily removed from the Deepwater Complex. **Alternatives 2 (Preferred)** through **5** would remove blueline tilefish from the Deepwater Complex when temporary measures expire or are replaced by measures proposed in Amendment 32. Relative to **Alternative 1 (No Action)**, **Alternatives 2 (Preferred)-5** would be expected to have positive biological effects on the stock because AMs would be triggered when the blueline tilefish ACL is met rather than the Deepwater Complex ACL is met. Furthermore, because **Alternatives 2 (Preferred)-5** would set the ACL equal to or below the ABC recommendations of the Council's Scientific and Statistical Committee (SSC), negative biological effects would not be expected for stocks in the complex.

In 2012, blueline tilefish represented 96% of the landings of the Deepwater Complex. The blueline tilefish portion of the Deepwater Complex annual catch limit (ACL) is 89%. Therefore, landings of blueline tilefish have had, by far, the greatest influence on triggering accountability measures (AM) for the Deepwater Complex if the ACL is met by the commercial or recreational sectors. Removal of blueline tilefish under **Alternative 2 (Preferred)** would make it less likely that an in-season closure of the Deepwater Complex would occur because, other than blueline tilefish, species in the Deepwater Complex are not generally targeted and their landings are minor.

Alternatives 2 (Preferred) through **5** would set ACL equal to the optimum yield (OY). The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) National Standard 1 established the relationship between conservation and management measures, preventing overfishing, and achieving OY from each stock, stock complex, or fishery. The National Standard 1 guidelines discuss the relationship of the overfishing limit (OFL) to the maximum sustainable yield (MSY) and annual catch target (ACT) or 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 or complex's abundance; MSY is the long-term average of such catches. The ACL is the limit that triggers AMs, and ACT, if specified, would be the management target for a species. Management measures for a species should, on an annual basis, prevent the ACL from being exceeded.

Alternative 2 (Preferred) would set the ACL equal to the ABC for the Deepwater Complex. The South Atlantic Fishery Management Council (Council) and their Scientific and Statistical Committee (SSC) have established an ABC control rule that takes into consideration scientific and management uncertainty to ensure catches are maintained below a MSY level. The NS1 guidelines indicate ACL may typically be set very close to the ABC and setting a buffer between the ACL and ABC would be appropriate in situations where there is uncertainty in whether or not management measures are constraining fishing mortality to target levels. Setting the ACL equal to the ABC leaves no buffer between the two harvest parameters, which may increase risk that harvest could exceed the ABC. The Council considered alternatives in the Comprehensive ACL Amendment (SAFMC 2011c) and Amendment 24 to the Snapper Grouper FMP (SAFMC 2011d) that would set the ACL below the ABC, but selected ACL=OY=ABC as their preferred alternative for snapper grouper species including the Deepwater Complex.

The National Standard 1 (NS 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 (74 FR 3178).*

If the ACL is exceeded more than once over the course of four years, the Council would reassess the system of ACLs and AMs for the species. Amendment 17B (SAFMC 2010b) updated the Framework Procedure for the Snapper Grouper FMP to allow OFL, ABC, ACLs, AMs, and ACTs to be modified via framework amendment, which requires less time to implement compared to a fishery management plan amendment. Amendment 27 to the Snapper Grouper FMP (SAFMC 2014 c) also updated the framework. The current commercial AM with its in-season closure and recreational AMs that include a payback provision to shorten the length of the following year's recreational fishing season for the Deepwater Complex could prevent both sectors from exceeding their ACLs. Furthermore, this amendment includes actions to improve AMs for the Deepwater Complex to ensure ACLs are not exceeded.

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 if they 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 the National Marine Fisheries Service (NMFS) Southeast Regional Office (SERO).

Additionally, the Southeast Fisheries Science Center (SEFSC) worked with SERO, the Gulf of Mexico Fishery Management Council, and Council to develop a Joint Dealer Reporting Amendment (GMFMC and SAFMC 2013b) which was implemented on August 7, 2014. The Joint Dealer Reporting Amendment has increased the required reporting frequency for dealers to once per week, and requires a single dealer permit for all finfish dealers in the Southeast Region. On January 27, 2014, the Generic For-Hire Reporting Amendment (GMFMC and SAFMC 2013a) was implemented, which required all federally-permitted headboats in the South Atlantic to report landings information electronically and on a weekly basis. The CLM, the for-hire reporting, and the new dealer reporting requirements constitute major improvements to how commercial and for-hire fisheries are monitored, and go far beyond monitoring efforts that were in place when the National Standard 1 guidelines were developed. The new CLM quota monitoring system and actions in the Joint Generic Dealer and Generic For-Hire Reporting amendments are expected to provide more timely and accurate data reporting and would thus reduce the incidence of quota overages.

Alternatives 3-5, which would specify lower ACLs for the Deepwater Complex than **Alternatives 1 (No Action)** and **2 (Preferred),** would be expected to have positive biological effects on stocks in the complex since allowable harvest levels would be reduced from current levels (**Table 4.1.1**). Positive effects to species in the Deepwater Complex increase from **Alternatives 2 (Preferred)** through **5** as the ACLs decrease. Among **Alternatives 2 (Preferred)** to **5**, **Alternative 5** would have the greatest biological benefits as the ACL would be set 10% below the ABC to account for management uncertainty. Such a buffer would help ensure that landings do not exceed the ABC thus preventing overfishing. However, AMs are in place to constrain landings below the ACL. Furthermore, alternatives are being considered in **Actions 5** and **6** to improve current AMs for blueline tilefish; hence, biological impacts for the Deepwater Complex would differ little among the proposed alternatives.

Table 4.1.1. ACLs and recreational ACTs (lbs ww) for Alternatives 1-5 in Action 1.

Alternative	Deepwater Complex ACL, OY, and Recreational ACT (lbs whole weight)			
	Total ACL	Commercial ACL	Recreational ACL	Recreational ACT
Alternative 1 (no action) --Current: Temporary rule --When temporary rule expires --If Amendment 29 implemented	 79,684 711,025 801,619	 60,371 376,469 447,732	 19,313 334,556 353,887	 197,100[1] 197,100 200,577
Alternative 2 (Preferred) (ACL=OY=ABC)	**170,278**	**131,634**	**38,644**	**13,134**
Alternative 3 (ACL=OY=95%ABC)	161,764	125,052	36,712	12,477
Alternative 4 (ACL=OY=90%ABC)	153,250	118,471	34,780	11,821
Alternative 5 (ACL=OY=80%ABC)	136,222	105,307	30,915	10,507

Setting the ACL at or below the ABC in **Alternatives 2 (Preferred)-5** would protect species in the Deepwater Complex by ensuring overfishing does not occur. This would be expected to increase the number of older, larger fish in the population, if the alternatives also reduce fishing mortality. A robust population with multiple year classes provides additional protections against recruitment failure since several years of poor environmental conditions can reduce survival of eggs and larvae. Reducing harvest of these species and improving the age structure of the population would be expected to allow these stocks to be less susceptible to adverse environmental conditions that might affect recruitment success.

Alternatives 2 (Preferred)-5 could increase the level of bycatch if harvest of blueline tilefish or the deepwater species (including blueline tilefish) is prohibited in-season **(Appendix F)**. In addition, if fishery managers implement separate blueline tilefish and Deepwater Complex ACLs and AMs, bycatch could increase if one ACL is closed and another open and fishermen are forced to discard fish. However, any increase in bycatch of blueline tilefish or other species in the Deepwater Complex is not expected to be substantial for several reasons. First, in 2012, blueline tilefish represented 96% of the landings in the Deepwater Complex; therefore, fishing effort towards the other species in the Deepwater Complex would likely be greatly reduced if blueline tilefish is prohibited because the other species in the complex are likely not targeted. Second, commercial fishermen may still retain the recreational bag limit if the commercial sector is closed and the recreational sector is open; the ability to retain the fish, even at low levels, would reduce the adverse effects of bycatch if the recreational sector is still open. Finally, blueline tilefish is largely caught separately from other deepwater species such as snowy grouper; therefore, incidental catch of blueline tilefish is not expected.

Since the removal of blueline tilefish from the Deepwater Complex is an administrative action, it is not anticipated to have any impact on protected species. Implementation of management measures specific to blueline tilefish and their potential effects to protected species are discussed below. Any changes to management of the rest of the species in the Deepwater Complex would be evaluated for potential impacts to protected species at the time they are proposed.

4.1.2 Economic Effects

Blueline tilefish has been temporarily removed from the Deepwater Complex. When the temporary rule expires, and if measures are not replaced by those specified Amendment 32, the Deepwater Complex would include blueline tilefish and the commercial and recreational ACLs for the complex would be 376,469 pounds whole weight (lbs ww) and 334,556 lbs ww, respectively. **Alternative 1 (No Action)** would have no economic effect on current ACLs, AMs, or landings. When commercial landings reach or are projected to reach the ACL, commercial harvest is closed in-season to cap landings at the commercial ACL.

None of the alternatives under **Action 1** would change the in-season AM for the commercial sector. The estimates of the economic effects of the maximum losses of landings (from the Deepwater Complex) are derived from comparing the temporary ACL values currently in place through the emergency rule to its alternative ACL once blueline tilefish is removed from the Deepwater Complex under this action. The negative economic effects resulting from removing blueline tilefish from the Deepwater Complex would be mitigated somewhat by establishment of a blueline tilefish ACL under **Action 3**. Therefore, the expected losses here are specific to the Deepwater Complex, not total landings and catches of the Deepwater Complex species and blueline tilefish.

In 2012, commercial landings for the Deepwater Complex reached 378,667 lbs ww, approximately 110% of the ACL for that year and the fishery was closed on 9/8/12. Preliminary data show that, in 2013, commercial landings of Deepwater Complex species reached 309,195 lbs ww, approximately 82% of the commercial ACL. In 2012, recreational landings reached 32% of the recreational ACL, which was 332,039 lbs ww. Recreational landings for 2013 reached 325,129 lbs ww, or approximately 97% of the Complex's recreational ACL of 334,556 lbs ww. There are no in-season recreational AMs in place to close the season when recreational landings for the Deepwater Complex reach or are projected to reach the recreational ACL. The current recreational AM shortens the following recreational fishing season if the recreational ACL is exceeded. Consequently, annual recreational landings of the Deepwater Complex can exceed the recreational ACL. **Alternative 1 (No Action)** would allow recreational landings of the Deepwater Complex to exceed the recreational ACLs specified in **Alternatives 2 (Preferred)-5** that are based on catch level recommendations from the SSC, which could reduce long-run recreational landings and associated economic benefits.

Blueline tilefish was the most harvested species within the Deepwater Complex. In 2012, for example, blueline tilefish accounted for approximately 90% (343,869 lbs ww) of commercial landings for the complex. A recent stock assessment indicates current harvest is at unsustainable levels. **Alternative 1 (No Action)** would not remove blueline tilefish from the Deepwater Complex after the temporary rule expires, which would allow for high landings of the species to continue and, in the long run, there would be diminished commercial landings of blueline tilefish and thus diminished economic benefits.

Under **Alternative 2 (Preferred)**, which would remove blueline tilefish from the Deepwater Complex and set ACL equal to ABC for the remaining species, the Deepwater Complex total ACL would increase by 114% from 79,684 lbs ww under the temporary rule currently in place to 170,278 lbs ww due to changes in the ABC for silk snapper and yellowedge grouper proposed in Amendment 29 (SAFMC 2014 b). If the temporary rule expires and Amendment 32 has not been implemented, blueline tilefish would be moved back into the Deepwater Complex under **Alternative 1 (No Action)**. With the addition of blueline tilefish back into the Deepwater Complex, the total ACL would decrease 76% from 711,025 lbs ww to 170,278 lbs ww. If Amendment 29 is implemented prior to implementation of this amendment and the ABCs are increased for silk snapper and yellowedge grouper, the Deepwater Complex total ACL with blueline tilefish would decrease 79% from 801,619 lbs ww to 170,278 lbs ww. **Alternatives 3, 4,** and **5** would result in a total ACL increase of 103%, 92%, and 71% lbs ww under the temporary rule scenario, respectively. Once the temporary rule expires, **Alternatives 3, 4,** and **5** would result in decreases in the total ACL of 77%, 78%, and 81%, respectively. If Amendment 29 is implemented, the decreases in the total ACL would amount to 80%, 81%, and 83%, respectively, under **Alternatives 3, 4,** and **5**.

Commercial sector

Under **Alternative 2 (Preferred)**, the Deepwater Complex commercial ACL would increase by 118% (about 71,000 lbs ww) compared to the **Alternative 1 (No Action)** temporary rule scenario, decrease by 65% (244,835 lbs ww) once the temporary rule expires, and decrease by 71% (316,098 lbs ww) if Amendment 29 is implemented first. **Alternatives 3**, **4,** and **5** would result in increases in the Deepwater Complex commercial ACL of 107%, 96%, and 74%, respectively, compared to the **Alternative 1 (No Action)** temporary rule. Once the temporary rule expires, decreases in the commercial ACL would amount to 67%, 69%, and 72% for **Alternatives 3, 4,** and **5**. If Amendment 29 was implemented, the decreases in the total ACL under **Alternatives 3, 4,** and **5** would total 72%, 74%, and 76%, respectively. Because the Deepwater Complex ACL is a combination of species, ex-vessel revenue gains and losses cannot be quantified. The gains and losses under **Alternatives 2 (Preferred)-5** compared to the **Alternative 1 (No Action)** scenarios are relatively large. The differences between the action alternatives is quite small. While **Alternative 2 (Preferred)** offers the highest commercial ACL, it is only about 26,000 lbs ww different from the lowest commercial ACL alternative (**Alternative 5**). Still, **Alternatives 3-5** offer a buffer between the ABC and the ACL, which could reduce the risk of exceeding the ACL. However, the reader should keep in mind that while blueline tilefish are targeted, the other species included in the Deepwater Complex under the status quo management are not. Therefore, the importance of having a buffer in place is uncertain.

Recreational sector

Alternative 1 (No Action) would not remove blueline tilefish from the Deepwater Complex after the temporary rule expires, which would allow recreational landings of blueline tilefish to exceed the catch level recommendations of the SSC, which could reduce long-run recreational landings and associated economic benefits. Although **Alternative 2 (Preferred)** would reduce the recreational ACL for the Deepwater Complex, it would not be expected to result in reduced recreational landings in 2014 unless additional action to establish an in-season recreational AM for the Complex is taken (**Action 6**). **Alternative 2 (Preferred)** would increase the Deepwater

Complex annual recreational ACL by 100% (19,331 lbs ww) under the temporary rule scenario, decrease by 88% (295,912 lbs ww) once the temporary rule expires, and decrease by 89% (315,243 lbs ww) if Amendment 29 is implemented. If specification of a blueline tilefish ACL is approved under **Action 3**, the two ACLs are expected to continue to be exceeded based on recent recreational landings unless AMs are in place under **Action 6** for the recreational sector. Dollar estimates of the losses of economic benefits from these short-run annual decreases in landings are currently unavailable since the value placed on blueline tilefish (the dominant species caught) by recreational fishermen is unknown. However, the expectation is that there would be significant changes in consumer surplus for private recreational fishermen and net operating revenues for charter and headboat fishermen in comparing **Alternative 2 (Preferred)** to **Alternative 1 (No Action)**. **Alternatives 3**, **4**, and **5** would result in recreational ACL increases of 90%, 80%, and 60%, respectively, compared to the **Alternative 1 (No Action)** temporary rule scenario due to changes in the ABC for silk snapper and yellowedge grouper proposed in Amendment 29.

Similar to the discussion above for the commercial sector, **Alternatives 3-5** offer a buffer between the ABC and ACL, theoretically reducing the likelihood of an overage of the ACL. A buffer is beneficial for the long-term economic benefits to the recreational sector although the Deepwater Complex species (once blueline tilefish are removed) are not likely typical targets by recreational fishermen. The differences in economic effects between **Alternatives 2 (Preferred)-5** are minimal. However, the differences between these alternatives and **Alternative 1 (No Action)** are relatively large, although these differences cannot be quantified at this time due to lack of an estimate for the recreational value of blueline tilefish.

Summary

Of the alternatives considered under **Action 1**, **Alternative 2 (Preferred)** would result in highest short-term landings and ex-vessel revenues. **Alternatives 3-5** provide for a buffer between the ABC and the ACL for the Deepwater Complex, which have long-term economic benefits due to a greater ability for landings to stay below the ACL. However, since the species in the Deepwater Complex (once blueline tilefish is removed) are not typically targeted, annual landings that exceed the ACL are unlikely. Therefore, the biological benefits of an added buffer (**Alternatives 3-5**) between the ACL and ABC are minimal. In summary, it is expected that **Alternative 2 (Preferred)** would result in the greatest economic benefits by providing the highest short-term landings and ex-vessel revenues. **Alternative 2 (Preferred)** removes blueline tilefish from the Deepwater Complex. Biological benefits would be expected as AMs would be triggered when the blueline tilefish ACL is met rather than the Deepwater Complex ACL is met. These biological benefits would result in long-term economic benefits through higher future landings due to greater stock health. At the same time, **Alternative 2 (Preferred)** provides for higher ACL levels than **Alternative 3-5** without negative biological effects.

4.1.3 Social Effects

Changes to management of blueline tilefish and access to the resource could affect fishermen who target blueline tilefish, and associated communities and businesses. **Section 3.3.3** provides detailed information about communities that could be affected by management changes and

ACLs, particularly for the North Carolina community of Wanchese, and possibly for the South Carolina communities of Murrells Inlet and Little River.

Changing the species included in the Deepwater Complex is primarily administrative and would be expected to have little direct effects on fishermen and communities. **Alternative 1 (No Action)** could affect fishermen targeting blueline tilefish by removing some flexibility providing by inclusion of blueline tilefish the ACL for the Deepwater Complex. However, **Preferred Alternative 2** would allow more precise management of blueline tilefish without affecting management of the other deepwater species, which would be expected to contribute to rebuilding of the blueline tilefish stock.

4.1.4 Administrative Effects

Blueline tilefish has been temporarily removed from the Deepwater Complex; as such, **Alternative 1 (No Action)** would have the same level of administrative effects as **Alternatives 2 (Preferred)** through **5** in the near term. Once the temporary rule expires, **Alternative 1 (No Action)** would retain blueline tilefish in the Deepwater Complex and retain the current level of administrative impacts through monitoring this ACL and applying the AMs. **Alternatives 2 (Preferred)** through **5** would remove blueline tilefish from the complex and, while **Alternative 2 (Preferred)** would set ACL=OY=ABC for the complex, **Alternatives 3** through **5** consider buffers between the ABC and ACL.

Lowering the sector ACLs for the Deepwater Complex through **Alternatives 2 (Preferred)** through **5** are not themselves actions that have direct impacts on the administrative environment, outside of the requisite public notices. However, in general, the lower the ACL is set, the more likely it is to be met or exceeded (if no additional harvest restrictions are implemented), and the more likely an AM would be triggered. Therefore, the adverse administrative effects are likely greater for **Alternative 1 (No Action)** compared to **Alternative 5**

4.2 Action 2. Re-define Maximum Sustainable Yield for Blueline Tilefish

4.2.1 Biological Effects

The maximum sustainable yield (MSY) is a reference point used by managers to assess fishery performance over the long term. As a result, redefined management reference points could require regulatory changes in the future as managers monitor the long-term performance of the stock with respect to the new reference point. Therefore, these parameter definitions would affect subject stocks and the ecosystem of which they are a part, by influencing decisions about how to maximize and optimize the long-term yield of fisheries under equilibrium conditions and triggering action when stock biomass decreases below a threshold level.

Alternatives
(preferred alternatives in bold)

1. No action. Currently, MSY equals the yield produced by F_{MSY}. $F_{30\%SPR}$ is used as the F_{MSY} proxy.

2. **Preferred. MSY equals the yield produced by F_{MSY} or the F_{MSY} proxy. MSY and F_{MSY} are recommended by the most recent SEDAR/SSC. F_{MSY}=0.302 and MSY = 226,500 lbs ww,**

MSY in **Alternative 1 (No Action)** is defined as the yield produced by F_{MSY} where $F_{30\%SPR}$ is used as the F_{MSY} proxy and represents the overfishing level defined in Amendment 11 to the Snapper Grouper FMP (SAFMC 1998b). In **Alternative 1 (No Action)**, a poundage for MSY is not specified since one was not specified in Amendment 11.

Alternative 2 (Preferred) would redefine the MSY and proxy based on the most recent SEDAR/SSC process. Based on the recommendation of the Southeast Data Assessment and Review (SEDAR) 32 (2013) Review Panel and the Council's SSC, MSY is equal to the value associated with the yield at F_{MSY} (226,500 lbs ww). Implementation of a MSY equation would have beneficial effects on the blueline tilefish stock as it provides a reference point to monitor the long-term performance of the stock.

What Does SPR Mean?

SPR stands for **S**pawning **P**otential **R**atio. It is defined as the average fecundity of a recruit over its lifetime when the stock is fished divided by the average fecundity of a recruit over its lifetime when the stock is unfished. The yield at F_{SPR} may serve as a proxy, or substitute, for F_{MSY} if the spawner-recruit relationship cannot be estimated reliably.

Implementation of a MSY equation would not directly affect protected species because it is a reference point used to monitor the long-term performance of the stock once it is rebuilt. In the future, when the stock is rebuilt, any specific management actions based on the MSY equation that may affect protected species will be evaluated as they are developed.

4.2.2 Economic Effects

Defining MSY for blueline tilefish does not alter the current harvest or use of the resource. Specification of this metric merely establishes a benchmark for a species and resource evaluation on which additional management actions for the species would be based if management adjustments were necessary. The impacts of these management adjustments would be evaluated as they are proposed. As a benchmark, MSY would not limit how, when, where, or with what frequency participants in the fishery engage in harvesting the resource. This includes participants who directly utilize the resource (commercial vessels, for-hire operations, and recreational anglers), as well as participants associated with peripheral and support industries.

Since there would be no direct effects on resource harvest or use, there would be no direct effects on fishery participants, associated industries, or communities. Direct effects only accrue to actions that alter harvest or other use of the resource.

Specifying MSY, however, establishes the platform for future management, specifically from the perspective of bounding allowable harvest levels. In this sense, MSY may be considered to have indirect effects on fishery participants. As a benchmark, MSY establishes a parameter that condition subsequent management actions, and as such, defining MSY takes special significance. Of the alternatives considered in this action, **Alternative 2 (Preferred)**, which is recommended in the most recent SEDAR stock assessment and by the SSC, has a better scientific basis. Hence, it provides a more solid ground for management actions that have economic implications.

4.2.3 Social Effects

Social effects of management specifications such as MSY for a stock would be associated with both the biological and economic effects of the MSY value. An MSY level that reflects the best scientific information available (**Preferred Alternative 2**) could result in lower fishing mortality values and consequently lower ACLs, which would likely affect fishermen targeting blueline tilefish. However, an informed and relevant MSY is expected to result in greater expected long-term benefits to the commercial fleet and recreational fishermen who target blueline target than under **Alternative 1 (No Action)**.

4.2.4 Administrative Effects

The potential administrative effects of these alternatives differ in terms of the implied restrictions required to constrain fisheries to the respective benchmarks. Defining a MSY proxy establishes a harvest goal for the blueline tilefish component of the snapper grouper fishery, for which management measures would be implemented. Those management measures would directly impact the administrative environment according to the level of conservativeness associated with the chosen MSY and subsequent restrictions placed on blueline tilefish to constrain harvest levels. **Alternative 2 (Preferred)** would implement a MSY equation that would allow for periodic adjustments of F_{MSY} and MSY values based on new assessments without the need for a plan amendment. This would reduce the administrative burden from

current levels and is the least administratively burdensome MSY proxy alternatives considered under this action.

4.3 Action 3. Establish Annual Catch Limits and Optimum Yield for Blueline Tilefish

4.3.1 Biological Effects

Alternatives
(preferred alternatives in bold)

1. No action. Temporary annual catch limits and optimum yield are in place for blueline tilefish. [1,2]
2. ACL=OY=ABC
3. **ACL=OY=98%ABC**
4. ACL=OY=90%ABC

[1]Temporary measures are in place to remove blueline tilefish from the Deepwater Complex and to reduce the ACL for the Deepwater Complex.
[2]Blueline tilefish is in the Deepwater Complex and there is an ACL for the complex. Action 1 proposes to separate blueline tilefish from the complex.

Previously, blueline tilefish was included in the Deepwater Complex, and the blueline tilefish's portion of the complex annual catch limit was 631,341 lbs ww. However, effective April 17, 2014, the National Marine Fisheries Service (NMFS) temporarily removed blueline tilefish from the Deepwater Complex and specified the following for blueline tilefish: total ACL = 224,100 lbs ww commercial ACL = 112,207 lbs ww; and recreational ACL = 111,893 lbs ww. These temporary regulations, which were in place for 180 days (through October 14, 2014), have been extended for 186 additional days (through April 18, 2015, 79 FR 21636).

There are negative biological consequences associated with retaining blueline tilefish in the Deepwater Complex and not specifying individual ACLs as outlined in **Alternative 1 (No Action)**. The most recent stock assessment has determined that the stock is undergoing overfishing and biomass is below SSB_{MSY}. The stock is overfished according to the previous definition of the minimum stock size threshold (MSST) but is not overfished based on the MSST implemented for blueline tilefish and 7 other snapper grouper species in Regulatory Amendment 21 to the Snapper Grouper FMP (SAFMC 2014a; 79 FR 60379). Although NMFS implemented temporary ACLs to reduce overfishing as specified in **Alternative 1 (No Action)**, this alternative would not reduce fishing mortality levels to those necessary to end overfishing. Although the stock is not overfished, the biomass of blueline tilefish is below the level associated with MSY, and would likely further decrease if harvest levels are not reduced.

Potential adverse impacts from overfishing (fishing mortality too high) include a decrease in the average age and size structure of the blueline tilefish stock, which may decrease population robustness to environmental perturbations. Also, older and larger females have greater reproductive potential because fecundity increases exponentially with size. Therefore, high fishing mortality rates, which remove older and larger fish from a population, can also decrease the number of young each year (recruitment).

In turn, continued overexploitation of any snapper grouper species may disrupt the natural community structure of the reef ecosystems that support these species. Predator species could

decrease in abundance in response to a decline of an exploited species, or predators could target other species as prey items. Conversely, the abundance of those prey and competitor species of the non-targeted species could increase in response to a decline in the abundance of a targeted species such as blueline tilefish.

Alternatives 2-4 would set ACL equal to OY. As mentioned in **Action 1**, the Magnuson-Stevens Act NS 1 guidelines established the relationship between conservation and management measures, preventing overfishing, and achieving OY from each stock, stock complex, or fishery. The National Standard 1 guidelines discuss the relationship of OFL to MSY and the ACT or 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 or complex's abundance; MSY is the long-term average of such catches. The ACL is the limit that triggers AMs, and ACT, if specified, would be the management target for a species. Management measures for a species should, on an annual basis, prevent the ACL from being exceeded.

The Council, with the advice of their SSC, has established an ABC control rule that takes into consideration scientific and management uncertainty to ensure catches are maintained below a MSY level. Setting the ACL equal to the ABC leaves no buffer between the two harvest parameters, which may increase risk that harvest could exceed the ABC. The NS1 guidelines indicate ACL may typically be set very close to the ABC and setting a buffer between the ACL and ABC would be appropriate in situations where there is uncertainty in whether or not management measures are constraining fishing mortality to target levels. The Council considered alternatives for snapper grouper species in the Comprehensive ACL Amendment (SAFMC 2011c) and Amendment 24 (SAFMC 2011d) that would set the ACL below the ABC, but selected ACL=OY=ABC as their preferred alternative. The current commercial AM with its in-season closure and recreational AMs that include a payback provision to shorten the length of the following year's recreational fishing season for blueline tilefish could prevent both sectors from exceeding their ACLs. Amendment 29 (SAFMC 2014b) includes actions to improve AMs for blueline tilefish to help ensure ACLs are not exceeded. Furthermore, with vastly improved commercial monitoring mechanisms recently implemented, it is unlikely that repeated commercial ACL overages would occur.

Alternatives 2 through **4** would reduce harvest of blueline tilefish at or below the catch level recommendations of the Council's SSC. Thus, relative to **Alternative 1 (No Action)** **Alternatives 2** through **4** would have positive biological effects on the stock. The proposed total ACL in 2015 for **Preferred Alternative 3** (ACL=OY=98%ABC) **(Table 4.3.1)** represents a 92% reduction from the 2012 total landings **(Table 4.3.2)** and a 94% reduction from the blueline tilefish portion of the Deepwater Complex ACL **(Table 4.3.3)**. The harvest reductions are based on the results of the recent stock assessment and harvest level recommendation from the Council's SSC. **Alternative 4** would have greater positive effects to blueline tilefish compared to **Alternatives 2** and **3 (Preferred)** as **Alternative 4** would establish the lowest ACL.

Table 4.3.1. The values for the blueline tilefish annual catch limits and optimum yield for **Preferred Alternative 3** (ACL=OY=98%ABC).

	Blueline Tilefish ACL for Preferred Alternative 3 (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

Table 4.3.2. The values for the blueline tilefish landings in 2012.

	Blueline Tilefish Landings in 2012 (lbs ww)		
Year	**Total**	**Commercial**	**Recreational**
2012	459,808	370,993	88,815

Source: SEFSC Commercial ACL database.

Table 4.3.3. The values for the blueline tilefish portion of the Deepwater Complex after the temporary measures in the emergency rule expires.

Blueline Tilefish Portion of the Deepwater Complex[1] (lbs ww)		
Total	**Commercial**	**Recreational**
631,341	316,098	315,243

[1]These values represent the Deepwater Complex ACL when the temporary measures in the emergency rule expire.

Reducing the blueline tilefish harvest would protect the blueline tilefish stock by reducing the fishing mortality levels, which would be expected to increase the number of older, larger fish in the population. A robust population with multiple year classes provides additional protection against recruitment failure since several years of poor environmental conditions can reduce survival of eggs and larvae. Reducing harvest of blueline tilefish and improving the age structure of the population would be expected to allow the stock to be less susceptible to adverse environmental conditions that might affect recruitment success.

Regardless of the alternative selected, none is anticipated to have adverse effects on listed *Acropora* species, large whales, or any distinct population segments (DPS) of Atlantic sturgeon. Previous Endangered Species Act (ESA) consultations determined the hook-and-line sector of the snapper grouper fishery was not likely to adversely affect these species or DPSs. For the species that may interact with the fishery (i.e., sea turtles and smalltooth sawfish), there is likely to be no additional biological benefit from **Alternative 1 (No Action)** because it would perpetuate the existing level of risk for interactions between these ESA-listed species and the fishery. Because the other alternatives would reduce the allowable harvest for blueline tilefish relative to **Alternative 1 (No Action)**, each of those alternatives would likely be more biologically beneficial to sea turtles and smalltooth sawfish if the total effort in the fishery is

reduced. **Alternative 4** would likely be the most biologically beneficial since it would reduce the ACL be the greatest amount. **Alternative 3 (Preferred)** would be slightly less biologically beneficial than **Alternative 4**, and **Alternative 2** would be the least biologically beneficial of those three alternatives.

4.3.2 Economic Effects

Alternatives 2 through **4** result in different ACLs for blueline tilefish. Blueline tilefish has been temporarily removed from the Deepwater Complex, and an ACL has been temporarily specified for the species. **Alternative 1 (No Action)** does not specify individual ACLs or OY for blueline tilefish when the temporary rule expires. In addition, **Alternative 1 (No Action)** does not incorporate the latest stock assessment information indicating that the blueline tilefish stock is undergoing overfishing. Therefore, under **Alternative 1 (No Action)**, overfishing would continue to result in long-term negative economic benefits.

Alternative 2, **Alternative 3 (Preferred)**, and **Alternative 4** would be expected to reduce harvest of blueline tilefish relative to **Alternative 1 (No Action)** and could result in short-term economic losses. However, **Alternative 2**, **Alternative 3 (Preferred)**, and **Alternative 4** would potentially result in long-term economic benefits once the stock is rebuilt through higher landings and ex-vessel revenues for the commercial sector and higher total consumer surplus and net operating revenues over time for the recreational sector. **Alternative 2** proposes the least conservative ACL (ranging from approximately 36,000 to 90,000 lbs ww from 2015 to 2018 and beyond) while **Alternative 4** proposes the most conservative ACL (ranging from approximately 33,000 to 81,000 lbs ww from 2015 to 2018 and beyond) for blueline tilefish.

The differences in the range of ACLs between **Alternatives 2, 3 (Preferred),** and **4** differ by about 3,600 lbs ww for 2015 and 9,000 lbs ww for 2018 and beyond. Therefore, differences in resulting economic impacts among **Alternative 2**, **Alternative 3 (Preferred)**, and **Alternative 4** are relatively small. However, comparisons between the resulting economic effects of the proposed alternatives and **Alternative 1 (No Action)** are large. Making a comparison between the proposed ACL with the current ACL, **Alternative 2** could result in commercial annual ex-vessel losses ranging from approximately $196,000 to $141,000 from 2015 to 2018 (in 2012 U.S. Dollars). The recreational sector would suffer similar losses (94,000 to 67,000 lbs ww) but these cannot be quantified in lost consumer surplus or net operating revenues at this time due to lack of data regarding the willingness-to-pay for blueline tilefish. **Alternative 3 (Preferred)** could result in commercial annual ex-vessel losses ranging from approximately $197,000 to $143,000 from 2015 to 2018, and recreational annual losses from 94,000 to 68,000 lbs over the same time period. **Alternative 4** would result in commercial annual ex-vessel losses of approximately $200,000 to $150,000 from 2015 to 2018 and recreational annual losses of 96,000 to 72,000 lbs ww. While these values show the difference between the status quo ACL and the proposed ACLs, actual losses would be greater since the status quo ACL has been exceeded in recent years. Commercial landings (based on logbooks) of blueline tilefish in 2012 were approximately 294,000 lbs ww (**Table 3.3.11**) while recreational landings were estimated at 89,000 lbs ww (**Table 4.3.2**) but were projected to be much higher (over 300,000 lbs ww) for 2013 (see **Appendix M**). Therefore, the actual commercial annual ex-vessel revenue losses and

recreational consumer surplus and net operating revenue losses could be three times the amount calculated here; although, commercial exceedance of the ACL is less likely due to new reporting requirements that improve the quota tracking system.

Alternative 4 would likely have the greatest overall economic benefits in the long-term by establishing the lowest allowable catch levels because of expected higher landings in the future, higher ex-vessel revenues for the commercial sector, and higher consumer surpluses and net operating revenues for the recreational sector. That said, the differences among **Alternative 2**, **Alternative 3 (Preferred)**, and **Alternative 4** are minimal whereas **Alternative 1 (No Action)** would have the smallest long-term economic benefits.

4.3.3 Social Effects

Blueline tilefish is an important component of the commercial species landed in Wanchese, Hatteras, and Avon, North Carolina; Murrells Inlet, South Carolina; and Little River, South Carolina in addition to potentially being an important recreational species in communities such as Key West, Florida (see **Section 3.3.3**). Changes to the ACL and access to the resource could affect individuals and businesses in these communities. However, in Wanchese, the overall importance to the community is not as great as other species. The importance to specific vessels is unknown but the primary effect would likely be for vessels to substitute other species if available when access to the blueline tilefish resource is limited or prohibited.

Changes in the ACL for any stock would 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. AMs can have significant direct and indirect social effects because, when triggered, can restrict harvest in the current season or subsequent seasons. While the negative effects 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 all together 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, assuming long-term recovery and rebuilding goals are met. Adhering to stock recovery and rebuilding goals 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 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 expected short-term effects on fishermen under **Alternative 1 (No Action)** are likely to be less severe than under lower ACLs proposed in **Alternatives 2-4**. However, continued fishing levels under **Alternative 1 (No Action)** would have negative biological effects on the blueline tilefish stock, and resulting long-term negative effects on blueline tilefish fishermen. **Alternative 4** would be expected to result in the least short-term negative effects and the most

long-term benefits to fishermen and communities, followed by **Preferred Alternative 3** and **Alternative 2**.

4.3.4 Administrative Effects

Establishing sector ACLs and OY for blueline tilefish are not themselves actions that have direct impacts on the administrative environment, outside of the requisite public notices. However, indirect administrative burdens such as monitoring landings, and correcting for and preventing ACL overages would stem from the specification of an ACL and OY for blueline tilefish. There is a temporary ACL in place for blueline tilefish. As such, **Alternative 1 (No Action)** would have the same level of administrative effects as **Alternatives 2** through **4**.

In general, the lower the ACL is set the more likely it is to be met or exceeded (if no additional harvest restrictions are implemented), and the more likely an AM would be triggered. **Alternative 2** would establish the highest sector ACLs for blueline tilefish and would provide no buffer between the ACL and the ABC, and is thus the least precautionary of the alternatives considered. Because the sector ACLs are slightly higher under **Alternative 2** than under **Alternatives 3 (Preferred)** and **4**, greater harvest would be allowed before an AM is triggered. **Alternatives 3 (Preferred)** and **4** would implement lower sector ACLs than **Alternative 2** and are therefore more likely to be met or exceeded than ACLs specified under **Alternative 2**. In the long-term, taking action to prevent an ACL overage or correcting for an ACL overage, may be administratively beneficial since those actions may prevent the stock from reaching an overfished condition that would trigger development of a new rebuilding plan.

4.4 Action 4. Establish a Recreational Annual Catch Target for Blueline Tilefish

4.4.1 Biological Effects

Alternatives[1]
(preferred alternatives in bold)

ACL=annual catch limit
ACT=annual catch target
AM=accountability measure

1. No action. An individual recreational ACT has not been established for blueline tilefish. [1]
2. **Recreational ACT for blueline tilefish = recreational ACL*(1-PSE) or ACL*0.5, whichever is greater.**
3. Recreational ACT for blueline tilefish = 85% of the recreational ACL.

[1]Blueline tilefish is in the Deepwater Complex and there is an ACT for the complex. Action 1 proposes to separate blueline tilefish from the complex.

At present, ACTs are used as a management reference point to track performance of the management measures imposed on the recreational sector. No AMs are triggered if recreational landings reach the recreational ACT. Hence, biological effects are neutral for all alternatives considered, including **Alternative 1 (No Action)**.

If fishery managers compare landings to the ACT to manage the recreational sector (e.g., establish bag limits) then **Preferred Alternative 2** would have the greatest biological benefit of the three alternatives considered since the ACT for **Preferred Alternative 2** is lower than specified under **Alternative 3**. Under **Preferred Alternative 2**, the lower the value of the percent standard error (PSE), the more reliable the landings estimate. By using PSE in **Preferred Alternative 2**, more precaution is taken with increasing variability and uncertainty in the landings data. If AMs were triggered when landings reached or were projected to reach the ACT, the need to close or implement post-season AMs that are meant to correct for an ACL overage would be diminished. However, as previously stated, no AMs are currently tied to the ACT; hence, biological benefits are not realized.

Regardless of the alternative selected, none is anticipated to have adverse effects on listed *Acropora* species, large whales, or any DPS of Atlantic sturgeon. Previous ESA consultations determined the hook-and-line sector of the snapper grouper fishery was not likely to adversely affect these species or DPSs. For the species that may interact with the blueline tilefish portion of the snapper grouper fishery (i.e., sea turtles and smalltooth sawfish), there is likely to be no additional biological benefit from **Alternative 1 (No Action)** because it would perpetuate the existing level of risk for interactions between these ESA-listed species and the fishery. Regardless of what alternative is selected for **Action 3**, **Preferred Alternative 2 for Action 4** is likely to be more biologically beneficial for sea turtles and smalltooth sawfish than **Alternative 3. Preferred Alternative 2** would establish lower recreational ACTs for blueline tilefish than

Alternative 3. If this reduced overall fishing effort, the potential likelihood of interactions between the sea turtles, smalltooth sawfish, and the fishery could decrease.

4.4.2 Economic Effects

If the ACT were used to trigger AMs for the recreational sector, economic effects would be similar in nature to those under **Action 3**, although not necessarily in magnitude. Under that scenario, **Alternative 1 (No Action)** would have the same economic effects as any of the ACL alternatives under **Action 3**.

If ACTs were used to trigger control measures, they would serve as "cushions" to effectively limit harvests and thus contribute to rebuilding of the stock. Long-term economic benefits would then ensue from a healthy stock. As long as long-term economic benefits outweigh short-term costs, the fishing industry and society in general would be better off. Realization of long-term economic benefits depends on a host of factors, including the type of management regime adopted. These factors render the long-term economic outcome of ACTs as relatively uncertain, at least from the standpoint of their magnitude. It appears that a prudent action to take would be to properly manage short-term costs. Relatively large short-term costs, such as those that may occur under more restrictive ACTs, may not be totally outweighed by long-term benefits. There is therefore weak economic rationale for adopting such type of restrictive control measures.

4.4.3 Social Effects

Establishment of a recreational ACT for blueline tilefish, apart from the Deepwater Complex recreational ACT, would likely have little effect on recreational fishermen targeting blueline tilefish. A higher ACT could be more beneficial for fishermen, depending on the levels specified in **Preferred Alternative 2** and **Alternative 3.** Because the ACT is used for monitoring only, it is expected that the social effects of **Alternative 1 (No Action)**, **Preferred Alternative 2**, and **Alternative 3** would be the same.

4.4.4 Administrative Effects

The NS 1 guidelines recommend the use of ACTs in systems of AMs so that an ACL is not exceeded. For species without in-season management control to prevent the ACL from being exceeded, AMs may utilize ACTs that are set below ACLs as a target level. If management measures are set to keep landings near the ACT, then overages of the ACL are less likely to occur. If an ACT is specified as part of the AMs for blueline tilefish, 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 that the ACL not be exceeded. In this sense, the ACT would serve as a "performance standard". The NS 1 guidelines suggest a performance standard such that if catch of a stock exceeds its ACL more often than once in the last four years, then the system of ACLs, ACTs, and AMs should be re-evaluated to

improve its performance and effectiveness. If the Council and its SSC determined that the management measures in place are not constraining catch to a target level such as the ACT, adjustments could be made through a future regulatory amendment.

Alternative 1 (No Action) would not specify a recreational ACT for blueline tilefish. **Alternative 2 (Preferred)** would have the greatest biological benefit of the alternatives by adjusting the ACL by 50% or one minus the PSE from the recreational sector, whichever is greater. The lower the value of the PSE, the more reliable the landings data. Establishing an ACT below the recreational ACL would also reduce the need to close or implement post-season AMs that are meant to correct for an ACL overage. **Alternative 3** would establish reduced harvest levels at 85% of the ACL designed to hedge against an ACL overage and therefore, provide a buffer between the ACT and ACL, and account for management uncertainty.

4.5 Action 5. Specify Accountability Measures for Blueline Tilefish and the Deepwater Complex for the Commercial Sector

4.5.1 Biological Effects

Alternatives
(preferred alternatives in bold)

ACL=annual catch limit
AM=accountability measure

1. No action. Temporary AMs are in place for blueline tilefish for the commercial sector. [1,2]

2. **Specify new AMs for blueline tilefish and the Deepwater Complex for the commercial sector. If ACL is met or projected to be met, close in-season.**

   2A. Only if blueline tilefish or a species in the Deepwater Complex is overfished, reduce ACL in following year by overage.

   2B. Only if total (commercial + recreational) ACL exceeded, reduce ACL in following year by overage.

   2C. Only if blueline tilefish or a species in the Deepwater Complex is overfished and total (commercial + recreational) ACL exceeded, reduce ACL in following year by overage.

[1]Temporary measures are in place to remove blueline tilefish from the Deepwater Complex and to establish an AM for the commercial sector.
[2]Blueline tilefish is in the Deepwater Complex and there is an AM for the complex. Action 1 proposes to separate blueline tilefish from the complex.

Alternative 1 (No Action) allows the Regional Administrator to close the commercial sector in-season if the blueline tilefish ACL is met or projected to be met. However, this measure is only temporarily in place. An in-season closure AM is currently in place for the Deepwater Complex. After the temporary rule expires, **Alternative 2 (Preferred)** would prohibit commercial harvest of blueline tilefish when the ACL is projected to be met. **Alternative 2 (Preferred)** would also continue the in-season closure for the Deepwater Complex when the commercial ACL is met or is projected to be met. Thus, **Alternative 2 (Preferred)** would be expected to have positive beneficial effects when compared to **Alternative 1 (No Action)**. The sub-alternatives under **Alternative 2 (Preferred)** would change the commercial payback provisions for blueline tilefish and enhance the biological benefits provided by the in-season closure specified in this alternative. Currently, there is no built in mechanism to correct an ACL overage if one were to occur. Therefore, when compared to **Alternative 1 (No Action)**, biological benefits would be realized under any of the three Sub-alternatives considered. **Sub-alternative 2a** would trigger a reduction of the ACL in the fishing year following a commercial ACL overage but only if blueline tilefish is overfished. **Sub-alternative 2b** would trigger a reduction of the commercial ACL for the fishing year following a total ACL overage, meaning the commercial ACL and the recreational ACL combined is exceeded. **Preferred Sub-alternative 2c** would trigger a reduction of the commercial ACL in the fishing year following an overage of the total ACL and only if the species is overfished. The amount of the commercial ACL payback would be equal to the amount of the commercial ACL overage during the prior year.

Sub-alternative 2a is associated with only one criterion for triggering implementation of a payback of the ACL, and it would ensure that paybacks are triggered when they are most needed, i.e., when the species is overfished. This provision is currently in place for black grouper, mutton snapper, yellowtail snapper, greater amberjack, red porgy, and unassessed snapper grouper species. However, if a species is not overfished and the commercial ACL is exceeded, no payback would be required. Thus, **Sub-alternative 2a** would only result in biological benefits if blueline tilefish or a species in the Deepwater Complex is overfished. **Sub-alternative 2b** is likely to have similar or greater beneficial biological impacts than **Sub-alternative 2a**, as the AM would be triggered when both the recreational and commercial ACLs have been exceeded regardless of overfished status. It is difficult to predict how often this AM would be triggered compared to **Sub-alternative 2a**; however, it is likely that overages of the total ACL may happen more frequently than exceeding the commercial ACL when a species is overfished. Regulatory Amendment 21 to the Snapper Grouper FMP (Regulatory Amendment 21; SAFMC 2014a) modified the current overfished definition (minimum stock size threshold (MSST)) for eight snapper grouper species, including blueline tilefish, to prevent species with low natural mortality rates from frequently fluctuating between an overfished and rebuilt condition due to natural environmental conditions rather than fishing pressure. Therefore, the risk of exceeding the commercial ACL while blueline tilefish is considered overfished would be minimized, and the AM proposed under **Sub-alternative 2a** could be triggered less often than that under **Sub-alternative 2b**.

Preferred Sub-alternative 2c would be triggered the least frequently of all the sub-alternative payback AMs under consideration, because the payback would only be required if two criteria are met, blueline tilefish or a species in the Deepwater Complex is overfished and the total ACL has been exceeded. Therefore, **Preferred Sub-alternative 2c** may be associated with the lowest level of biological benefits compared to **Sub-alternatives 2a** and **2b** since two criteria (instead of one under **Sub-alternatives 2a** and **2b**) would have to be met for a payback to be required. While it is correct that **Preferred Sub-alternative 2c** would be triggered the most infrequently, thereby resulting in a lower level of biological benefits based on the biological impact analyses, it is the alternative that triggers a payback when it is biologically necessary. If the stock is not overfished, no biological damage would result if the total ACL is exceeded by a small amount. The Council has put in place management measures and reporting requirements that should prevent the total ACL from being exceeded. If something extraordinary occurs, and the total ACL is exceeded, the Council would review the situation and determine if any additional changes to management measures or the quota monitoring system are required.

Regardless of the alternative selected, none is anticipated to have adverse effects on listed *Acropora* species, large whales, or any DPS of Atlantic sturgeon. Previous ESA consultations determined the hook-and-line sector of the snapper grouper fishery was not likely to adversely affect these species or DPSs. For the species that may interact with the blueline tilefish portion of the snapper grouper fishery (i.e., sea turtles and smalltooth sawfish), there is likely to be no additional biological benefit from **Alternative 1 (No Action)** because it would perpetuate the existing level of risk for interactions between these ESA-listed species and the snapper grouper fishery**. Sub-alternative 2a** is associated with only one criterion for triggering ACL payback. If an ACL payback resulted in lower overall fishing effort, this Sub-alternative would likely have the most biological benefit to sea turtles and smalltooth sawfish because it has the greatest

chance of being triggered. Since **Preferred Sub-alternative 2c** has three criteria for triggering ACL payback, it is the least likely to be triggered and less likely to result in reduced fishing effort. Under those circumstances, that alternative would have the least biological benefit to sea turtles and smalltooth sawfish, relative to the other alternatives. The biological benefits to sea turtles and smalltooth sawfish from **Sub-alternative 2b** are likely to be between **Sub-alternatives 2a** and **2c.**

4.5.2 Economic Effects

Under **Alternative 1 (No Action)**, an in-season closure is temporarily in place for the blueline tilefish commercial sector. When the temporary rule expires, there will be no AM for blueline tilefish. The commercial AM for the Deepwater Complex is an in-season closure when the ACL is projected to be met. **Alternative 1 (No Action)** would not economically benefit the blueline tilefish commercial sector in the long-term because it would not help to prevent overfishing. Overfishing leads to long-term economic losses in ex-vessel revenues due to decreases in available harvest from decreased stock health. All options under **Alternative 2 (Preferred)** would result in short-term ex-vessel revenue losses to the commercial sector compared to recent landings. Over the long-term, however, these alternatives would provide a beneficial economic scenario for the commercial sector by addressing issues related to overfishing of the stock. With a relatively stable stock over time, future harvest would increase or at least would be stable. This stability could benefit the commercial sector financially by paving the way for more confident business planning with more predictable landings that could result in improvements in reliability of landings to dealers and their markets.

The alternatives differ in the conditions that must occur for an overage to be subtracted from the following year's ACL. Under **Alternative 1 (No Action),** a temporary rule is in place that closes commercial harvest of blueline tilefish when the commercial ACL is projected to be met. Under **Alternative 1 (No Action)**, there will be no AM for blueline tilefish when the temporary rule expires. After the temporary rule expires, **Alternative 2 (Preferred)** would prohibit harvest in-season if the commercial ACL is projected to be met. The **Alternative 2 (Preferred)** Sub-alternatives specify a payback of the ACL under different conditions if commercial landings exceed the ACL. **Sub-alternative 2c (Preferred)** is the least restrictive and requires a reduction in the following year's ACL only if the total ACL is exceeded and the stock is overfished. **Sub-alternatives 2a** and **2b** are more restrictive than **Sub-alternative 2c (Preferred)**. **Sub-alternative 2c (Preferred)** allows for a larger catch than might otherwise be allowed under the other Sub-alternatives but still protects the biological stocks. There are short-term economic benefits associated with the less restrictive Sub-alternatives as a result of higher ex-vessel revenues that would occur.

4.5.3 Social Effects

Under **Alternative 1 (No Action)** an in-season closure for blueline tilefish is in place through a temporary rule. The commercial AM for the Deepwater Complex is an in-season closure when the ACL is projected to be met. **Alternative 2 (Preferred)** would retain the in-season closure

specified for the Deepwater Complex, and in the temporary rule for blueline tilefish. The Sub-alternatives would establish potential payback provisions for commercial harvest of blueline tilefish and the Deepwater Complex. **Alternative 2 (Preferred)** and its Sub-alternatives can affect fishermen and communities if they are triggered, restricting harvest in the current season or subsequent seasons. While the negative effects of a closure or payback 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. Some of those effects are similar to other thresholds being met and may involve switching to other species or discontinuing fishing altogether. Those restrictions usually translate into reduced opportunity for harvest, which in turn can change fishing behaviors through species switching if the opportunity exists. That behavior can increase pressure on other stocks or amplify conflict. If there are no opportunities to switch species, then losses of income or fishing opportunities may occur which can act like any downturn in an economy for fishing communities affected. If there is a substantial downturn then increased unemployment and other disruptions to the social fabric may occur.

In general, the most beneficial in the long term for the stock and for sustainable fishing opportunities is a combination of an in-season closure and a payback provision. However, some flexibility in how these AMs are triggered, such as conditions of the stock being overfished or the total ACL being exceeded, can help to mitigate the negative short-term impacts on fishermen and associated businesses and communities. **Alternative 1 (No Action)** would not be expected to result in effects on the commercial fleets of these fisheries because it would not be consistent with changes to the management of blueline tilefish and the Deepwater Complex. **Preferred Alternative 2** would likely benefit fishermen in the long term by maximizing effectiveness of the ACL and the rebuilding strategy through in-season and post-season AMs**. Sub-alternatives 2a, 2b** and **Preferred 2c** would provide some flexibility and specifics for triggering the payback provisions if the ACL is exceeded. **Preferred Sub-alternative 2c** would provide the most flexibility for triggering the payback AM, in that the most critical conditions must be met before the payback is triggered, and would be expected to be most beneficial to commercial fishermen in that it would be less likely that a payback is required for an overage. Additionally, **Preferred Sub-alternative 2c** would be more consistent with AMs for other species such as king mackerel and Spanish mackerel.

4.5.4 Administrative Effects

Under **Alternative 1 (No Action)**, all the species addressed in this amendment have AMs in place. Therefore, any increase or decrease in administrative burden associated with **Alternatives 1 (No Action)** and **2 (Preferred)** would be caused by more or less frequently implemented AMs. **Preferred Alternative 2** would continue the in-season commercial sector closure AM already included under **Alternative 1 (No Action)** for the Deepwater Complex and temporarily in place for blueline tilefish, and would not modify the administrative environment for implementing commercial AMs. **Preferred Alternative 2** sub-alternatives may be associated with slight changes to the administrative environment based on the frequency with which each of the AM options would be triggered. **Sub-alternative 2b** is likely to be triggered the most often, and therefore, would be associated with the highest level of administrative impacts in the form of document preparation and notifications sent to the commercial sector participants informing

them that the ACL the following year would be reduced. **Sub-alternative 2a** is likely to follow **Sub-alternative 2b** in frequency of implementation, and **Preferred Sub-alternative 2c** would be triggered least frequently, resulting in the lowest direct effects on the administrative environment. However, if AMs are not implemented when they are biologically necessary, the risk of overfishing increases and the administrative burden associated with having to curtail overfishing are much greater than those associated with implementing an effective AM.

4.6 Action 6. Specify Accountability Measures for Blueline Tilefish and the Deepwater Complex for the Recreational Sector

4.6.1 Biological Effects

The following AMs are in place for blueline tilefish and the Deepwater Complex for the recreational sector **(Table 4.6.1).**

Table 4.6.1. Recreational accountability measures for blueline tilefish and the Deepwater Complex.

	In-season	Post-season
Blueline tilefish (temporary)	Close in season	None
Deepwater Complex	None	Reduce length of the following year if necessary

Under **Alternative 1 (No Action)** a temporary rule is in place, which specifies an in-season closure for blueline tilefish when the recreational ACL is met or expected to be met. There would be no recreational AM for blueline tilefish when the temporary rule expires. The recreational AM for the Deepwater Complex under **Alternative 1 (No Action)** is to reduce the length of the following fishing season if the recreational ACL is exceeded. **Alternative 4 (Preferred)** and **Sub-alternative 4b (Preferred)** would also allow for an in-season recreational closure for blueline tilefish and specify this same AM for the Deepwater Complex, regardless of stock status. Thus, **Alternative 4 (Preferred)** and **Sub-alternative 4b (Preferred)** would provide positive biological benefits for blueline tilefish and the Deepwater Complex relative to **Alternative 1 (No Action)**.

Alternatives

(preferred alternatives in bold)

ACL=annual catch limit
AM=accountability measure

1. No action. Temporary recreational AMs are in place for the Deepwater Complex and blueline tilefish. [1,2]

2. **Specify new AMs for blueline tilefish and the Deepwater Complex for the recreational sector. If recreational ACL exceeded, monitor landings in the following year for a persistence in increased landings.**

   2A. Only if stocks overfished, reduce length of the following fishing year and reduce the ACL.

   2B. Only if total (commercial + recreational) ACL exceeded, reduce length of the following fishing year and reduce the ACL.

   2C. Only if stock overfished and total (commercial + recreational) ACL exceeded, reduce length of the following fishing year and reduce the ACL.

3. If ACL for blueline tilefish and the Deepwater Complex is met or projected to be met, close in-season.

4. **If ACL for blueline tilefish and the Deepwater Complex is met or projected to be met, close in-season unless Regional Administrator determines that a closure is unnecessary.**
   4A. If species is overfished.
   4B. Regardless of stock status.

[1]Temporary measures are in place to remove blueline tilefish from the Deepwater Complex and to establish an AM for the commercial sector.
[2]Blueline tilefish is in the Deepwater Complex and there is an AM for the complex. Action 1 proposes to separate blueline tilefish from the complex.
* For the Deepwater Complex, at least one species would need to be overfished.

Sub-alternatives 2a, 2b, and **2c (Preferred)** would enhance the biological benefits provided by **Alternative 4 (Preferred)** and **Sub-alternative 4b (Preferred)** by providing a payback provision if the recreational ACL is exceeded. **Sub-alternatives 2a, 2b,** and **2c (Preferred)**, would maintain the ability of the Regional Administrator to interpret landings data to determine whether a payback is needed. However, these sub-alternatives would all allow the payback to take the form of a recreational ACL reduction and a season length reduction in addition to an in-season closure specified under **Alternative 4 (Preferred).**

Sub-alternative 2a would allow the Regional Administrator to correct for a recreational ACL overage by reducing the length of the fishing season and the recreational ACL in the following fishing year by the amount of the recreational overage, but only if blueline tilefish or one of the species in the Deepwater Complex is overfished. Therefore, if the recreational ACL is exceeded and increased landings through the next fishing year are detected, but a species is not overfished, no corrective action to pay back the ACL overage would be required. This scenario could lead to negative biological impacts, especially if the recreational ACL is exceeded repeatedly without an overfished determination.

Sub-alternative 2b would allow the Regional Administrator to reduce the length of the fishing season and the recreational ACL following persistently high landings if the total ACL (commercial and recreational ACL combined) is exceeded. It is likely that overages of the total ACL would happen more frequently than exceeding the commercial ACL when a species is overfished. Furthermore, the definition of MSST for blueline tilefish was changed through Regulatory Amendment 21 (SAFMC 2014a), making it less likely for blueline tilefish to be determined to be overfished. Thus, it is expected that the AM under **Sub-alternative 2b** would be triggered more frequently and have a greater biological benefit than **Sub-alternative 2a**.

Sub-alternative 2c (Preferred) would only trigger a recreational ACL payback (in the form of a reduced recreational ACL and season length following an ACL overage) if blueline tilefish or a species in the Deepwater Complex is overfished and the total ACL is exceeded. This AM is the least likely to be implemented considering that two criteria, instead of one, would need to be met for a payback to be triggered. Under **Sub-alternative 2c (Preferred)**, no action would be taken to correct for a recreational ACL overage unless both of those criteria are met. Therefore, **Sub-alternative 2c (Preferred)** may be the least biologically beneficial compared to the other **Alternative 2** Sub-alternatives considered. While it is correct that **Preferred Sub-alternative 2c** would be triggered the most infrequently, thereby resulting in a lower level of biological benefits based on the biological impact analyses, it is the alternative that triggers a payback when it is biologically necessary. If the stock is not overfished, no biological damage would result if the total ACL is exceeded by a small amount. The Council has put in place management measures and reporting requirements that should prevent the total ACL from being exceeded. If something extraordinary occurs, and the total ACL is exceeded, the Council would review the situation and determine if any additional changes to management measures or the quota monitoring system are required.

Alternatives 3 and **4 (Preferred)** would allow a more timely response to recreational landings data that may indicate a species' recreational ACL is going to be met or exceeded while the fishing season is still open. Requiring an in-season closure when recreational landings

information indicates an ACL is going to be met may prevent the need for implementation of a post season AM such as reducing the length of the next fishing season or reducing the ACL in the next fishing season. Biologically, it is preferable to prevent overexploitation of a resource rather than correcting for it after overharvest has occurred. **Alternatives 3** and **4 (Preferred)** may not be practicable by themselves; however, for species with extremely small recreational ACLs, such as blueline tilefish if the amendment is implemented. For this reason, the most biologically beneficial option would be to implement a system of recreational AMs that combines **Alternatives 2 (Preferred)** and **3** or **4 (Preferred)**.

Under **Alternative 4 (Preferred)**, an in-season action to close a recreational sector could be triggered under one of two circumstances specified in **Sub-alternative 4a** or **Sub-alternative 4b (Preferred)**. If the recreational ACL is met or projected to be met, **Sub-alternative 4a** would *only* close the recreational sector in-season if the species is overfished. Therefore, if the landings information indicates the ACL would be met or exceeded within the fishing year, and the species is not overfished, no action would be taken to prevent the ACL overage from occurring. Alternatively, **Sub-alternative 4b (Preferred)** would allow an in-season recreational closure to take place regardless of overfished status, possibly preventing a potential ACL overage for any species addressed under this action. **Sub-alternative 4b (Preferred)** is the biologically preferable sub-alternative under **Alternative 4 (Preferred)**, since a recreational closure could be implemented regardless of overfished status. However, under **Alternative 4 (Preferred)**, the Regional Administrator would still have the option to not implement an in-season closure for a species that is not overfished, if the best scientific information indicates a closure is not necessary. In that scenario, the biological benefits of **Sub-alternative 4b (Preferred)** may be equal to those under **Sub-alternative 4a**.

Compared to **Alternative 1 (No Action)**, **Alternatives 2 (Preferred)**, **3**, and **4 (Preferred)** would all benefit the biological environment to varying degrees based on the sub-alternatives chosen under each alternative. For the recreational sector, the most biologically beneficial option is a combination of **Alternatives 2 (Preferred)** and **4 (Preferred)**. None of the alternatives being considered under this action would significantly alter the way in which the snapper grouper fishery is prosecuted in the South Atlantic exclusive economic zone. No adverse impacts on endangered or threatened species are anticipated because of this action; nor are any adverse impacts on essential fish habitats or habitat areas of particular concern including corals, sea grasses, or other habitat types expected because of this action.

Regardless of the alternative selected, none is anticipated to have adverse effects on listed *Acropora* species, large whales, or any DPS of Atlantic sturgeon. Previous ESA consultations determined the hook-and-line sector of the snapper grouper fishery was not likely to adversely affect these species or DPSs. For the species that may interact with the blueline tilefish portion of the fishery (i.e., sea turtles and smalltooth sawfish), there is likely to be no additional biological benefit from **Alternative 1 (No Action)** because it would perpetuate the existing level of risk for interactions between these ESA-listed species and the fishery**. Sub-alternative 2a** is associated with only one criterion for triggering recreational ACL payback and a shorter season and has the greatest chance of being triggered relative to the other sub-alternatives. If an ACL payback and shorter season resulted in lower overall fishing effort, this Sub-alternative would likely have the most biological benefit to sea turtles and smalltooth sawfish. Since **Sub-**

alternative 2c (Preferred) has two criteria for triggering a recreational ACL payback and shorter season, it is the least likely to be triggered, and less likely to result in reduced fishing effort. Under those circumstances, we would anticipate that alternative would have the least biological benefit to sea turtles and smalltooth sawfish, relative to the other alternatives. The biological benefits to sea turtles and smalltooth sawfish from **Sub-alternative 2b** are likely to be in between **Sub-alternatives 2a** and **2c (Preferred).**

4.6.2 Economic Effects

Under **Alternative 1 (No Action)**, an in-season closure is temporarily in place for the blueline tilefish recreational sector. When the temporary rule expires, there will be no AM for blueline tilefish. The recreational AM for the Deepwater Complex is to reduce the length of the following fishing season if the ACL is exceeded. **Alternative 1 (No Action)** would not economically benefit the blueline tilefish recreational sector in the long-term because the AM for blueline tilefish would go away and therefore increase the chance of overfishing for blueline tilefish. The post season AM for the Deepwater Complex would remain. Overfishing leads to long-term economic losses in terms of consumer surplus and revenues for headboat and charter operations due to decreases in available harvest as a result of decreased stock health. **Alternative 3** and **Alternative 4 (Preferred)** would prohibit harvest of blueline tilefish or the Deepwater Complex when the recreational ACL is met or projected to be met. **Sub-alternatives 2a, 2b,** and **2c (Preferred)** would enhance the biological benefits provided by **Alternative 4 (Preferred)** and **Sub-alternative 4b (Preferred)** by providing a payback provision. Thus, the combined effects of an in-season closure and payback provision under **Alternative 2 (Preferred)** and **Alternative 4 (Preferred)** are more restrictive than **Alternative 1 (No Action)** and provide a beneficial long-term economic outcome for the recreational sector by addressing issues related to overfishing of the stock.

The alternatives differ in the conditions that must occur for an overage to be subtracted from the following year's ACL. For the Deepwater Complex and blueline tilefish, the most restrictive option would be a combination of the in-season closure proposed in **Alternatives 3** and **4**, and the payback provisions proposed in the **Alternative 2 (Preferred)** Sub-alternatives. **Preferred Alternative 2** sub-alternatives reduce the season length only if certain additional conditions are met. **Sub-alternative 2c (Preferred)** is the least restrictive option among the sub-alternatives, and requires a reduction in the following year's ACL only if the total ACL is exceeded *and* the stock is overfished. **Sub-alternatives 2a** and **2b** are more restrictive than **Sub-alternative 2c (Preferred)** because only one of these triggers is required for a reduction in the following year's ACL. **Sub-alternative 2c (Preferred)** allows for a larger catch than might otherwise be allowed under the other sub-alternatives but still protects the biological stocks. The combined effects of **Alternative 2c (Preferred)** and **Alternative 4b (Preferred)** would be the most economically beneficial approach. The economic benefits are as a result of expected future long-term increased access to the resource, higher consumer surpluses, and increased revenues for for-hire vessels as a result of biological benefits.

4.6.3 Social Effects

The potential social effects when AMs restrict harvest in the current season or subsequent seasons are discussed in more detail in **Section 4.5.3**. For the recreational sector, **Alternative 1 (No Action)** would have minimal effects but also would not establish necessary AMs for blueline tilefish and the Deepwater Complex, which could have negative social effects if the long-term health of the stock or complex is affected. The Deepwater Complex would have a reduced ACL due to removal of blueline tilefish in **Action 1**, and blueline tilefish would have a reduced ACL under **Action 3** relative to what is currently in place under the temporary rule. Establishment of a payback provision for the recreational sector for stocks without a post-season AM under **Preferred Alternative 2**, would create an increased likelihood that an overage by the recreational could reduce fishing opportunities in the following year. However, **Sub-alternatives 2a, 2b,** and **Preferred Sub-alternative 2c** provide some flexibility in how a post-season payback would be triggered, with **Preferred Sub-alternative 2c** being the least likely to trigger a payback and affecting recreational fishing opportunities in the subsequent year for both the Deepwater Complex and for blueline tilefish.

The in-season closure AMs for the Deepwater Complex and blueline tilefish for the recreational sector in **Alternative 3** and **Alternative 4 (Preferred)** could have negative effects on recreational fishing opportunities and for-hire businesses because there has not been an in-season recreational AM in place for the Deepwater Complex, and only a temporary in-season closure AM has been in place for blueline tilefish. However, the in-season closure would likely help prevent the frequency of paybacks, along with additional protection for the blueline tilefish resource and the Deepwater Complex. Under **Preferred Alternative 4**, the Regional Administrator, using the best scientific information available, may determine that a closure is unnecessary. Therefore, **Preferred Alternative 4** would provide flexibility for when the AM is triggered if information is available that indicates that the closure is not necessary, which could help reduce the likelihood of an in-season closure. **Preferred Sub-alternative 4b** would provide additional flexibility and is expected to further reduce the likelihood of an in-season closure, more so than under **Sub-alternative 4a**.

4.6.4 Administrative Effects

Under **Alternative 1 (No Action)**, an in-season closure is temporarily in place for the blueline tilefish recreational sector. When the temporary rule expires, there will be no AM for blueline tilefish. The recreational AM for the Deepwater Complex is to reduce the length of the following fishing season if the ACL is exceeded. Therefore, any increase or decrease in administrative burden associated with **Alternatives 2 (Preferred)**, **3**, and **4 (Preferred)** would be caused by more or less frequently implemented AMs. **Alternative 4 (Preferred)** would continue the temporary in-season recreational sector closure AM for blueline tilefish included under **Alternative 1 (No Action)**, and would not modify the administrative environment for implementing recreational AMs in-season. However, **Alternative 4 (Preferred)** would establish a new AM for the Deepwater Complex. The administrative impacts associated with **Alternative 3** are largely the same as those under **Alternative 4 (Preferred)**, with the addition of continued monitoring for persistence of increased landings when a species' recreational ACL has been

exceeded. Because landings are already closely monitored, regardless of whether or not they are perceived to be increasing, the addition of the monitoring portion of the recreational AM would not constitute an additional administrative burden for those species that do not already have that AM. **Sub-alternative 4a** would be triggered less frequently than **Sub-alternative 4b (Preferred)** and would, therefore, result in a lower administrative impact in the form of public notification of an in-season closure, compared to **Sub-alternative 4b (Preferred)**. Therefore, compared to **Alternative 1 (No Action)**, **Alternatives 3** and **4 (Preferred)** would not constitute a significant increase in the need for increased staff time or agency funds.

Alternative 2 (Preferred) sub-alternatives may be associated with slight changes to the administrative environment based on the frequency with which each of the AM options would be triggered. **Sub-alternative 2a** is likely to be triggered the most often and, therefore, would be associated with the highest level of administrative impacts in the form of document preparation and notifications sent to the commercial sector participants informing them that the ACL the following year would be reduced. **Sub-alternative 2b** is likely to follow **Sub-alternative 2a** in frequency of implementation, and **Sub-alternative 2c (Preferred)** would be triggered least frequently, resulting in the lowest direct effects on the administrative environment. However, if AMs are not implemented when they are biologically necessary, the risk of overfishing increases and the administrative burden associated with having to curtail overfishing are much greater than those associated with implementing an effective AM.

Overall, the administrative impacts of all the alternatives considered under this action for blueline tilefish and the Deepwater Complex, compared to **Alternative 1 (No Action)**, are expected to be minimal.

4.7 Action 7. Establish a Trip Limit for Blueline Tilefish for the Commercial Sector

Alternatives
(preferred alternatives in bold)

ACL=annual catch limit

1. No action. No commercial trip limit for blueline tilefish [1]
2. **100-lb gw commercial trip limit for blueline tilefish.**
3. 200-lb gw commercial trip limit for blueline tilefish.
4. 300-lb gw commercial trip limit for blueline tilefish.

[1]The current management measures for blueline tilefish for the commercial sector include gear restrictions, limited access, and area closures.

4.7.1 Biological Effects

Under **Action 3**, the Council is considering four alternatives for the blueline tilefish ACL, including the no action alternative. The preferred alternative under **Action 3** would set the commercial ACL equal to 17,841 lbs ww (15,929 pounds gutted weight (lbs gw)) in 2015. The Council is considering trip limits of 100, 200, and 300 lbs gw in **Alternatives 2 (Preferred)-4**. Using the ACL and trip limit scenarios, analysts have predicted when the ACLs would be reached and the commercial sector closed (**Table 4.7.1**). The commercial trip limit analysis is contained in **Appendix K.**

When fishery managers prohibit a particular species, anglers may continue to catch the prohibited species and return the fish to the water as "bycatch". Such is often the case with the snapper grouper fishery, which is considered a "multi-species fishery". This means that anglers, at times, may be targeting several species at once, and not just a single species. In a multi-species fishery, fishery managers may increase bycatch (also referred to as "regulatory discards") by lowering an ACL and implementing trip limits. A significant portion of the released fish may not survive following its release. As discussed in detail in **Appendix F (Bycatch Practicability Analysis)**, adverse effects to blueline tilefish from an increase in bycatch are not likely to be substantial. Blueline tilefish represented 96% of the landings in the Deepwater Complex; therefore, fishing effort for the other species in the complex would likely be greatly reduced if blueline tilefish is prohibited because the other species are likely not targeted. In addition, blueline tilefish is largely caught separately from other deepwater species such as snowy grouper; therefore, incidental catch of blueline tilefish is not expected.

Table 4.7.1. The expected closure dates for the commercial sector under various trip limits for the ACL alternatives.

ACL Alternative (Action 3)	Commercial ACL	Trip Limit	Days Fishing	Predicted End Date
2 ACL = ABC	16,254 lb gw	No Limit	22	22-Jan
		100 lb gw	161	10-Jun
		200 lb gw	118	28-Apr
		300 lb gw	102	12-Apr
3 (Preferred) ACL = 98% ABC	**15,929 lb gw**	**No Limit**	**20**	**20-Jan**
		100 lb gw	**156**	**5-Jun**
		200 lb gw	**116**	**26-Apr**
		300 lb gw	**101**	**11-Apr**
4 ACL = 90% ABC	14,629 lb gw	No Limit	13	13-Jan
		100 lb gw	149	29-May
		200 lb gw	108	18-Apr
		300 lb gw	86	27-Mar

The biological effects of the **Alternatives 2 (Preferred)** through **4** would be expected to be neutral compared with **Alternative 1 (No Action)**, because ACLs and AMs are in place to cap harvest, and take 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 have been made to the quota monitoring system, and the Council has approved a Dealer Reporting Amendment (GMFMC and SAFMC 2013b; effective August 7, 2014), which should enhance data reporting. Larger trip limits could also result in earlier commercial closures of blueline tilefish. Early closures can lead to regulatory discards, and release mortality for blueline tilefish is 100%, which would not be beneficial 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.

Regardless of the ACL selected in **Action 3**, none of the alternatives in **Action 7** are anticipated to have adverse effects on listed *Acropora* species, large whales, or any DPS of Atlantic sturgeon. Previous ESA consultations 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. Regardless of the ACL selected in **Action 3**, in all possible scenarios, **Alternative 1 (No Action)** is likely to be the most biological beneficial to sea turtles and smalltooth sawfish because the fishing effort likely to occur under each scenario is the lowest relative to the other alternatives. Sea turtles nest along the East Coast of the United States from April-October, with peak nesting occurring from May-July. Sea turtle nesting brings gravid females closer to shore where they are more susceptible to interaction with snapper grouper fishing gear. **Alternative 4** (300-lb gw trip limit) would be the next most biologically beneficial

to sea turtles and smalltooth sawfish. The fishing season under this alternative would only overlap with a small portion of the sea turtle nesting season and none of the peak nesting season. The fishing effort under **Alternative 4** would likely be lower than **Alternatives 2 (Preferred)** and **3**, reducing the potential risks to sea turtles and smalltooth sawfish. Simply because of the length of time fishing could occur for blueline tilefish, **Alternative 2** (100-lb gw trip limit) is likely to be the least beneficial alternative for sea turtles and smalltooth sawfish. Fishing under this alternative would extend the longest into the sea turtle nesting season and would occur during a portion of the peak nesting season. The biological benefits from **Alternative 3** are likely to be greater than **Preferred Alternative 2** but less than **Alternative 4**.

4.7.2 Economic Effects

Action 7 proposes three alternatives beyond the No Action alternative for trip limits of 100 lbs, 200 lbs, and 300 lbs gw. Under **Alternative 1 (No Action)**, no trip limit would be imposed on the harvest of blueline tilefish and the pace of fishing is not expected to be altered. Therefore, it is expected the commercial ACL would be met very quickly (i.e., 13-22 days; **Table 4.7.1**).

In general, a larger trip limit is expected to result in a shorter season for commercial fishermen, which would likely result in an increase in regulatory discards. A smaller trip limit could result in a longer season for commercial fishermen and decrease the chances of exceeding the ACL and contributing to overfishing. However, a larger trip limit could result in more profitable trips because fishermen would be able to take larger amounts of fish for similar operating costs. These potential short-term economic benefits depend on geographic location and would likely lead to long-term adverse economic effects. Distance to fishing grounds for blueline tilefish is likely to differ depending on port. Therefore, lower trip limits would likely be more appealing to fishermen located closer to fishing grounds (those with snmaller vessels) while higher trip limits would likely appeal more to fishermen located further away from fishing grounds (those with larger vessels) where blueline tilefish can be accessed.

Appendix K contains a trip limit analysis based on different ACL levels that correspond to **Action 3,** and trip limits from **Action 7**. As stated in **Appendix K**, trip limit analyses were done using trip level information for 2013 from the Coastal Logbooks, updated as of 4/28/14. While the Coastal Logbook data may still be incomplete, it was deemed that these were the best data to use, as it was the most recent time frame that had a full year of blueline tilefish fishing without closures. Data from 2012 were not used because of the restriction on possession or harvest of eight deepwater snapper grouper species in waters greater than 240 ft from Jan 1 – May 10th and the closure of the Deepwater Complex on Sept 9th due to exceeding the ACL.

Preferred Alternative 2 proposes a 100-lb gw trip limit under the three possible ACL scenarios identified in **Action 3**. Based on 2013 logbook landings data, the results of imposing a 100-lb gw trip limit indicate that the blueline tilefish commercial fishing season that starts January 1 could last until June 10th, June 5th, and May 29th based on the scenario where ACL = ABC, ACL = 98% of ABC, and ACL = 90% of ABC **(see Table 4.7.1** above**)**. **Alternative 3** proposes a 200-lb gw trip limit, which indicates a commercial season closure of April 28th for the scenario where ACL=ABC and April 26th for the scenario where ACL=98% of ABC **(Table**

4.7.1). Under the scenario where ACL=90% of ABC, the season is expected to close April 18th **(Table 4.7.1)**. Under the same analysis and scenarios, a 300 lb gw trip limit **(Alternative 4)** would result in an April 12th, April 11th, and March 27th closure date **(Table 4.7.1)**.

These results indicate that the lower trip limits imply a longer season while the higher trip limits imply a shorter season. As mentioned above, the lower trip limit could indicate lower profits and, for some, the inability to make a trip at all. A higher trip limit would indicate the opposite. **Section 3.3.1.2** describes the importance of blueline tilefish harvest relative to revenues from all species for vessels that harvest blueline tilefish. Dockside revenue from blueline tilefish landings represented, on average, 48% of annual dockside revenue (2012 $) from complex landings from 2003 through 2007 and 85% from 2008 through 2012. **Table 4.7.2** shows the usage of handline versus longline gear. The data indicate a steady increase in the use of longline over handline since 2007, peaking in 2011 at approximately 81%. On average, over the period from 2002 to 2011, 39% of the commercial landings can be attributed to longline gear.

Table 4.7.2. Blueline tilefish landings by gear type, 2002-2011.

Year	Handline	Longline	Other	Total	% Handline	% Longline
2002	140,673	124,815	70	265,558	52.97%	47.00%
2003	78,996	34,954	5,129	119,079	66.34%	29.35%
2004	42,415	27,003	7,291	76,709	55.29%	35.20%
2005	59,083	18,364	6,489	83,936	70.39%	21.88%
2006	110,545	47,358	15,099	173,002	63.90%	27.37%
2007	68,717	6,904	9,482	85,103	80.75%	8.11%
2008	210,865	186,846	14,467	412,178	51.16%	45.33%
2009	260,283	199,873	14,688	474,844	54.81%	42.09%
2010	137,744	291,514	88,791	518,049	26.59%	56.27%
2011	19,904	114,343	7,255	141,502	14.07%	80.81%

Source: SEDAR 32 (2013).

Currently, most blueline tilefish landed commercially are caught with longline gear. For those fishermen that use longline gear exclusively, the lower trip limit may not be large enough to make a profitable trip. If a lower trip limit is chosen by the Council, a redistribution of income from longliners to hook-and-line gear vessels may occur. Hook-and-line gear users may be able to make a profitable trip when other species are targeted if a lower trip limit is chosen by the Council. Fishermen's input will be important in determining the preferred alternative since sufficient information does not exist at this time regarding how large a trip limit has to be to make a blueline tilefish trip profitable with use of longline or hook and line gear.

4.7.3 Social Effects

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 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. Overall, it would be expected that fishermen and crew working on longline vessels in Wanchese, North Carolina would be the most affected by the proposed trip limits in **Alternatives 2 (Preferred)-4** as noted in **Section 3.3.3** where that community has the largest share of regional quotient for blueline tilefish by a wide margin over other communities in the South Atlantic region.

Alternative 1 (No Action) would be most beneficial for vessels that wish to maximize trip efficiency and have other species to target when blueline tilefish is not available. However, with a low proposed commercial ACL in **Action 3**, it is likely that the commercial season would be much shorter than in recent years with no trip limit in place (**Table 4.7.1**). For fishing businesses that would benefit more from a higher trip limit than a longer season due to alternative species to target in other times of the year, **Alternative 4** would be the most beneficial, followed by **Alternative 3** and then **Preferred Alternative 2**. Any changes to fishing trips could affect captains, crew, fish houses and dealers, and businesses associated with blueline tilefish harvest. However, the trip limits in **Alternatives 2 (Preferred)-4** would likely prohibit a vessel from making a trip only to target blueline tilefish, and would require multi-species trips. This could change fishing behavior for fishermen harvesting blueline tilefish, and could affect associated businesses and communities such as Wanchese, North Carolina, and possibly Murrells Inlet and Little River in South Carolina. However, **Alternatives 2 (Preferred)-4** could also be considered a bycatch allowance and allow fishermen to keep some blueline tilefish caught on trips targeting other species, which could improve profitability and efficiency of the trip. The negative effects of trip limits on fishermen using longline gear is expected to be more severe than on fishermen using hook and line, due to time and effort required for the longline component of the blueline tilefish portion of the snapper grouper fishery.

4.7.4 Administrative Effects

Alternatives 2 (Preferred) through **4** would increase administrative costs as these alternatives would implement commercial trip limits for blueline tilefish. These alternatives would add to the administrative burden in the form of cost, time, or law enforcement efforts.

4.8 Action 8. Adjust the Bag Limit for Blueline Tilefish for the Recreational Sector

4.8.1 Biological Effects

Under **Action 3**, the Council is considering four alternatives for the blueline tilefish ACL, including the no action alternative. The preferred alternative under **Action 3** would set the recreational ACL equal to 17,791 lbs ww in 2015. Using the ACL and bag limit scenarios, analysts have predicted when the ACLs would be reached and the sector closed (**Tables 4.8.2** and **4.8.4**). The recreational bag limit analysis is contained in **Appendix L.**

Reductions in harvest associated with various bag and seasonal prohibitions were compared to the status quo **Alternative 1** using the Council's preferred ACL alternative in **Action 3** (98% of the ABC). The largest reductions were seen in the vessel limits for all modes (**Table 4.8.1**), particularly for bag limits, which also included a reduced fishing season. The bag limit reductions were largest for private anglers, followed by headboats and charter boats.

Alternatives

(preferred alternatives in bold)

1. No action. Blueline tilefish is included in the 3 fish/person/day aggregate bag limit.[1]
2. Remove blueline tilefish from the 3 fish/person/day aggregate bag limit.
3. Blueline tilefish bag limit of 1/person/day
4. Blueline tilefish vessel limit of 1/vessel/day
5. **Blueline tilefish vessel limit of 1/vessel/day May through August (closed rest of year)**
6. Blueline tilefish vessel limit of 1/vessel/day May and June (closed rest of year)
7. Blueline tilefish vessel limit of 1/vessel/day in May (closed rest of year)
8. Blueline tilefish vessel limit of 1/vessel/day in June (closed rest of year)

[1]The current management measures for blueline tilefish for the recreational sector include gear restrictions, area closures, and possession limits.

Table 4.8.1. Projected reductions of blueline tilefish landings by month for various alternatives for a) Headboats, b) Marine Recreational Information Program (MRIP) private, and c) MRIP charter. Warmer colors denote higher reductions.

A) Headboats

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1/person/day (Alt 3)	55%	55%	27%	27%	58%	58%	63%	63%	88%	88%	78%	78%
1/vessel/day (Alt 4)	99%	99%	97%	97%	99%	99%	99%	99%	99%	99%	99%	99%
1/vessel/day from May –Aug (Alt 5)	**100%**	**100%**	**100%**	**100%**	**99%**	**99%**	**99%**	**99%**	**100%**	**100%**	**100%**	**100%**
1/vessel/day from May –Jun (Alt 6)	100%	100%	100%	100%	99%	99%	100%	100%	100%	100%	100%	100%
1/vessel/day in May only (Alt 7)	100%	100%	100%	100%	99%	100%	100%	100%	100%	100%	100%	100%
1/vessel/day in June only (Alt 8)	100%	100%	100%	100%	100%	99%	100%	100%	100%	100%	100%	100%

B) MRIP private

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1/person/day (Alt 3)	79%	79%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%
1/vessel/day (Alt 4)	93%	93%	86%	86%	86%	86%	86%	86%	86%	86%	86%	86%
1/vessel/day from May –Aug (Alt 5)	**100%**	**100%**	**100%**	**100%**	**86%**	**86%**	**86%**	**86%**	**100%**	**100%**	**100%**	**100%**
1/vessel/day from May –Jun (Alt 6)	100%	100%	100%	100%	86%	86%	86%	86%	100%	100%	100%	100%
1/vessel/day in May only (Alt 7)	100%	100%	100%	100%	86%	86%	86%	86%	100%	100%	100%	100%
1/vessel/day in June only (Alt 8)	100%	100%	100%	100%	86%	86%	86%	86%	100%	100%	100%	100%

C) MRIP charter

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1/person/day (Alt 3)	55%	55%	46%	46%	29%	29%	70%	70%	51%	51%	51%	51%
1/vessel/day (Alt 4)	88%	88%	87%	87%	87%	87%	94%	94%	89%	89%	88%	88%
1/vessel/day from May –Aug (Alt 5)	**100%**	**100%**	**100%**	**100%**	**87%**	**87%**	**94%**	**94%**	**100%**	**100%**	**100%**	**100%**
1/vessel/day from May –Jun (Alt 6)	100%	100%	100%	100%	87%	87%	100%	100%	100%	100%	100%	100%
1/vessel/day in May only (Alt 7)	100%	100%	100%	100%	87%	100%	100%	100%	100%	100%	100%	100%
1/vessel/day in June only (Alt 8)	100%	100%	100%	100%	100%	87%	100%	100%	100%	100%	100%	100%

Alternative 2 would remove blueline tilefish from the grouper tilefish aggregate bag limit, while **Alternatives 3-8** would specify a bag limit for blueline tilefish within the aggregate. **Alternatives 3** and **4**, which would allow for a 1-blueline tilefish per person (**Alternative 3**) or 1 blueline tilefish per vessel (**Alternative 4**) with no seasonal closure, would result in the greatest percentage of the ACL being landed (**Table 4.8.2**). Under **Alternatives 3** and **4**, the recreational

ACL would be met in January and July, respectively, based on data from 2013. Vessel limits (**Alternatives 6-8**) that include a short open season (May – Jun, May only, and June only) would result in very low projected landings and a small portion of the ACL being caught.

Table 4.8.2. The expected closure dates for the recreational sector under various bag limits for the preferred ACL alternative based on 2013 data.

	Projected Closure date	Projected Days Open	Projected Landings (ww)	Percentage of ACL
Status quo (Alt 1)	Jan – 5	4	17,791	100%
1/person/day (Alt 3)	Jan – 26	25	17,791	100%
1/vessel/day (Alt 4)	Jul – 15	195	17,791	100%
1/vessel/day from May – Aug (Alt 5)	**Sep – 1**	**123**	**14,397**	**80.9%**
1/vessel/day from May –Jun (Alt 6)	Jul – 1	61	579	3.3%
1/vessel/day in May only (Alt 7)	Jun – 1	31	293	1.6%
1/vessel/day in June only (Alt 8)	Jul – 1	30	287	1.6%

In 2013, very high landings were reported in Wave 1 (January-February), which may not be representative of future landings (**Table 4.8.3**). A sensitivity analysis was conducted using the 12 most recent months of data available (**Table 4.8.4**). This included MRIP landings from the ACL datasets for Waves 1 and 2 from 2014, and all remaining data were from 2013. The sensitivity analysis lengthened the season length for **Alternatives 1 (No Action), 3,** and **4**, but had no effect on the other alternatives because they would be closed during Wave 1. In comparison to the status quo **Alternative 1**, using data in the sensitivity analysis would extend the season length by 100 days under **Alternative 3** (1 fish per person per day) and 210 days under **Alternative 4** (1fish per vessel per day).

Table 4.8.3. MRIP landings from the ACL database over time.

Year	Wave 1	Wave 2	Wave 3	Wave 4	Wave 5	Wave 6
2014	4,548	18,089	NA	NA	NA	NA
2013	178,302	5,905	4,366	108,849	4,027	43,024
2012	388	3,300	33,190	27,886	19,609	7,711
2011	2,797	326	6,195	26,492	9,084	166
2010	11,453	12,596	30,297	6,293	6,570	3,675

Table 4.8.4. Estimated projected closures and landings using 2014 data for MRIP waves 1 and 2, and 2013 data for all other months/waves.

	Projected Closure date	Projected Days Open	Projected Landings (ww)	Percentage of ACL
Status quo (Alt 1)	Apr – 4	93	17,791	100%
1/person/day (Alt 3)	Jul – 13	193	17,791	100%
1/vessel/day (Alt 4)	Oct – 31	303	17,791	100%
1/vessel/day from May – Aug (Alt 5)	**Sep – 1**	**123**	**14,397**	**79.3%**
1/vessel/day from May –Jun (Alt 6)	Jul – 1	61	579	3.3%
1/vessel/day in May only (Alt 7)	Jun – 1	31	293	1.6%
1/vessel/day in June only (Alt 8)	Jul – 1	30	287	1.6%

When fishery managers prohibit harvest of a particular species, anglers may continue to catch the prohibited species and return the fish to the water as "bycatch". Such is often the case with the snapper grouper fishery, which is considered a "multi-species fishery". This means that anglers, at times, may be targeting several species at once, and not just a single species. In a multi-species fishery, fishery managers may increase bycatch (also referred to as "regulatory discards") by lowering an ACL and implementing bag limits. Depending on the release mortality rates for a species, a portion of the released fish may not survive following its release. As discussed in detail in **Appendix F (Bycatch Practicability Analysis)**, adverse effects to blueline tilefish from an increase in bycatch are not likely to be substantial. Blueline tilefish represented 96% of the landings in the Deepwater Complex; therefore, fishing effort towards the other species in the Deepwater Complex would likely be greatly reduced if blueline tilefish is prohibited because the other species in the complex are likely not targeted. In addition, blueline tilefish is largely caught separately from other deepwater species such as snowy grouper; therefore, incidental catch of blueline tilefish is not expected.

Using the MRIP Website effort queries, the number of trips that caught and landed blueline tilefish were compared to the number of trips that were targeting blueline tilefish as its primary species to obtain additional information with respect to discards and the bag limit analysis. In 2013, 83% of all trips catching blueline tilefish were targeting blueline tilefish. This value is variable though when looking at data since 2006, with an average of 37% of the trips targeting blueline tilefish. According to the blueline tilefish stock assessment (SEDAR 32; Table 2.11), the number of recreational blueline tilefish discarded was low with 12% discarded in 2010 and 3% of blueline tilefish were discarded in 2011 when the 240-foot harvest prohibition of 8 species (including blueline tilefish) was in place. The MRIP Website provides an estimate of 1,345 (5%) and 1,200 (2%) blueline tilefish discarded in 2012 and 2013, respectively. Discards would vary depending on whether fishermen continued to target blueline tilefish after the bag limit was met or the species was incidentally caught when harvest was prohibited. The reduction in blueline

tilefish discards during the 240 foot harvest prohibition of the 8 snapper grouper species in 2011 may imply that fishermen were not actively targeting this species. This may be an indication that once the season closes or the bag limit is reached, fishermen may cease to target blueline tilefish, which would limit the discards. The maximum discards that could be expected would be the differences between the alternatives and the status quo, and with the high projected reductions for some alternatives, increased discards should be considered when choosing an alternative.

The biological effects of removing blueline tilefish from the grouper aggregate under **Alternative 2** would not be different from **Alternative 1 (No Action)** because the grouper aggregate is rarely met (**Tables 4.8.5** and **4.8.6**). In addition, the average catch of blueline tilefish within the grouper aggregate is less than 1 fish per person per day (**Tables 4.8.5** and **4.8.6**). The biological effects of **Alternative 2** when compared to **Alternative 1 (No Action)** are expected to be neutral.

Table 4.8.5. Number of trips that caught a species in aggregate grouper bag limit, the grouper aggregate of 3 fish, and blueline tilefish by year from MRIP data.

MRIP	2009	2010	2011	2012	2013
Trips that caught an aggregate fish (landed or discarded)	145	448	278	446	359
Positive aggregate trips (landed an aggregate fish)	72	139	96	167	118
Average aggregate CPA (max = 3)	0.45	0.29	0.29	0.34	0.33
Average aggregate CPA, positive trips (max = 3)	0.90	0.92	0.84	0.90	1.0
Trips that landed blueline tilefish	10	40	22	42	25
% aggregate trips that landed blueline tilefish	7%	9%	8%	9%	7%
Average blueline tilefish CPA (max = 1)	0.15	0.11	0.10	0.18	0.16
Average blueline tilefish CPA, positive trips (max = 1)	2.20	1.21	1.23	1.95	2.27

Table 4.8.6. Number of trips that caught a species in aggregate grouper bag limit, the grouper aggregate of 3 fish, and blueline tilefish by year from HBS data.

HBS	2009	2010	2011	2012	2013
Trips that caught an aggregate fish	4967	4916	3772	4572	4423
Positive aggregate trips (landed an aggregate fish)	2583	2344	1988	1926	2007
Average aggregate CPA (max = 3)	0.13	0.13	0.16	0.13	0.12
Average aggregate CPA, positive trips (max = 3)	0.24	0.28	0.31	0.30	0.27
Trips that landed blueline tilefish	55	59	99	75	56
% aggregate trips that landed blueline tilefish	1.1%	1.2%	2.6%	1.6%	1.3%
Average CPA BLT (max = 1)	0.02	0.02	0.05	0.05	0.04
Average blueline tilefish CPA, positive trips (max = 1)	1.74	1.66	2.04	2.93	3.25

The biological effects of **Alternatives 3** through **8** are expected to be neutral compared with **Alternative 1 (No Action)**, because ACLs and AMs are in place to cap harvest, and take action if ACLs are exceeded. However, alternatives with larger bag limits could present a greater biological risk to blueline tilefish in terms of exceeding the ACL since the rate of harvest would be greater. For example, **Alternative 3** would implement a bag limit of one blueline tilefish per person per day with an expected closure date occurring as early as January (**Table 4.8.2**). If this alternative is implemented, and the recreational ACL is reached in January, fishery managers would not be aware that the ACL was reached until later in the fishing season. In this scenario, it is possible that the recreational ACL would be exceeded, unless NMFS anticipated the overage and implemented an in-season recreational closure. If less conservative bag limits increase the probability of an overage of the ACL, then more conservative bag limit alternatives (**Alternatives 6** through **8**) would have greater beneficial effects to the resource than less conservative alternatives (**Alternatives 3** through **5 (Preferred)**). This is evident by the percentage of ACL for each alternative shown in **Tables 4.8.2** and **4.8.4**. Removing blueline tilefish from the three fish aggregate bag limit (**Alternative 2**) would positively affect the blueline tilefish population on trips where the aggregate bag limit is limiting harvest of the species. The effect may be greater for private trips compared to charter and headboat trips; the average catch per angler was 2.8, 1.9, and 1.8 for the private, charterboat, and headboat trips, respectively.

Larger bag 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%, which would not be beneficial to the stock. Similarly larger bag 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.

None of the alternatives in **Action 8** are anticipated to have adverse effects on listed *Acropora* species, large whales, or any DPS of Atlantic sturgeon. Previous ESA consultations 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. **Alternative 1 (No Action)** is likely to provide the most biological benefits to sea turtles and smalltooth sawfish because the fishing season would remain open for the fewest number of days relative to the other alternatives and would not occur at all during sea turtle nesting season. Sea turtles nest along the East Coast of the United States from April-October, with peak nesting occurring from May-July. Sea turtle nesting brings gravid females closer to shore where they are more susceptible to interaction with snapper grouper fishing gear. **Alternative 3** would be second most biologically beneficial to sea turtles and smalltooth sawfish. While the fishing season would remain open longer than in **Alternative 1 (No Action)**, there would be fewer fishing days than all remaining alternatives, and no fishing would occur during the nesting season. **Alternatives 7** and **8** would have the same biological benefits. While the fishing season would be the shortest under these alternatives, all fishing effort under each would occur during one month of the peak nesting season. **Alternative 6** is likely to be less biologically beneficial than **Alternatives 7** and **8**. The fishing season under **Alternative 6** would be longer than those two alternatives and would occur only during the entire peak nesting season. **Alternatives 4** and **5 (Preferred)** are likely to be the least biologically beneficial. The fishing seasons under **Alternative 4** would be open the longest and would occur during sea turtle nesting season, including large portions of the peak nesting season. **Preferred Alternative 5** would have a shorter fishing reason relative to **Alternative 4**, but the season would be open during the entire peak sea turtle nesting season, as well as September.

4.8.2 Economic Effects

In general, the short-term economic effects of bag limit changes for the recreational sector depend on the change in access to the resource. **Alternative 1 (No Action)** allows the recreational sector the greatest access to retain blueline tilefish with up to three blueline tilefish kept per trip. While this may result in higher catch rates by the recreational sector, it does not directly affect long-term economic benefits, which are largely ruled by the ACL and the ability of AMs to be enforced. **Alternative 2** would likely have negative long-term economic effects associated with the biological effects of no bag limit for blueline tilefish, such as lower ACLs or limited access to the resource. This is the least economically beneficial alternative for the recreational fishery in the short-term. **Appendix L** and **Tables 4.8.2** and **4.8.4** contain an analysis of **Alternatives 3** through **8**.

The bag limit analysis results in **Table 4.8.2** show that **Alternative 1 (No Action)** could result in a January 5th closure data with a recreational fishing season of four days. The remaining alternatives (other than **Alternative 2**) have projected season lengths of 25 days (**Alternative 3**), approximately 30 days (**Alternatives 7 and 8**), 61 days (**Alternative 6**), 123 days (**Preferred Alternative 5**), and 195 days (**Alternative 4**). Season lengths would be extended based on a sensitivity analysis that substitutes 2014 data for data from Waves 1 and 2 in 2013 (**Table 4.8.4**). **Alternative 4**, which proposes 1 fish per vessel per day is expected to result in the greatest number of days available for recreational fishermen to access the resource. **Alternative 4** is also

expected to result in the greatest capture of the recreational ACL. Therefore, **Alternative 4** is expected to result in the largest short-term economic benefits to the recreational sector. **Alternatives 6**, **7**, and **8** offer the least amount the ACL to be taken (3.3%, 1.6%, and 1.6%, respectively). These last three alternatives are among the least economically beneficial for the recreational sector after **Alternative 2**.

4.8.3 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 4.8.1**), as well as the effects on current recreational fishing opportunities. The aggregate bag limit (**Alternative 1 (No Action)**) would not contribute to directed management of blueline tilefish. Additionally, as shown in **Appendix L** and **Tables 4.8.2 and 4.8.4**, **Alternative 1 (No Action)** would result in the shortest projected season (4 days). The biological and social effects of removing blueline tilefish from the grouper aggregate under **Alternative 2** would not be different from **Alternative 1 (No Action)** because the grouper aggregate is rarely met and an average of less than 1 blueline tilefish per person is caught within the grouper aggregate. **Alternatives 3-8** would limit recreational fishing opportunities for blueline tilefish but would also be expected to contribute to successful rebuilding of the stock. Establishing a recreational season for blueline tilefish under **Alternatives 5 (Preferred)-8** could contribute to rebuilding the stock and reducing discards of blueline tilefish by confining recreational landings to a small portion of each year.

Different levels of recreational fishing opportunities through limited seasons under each of these alternatives could affect recreational fishermen who target blueline tilefish. In general, longer fishing seasons for blueline tilefish would be more beneficial for recreational fishermen. The following analysis incorporates an in-season closure established under **Action 6**, and incorporates the bag limit analysis in **Appendix L**. Recreational harvest under **Alternative 3** would not be projected to continue past January (**Table 4.8.2**). Additionally, having only January open would likely prohibit recreational fishermen in the northern part of the region from having any opportunity to fish for blueline tilefish. **Alternative 4** would be expected to increase recreational fishing opportunities with a projected season into July.

Although **Preferred Alternative 5** would limit recreational harvest of blueline tilefish to May-August, the projected season length suggest recreational fishermen would be able to target blueline tilefish throughout the entire four months. **Alternative 6**, however, would limit recreational harvest to only May and June. If this occurred, some of the recreational ACL could not be harvested. **Alternatives 7** and **8** would limit the recreational harvest to only one month, but both would at least allow the respective month to be open the entire time. 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.

4.8.4 Administrative Effects

Alternatives 3 through **8** would increase administrative costs as these alternatives would implement recreational bag limits for blueline tilefish. These alternatives would add to the administrative burden in the form of cost, time, or law enforcement efforts. The administrative adverse effects of **Alternatives 5 (Preferred)** through **8** would be greater than the other alternatives since the bag limits are only specified for a specific time of the year versus a year-round bag limit. Changing bag limits may require more outreach in order to notify the public and more law enforcement efforts to enforce the regulations.

Chapter 5. Council's Choice for the Preferred Alternative

5.1 Action 1. Revise the Composition of the Deepwater Complex and Adjust the Deepwater Complex Annual Catch Limits, Optimum Yield, and Annual Catch Targets

Alternatives
(preferred alternatives in bold)

1. No action. Blueline tilefish has been temporarily removed from the Deepwater Complex.

2. Remove blueline tilefish from Deepwater Complex and adjust ACLs, OY, and recreational ACTs accordingly. Retain ACL=OY=ABC and recreational ACT=ACL*(1-PSE) or ACL*0.5, whichever is greater for the Deepwater Complex.

3. Remove blueline tilefish from Deepwater Complex and adjust ACLs, OY, and ACTs accordingly. ACL=OY=95%ABC, and retain recreational ACT=ACL*(1-PSE) or ACL*0.5, whichever is greater for the Deepwater Complex.

4. Remove blueline tilefish from Deepwater Complex and adjust ACLs, OY, and recreational ACTs accordingly. ACL=OY=90%ABC, and retain recreational ACT=ACL*(1-PSE) or ACL*0.5, whichever is greater for the Deepwater Complex.

5. Remove blueline tilefish from Deepwater Complex and adjust ACLs, OY, and recreational ACTs accordingly. ACL=OY=80%ABC, and retain recreational ACT=ACL*(1-PSE) or ACL*0.5, whichever is greater for the Deepwater Complex.

Snapper Grouper Advisory Panel Comments and Recommendations

The Snapper Grouper Advisory Panel (AP) reviewed Amendment 32 at their April 8-10, 2014 meeting. At that time, the amendment did not include an action to remove blueline tilefish from the Deepwater Complex. The AP made a motion to recommend to the South Atlantic Fishery Management Council (Council) that such an action be included in Amendment 32.

Law Enforcement Advisory Panel Comments and Recommendations

The Law Enforcement Advisory Panel (LEAP) received a general overview of actions proposed in Amendment 32 during their March 3, 2014 meeting. The LEAP did not express concern or provide recommendations.

Scientific and Statistical Committee Comments and Recommendations

The Scientific and Statistical Committee (SSC) did not have specific comments or recommendations regarding re-structuring of the Deepwater Complex to remove blueline tilefish. However, they stated that it is implicit in the design of the acceptable biological catch (ABC) control rule that as species are assessed, they "move up" to the appropriate tier of the control rule. Hence, it is appropriate, and indeed the intent of the SSC, for newly assessed species like blueline tilefish to no longer be included in a complex once their stock status has been assessed.

Council's Choice for Preferred Alternative

The design of the Council's ABC control rule "moves up" a stock to the top tier after an assessment. As such, the Council has determined that it is no longer necessary or appropriate to include that stock in a complex. Therefore, the Council selected **Preferred Alternative 2** to remove blueline tilefish from the Deepwater Complex, as intended under the current ABC control rule. **Preferred Alternative 2** best meets the purpose and need and 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. Re-define Maximum Sustainable Yield for Blueline Tilefish

Alternatives
(preferred alternatives in bold)

1. No action. Currently, MSY equals the yield produced by F_{MSY}. $F_{30\%SPR}$ is used as the F_{MSY} proxy.

2. **Preferred. MSY equals the yield produced by F_{MSY} or the F_{MSY} proxy. MSY and F_{MSY} are recommended by the most recent SEDAR/SSC. F_{MSY}=0.302 and MSY = 226,500 lbs ww.**

Snapper Grouper Advisory Panel Comments and Recommendations

The Snapper Grouper AP reviewed Amendment 32 at their April 8-10, 2014 meeting. The AP recommended **Alternative 2** as preferred under Action 2.

Law Enforcement Advisory Panel Comments and Recommendations

The LEAP received a general overview of actions proposed in Amendment 32 during their March 3, 2014 meeting. The LEAP did not express concern or provide recommendations.

Scientific and Statistical Committee Comments and Recommendations

The SSC reviewed the blueline tilefish assessment (SEDAR 32 2013) at their October 22-24, 2013 meeting. The SSC accepted the benchmark assessment as representing the best available scientific information on the current status of blueline tilefish in South Atlantic waters, and considered it appropriate for management decisions.

Council's Choice for Preferred Alternative

Re-defining the maximum sustainable yield (MSY) would not alter the current harvest or use of the blueline tilefish resource. Specification of this biological reference point establishes a benchmark for management of the blueline tilefish portion of the snapper grouper fishery; it does not entail a change to regulations unless a comparison of the status of the stock with the benchmark indicates that management adjustments are necessary. As a benchmark, MSY would not limit how, when, where, or with what frequency participants in the snapper grouper fishery engage in harvesting blueline tilefish. The Council is revising MSY because a stock assessment was completed for blueline tilefish in 2013. Prior to that, MSY was defined as the yield produced by fishing at F_{MSY} or the F_{MSY} proxy (substitute), which was set at $F_{30\%SPR}$ but no actual value was specified. The latest stock assessment (SEDAR 32 2013) produced an estimate of F_{MSY} as well as the yield produced from fishing at F_{MSY}. Hence, the Council adopted the updated MSY and changed the specification process such that adjustments to the MSY can be made automatically based on the latest stock assessment or recommendation from the SSC that is accepted by the Council, as opposed to modifications to MSY made through a Snapper Grouper FMP amendment or framework adjustment.

The Council concluded that **Preferred Alternative 2** best meets the purpose and need to implement measures expected to prevent overfishing and achieve optimum yield (OY) while minimizing, to the extent practicable, adverse social and economic effects. The preferred alternative also 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. Establish Annual Catch Limits and Optimum Yield for Blueline Tilefish

Alternatives
(preferred alternatives in bold)

1. No action. Temporary annual catch limits and optimum yield are in place for blueline tilefish. [1,2]
2. ACL=OY=ABC
3. **ACL=OY=98%ABC**
4. ACL=OY=90%ABC

[1]Temporary measures are in place to remove blueline tilefish from the Deepwater Complex and to reduce the ACL for the Deepwater Complex.
[2]Blueline tilefish is in the Deepwater Complex and there is an ACL for the complex. Action 1 proposes to separate blueline tilefish from the complex.

Snapper Grouper Advisory Panel Comments and Recommendations

The Snapper Grouper AP reviewed Amendment 32 at their April 8-10, 2014 meeting. The AP supported establishing the blueline tilefish annual catch limit (ACL) at 98% of the proposed ABC (**Preferred Alternative 3**).

Law Enforcement Advisory Panel Comments and Recommendations

The LEAP received a general overview of actions proposed in Amendment 32 during their March 3, 2014 meeting. The LEAP did not express concern or provide recommendations.

Scientific and Statistical Committee Comments and Recommendations

The SSC reviewed the blueline tilefish assessment (SEDAR 32 2013) at their October 22-24, 2013 meeting. The SSC accepted the benchmark assessment as representing the best available scientific information on the current status of blueline tilefish in South Atlantic waters, and considered it appropriate for Council management decisions. The SSC stated that given that stock biomass is below equilibrium levels, the use of yield at 75%F_{MSY} as an interim ABC is not feasible and could lead to overfishing ($F>F_{MSY}$). Instead, the SSC recommended using projections at P* = 0.3 for ABC and P* = 0.5 for the overfishing limit. The SSC made no recommendations on an ACL level, as this is a management decision. However, at their November 2011 and 2013 meetings, the SSC stated that ACL and ABC cannot equal OY since OY is a separate value that is calculated very differently from ABC. The SSC cautioned that having ACL=ABC does not consider management uncertainty and could lead to overages. An ACL trigger should be set that accounts for management uncertainty to help prevent overages from occurring.

At their April 29-May 1, 2014 meeting, the SSC discussed additional items pertaining to blueline tilefish. The SSC supported replacing the vermilion snapper update assessment with a blueline tilefish standard assessment on the 2015 SEDAR schedule. The Committee felt that an update assessment of blueline tilefish would be insufficient to resolve some of the data issues (e.g., limited indices of abundance) identified in SEDAR 32 (2013). A standard assessment would allow for the use of new data without incurring the time and resources required for a benchmark assessment.

Council's Choice for Preferred Alternative

OY is a long-term average amount of desired yield from a stock, stock complex, or fishery 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. The Magnuson-Stevens Act does not preclude OY from being equal to the ABC or ACL. The Magnuson-Stevens Act indicates that OY "is prescribed as such on the basis of the maximum sustainable yield from the fishery, as reduced by any relevant economic, social, or ecological factor." The Council determined that setting OY equal to ABC, and below the MSY would provide greater assurance that overfishing is prevented, the long-term average biomass is near or above B_{MSY}, and overfished stocks are rebuilt in as short a time as possible. An ACL cannot exceed the ABC and may be set annually or on a multiyear plan basis. An ACL, in coordination with accountability measures (AMs), must prevent overfishing. The National Standard 1 guidelines specify that Councils can choose to account for management uncertainty by setting the ACL below the ABC but state that the ACL may typically be set very close to ABC. With vastly improved commercial monitoring mechanisms recently implemented, it is unlikely that repeated commercial ACL overages would occur. Additionally, a Joint Dealer Reporting Amendment, which was implemented on August 7, 2014, has increased the required reporting frequency for dealers to once per week, and requires a single dealer permit for all finfish dealers in the Southeast Region. On January 27, 2014, the Generic For-Hire Reporting Amendment was implemented which required all federally-permitted headboats in the South Atlantic to report landings information electronically and on a weekly basis. The new Commercial Landings Monitoring (CLM) monitoring system and actions in the Joint Generic Dealer and Generic For-Hire Reporting amendments are expected to provide more timely and accurate data reporting and would thus reduce the incidence of quota overages.

Due to improved data reporting, the Council has frequently chosen to set ACL equal to ABC (**Alternative 2**) and to set ACL equal to OY to prevent a situation in which the OY from a fishery was not being achieved. In the case of blueline tilefish; however, the Council chose to set ACL at 98% of the proposed ABC (**Preferred Alternative 3**) to account for landings that occur north of the Council's area of jurisdiction. After examination of the commercial and recreational landings of blueline tilefish, it was determined that about 2% of the blueline tilefish landings originate north of the North Carolina/Virginia border.

The Council concluded that **Preferred Alternative 3** best meets the purpose and need to implement measures expected to prevent overfishing and achieve OY while minimizing, to the extent practicable, adverse social and economic effects. The preferred alternative also 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. Establish a Recreational Annual Catch Target for Blueline Tilefish

Snapper Grouper Advisory Panel Comments and Recommendations

The Snapper Grouper AP reviewed Amendment 32 at their April 8-10, 2014 meeting. The AP recommended **Alternative 2** as the preferred.

Law Enforcement Advisory Panel Comments and Recommendations

The LEAP received a general overview of actions proposed in Amendment 32 during their March 3, 2014 meeting. The LEAP did not express concern or provide recommendations.

Scientific and Statistical Committee Comments and Recommendations

The SSC did not have any comments or recommendations as the specification of an ACT is a management decision.

***Alternatives*[1]**

(preferred alternatives in bold)

ACL=annual catch limit
ACT=annual catch target
AM=accountability measure

1. No action. An individual recreational ACT has not been established for blueline tilefish. [1]

2. **Recreational ACT for blueline tilefish = recreational ACL*(1-PSE) or ACL*0.5, whichever is greater.**

3. Recreational ACT for blueline tilefish = 85% of the recreational ACL.

[1]Blueline tilefish is in the Deepwater Complex and there is an ACT for the complex. Action 1 proposes to separate blueline tilefish from the

Council's Choice for Preferred Alternative

The Council has consistently chosen to specify a recreational ACT for snapper grouper species as proposed under **Preferred Alternative 2**. By using PSE in **Preferred Alternative 2**, more precaution is taken with increasing variability and uncertainty in the recreational landings data. The Council concluded **Preferred Alternative 2** best meets the purpose and need to prevent overfishing and achieve OY while minimizing, to the extent practicable, adverse social and economic effects. The preferred alternative also 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. Specify Accountability Measures for Blueline Tilefish and the Deepwater Complex for the Commercial Sector

Snapper Grouper Advisory Panel Comments and Recommendations

The Snapper Grouper AP reviewed Amendment 32 at their April 8-10, 2014 meeting. The AP recommended **Sub-alternative 2c** as the preferred.

Law Enforcement Advisory Panel Comments and Recommendations

The LEAP received a general overview of actions proposed in Amendment 32 during their March 3, 2014 meeting. The LEAP did not express concern or provide recommendations.

Scientific and Statistical Committee Comments and Recommendations

The SSC provided no comments or recommendations as the setting of accountability measures is a management decision.

Council's Choice for Preferred Alternative

The Council chose **Preferred Alternative 2**, **Preferred Sub-alternative 2c** for the commercial sector accountability measures. The Council determined that **Alternative 1 (No Action)** would not be the best alternative because it does not require paybacks of ACL overages for the affected species. The Council determined the preferred alternative/sub-alternative is the best management strategy based on the biology and the recent catch levels of the affected species. The Council has determined that, with improvements to the commercial quota monitoring system and the implementation of an in-season AM, the likelihood of exceeding the commercial ACL would be reduced. In addition, **Preferred Alternative 2**, **Preferred Sub-alternative 2c** would provide the most flexibility for triggering the payback AM because it would be triggered the least frequently of all the sub-alternative payback AMs under

Alternatives

(preferred alternatives in bold)

ACL=annual catch limit
AM=accountability measure

1. No action. Temporary AMs are in place for blueline tilefish for the commercial sector. [1,2]

2. **Specify new AMs for blueline tilefish and the Deepwater Complex for the commercial sector. If ACL is met or projected to be met, close in-season.**

   2A. Only if blueline tilefish or a species in the Deepwater Complex is overfished, reduce ACL in following year by overage.

   2B. Only if total (commercial + recreational) ACL exceeded, reduce ACL in following year by overage.

   2C. Only if blueline tilefish or a species in the Deepwater Complex is overfished and total (commercial + recreational) ACL exceeded, reduce ACL in following year by overage.

[1]Temporary measures are in place to remove blueline tilefish from the Deepwater Complex and to establish an AM for the commercial sector.
[2]Blueline tilefish is in the Deepwater Complex and there is an AM for the complex. Action 1 proposes to separate blueline tilefish from the complex.

consideration since the payback would only be required if two criteria are met (blueline tilefish or a species in the Deepwater Complex is overfished and the total ACL has been exceeded).

While it is correct that **Preferred Sub-alternative 2c** would be triggered the most infrequently, thereby resulting in a lower level of biological benefits based on the biological impact analyses, it is the alternative that triggers a payback when it is biologically necessary. If the stock is not overfished, no biological damage would result if the total ACL is exceeded by a small amount. The Council has put in place management measures and reporting requirements that should prevent the total ACL from being exceeded. If something extraordinary occurs, and the total ACL is exceeded, the Council would review the situation and determine if any additional changes to management measures or the quota monitoring system are required. The Council concluded it is only appropriate to require a payback when both the stock is overfished and the total ACL is exceeded. Such a payback would have negative short-term social and economic impacts and is not necessary if only one sector exceeds their sector ACL because havest is allowed up to the total ACL. Therefore, it is only prudent to impose the payback when it is biologically necessary (stock overfished and total ACL is exceeded) to prevent biological damage to the stock. Fishermen pay a high price for such paybacks and the Council concluded **Preferred Sub-alternative 2c** provides the appropriate level of biological protection when it is biologicallyh necessary while balancing the negative social and economic impacts. Additionally, **Preferred Sub-alternative 2c** would be consistent with AMs for other snapper grouper species and other Council-managed species such as king mackerel and Spanish mackerel.

The Council concluded **Preferred Alternative 2** and **Preferred Sub-alternative 2c** best meet the purpose and need and the objectives of the Snapper Grouper FMP, as amended, while enhancing socio-economic benefits and complying with the requirements of the Magnuson-Stevens Act and other applicable law.

5.6 Action 6. Specify Accountability Measures for Blueline Tilefish and the Deepwater Complex for the Recreational Sector

Snapper Grouper Advisory Panel Comments and Recommendations

The Snapper Grouper AP reviewed Amendment 32 at their April 8-10, 2014 meeting. The AP recommended **Sub-alternative 2c** and **Alternative 3** as preferreds.

Law Enforcement Advisory Panel Comments and Recommendations

The LEAP received a general overview of actions proposed in Amendment 32 during their March 3, 2014 meeting. The LEAP did not express concern or provide recommendations.

Scientific and Statistical Committee Comments and Recommendations

The SSC provided no comments or recommendations as the setting of AMs is a management decision.

Council's Choice for Preferred Alternative

The Council chose **Preferred Alternative 2**, **Preferred Sub-alternative 2c**, and **Preferred Alternative 4**, **Preferred Sub-alternative 4b** for the recreational sector AMs. While **Preferred Alternative 2,** could increase the likelihood that an overage by the recreational sector could reduce fishing opportunities in the following year, **Preferred Alternative**

Alternatives

(preferred alternatives in bold)

ACL=annual catch limit
AM=accountability measure

1. No action. Temporary recreational AMs are in place for the Deepwater Complex and blueline tilefish. [1,2]

2. Specify new AMs for blueline tilefish and the Deepwater Complex for the recreational sector. If recreational ACL exceeded, monitor landings in the following year for a persistence in increased landings.

2A. Only if stocks overfished, reduce length of the following fishing year and reduce the ACL.

2B. Only if total (commercial + recreational) ACL exceeded, reduce length of the following fishing year and reduce the ACL.

2C. Only if stock overfished and total (commercial + recreational) ACL exceeded, reduce length of the following fishing year and reduce the ACL.

3. If ACL for blueline tilefish and the Deepwater Complex is met or projected to be met, close in-season.

4. If ACL for blueline tilefish and the Deepwater Complex is met or projected to be met, close in-season unless Regional Administrator determines that a closure is unnecessary.
4A. If species is overfished.
4B. Regardless of stock status.

[1]Temporary measures are in place to remove blueline tilefish from the Deepwater Complex and to establish an AM for the commercial sector.
[2]Blueline tilefish is in the Deepwater Complex and there is an AM for the complex. Action 1 proposes to separate blueline tilefish from the complex.
* For the Deepwater Complex, at least one species would need to be overfished.

2c provides flexibility in how a post-season payback would be triggered, and is in fact the least likely of the proposed alternatives to trigger a payback that could affect recreational fishing opportunities in the subsequent year for both the Deepwater Complex and for blueline tilefish.

While it is correct that **Preferred Sub-alternative 2c** would be triggered the most infrequently, thereby resulting in a lower level of biological benefits based on the biological impact analyses, it is the alternative that triggers a payback when it is biologically necessary. If the stock is not overfished, no biological damage would result if the total ACL is exceeded by a small amount. The Council has put in place management measures and reporting requirements that should prevent the total ACL from being exceeded. If something extraordinary occurs, and the total ACL is exceeded, the Council would review the situation and determine if any additional changes to management measures or the quota monitoring system are required. The Council concluded it is only appropriate to require a payback when both the stock is overfished and the total ACL is exceeded. Such a payback would have negative short-term social and economic impacts and is not necessary if only one sector exceeds their sector ACL because havest is allowed up to the total ACL. Therefore, it is only prudent to impose the payback when it is biologically necessary (stock overfished and total ACL is exceeded) to prevent biological damage to the stock. Fishermen pay a high price for such paybacks and the Council concluded **Preferred Sub-alternative 2c** provides the appropriate level of biological protection when it is biologicallyh necessary while balancing the negative social and economic impacts. Additionally, **Preferred Sub-alternative 2c** would be consistent with AMs for other snapper grouper species and other Council-managed species such as king mackerel and Spanish mackerel.

The Council has provided additional biological protection by choosing Preferred Sub-alternative 4b to close the recreational sector if the recreational ACL is met or projected to be met. This will help prevent the total ACL being exceeded, and it will likely reduce the frequency that a pay back provision is needed.

In addition, under **Preferred Alternative 4**, **Preferred Sub-alternative 4b**, the Regional Administrator has the flexibility to determine, using the best scientific information available, that a closure is unnecessary and thus reduce the likelihood of an in-season closure. The Council concluded **Preferred Alternative 2**, **Preferred Sub-alternative 2c**, **Preferred Alternative 4**, and **Preferred Sub-alternative 4b** best meet the purpose and need and the objectives of the Snapper Grouper FMP, as amended, while enhancing socio-economic benefits and complying with the requirements of the Magnuson-Stevens Act and other applicable law.

5.7 Action 7. Establish a Trip Limit for Blueline Tilefish for the Commercial Sector

Snapper Grouper Advisory Panel Comments and Recommendations

The Snapper Grouper AP reviewed Amendment 32 at their April 8-10, 2014 meeting. At that time, the Council was considering different trip limit alternatives under this action. The AP recommended **Alternative 2**, **Sub-alternative 2a** as preferreds:

Alternative 2. Establish a commercial trip limit for blueline tilefish from January to April of 100 pounds.

Sub-alternative 2a. Establish a commercial trip limit from May onwards of 1,500 pounds until 80% of the ACL is projected to be met. Then reduce the trip limit to 100 pounds for the remainder of the fishing year until the ACL is met or projected to be met.

Alternatives

(preferred alternatives in bold)

ACL=annual catch limit

1. No action. No commercial trip limit for blueline tilefish [1]
2. **100-lb gw commercial trip limit for blueline tilefish.**
3. 200-lb gw commercial trip limit for blueline tilefish.
4. 300-lb gw commercial trip limit for blueline tilefish.

[1]The current management measures for blueline tilefish for the commercial sector include gear restrictions, limited access, and area closures.

Law Enforcement Advisory Panel Comments and Recommendations

The LEAP received a general overview of actions proposed in Amendment 32 during their March 3, 2014 meeting. The LEAP did not express concern or provide recommendations.

Scientific and Statistical Committee Comments and Recommendations

The SSC provided no comments or recommendations as the establishment of commercial trip limits is a management decision.

Council's Choice for Preferred Alternative

At their June 2014 meeting, the Council voted to move the trip limit alternatives that were originally being considered (see above under AP recommendations) to **Appendix A** because the recommended ABC was too low to support any of the proposed commercial trip limits. The alternatives were included in Amendment 32 prior to the Council obtaining the projections at the recommended P* level. Subsequent to obtaining the projections, the Council requested that trip limits of 100-300 pounds gutted weight be analyzed instead. The Council selected **Preferred Alternative 2** to specify the commercial trip limit because this alternative is the most likely to extend the fishing season under the Council's preferred ACL alternative. Therefore, the Council concluded **Preferred Alternative 2** best meets the purpose and need and the objectives of the Snapper Grouper FMP, as amended, while enhancing socio-economic benefits and complying with the requirements of the Magnuson-Stevens Act and other applicable law.

5.8 Action 8. Adjust the Bag Limit for Blueline Tilefish for the Recreational Sector

Snapper Grouper Advisory Panel Comments and Recommendations

The Snapper Grouper AP reviewed Amendment 32 at their April 8-10, 2014 meeting. The AP recommended **Alternative 3** as the preferred.

Law Enforcement Advisory Panel Comments and Recommendations

The LEAP received a general overview of actions proposed in Amendment 32 during their March 3, 2014 meeting. The LEAP did not express concern or provide recommendations.

Scientific and Statistical Committee Comments and Recommendations

The SSC provided no comments or recommendations as the specification of a recreational bag limit is a management decision.

Council's Choice for Preferred Alternative

While discussing changes to management of snowy grouper and blueline tilefish, the Council decided that a recreational season for deepwater species would be beneficial since discards would be reduced and so would interactions with other vulnerable species whose harvest is prohibited, such as speckled hind and warsaw grouper. Over time, as species recover, the season could be extended or removed and the bag limit could be adjusted. Moreover, May through August is a time of the year when recreational fishermen throughout the region have access to the resource and a recreational season for deepwater species during this time would create an "even playing field" for all participants. The Council acknowledged the limitations of the current system to monitor recreational landings and the frequency with which deepwater species are intercepted. Reducing the season to only 2 waves out of the year may have implications for monitoring landings. Nonetheless, the Council chose to select the same recreational bag limit and season for both blueline tilefish and snowy grouper.

Alternatives

(preferred alternatives in bold)

1. No action. Blueline tilefish is included in the 3 fish/person/day aggregate bag limit.[1]
2. Remove blueline tilefish from the 3 fish/person/day aggregate bag limit.
3. Blueline tilefish bag limit of 1/person/day
4. Blueline tilefish vessel limit of 1/vessel/day
5. **Blueline tilefish vessel limit of 1/vessel/day May through August (closed rest of year)**
6. Blueline tilefish vessel limit of 1/vessel/day May and June (closed rest of year)
7. Blueline tilefish vessel limit of 1/vessel/day in May (closed rest of year)
8. Blueline tilefish vessel limit of 1/vessel/day in June (closed rest of year)

[1]The current management measures for blueline tilefish for the recreational sector include gear restrictions, area closures, and possession limits.

The Council concluded **Preferred Alternative 5** best meets the purpose and need and the objectives of the Snapper Grouper FMP, as amended, while enhancing socio-economic benefits and complying with the requirements of the Magnuson-Stevens Act and other applicable law.

Chapter 6. Cumulative Effects

As directed by the National Environmental Policy Act (NEPA), federal agencies are mandated to assess not only the indirect and direct impacts, but the cumulative impacts of proposed actions as well. NEPA defines a cumulative impact as *"the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time"* (40 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 (MacDonald 2000). 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". The report outlines 11 items for consideration in drafting a CEA for a proposed action.

1. Identify the significant cumulative effects issues associated with the proposed action and define the assessment goals.
2. Establish the geographic scope of the analysis.
3. Establish the timeframe for the analysis.
4. Identify the other actions affecting the resources, ecosystems, and human communities of concern.
5. Characterize the resources, ecosystems, and human communities identified in scoping in terms of their response to change and capacity to withstand stress.
6. Characterize the stresses affecting these resources, ecosystems, and human communities and their relation to regulatory thresholds.
7. Define a baseline condition for the resources, ecosystems, and human communities.
8. Identify the important cause-and-effect relationships between human activities and resources, ecosystems, and human communities.
9. Determine the magnitude and significance of cumulative effects.
10. Modify or add alternatives to avoid, minimize, or mitigate significant cumulative effects.
11. Monitor the cumulative effects of the selected alternative and adapt management.

This CEA for the biophysical environment will follow a modified version of the 11 steps. Cumulative effects for the socio-economic environment will be analyzed separately.

6.1 Biological and Ecological

1. 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)**.

2. 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 (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.

3. Establish the timeframe for the analysis.

The timeframe for the analysis of cumulative effects is 1999 through the present. Fishery managers implemented the first significant regulations pertaining to blueline tilefish in 1999 through Amendment 9 to the Snapper Grouper FMP (SAFMC 1998a). The regulations included a five fish aggregate grouper bag limit, which included blueline tilefish. In addition, fishery managers implemented a regulation where vessels with longline gear aboard may only possess snowy grouper, warsaw grouper, yellowedge grouper, misty grouper, golden tilefish, blueline tilefish, and sand tilefish.

4. Identify the other actions affecting the resources, ecosystems, and human communities of concern

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.

I. 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 for species in the Snapper Grouper FMP, including blueline tilefish. Past regulatory activity for the relevant snapper grouper species in this amendment is listed below.

Amendment 9 to the Snapper Grouper FMP (SAFMC 1998a) 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 Council approved Amendment 9 at their December 1998 meeting. 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 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 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 Council approved Amendment 17B at their September 2010 meeting. The final rule published in the *Federal Register* on December 30, 2010.

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.

The Comprehensive ACL Amendment (SAFMC 2011c) includes ACLs and AMs for federally managed species not undergoing overfishing in four FMPs (Snapper Grouper, Dolphin Wahoo, Golden Crab, and *Sargassum*). Actions contained within the Comprehensive ACL Amendment included: (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 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 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) established 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 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. Regulations became effective on July 1, 2012.

Regulatory Amendment 12 to the Snapper Grouper FMP (SAFMC 2012c) 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 2013a) to the Snapper Grouper FMP was approved by the 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.

At their March 2012 meeting, the Council requested development of Regulatory Amendment 13 (SAFMC 2013b) to the Snapper Grouper FMP to allow for adjustment of allocations and ACLs based on the new landings information from the Marine Recreational Information Program. Regulatory Amendment 13 was approved by the Council at their December 2012 meeting. The National Marine Fisheries Service (NMFS) published the final rule on June 17, 2013, and regulations became effective on July 17, 2013.

At their September 2012 meeting, the Council requested development of Regulatory Amendment 15 to the Snapper Grouper FMP (SAFMC 2013c) to adjust the yellowtail snapper ABC and ACL based on results from a recent assessment and remove the provision that the commercial harvest of all shallow water grouper species is prohibited when the gag quota is met. The Council approved Regulatory Amendment 15 at their December 2012 and the regulations were effective on September 12, 2013. Additionally, at the Council's request while they were developing Regulatory Amendment 15, NMFS implemented an emergency rule under the Magnuson-Stevens Fishery Conservation and Management Act to increase the commercial sector's ACL based upon the new stock assessment (77 FR 66744, November 7, 2012).

B. Present

In addition to snapper grouper fishery management issues being addressed in this amendment, other snapper grouper amendments and amendment affecting the snapper grouper fishery have been developed concurrently and have been implemented or are in the process of approval and implementation.

The Joint South Atlantic/Gulf of Mexico Generic Charter/Headboat Reporting in the South Atlantic Amendment (GMFMC and SAFMC 2013a) requires that all federally-permitted headboats on the South Atlantic report their landings information electronically, and on a weekly basis in order to improve the timeliness and accuracy of harvest data. The proposed rule published in the *Federal Register* on September 27, 2013. The final rule published on December 27, 2013, and regulations became effective on January 27, 2014.

At their September 2012 meeting, the Council directed staff to develop Amendment 27 to the Snapper Grouper FMP (SAFMC 2014c) to address issues related to blue runner, and extension of management into the Gulf of Mexico for Nassau grouper. The amendment also changed the existing snapper grouper framework procedure to allow for more timely adjustments to ACLs. The proposed rule published in the *Federal Register* on September 27, 2013. The final rule published on December 27, 2013, and regulations became effective on January 27, 2014.

The Joint Dealer Reporting Amendment (GMFMC and SAFMC 2013b) has been approved for Secretarial Review by the Gulf of Mexico and South Atlantic Fishery Management Councils.

This amendment is intended to improve the timeliness and accuracy of fisheries data reported by permitted dealers. The amendment would also create one dealer permit for all federally-permitted dealers in the southeast region. Requiring dealers to report landings data weekly will help to improve in-season quota monitoring efforts, which will increase the likelihood that AMs could be more effectively implemented prior to ACLs being exceeded. The notice of availability of the amendment and the proposed rule published on December 19, 2013, and January 2, 2014, respectively. The final rule published in the *Federal Register* on April 9, 2014 (79 FR 19490) with an effective date of August 7, 2014.

The Council has recently completed and is developing amendments for coastal migratory pelagic species, spiny lobster, golden crab, dolphin-wahoo, shrimp, and octocorals. See the Council's Web site at http://www.safmc.net/ for further information on Council-managed species.

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 Joint Charter Boat Reporting Amendment would require charter vessels to regularly report their landings information electronically. Including charter boats in the recreational harvest reporting system would further improve the agency's ability to monitor recreational catch rates in-season.

At their June 2012 meeting, the Council further discussed Amendment 22 to the Snapper Grouper FMP to consider measures such as a tag program to allow harvest of red snapper as the stock rebuilds. Scoping of Amendment 22 was conducted during January and February 2011. At their September 2012 meeting, the Council stated their intent to further develop Amendment 22 in 2013 focusing on a recreational tag program for red snapper, golden tilefish, snowy grouper and wreckfish. In June 2013, the Council changed to focus of Amendment 22 to a recreational tag program to monitor harvest of species with small ACLs. The Council discussed the amendment in September 2014.

At their June 2013 meeting, the Council requested development of Regulatory Amendment 16 to the Snapper Grouper FMP to adjust management measures for black sea bass by removing the November through April prohibition on the use of black sea bass pots in Regulatory Amendment 19 (SAFMC 2013f). An options paper was reviewed by the Council in September 2013. The Council held scoping meetings in January 2014.

At their September 2012 meeting, the Council requested development of Regulatory Amendment 17 to the Snapper Grouper FMP to consider MPAs to provide additional protection for speckled hind and warsaw grouper. This action was previously considered in Comprehensive Ecosystem-Based Amendment 3. The Council discussed the regulatory amendment in September 2013. At the December 2013 meeting, Council requested the Snapper Grouper Advisory Panel review Regulatory Amendment 17 and bring any recommendations to the

Council in June 2014. At their June 2014 meeting, the Council retired Regulatory Amendment 17 and decided to use Amendment 36 to establish Spawning Special Management Zones to enhance protection for snapper grouper species, including warsaw grouper and speckled hind.

The Council requested development of Regulatory Amendment 14 to the Snapper Grouper FMP at their September 2013 meeting. Options included in Regulatory Amendment 14 are: changes in the fishing years for greater amberjack and black sea bass; changes in AMs for vermilion snapper and black sea bass; and modification of the gag trip limit. The Council approved Regulatory Amendment 14 (SAFMC 2013e) at their September 2013 meeting. The proposed rule was published in the *Federal Register* on April 25, 2014, with a comment period ending May 27, 2014 (79 FR 22936).

At their June 2013 meeting, the Council began development of Amendment 29 to the Snapper Grouper FMP (SAFMC 2014b), which would consider adjustments to the ABCs for data poor snapper grouper species, and management measures for gray triggerfish. Public hearings took place in January 2014, and the Council approved the amendment for formal review in September 2014. Amendment 29 was sent to NMFS in October 2014.

At their December 2013 meeting, the Council began development of Regulatory Amendment 21 to the Snapper Grouper FMP, which would consider redefining the minimum stock size threshold for species, including blueline tilefish, with small natural mortality rates. The Council approved Regulatory Amendment 21 at their March 2014 meeting. The proposed rule published on August 1, 2014, and the comment period ended on September 3, 2014. The final rule for Regulatory Amendment 21 published in the *Federal Register* on October 7, 2014 (79 FR 60379), with an effective date of November 6, 2014.

Regulatory Amendment 20 to the Snapper Grouper FMP (SAFMC 2014d) considers management measures for snowy grouper based on a recent assessment, which indicates overfishing of the stock has been ended and the stock is rebuilding. The Council initiated development of the amendment at their March 2014 meeting, and reviewed a draft in June 2014. Public hearings took place in August 2014, and the South Atlantic Council approved the amendment for formal review in September 2014.

Regulatory Amendment 22 considers adjustments to the ACLs for gag and wreckfish based on the results of recent assessments. Development of Regulatory Amendment 22 was initiated by the Council in June 2014. Public hearings will take place in November 2014 and the Council is scheduled to approve the amendment for formal review in December 2014.

The Council initiated development of the Comprehensive Accountability Measure (AM) and Dolphin Allocation Amendment at their September 2013 meeting. In December 2013, the South Atlantic Council changed the range of actions to only include AMs for snapper grouper species and golden crab, and sector allocations for dolphin. The South Atlantic Council reviewed drafts of the amendment at the December 2013, March 2014, and June 2014 meetings. Public hearings took place in August 2014, and Council is scheduled to take final action in December 2014

II. Non-Council and other non-fishery related actions, including natural events affecting the 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 2007, 2013 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 was not detected in the South Atlantic region, and did not likely to pose a threat to the species addressed in this amendment.

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 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.

The species most likely to be impacted by alternatives considered in this environmental assessment (EA) are deepwater species. Trends in the condition of these species are determined through the Southeast Data, Assessment and Review (SEDAR) process if they are assessed. More information on the SEDAR process and assessed species that are included in this

amendment can be found in **Section 3.2.1** and information on other affected species can be found in **Section 3.2.1** and is hereby incorporated by reference.

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 snapper grouper species 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.

Fish populations

In addition to the information in **Item Number 6** of this CEA, the reader is directed to **Section 3.2.1** of this document for more details regarding the species addressed in this amendment. The results of SEDAR 32, utilizing the most recent data from 2011, determined that the blueline tilefish stock to be undergoing overfishing and to be overfished. However, Regulatory Amendment 21 (SAFMC 2014a) changed the overfished definition for species with low natural mortality, such as blueline tiflefish. Under the new definition, the South Atlantic stock of blueline tilefish is not considered overfished. The Council's Scientific and Statistical Committee reviewed the assessment at their October 2013 and April 2014 meetings and approved it as the best available science and usable for management purposes. The Council, through Amendment 32, intends to implement management measures to end overfishing and rebuild the stock

Climate change

Global climate changes may or may not 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 (Osgood 2008; IPCC 2007; 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.

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 SEDAR assessments show trends in biomass, fishing mortality, fish weight, and fish length going back to the earliest periods of data collection. For a detailed discussion of the baseline conditions of species addressed in this amendment including blueline tilefish, the reader is referred to the sources referenced in **Item Number 6** of this CEA.

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 is shown in **Table 6.1.1**

Table 6.1.1. 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
Pre-January 12, 1989	Habitat destruction, growth overfishing of vermilion snapper.	Damage to snapper grouper habitat, decreased yield per recruit of vermilion snapper.
January 1989	Trawl prohibition to harvest fish (Snapper Grouper Amendment 1; SAFMC 1988).	Increase yield per recruit of vermilion snapper; eliminate trawl damage to live bottom habitat.
Pre-January 1, 1992	Overfishing of many snapper grouper species.	Spawning stock ratio of these species is estimated to be less than 30% indicating that they are overfished.
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.
Pre-June 27, 1994	Damage to *Oculina* habitat.	Noticeable decrease in numbers and species diversity in areas of *Oculina* off FL
July 1994	Prohibition of fishing for and retention of snapper grouper species (HAPC renamed Oculina Experimental Closed Area (OECA). Snapper Grouper Amendment 6; SAFMC 1993.	Initiated the recovery of snapper grouper species in OECA.
1992-1999	Declining trends in biomass and overfishing continue for a number of	Spawning potential ratio for golden tilefish is less than 30% indicating that

Time period/dates	Cause	Observed and/or Expected Effects
	snapper grouper species including golden tilefish.	they are overfished.
July 1994	Snapper Grouper Amendment 6; SAFMC 1993.	Commercial quota for golden tilefish; commercial trip limits for golden tilefish; include golden tilefish in grouper recreational aggregate bag limits.
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 October 23, 2006	Stock assessments indicate black sea bass vermilion snapper, red porgy, and snowy grouper are undergoing overfishing. Snapper grouper FMP Amendment 13C (SAFMC 2006)	Management measures implemented to end overfishing of these species.
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 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 Dates Dec 16, 2009, to Feb 16, 2010.	Concern that bag limit sales of snapper grouper species obfuscates accurate reporting of landings data. Snapper grouper FMP Amendment 15B (SAFMC 2008b).	End double counting in the commercial and recreational reporting systems by prohibiting the sale of bag-limit caught snapper grouper, and minimize impacts on sea turtles and smalltooth sawfish.
Effective Date July 29, 2009	Stock assessment indicates gaga is 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 4, 2010	Stock assessment indicated red snapper is overfished and undergoing overfishing. Red Snapper Interim Rule.	Prohibit commercial and recreational harvest of red snapper from January 4, 2010, to June 2, 2010 with a possible 186-day extension. Reduce overfishing of red snapper while long-term measures to end overfishing are

Time period/dates	Cause	Observed and/or Expected Effects
		addressed in Amendment 17A.
Effective Dates June 3, 2010, to Dec 5, 2010	Stock assessment indicated red snapper is overfished and undergoing overfishing. Extension of Red Snapper Interim Rule	Extended the prohibition of red snapper to reduce overfishing of red snapper while long-term measures to end overfishing are addressed in Amendment 17A.
Effective Date December 4, 2010	Stock assessment indicated red snapper is overfished and undergoing overfishing. Snapper Grouper FMP Amendment 17A (SAFMC 2010a).	Specified SFA parameters for red snapper; ACLs and ACTs; management measures to limit recreational and commercial sectors to their ACTs; accountability measures. Establish rebuilding plan for red snapper. Large snapper grouper area closure inn EEZ of NE Florida. Emergency rule delayed the effective date of the snapper grouper closure.
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 June 1, 2011	New red snapper assessment indicates stock is undergoing overfishing and is overfished but area closures approved in Amendment 17B are not needed. Regulatory Amendment 10 (SAFMC 2010c).	Removed of snapper grouper area closure approved in Amendment 17A.
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 April 16, 2012	Reauthorized Magnuson-Stevens Act requires ACLs for species not undergoing overfishing. Comprehensive ACL Amendment (SAFMC 2011c).	ACLs ACTs, and AMs for species not experiencing overfishing; accountability measures; an action to remove species from the fishery management unit as appropriate; and management measures to limit recreational and commercial sectors to their ACTs.

Time period/dates	Cause	Observed and/or Expected Effects
Effective Date July 11, 2012	Stock assessment indicates red grouper is overfished and undergoing overfishing. Amendment 24 (Red Grouper) (SAFMC 2011d).	Established a rebuilding plan for red grouper, specified ABC, and established ACL, ACT and revised AMs for the commercial and recreational sectors.
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 Dates: September 17, 2012 (commercial); September 14, 2012 (recreational)	As red snapper stock rebuilds some limited harvest of red snapper can occur, as long as rebuilding is not compromised. Temporary Rule through Emergency Action (Red snapper).	Established limited red snapper fishing seasons (commercial and recreational) in 2012.
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.
Effective Date October 26, 2012	Some wreckfish catch shares have become available over time. Amendment 20A (Wreckfish) (SAFMC 2012b).	Redistributed inactive wreckfish shares.
Effective Date October 9, 2012	Stock assessment indicates golden tilefish overfishing has been ended and catch levels can be increased. Regulatory Amendment 12 (SAFMC 2012c).	Adjusted the golden tilefish ACL based on the results of a new stock assessment and modified the recreational golden tilefish AM.
Effective Date May 23, 2013	There is a need to reduce effort in the commercial longline sector that targets golden tilefish to ease derby conditions. Snapper Grouper Amendment 18B (SAFMC 2013a)	Establish a commercial longline endorsement program for golden tilefish; establish an appeals process; allocate the commercial ACL by gear; establish trip limit for the hook-and-line sector.
Target 2014	There is a need to control recreational harvest of snapper grouper species with very small ACLs. Snapper Grouper Amendment 22 (under development).	Develop a recreational tag program for snapper grouper species in the South Atlantic.
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
Effective Date January 27, 2014	Blue runner are caught primarily in state waters of FL, and it is not clear if federal management is needed. Nassau grouper is no longer managed by Gulf Council. Council would like to be able to make adjustment to ACLs more quickly after a stock assessment has	Establish the Council 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

Time period/dates	Cause	Observed and/or Expected Effects
	been completed. Snapper Grouper Amendment 27 (SAFMC 2014c).	
Effective Date August 23, 2013	As the red snapper stock rebuilds, some allowable harvest could occur if rebuilding is not affected. Snapper Grouper Amendment 28 (SAFMC 2013d).	Modify red snapper management measures including the establishment of a process to determine future annual catch limits and fishing seasons.
Target 2015	Council's SSC has identified new methods to estimate ABC for data poor species. Snapper Grouper Amendment 29 (SAFMC 2014b).	Update ABCs, ACLs, and ACTs for snapper grouper species based on recommendations from SSC.
Effective Date September 12, 2013	New stock assessments completed for vermilion snapper and red porgy. Regulatory Amendment 18 (SAFMC 2013g).	Adjust ACLs and management measure for vermilion snapper and red porgy based on results from new update assessment.
Effective Date September 23, 2013	New stock assessment for black sea bass indicates the stock is rebuilt and catch levels can be increased. Regulatory Amendment 19 (SAFMC 2013f).	Increase recreational and commercial ACLs for black sea bass. Black sea bass pots prohibited from November 1 through April 30 (effective October 23, 2013).
Effective Date September 5, 2013	New stock assessment indicates catch levels of yellowtail snapper can be increased. Accountability measures for gag can be adjusted because effective means are in place to ensure overfishing does not occur. Regulatory Amendment 15 (SAFMC 2013c).	Increase yellowtail snapper ACL, remove accountability measure for gag that closes commercial harvest for all shallow water grouper species when the gag ACL is met. Reduce gag ACL to account for dead discards when fishermen target co-occurring shallow water grouper species.
Effective Date January 27, 2014	Southeast Fisheries Science Center has established a program that allows headboats to report landings through electronic means. Generic For-Hire Reporting Amendment (GMFMC & SAFMC 2013a).	Require all federally-permitted headboats in the South Atlantic to report landings information electronically and on a weekly basis.
Target 2015	Joint Commercial Logbook Reporting Amendment	Require all federally-permitted commercial fin fish fishermen in the southeast to report electronically.
Effective Date Dec 8, 2014	Regulatory Amendment 14 (SAFMC 2013c).	Change the fishing years for greater amberjack and black sea bass, change in AMs for vermilion snapper and black sea bass, and modify the gag trip limit.
Target 2015	Generic AM and dolphin allocation amendment.	Modify AMs for snapper grouper species and golden crab. Modify allocations for dolphin.
Target 2014/2015	Joint Charterboat Reporting Amendment	Require all federally-permitted charterboats to report landings information electronically.

Time period/dates	Cause	Observed and/or Expected Effects
Target 2015	Amendment 33	Require fillets of snapper grouper species lawfully harvested from the Bahamas to be brought into the United States through the Atlantic EEZ, to have the skin intact.
Target 2015	Amendment 22	Tag program for snapper grouper species with small recreational ACLs.
Target 2015	Amendment 36	Protect spawning species
Target 2015	Amendment 29 (SAFMC 2014b)	Update the ABC control rule for snapper grouper species using the only reliable catch stocks (ORCS) methodology, and update management measures for gray triggerfish to lengthen the fishing season.
Effective Date November 6, 2014	Regulatory Amendment 21 (SAFMC 2014a)	Modify MSST for 8 snapper grouper species including blueline tilefish.
Target 2015	Amendment 32	End overfishing of blueline tilefish.
Target 2015	Regulatory Amendment 20	Update ACLs and management measures for snowy grouper.
Target 2015	Regulatory Amendment 22	Update ACLs and management measures for gag and wreckfish.
Target 2015	Regulatory Amendment 16	Modify November-April black sea bass pot prohibition.

9. Determine the magnitude and significance of cumulative effects.

When species in the snapper grouper fishery management unit are assessed, stock status may change as new information becomes available. In addition, changes in management regulations, fishing techniques, social/economic structure, etc. can result in shifts in the percentage of harvest between user groups over time. As such, the Council has determined that certain aspects of the current management system should be restructured as necessary. As shown in **Table 6.1.1** above, a number of amendments could be implemented in the near future. For instance, Amendment 22 to the Snapper Grouper FMP considers a recreational tag program for snapper grouper species with very low ACLs.

None of the impacts from the proposed management actions have been determined to be significant. See **Chapter 4** for the detailed discussions of the magnitude of the impacts of the preferred alternatives on the human environment.

None of the actions in this EA would have significant biological, social, or economic effects. The actions contained in Amendment 32, 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. Amendment 32 is necessary to end overfishing of the blueline tilefish stock while minimizing, to the extent practicable, adverse social and economic effects. Modifying the ACLs, recreational ACT, and management measures for blueline tilefish as a result of the most recent stock assessment for the 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 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.

The actions in this EA are not likely to result in direct, indirect, or cumulative effects to unique areas, such as significant scientific cultural or historical resources, parkland, prime farmlands, wetlands, wild and scenic rivers or ecologically critical areas. The USS Monitor, Gray's Reef, and Florida Keys National Marine Sanctuaries are within the boundaries of the South Atlantic EEZ. The proposed action is expected to substantially decrease fishing effort and the spatial and/or temporal distribution of current fishing effort for blueline tilefish within the South Atlantic region. As described in **Section 4.3.3**, if the proposed blueline tilefish ACLs are implemented, vessels would likely substitute other species for blueline tilefish, if available, when access to the blueline tilefish resource is limited or prohibited. As the overall fishing effort is not expected to increase from the proposed actions, the proposed actions are not likely to cause loss or destruction of these 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 Amendment 32, 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. Amendment 32 is necessary to end overfishing of the blueline tilefish stock while minimizing, to the extent practicable, adverse social and economic effects. Modifying the ACLs, recreational ACT, and management measures for blueline tilefish as a result of the most recent stock assessment for the 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 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 alternative 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. The proposed action relates to the harvest of indigenous species in the Atlantic, and the activity being altered does not itself introduce non-indigenous species, and is not reasonably expected to facilitate the spread of such species through depressing the populations of native species. Additionally, these actions do not propose any activity, such as increased ballast water discharge from foreign vessels, which is associated with the introduction or spread on non-indigenous species.

6.2 Socioeconomic

The actions in Amendment 32 are expected to reduce harvest of blueline tilefish and add AMs in South Atlantic waters. The likely cumulative socioeconomic effects would be species substitution to replace any forgone harvest for both commercial and recreational fishermen. With the establishment of an ACL for blueline tilefish, commercial fishermen would need to monitor harvest levels in anticipation of closures. However, the lower ACLs that would result from the alternatives would definitely require some adjustment to their fishing operations. The economic losses that might be incurred from lower harvest levels may have short-term negative effects if suitable replacements are not available. Yet, in the long-term these losses could be less than if no action were taken and thereby avoid even larger losses in the future.

Because of the recent overall downturn in the economy, any action that restricts economic opportunity may have detrimental social and/or economic effects. 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. Furthermore, almost all fishermen or businesses with snapper grouper commercial and for-hire permits also hold at least one (and usually multiple) additional commercial or for-hire permits to have the opportunity to participate in other fisheries. Commercial fishermen, for-hire vessel owners and crew, and private recreational anglers commonly participate in multiple fisheries throughout the year. Even within the snapper grouper fishery, effort can shift from one species to another due to environmental, economic, or regulatory changes. Overall, changes in management of one species in the snapper grouper fishery can impact effort and harvest of another species (in the snapper grouper fishery or in another fishery) because of multi-fishery participation that is characteristic in the South Atlantic region.

With the recent adoption of ACLs and associated accountability measures, early closures of some species are occurring that can change fishing behavior by targeting species in other fisheries and adding pressure on other stocks. If those choices are limited, then fishermen are also limited in their flexibility to adapt to regulatory change, which is the primary benefit of multi-fishery participation. Without other options on the water, they may need to make changes in household economics that can have further impacts that extend to the larger community. Much of this discussion is based upon assumption as we do not have enough detailed information on fishermen's businesses or households to determine specific effects.

Since 2005, Snapper Grouper Unlimited and Trip-Limited permits have shown a downward trend. With a limited entry program in place since 1998 and a 2-for-1 permit purchase criteria for entry with an Unlimited permit, a reduction in permits would be expected over time and will likely continue as long as the criteria are a continued part of management. While the limited entry program has contributed to the reduced capacity, other factors have also contributed to this downward trend. Economic factors like increased imports, decreasing prices for domestic product, and rising prices for diesel fuel have had a widespread effect on commercial fishing throughout many regions of the U.S. In addition, the loss of working waterfronts has contributed to a growing loss of fishing infrastructure that may play a role in the decline in many fishing communities (Garrity-Blake 2012; Griffith, 2011). For North Carolina, the losses have been substantial as over a decade there has been a 36% decline in the number of fish houses (Garrity-Blake and Nash 2012).

While some of the same social and economic factors above have affected the for-hire sector in terms of loss of working waterfronts, other issues such as a downturn in the economy and competition have affected growth of that sector. The recreational sector is also subjected to permit requirements in the for-hire sector as vessels in the South Atlantic are required to have a snapper grouper for-hire permit to fish for or possess snapper grouper species in the EEZ. The number of for-hire permits issued for the South Atlantic snapper grouper fishery decreased from 1,805 permits in 2008 to 1,797 permits in 2012. It was only in 2009 and 2012 that for-hire snapper grouper permits increased. Most of these permitted for-hire vessels were home-ported in Florida; vessels were also home-ported in North Carolina and South Carolina. As of /6/14, there were 1,364 for-hire permits.

It is expected that the actions in this amendment may have negative short-term effects, particularly on commercial fishermen in communities such as Wanchese, North Carolina and on fishermen in other areas that regularly target blueline tilefish and have invested in gear, vessel, and permits. Additionally, reduced access to the blueline tilefish resource will likely result in effort shifts to other species, which could in turn necessitate future regulations for those species. It is anticipated that the proposed actions will contribute to fewer negative long-term effects and thereby, should avoid additional burdens to either sector as restrictive harvest levels would have to be imposed as overfishing continued to occur. However, changes in the fishery in response to the proposed restrictions on access to blueline tilefish could affect the long-term outcomes for businesses, communities, and individuals if access to other species or alternative income opportunities is limited.

Chapter 7. List of Preparers

Table 7.1.1. List of Amendment 32 preparers.

Name	Agency/Division	Area of Amendment Responsibility
Andy Herndon	NMFS/PR	Protected Resources Biologist
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
Jessica Stephen	NMFS/SF	Fishery Biologist
Kate Quigley	SAFMC Contractor	Economist
Mary Vara	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 Amendment 32 interdisciplinary plan team members.

Name	Organization	Title
Akbar Marvasti	SEFSC	Economist
Andy Herndon	NMFS/PR	Protected Resources Biologist
Brian Cheuvront	SAFMC	Economist
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David Keys	NMFS/SER	Regional NEPA Coordinator
Gregg Waugh	SAFMC	Deputy Executive Director
Jack McGovern	NMFS/SF	Fishery Biologist
Jessica Stephen	NMFS/SF	Fishery Biologist
John Carmichael	SAFMC	Science and Statistics Program Manager
Kari MacLauchlin	SAFMC	Fishery Social Scientist
Kate Quigley	SAFMC Contractor	Economist
Scott Sandorf	NMFS/SF	Regulation Writer
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Mike Jepson	NMFS/SF	Fishery Social Scientist
Monica Smit-Brunello	NMFS SERO/GC	Attorney
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Jeff Radonski	NOAA/OLE	Supervisory Criminal Investigator
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

Amendment 32:
South Atlantic Fishery Management Council
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Environmental Assessment:
NMFS, Southeast Region
263 13th Avenue South
St. Petersburg, Florida 33701
(727) 824-5301 (TEL)
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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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