Amendment 34 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region, Amendment 9 to the Fishery Management Plan for the Golden Crab of the South Atlantic Region, and Amendment 8 to the Fishery Management Plan for the Dolphin Wahoo Fishery of the Atlantic

February 2015

Environmental Assessment Regulatory Impact Review Regulatory Flexibility Analysis Fishery Impact Statement

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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
$\mathbf{B_{MSY}}$	the stock biomass expected to exist under equilibrium conditions when fishing at F_{MSY}
$\mathbf{B_{OY}}$	the stock biomass expected to exist under equilibrium conditions when fishing at F_{OY}
$\mathbf{B_{CURR}}$	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
$\mathbf{F_{30\%SPR}}$	fishing mortality that will produce a static SPR = 30%
$\mathbf{F_{CURR}}$	the current instantaneous rate of fishing mortality
$\mathbf{F_{MSY}}$	the rate of fishing mortality expected to achieve MSY under equilibrium conditions and a corresponding biomass of B_{MSY}
$\mathbf{F_{OY}}$	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 34 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region, Amendment 9 to the Fishery Management Plan for the Golden Crab of the South Atlantic Region, and Amendment 8 to the Fishery Management Plan for the Dolphin Wahoo Fishery of the Atlantic with Environmental Assessment and Regulatory Impact Review

Proposed action:	The purpose for the actions is to: modify the accountability measures for snapper grouper species and golden crab, and adjust sector allocations for dolphin.
Lead agency:	FMP Actions – South Atlantic Fishery Management Council Environmental Assessment – National Marine Fisheries Service (NMFS) Southeast Regional Office
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Summary

Amendment 34 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region (Snapper Grouper FMP), Amendment 9 to the Fishery Management Plan for the Golden Crab of the South Atlantic Region (Golden Crab FMP), and Amendment 8 to the Fishery Management Plan for the Dolphin and Wahoo Fishery of the Atlantic (Dolphin Wahoo FMP) would modify the accountability measures for snapper grouper species and golden crab, and adjust sector allocations for dolphin.

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Chapter 1. Introduction

1.1 What Actions Are Being Proposed?

Amendment 34 to the Snapper Grouper FMP and Amendment 9 to the Golden Crab FMP would revise the accountability measures (AMs) for black grouper, mutton snapper, yellowtail snapper, greater amberjack, red porgy, gag, golden tilefish, red grouper, snowy grouper, gray triggerfish, hogfish, scamp, Atlantic spadefish, bar jack, snappers complex, jacks complex, shallow-water grouper complex, porgies complex; wreckfish (recreational), and golden crab (commercial). Amendment 8 to the Dolphin Wahoo FMP proposes to revise commercial and recreational sector allocations for dolphin in the South Atlantic.

1.2 Who is Proposing the Actions?

The South Atlantic Fishery Management Council (South Atlantic Council) is proposing the actions. The South Atlantic Council develops the amendment and submits it, to the National Marine Fisheries Service (NMFS) who, on behalf of the Secretary of Commerce, approves, disapproves, or partially approves, and implements the actions in the amendment through the development of regulations. NMFS is a line office of the National Oceanic and Atmospheric Administration. The South Atlantic Council and NMFS are also responsible for making this document available for public comment. The draft environmental assessment (EA) has been made available to the public during the scoping process, during public hearings, and in South Atlantic Council meeting briefing books. The EA/amendment will be published for public comment during the notice of availability and proposed rule stages of the rulemaking process. The public hearing draft and final EA/amendment may be found online http://sero.nmfs.noaa.gov/sustainable_fisheries/s_atl/2014/am_dolphin_allocation/index.html.

South Atlantic Fishery Management Council

- Responsible for conservation and management of fish stocks in the South Atlantic Region
- Consists of 13 voting members who are 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; recommends actions to NMFS for implementation
- Management area is from 3 to 200 nautical miles off the coasts of North Carolina, South Carolina, Georgia, and east Florida through Key West. For CMP species, the South Atlantic Council manages through the Mid-Atlantic Region

1.3 Purpose and Need Statement

Purpose for Actions

The purpose for these three amendments is to modify the accountability measures for black grouper, mutton snapper, yellowtail snapper, greater amberjack, red porgy, gag, golden tilefish, red grouper, snowy grouper, gray triggerfish, hogfish, scamp, Atlantic spadefish, bar jack, snappers complex, jacks complex, shallow-water grouper complex, porgies complex, wreckfish (recreational), and golden crab (commercial), and revise sector allocations for dolphin.

Need for Actions

The need for Amendment 34 to the Snapper Grouper FMP and Amendment 9 to the Golden Crab FMP is to create a consistent regulatory environment while preventing unnecessary negative socio-economic impacts, and ensure overfishing does not occur in accordance with the provisions set forth in the Magnuson-Stevens Fishery Conservation and Management Act. The need for Amendment 8 to the Dolphin Wahoo FMP is to base sector allocations on the best scientific information available, and use the most appropriate allocation method to determine sector allocations.

Chapter 2. Proposed Actions and Alternatives

Action 1. Revise accountability measures (AMs) for black grouper, mutton snapper, yellowtail snapper, greater amberjack, red porgy, gag, golden tilefish, red grouper, snowy grouper, gray triggerfish, hogfish, scamp, Atlantic spadefish, bar jack, snappers complex, jacks complex, shallow-water grouper complex, porgies complex, wreckfish (recreational), and golden crab (commercial).

Alternative 1 (No Action). Retain the current commercial and recreational AMs, if applicable, for black grouper, mutton snapper, yellowtail snapper, greater amberjack, red porgy, gag, golden tilefish, red grouper, snowy grouper, gray triggerfish, hogfish, scamp, Atlantic spadefish, bar jack, snappers complex, jacks complex, shallow-water grouper complex, porgies complex, wreckfish (recreational), and golden crab (commercial). A list of the current AMs in place for all species affected by this action is included under the "Discussion" heading below

Preferred Alternative 2. If commercial landings as estimated by the Science and Research Director reach or are projected to reach the commercial annual catch limit (ACL), or quota component (i.e. golden tilefish), 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 EEZ is limited to the bag and possession limit. This bag and possession limit applies in the South Atlantic on board a vessel for which a valid Federal commercial or charter vessel/headboat permit for South Atlantic snapper grouper, or golden crab has been issued as appropriate, without regard to where such species were harvested, i.e., in state or federal waters (this portion of the alternative is already part of the current commercial AMs for species affected under this action).

> **Sub-alternative 2a.** If the commercial ACL is exceeded, the Regional Administrator shall publish a notice to reduce the commercial ACL in the following fishing year by the amount of the commercial overage, only if the species is overfished, or one or more species in a species complex, is overfished.
>
> **Sub-alternative 2b.** If the commercial ACL is exceeded, the Regional Administrator shall publish a notice to reduce the commercial ACL in the following fishing year by the amount of the commercial overage, only if the total ACL (commercial ACL and recreational ACL) is exceeded.
>
> **Preferred Sub-alternative 2c.** If the commercial ACL is exceeded, the Regional Administrator shall publish a notice to reduce the commercial ACL in the following fishing year by the amount of the commercial overage, only if the species, or one or more

species in a species complex, is overfished **and** the total ACL (commercial ACL and recreational ACL) is exceeded.

Preferred Alternative 3. If recreational landings, as estimated by the Science and Research Director, exceed the recreational ACL, then during the following fishing year, recreational landings will be monitored for a persistence in increased landings.

Sub-alternative 3a. If necessary, the Regional Administrator shall publish a notice to reduce the length of fishing season and the recreational ACL in the following fishing year by the amount of the recreational overage, only if the species is overfished, or one or more species in a species complex, is overfished. The length of the recreational season and recreational ACL will not be reduced if the Regional Administrator determines, using the best scientific information available, that a reduction is unnecessary.

Sub-alternative 3b. If necessary, the Regional Administrator shall publish a notice to reduce the length of fishing season and the recreational ACL in the following fishing year by the amount of the recreational overage, only if the total ACL (commercial ACL and recreational ACL) is exceeded. The length of the recreational season and recreational ACL will not be reduced if the Regional Administrator determines, using the best scientific information available, that a reduction is unnecessary.

Preferred Sub-alternative 3c. If necessary, the Regional Administrator shall publish a notice to reduce the length of fishing season and the recreational ACL in the following fishing year by the amount of the recreational overage, only if the species, or one or more species in a species complex, is overfished **and** the total ACL (commercial ACL and recreational ACL) is exceeded. The length of the recreational season and recreational ACL will not be reduced if the Regional Administrator determines, using the best scientific information available, that a reduction is unnecessary.

Preferred Alternative 4. If recreational landings 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 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, or one or more species in a species complex, is overfished.

Preferred Sub-alternative 4b. Regardless of the overfished status of a species, or one or more species within a complex.

Discussion

Table 2.1. Species and species complexes addressed in this action with sector ACLs for all species including those affected by Amendment 29, Regulatory Amendment 20, and Regulatory Amendment 22 if implemented; and ACLs for those species in the absence of ACL revisions in Amendment 29, Regulatory Amendment 20, and Regulatory Amendment 22. ACLs are in pounds whole weight (lbs ww) unless otherwise noted.

Unassessed Species Complexes	Commercial ACL	Recreational ACL	Commercial ACLs Without Implementation of Amendment 29, and Reg. Amendments 20 and 22	Recreational ACLs Without Implementation of Amendment 29, and Reg. Amendments 20 and 22
Jacks Complex[(a)]	189,422	267,799	--	--
Snappers Complex[(b)]	344,884*(**)	1,172,832*(**)	215,662	728,577
Grunts Complex[(c)]	217,903**	618,122**	218,539	588,113
Shallow Water Groupers Complex[(d)]	55,542**	48,648**	49,776	46,656
Porgies Complex[(e)]	36,348	106,914	--	--
Individual Unassessed Species				
Atlantic spadefish	150,552**	661,926**	35,108	154,352
Bar jack	13,228**	49,021**	5,265	19,515
Scamp	219,375**	116,369**	333,100	176,688
Hogfish	49,569	85,355	--	--
Gray triggerfish	312,325	404,675	--	--
Individual Assessed Stocks				
Black grouper	96,844	165,750	--	--
Mutton snapper	157,743	768,857	--	--
Yellowtail snapper	1,596,510	1,440,990	--	--
Greater amberjack	769,388 (gw)	1,167,837	--	--
Red porgy	157,692 (gw)	157,692 (gw)	--	--
Gag	295,459 (gw)***	310,023 (gw)***	326,722 (gw)	340,060 (gw)
Golden tilefish hook-and-line	135,324 (gw)	3,019 (fish)	--	--
Golden tilefish longline	405,971(gw)	N/A	--	--
Red grouper	343,200	436,800	--	--
Snowy grouper	115,451 (gw)****	4,152 (fish)****	82,900 (gw)	523 (fish)
Wreckfish (Recreational)	411,350***	21,650***	223,250	11,750
Golden crab (Commercial)	2,000,000	N/A	--	--

* Dog snapper and mahogany snapper are being considered for removal from the Snapper Grouper FMP in Amendment 35 to the Snapper Grouper FMP.
****** ACL values as updated through Amendment 29 to the Snapper Grouper FMP
*** ACL values as updated through Regulatory Amendment 22 to the Snapper Grouper FMP
**** ACL values as updated through Regulatory Amendment 20 to the Snapper Grouper FMP
(a) Almaco jack, banded rudderfish, lesser amberjack

(b) Gray snapper, lane snapper, cubera snapper, dog snapper, mahogany snapper
(c) White grunt, margate, sailor's choice, tomtate
(d) Red hind, rock hind, coney, graysby, yellowfin grouper, yellowmouth grouper
(e) Jolthead porgy, knobbed porgy, saucereye porgy, scup, whitebone porgy

Current AMs

Black grouper, mutton snapper, yellowtail snapper, greater amberjack, red porgy, gag, golden tilefish, red grouper, snowy grouper, gray triggerfish, hogfish, scamp, Atlantic spadefish, and bar jack

Commercial: If commercial landings, as estimated by the Science and Research Director, reach or are projected to reach the commercial ACL, the Assistant Administrator will file a notification with the Office of the Federal Register 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 (EEZ) is limited to the bag and possession limit. This bag and possession limit applies in the South Atlantic on board a vessel for which a valid Federal commercial or charter vessel/headboat permit for South Atlantic snapper grouper has been issued, without regard to where such species were harvested, i.e., in state or Federal waters. If commercial landings exceed the ACL, and the species is overfished, based on the most recent Status of U.S. Fisheries Report to Congress, the Assistant Administrator will file a notification with the Office of the Federal Register, at or near the beginning of the following fishing year to reduce the ACL for that following year by the amount of the overage in the prior fishing year.

Recreational: If recreational landings, as estimated by the Science and Research Director, exceed the recreational ACL, then during the following fishing year, recreational landings will be monitored for a persistence in increased landings and, if necessary, the Assistant Administrator will file a notification with the Office of the Federal Register, to reduce the length of the following recreational fishing season by the amount necessary to ensure recreational landings do not exceed the recreational ACL in the following fishing year. However, the length of the recreational season will also not be reduced during the following fishing year if the Regional Administrator determines, using the best scientific information available, that a reduction in the length of the following fishing season is unnecessary.

Gag

Commercial: If commercial landings, as estimated by the Science and Research Director, reach or are projected to reach the quota specified in § 622.190(a)(7), the Assistant Administrator will file a notification with the Office of the Federal Register to close the commercial sector for gag for the remainder of the fishing year.

Recreational: If recreational landings, as estimated by the Science and Research Director, reach or are projected to reach the recreational ACL, and gag are overfished, the Assistant Administrator will file a notification with the Office of the Federal Register to close the recreational sector for the remainder of the fishing year. On and after the effective date of such notification, the bag and possession limit in or from the South Atlantic EEZ is zero. This bag and possession limit also applies in the South Atlantic on board a vessel for which a valid Federal commercial or charter vessel/headboat permit for South Atlantic snapper grouper has been issued, without regard to where such species were harvested, i.e., in state or Federal waters. Without regard to overfished status, if recreational landings exceed the ACL, the Assistant

Administrator will file a notification with the Office of the Federal Register, at or near the beginning of the following fishing year, to reduce the ACL for that fishing year by the amount of the overage. Recreational landings will be evaluated relative to the ACL based on a moving multi-year average of three most recent years of landings.

Golden tilefish

Commercial: (i) Hook-and-line component. If commercial landings, as estimated by the Science and Research Director, reach or are projected to reach the commercial ACL (commercial quota) specified in § 622.190(a)(2)(ii), the Assistant Administrator will file a notification with the Office of the Federal Register to close the hook-and-line component of the commercial sector for the remainder of the fishing year. (ii) Longline component. If commercial landings, as estimated by the Science and Research Director, reach or are projected to reach the commercial ACL (commercial quota) specified in § 622.190(a)(2)(iii), the Assistant Administrator will file a notification with the Office of the Federal Register to close the longline component of the commercial sector for the remainder of the fishing year. After the commercial ACL for the longline component is reached or projected to be reached, golden tilefish may not be fished for or possessed by a vessel with a golden tilefish longline endorsement.

Recreational: If recreational landings for golden tilefish, as estimated by the Science and Research Director, reach or are projected to reach the recreational ACL, the Assistant Administrator will file a notification with the Office of the Federal Register to close the recreational sector for the remainder of the fishing year. If recreational landings for golden tilefish, as estimated by the Science and Research Director, exceed the recreational ACL, then during the following fishing year, recreational landings will be monitored for a persistence in increased landings and, if necessary, the Assistant Administrator will file a notification with the Office of the Federal Register, to reduce the length of the following recreational fishing season by the amount necessary to ensure recreational landings do not exceed the recreational ACL in the following fishing year.

Red grouper

Commercial: If commercial landings for red grouper, as estimated by the Science and Research Director, reach or are projected to reach the applicable ACL in paragraph (d)(1)(iii) of this section, the Assistant Administrator will file a notification with the Office of the Federal Register to close the commercial sector for the remainder of the fishing year. On and after the effective date of such a notification, all sale or purchase of red grouper is prohibited and harvest or possession of this species in or from the South Atlantic EEZ is limited to the bag and possession limit. This bag and possession limit applies in the South Atlantic on board a vessel for which a valid Federal commercial or charter vessel/headboat permit for South Atlantic snapper-grouper has been issued, without regard to where such species were harvested, i.e., in state or Federal waters. If commercial landings exceed the ACL, the Assistant Administrator will file a notification with the Office of the Federal Register, at or near the beginning of the following fishing year to reduce the ACL for that following year by the amount of the overage in the prior fishing year.

Recreational: If recreational landings for red grouper, as estimated by the Science and Research Director, are projected to reach the applicable ACL in paragraph (d)(2)(iii) of this section, the Assistant Administrator will file a notification with the Office of the Federal Register to close the recreational sector for the remainder of the fishing year. On and after the effective date of such a notification, the bag and possession limit is zero. This bag and possession limit applies in the South Atlantic on board a vessel for which a valid Federal charter vessel/headboat permit for South Atlantic snapper grouper has been issued, without regard to where such species were harvested, i.e. in state or Federal waters. If recreational landings for red grouper, as estimated by the Science and Research Director, exceed the applicable ACL, the Assistant Administrator will file a notification with the Office of the Federal Register, to reduce the recreational ACL the following fishing year by the amount of the overage in the prior fishing.

Snowy grouper

Commercial: If commercial landings, as estimated by the Science and Research Director, reach or are projected to reach the quota specified in § 622.190(a)(1), the Assistant Administrator will file a notification with the Office of the Federal Register to close the commercial sector for snowy grouper for the remainder of the fishing year.

Recreational: If recreational landings, as estimated by the Science and Research Director, exceed the recreational ACL, the Assistant Administrator will file a notification with the Office of the Federal Register, at or near the beginning of the following fishing year, to reduce the length of the following recreational fishing season by the amount necessary to ensure recreational landings do not exceed the recreational ACL in the following fishing year. When NMFS reduces the length of the following recreational fishing season, the following closure provisions apply: the bag and possession limit for snowy grouper in or from the South Atlantic EEZ is zero. This bag and possession limit also applies in the South Atlantic on board a vessel for which a valid Federal commercial or charter vessel/headboat permit for South Atlantic snapper grouper has been issued, without regard to where such species were harvested, i.e., in state or Federal waters. Recreational landings will be evaluated relative to the ACL based on a moving multi-year average of landings, as described in the Snapper Grouper FMP.

Shallow-Water Groupers Complex (red hind, rock hind, yellowmouth grouper, yellowfin grouper, coney, and graysby); Porgy Complex (jolthead porgy, knobbed porgy, saucereye porgy, scup, whitebone porgy); Grunts Complex (white grunt, sailors choice, tomtate, margate); Snappers Complex (gray snapper, lane snapper, cubera snapper, dog snapper*, mahogany snapper*); and Jacks Complex (almaco jack, banded rudderfish, lesser amberjack)

* Dog snapper and mahogany snapper are being considered for removal from the Snapper Grouper FMP in Amendment 35 to the Snapper Grouper FMP.

Commercial: If commercial landings, as estimated by the Science and Research Director, reach or are projected to reach the commercial ACL, the Assistant Administrator 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. On and after the effective date of such a notification, all sale or purchase of species in a complex is prohibited, and harvest or possession

of these species in or from the South Atlantic EEZ is limited to the bag and possession limit. This bag and possession limit applies in the South Atlantic on board a vessel for which a valid Federal commercial or charter vessel/headboat permit for South Atlantic snapper-grouper has been issued, without regard to where such species were harvested, i.e., in state or Federal waters.

If commercial landings exceed the ACL, and at least one of the species in the complex is overfished, based on the most recent status of U.S. Fisheries Report to Congress, the AA will file a notification with the Office of the Federal Register, at or near the beginning of the following fishing year to reduce the ACL for that following year by the amount of the overage in the prior fishing year.

Recreational: If recreational landings for a complex, as estimated by the Science and Research Director, exceed the recreational ACL, then during the following fishing year, recreational landings will be monitored for a persistence in increased landings and, if necessary, the Assistant Administrator will file a notification with the Office of the Federal Register, to reduce the length of the following recreational fishing season by the amount necessary to ensure recreational landings do not exceed the recreational ACL in the following fishing year. However, the length of the recreational season will also not be reduced during the following fishing year if the Regional Administrator determines, using the best scientific information available, that a reduction in the length of the following fishing season is unnecessary.

Wreckfish

Commercial: The individual transferable quota (ITQ) program for wreckfish in the South Atlantic serves as the accountability measures for commercial wreckfish. The commercial ACL for wreckfish is equal to the commercial quota specified in § 622.190(b). The commercial ITQ system would not change under this action.

Recreational: If recreational landings for wreckfish, as estimated by the Science and Research Director, exceed the recreational ACL then during the following fishing year, recreational landings will be monitored for a persistence in increased landings and, if necessary, the Assistant Administrator will file a notification with the Office of the Federal Register, to reduce the length of the following recreational fishing season by the amount necessary to ensure recreational landings do not exceed the recreational ACL in the following fishing year. However, the length of the recreational season will also not be reduced during the following fishing year if the Regional Administrator determines, using the best scientific information available, that a reduction in the length of the following fishing season is unnecessary.

Golden crab

Commercial: If commercial landings for golden crab, as estimated by the Science and Research Director, reach or are projected to reach the ACL, the Assistant Administrator will file a notification with the Office of the Federal Register to close the golden crab fishery for the remainder of the fishing year. On and after the effective date of such a notification, all harvest, possession, sale or purchase of golden crab in or from the South Atlantic EEZ is prohibited. If commercial landings exceed the ACL, and golden crab are overfished, based on the most recent Status of U.S. Fisheries Report to Congress, the Assistant Administrator will file a notification

with the Office of the Federal Register, at or near the beginning of the following fishing year to reduce the ACL for that following year by the amount of the overage in the prior fishing year.

Recreational: There is no recreational component to the golden crab fishery; therefore, no modification to a recreational AM is necessary.

This action would update AMs for most snapper grouper species in the fishery management unit and golden crab (commercial). **Table 2.1** lists the species affected by this action. However, the deepwater complex, vermilion snapper, black sea bass, and blueline tilefish are not addressed under this action because AMs for those species have been or are being modified in other amendments. Ecosystem component species are not included in the action because AMs and ACLs are not required. In addition, warsaw grouper, speckled hind, Nassau grouper, and goliath grouper are not included because harvest is prohibited. **Table 2.2** lists the species not affected by this action.

Table 2.2. Species not included under Action 1 and reason they are not included in the action.

Species	Amendment
Vermilion snapper	AMs addressed in Regulatory Amendment 14 to the Snapper Grouper FMP
Black sea bass	AMs addressed in Regulatory Amendment 14 to the Snapper Grouper FMP
Blueline tilefish	AMs addressed in Amendment 32 to the Snapper Grouper FMP
Deepwater complex	AMs addressed in Amendment 32 to the Snapper Grouper FMP
Cottonwick	Ecosystem component species
Longspine porgy	Ecosystem component species
Bank sea bass	Ecosystem component species
Rock sea bass	Ecosystem component species
Ocean triggerfish	Ecosystem component species
Schoolmaster *	Ecosystem component species
Warsaw grouper	Harvest prohibited
Speckled hind	Harvest prohibited
Nassau grouper	Harvest prohibited
Goliath grouper	Harvest prohibited

*Schoolmaster is being considered for removal from the FMP in Amendment 35 to the Snapper Grouper FMP.

Summary Comparison of Alternatives

Compared to **Alternative 1 (No Action)**, **Preferred Alternatives 2**, **3**, and **4** would 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 likely a combination of **Preferred Alternatives 3** and **4**. For the commercial sector, the most biologically beneficial option compared to **Alternative 1 (No Action)** is likely to be **Sub-alternative 2b**. None of the alternatives considered under this action would significantly alter the way in which the snapper grouper or golden crab fisheries are prosecuted in the South

Atlantic EEZ. 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.

For the commercial sector, the alternatives may be ranked from lowest to highest probability of paybacks and associated short-term adverse economic effects as follows: **Alternative 1 (No Action)**, **Preferred Sub-alternatives 2c** and **3c**, **Sub-alternatives 2b** and **3b**, followed by **Sub-alternatives 2a** and **3a**. For golden tilefish, the in-season closure commercial AM would continue to be triggered separately for the hook-and-line and the longline sectors. When either the longline and/or hook-and-line quotas are harvested, that sector would be closed to harvest of golden tilefish. However, the payback provision would only be triggered when the commercial golden tilefish ACL (the hook-and-line quota plus the longline quota) and the recreational golden tilefish ACL combined is exceeded and the species is overfished. The likelihood a species would be affected by this action is based primarily on the probability that its total ACL would be reached, and whether or not the species is overfished. For the recreational sector, **Sub-alternative 4a** would be less likely to cause short-term direct economic effects compared to **Preferred Sub-alternative 4b** because fewer species potentially would be affected. However, **Preferred Sub-alternative 4b** would be more likely to prevent long term, direct economic effects compared to **Sub-alternative 4a.**

For the commercial sector of the snapper grouper fishery, maintaining the current AMs under **Alternative 1 (No Action)** would not be expected to result in additional negative effects on the commercial fleets of these fisheries, but could also negate benefits to the commercial sectors by not allowing flexibility in the payback provisions, such as those in **Sub-alternatives a-c** under **Preferred Alternative 2. 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 snapper grouper and golden crab 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.

For the recreational sector of the snapper grouper fishery, maintaining the current AMs under **Alternative 1 (No Action)** would not be expected to result in additional negative effects on recreational fishermen and for-hire businesses, other than inconsistency in AMs among all the species. For many of these species, establishment of a payback provision without a post-season AM under **Preferred Alternative 3** would create an increased likelihood that an overage of the recreational ACL could reduce fishing opportunities in the following year. However, **Sub-alternatives 3a-3c** (**Preferred**) provide some flexibility in how a post-season payback would be triggered, with **Preferred Sub-alternative 3c** being the least likely to trigger a payback and affecting recreational fishing opportunities in the subsequent year. The in-season closure AM for the recreational sector in **Preferred Alternative 4** could have negative effects on recreational fishing opportunities and for-hire businesses for the stocks that do not have a recreational in-season AM in place. However, **Sub-alternative 4a** would reduce the likelihood of a recreational in-season closure.

The **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 for the commercial sector would be triggered. The payback provision under **Preferred Sub-alternative 2c** would be triggered less frequently than other alternatives under **Preferred Alternative 2**, resulting in the lowest direct effects on the administrative environment. The administrative impacts associated with **Preferred Alternative 3** are largely the same as those under **Preferred Alternative 2**, with the addition of continued monitoring for persistence of increased landings when a species' recreational ACL has been exceeded. **Preferred Sub-alternative 3c** is the least likely to be triggered among the **Preferred Alternative 3** sub-alternatives. **Preferred Alternative 4** is the most simplistic recreational AM considered under this action, but may result in the implementation of an AM more frequently than **Alternative 1 (No Action).** Overall, the administrative impacts of all the alternatives considered under this action, compared to **Alternative 1 (No Action)**, are expected to be minimal.

Action 2. Revise the sector allocations for dolphin.

Alternative 1 (**No Action):** Retain the recreational sector allocation for dolphin is 92.46%. The commercial sector allocation for dolphin is 7.54%. The sector allocations for dolphin were set in the Comprehensive ACL Amendment (SAFMC 2011c) using the sector allocation rule where 50% of sector allocations are based on a longer term landings series (1999-2008) and 50% of the sector allocations are based on a shorter time series (2006-2008). The current allocation amounts are 1,157,001 lb ww for the commercial sector and 14,187,845 lb ww for the recreational sector.

Alternative 2: Establish sector allocations based on soft cap allocations in place before the Comprehensive ACL Amendment. The recreational sector allocation for dolphin is 87%, and commercial sector allocation is 13%.

Alternative 3: Set the commercial allocation at its highest percentage of the total catch for 2008-2012. The recreational sector allocation for dolphin is 86%, and commercial sector allocation is 14%.

Preferred Alternative 4: Set the commercial allocation at the average of the percentages of the total catch for 2008-2012. The recreational sector allocation for dolphin is 90%, and commercial sector allocation is 10%.

Alternative 5: Modify the time series by which allocations were specified for the two sectors. Allocation by sector = (0.5 * catch history) + (0.5 * current trend)

> **Sub-alternative 5a:** Catch history = average landings 1986-2011, current trend = average landings 2009-2011. 2011 is the last year before ACLs went into place. The recreational sector allocation for dolphin is 90%, and commercial sector allocation is 10%.
>
> **Sub-alternative 5b:** Catch history = average landings 1986-2012, current trend = average landings 2010-2012. The recreational sector allocation for dolphin is 90%, and commercial sector allocation is 10%.
>
> **Sub-alternative 5c:** Catch history = average landings 1986-2012, current trend = average landings 2006-2012. The recreational sector allocation for dolphin is 91%, and commercial sector allocation is 9%.

Discussion

The current allocation amounts are 1,157,001 lbs ww for the commercial sector and 14,187,845 lbs ww for the recreational sector (recently updated through Amendment 5 to the Dolphin Wahoo FMP, effective July 9, 2014). The South Atlantic Fishery Management Council (South Atlantic Council) has expressed concern that the commercial ACL could be exceeded in the future because of variability in commercial annual landings. From 1986-2013, the variability in commercial landings exceeded those of the recreational sector; however, since 2009, commercial landings have been more variable than those in the recreational sector (**Table 2.2; Figure 2.1**). Furthermore, the recreational sector has not come close to meeting its ACL in

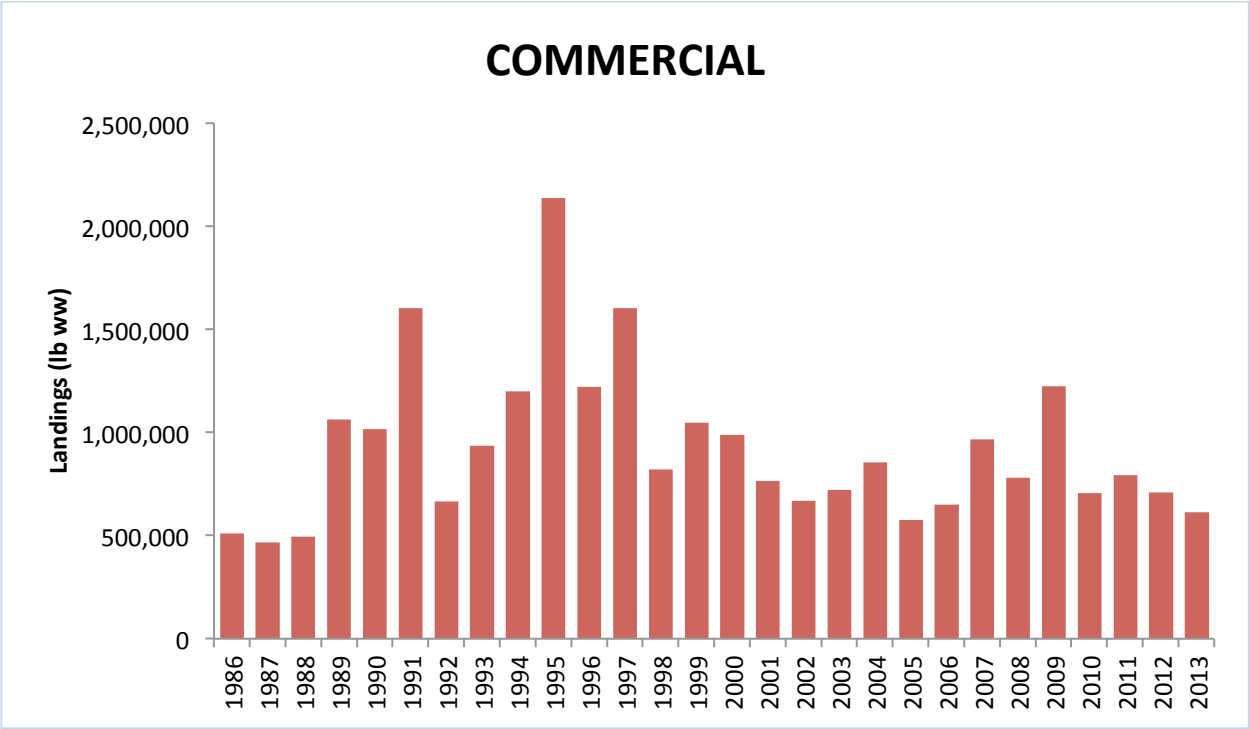
recent years; whereas, the 1,157,001 lbs ww commercial ACL would have been met in 2009 (**Table 2.2**).

The South Atlantic Council's **Preferred Alternative 4** would establish a 10% commercial allocation, which is similar to the soft cap commercial allocation of 13% that was in place prior to publication of the final rule for the Comprehensive ACL Amendment (SAFMC 2011c). Under **Preferred Alternative 4**, the proposed commercial ACL of 13,810,361 lbs ww and recreational ACL of 13,810,361 lbs ww would not have been exceeded during 2008 through 2013. From 2008 through 2013, the recreational sector landed approximately 50% of their ACL each year, showing a much smaller percent change in landings from year to year. Recreational landings over the time series ranged from 4.32 million pounds (mp) - 15.98 mp. Commercial landings from 2008 through 2013 ranged from 0.46 MP - 2.14 mp. Increasing the commercial allocation for dolphin from 7.54% to 10% (**Preferred Alternative 4**) could help minimize the effects of the landings volatility and the potential for exceeding the commercial ACL.

Table 2.3. Total landings (lbs ww) of dolphin and the percent the landings represent compared to the sector's average landings from 1986-2013. Note that South Atlantic Council jurisdiction for this stock includes entire US East Coast.

Year	Commercial	% of comm avg	Recreational	% of rec avg
1986	509,343	55%	5,519,865	58%
1987	468,464	51%	4,557,988	48%
1988	495,139	54%	5,499,471	58%
1989	1,063,399	115%	10,906,691	115%
1990	1,016,215	110%	8,719,212	92%
1991	1,602,698	174%	12,207,491	129%
1992	667,183	72%	6,150,769	65%
1993	934,393	101%	9,126,773	96%
1994	1,200,065	130%	12,009,553	127%
1995	2,136,534	232%	14,548,450	153%
1996	1,220,767	132%	9,186,371	97%
1997	1,602,227	174%	14,999,859	158%
1998	822,439	89%	10,403,732	110%
1999	1,046,583	114%	12,452,179	131%
2000	987,623	107%	15,981,436	168%
2001	764,821	83%	14,580,182	154%
2002	670,415	73%	15,894,165	168%
2003	722,921	78%	9,911,033	104%
2004	856,517	93%	7,235,087	76%
2005	576,671	63%	8,629,312	91%
2006	650,004	71%	8,898,207	94%
2007	967,151	105%	9,598,786	101%
2008	780,818	85%	7,833,547	83%
2009	1,222,944	133%	7,570,195	80%
2010	706,281	77%	6,243,399	66%
2011	792,209	86%	6,518,302	69%
2012	708,852	77%	6,097,291	64%
2013	614,349	67%	4,320,889	46%
	Std error 1986-2013	78%	Std error 1986-2013	70%
	Std error 2009-2013	12%	Std error 2009-2013	3%

Sources: SEFSC ACL Data (Commercial: 07102014; Recreational MRIP-based: 06042014)



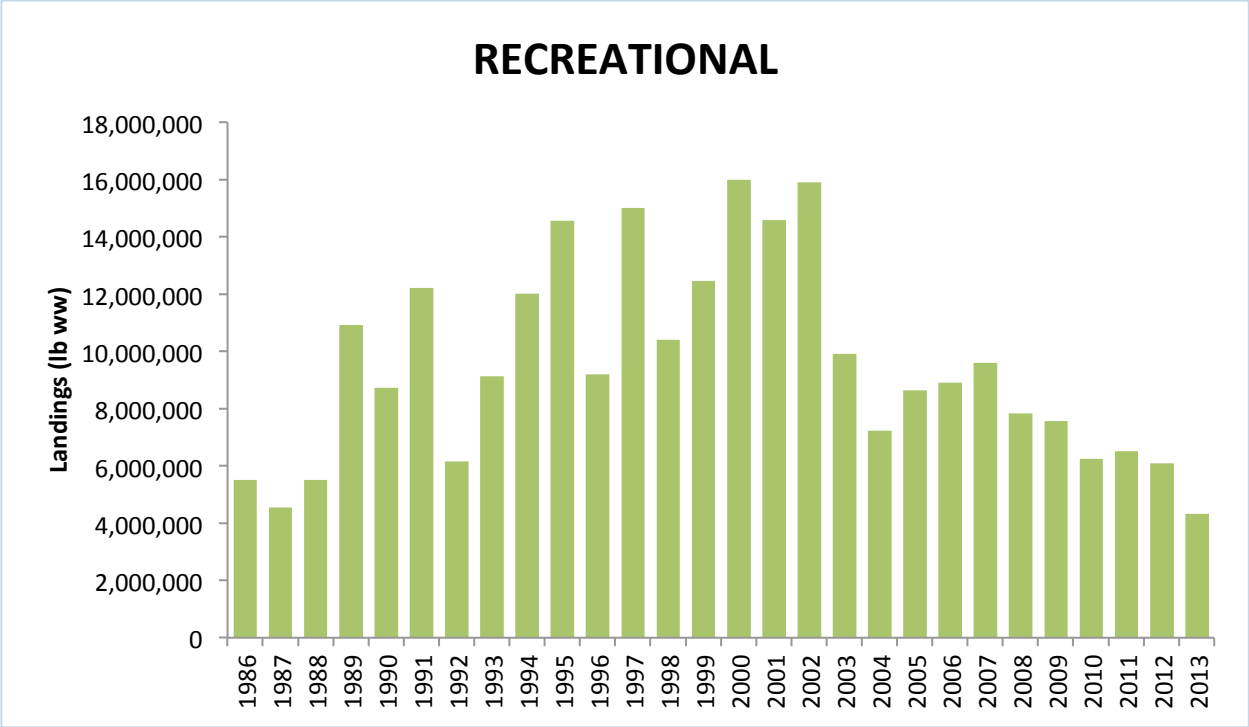


Figure 2.1. Total landings (pounds, whole weight) of dolphin, by sector, 1986-2013. Note that South Atlantic Council jurisdiction for this stock includes entire US East Coast.
Sources: SEFSC ACL Data (Commercial: 07102014; Recreational MRIP-based: 06042014)

Summary Comparison of Alternatives

Neither sector of the dolphin segment of the dolphin wahoo fishery has met or exceeded their catch limits since the dolphin wahoo fishery came under federal management; therefore, **Alternative 1 (No Action)** is not expected to result in any significant direct or indirect biological impacts. **Alternative 2** would reinstate the allocation methodology used prior to implementation of the Comprehensive ACL Amendment (SAFMC 2011c). At that time, the 13% allocation to the commercial sector was treated as a "soft cap" harvest limit. **Alternative 2** would use the same allocation percentages; however, the soft cap for the commercial sector has been replaced with a commercial ACL (a "hard cap" harvest limit), which would remain in place as required by Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act). Although the alternative references "soft cap allocations", the current Magnuson-Stevens Act requirements to establish ACLs and AMs for each federally managed fishery prevents the allocation method in **Alternative 2** from incorporating the amount of flexibility the term "soft cap" implies. Once the commercial ACL is met or projected to be met, the sector is closed to harvest to prevent the ACL from being exceeded. Despite the use of the term, "soft cap" in the alternative, an ACL is a hard cap so that the commercial ACL is used to control harvest and trigger an AM when needed. The biological impacts of **Alternative 2** compared to **Alternative 1 (No Action),** and the other alternatives under consideration, are expected to be neutral; both the commercial and recreational sectors would be limited to their respective ACLs and the AMs in place for dolphin.

Table 2.4 sector ACLs that would result under each of the alternatives considered.

Alternative	Commercial Sector ACL (lbs ww)	Increase in Commercial ACL/Decrease in Recreational ACL (lbs ww)	Recreational Sector ACL (lbs ww)
Alternative 1 (No Action)	1,157,001	0	14,187,845
Alternative 2	1,994,830	837,829	13,344,846
Alternative 3	2,148,278	991,277	13,196,567
Pref. Alternative 4	1,534,485	377,484	13,810,361
Sub-Alternative 5a	1,534,485	377,484	13,810,361
Sub-Alternative 5b	1,534,485	377,484	13,810,361
Sub-Alternative 5c	1,381,036	224,035	13,963,809

Alternative 3, like **Alternatives 1 (No Action)** and **2**, is not expected to result in adverse biological impacts since it would not alter the overall cap on harvest established by the total ACL of 15,344,846 lbs ww. The commercial sector allocation would almost double under **Alternative 3** and the recreational allocation would be reduced by 6.46%; however, the biological impacts of this alternative compared to the no-action alternative would be negligible because harvest in both sectors is controlled by the ACL. Like **Alternatives 2** and **3**, **Preferred Alternative 4** would result in a slightly reduced recreational allocation and an increased commercial allocation compared to **Alternative 1 (No Action)**. Again, the biological impacts of this alternative are expected to be neutral due to the presence of a harvest control mechanism that was created to prevent the sector ACLs from being exceeded.

Alternative 5 and its sub-alternatives would use a combination of historical landings data and current landings data to determine commercial and recreational sector allocations. All sub-alternatives under **Alternative 5** would use catch history data starting in 1986; however, the end date for the catch history time series is different for each sub-alternative. The biological effects of **Sub-alternative 5a** are expected to be identical to **Preferred Alternative 4**, which also results in a 90%-10% allocation for the recreational and commercial sectors, respectively. **Sub-alternative 5b** would use the average landings from 1986-2012*50% plus average landings from 2010-2012*50% to determine the sector allocations. **Sub-alternative 5b**, would also result in a 90% allocation for the recreational sector, and 10% allocation for the commercial sector. Therefore, the biological impacts are anticipated to be neutral as described under **Preferred Alternative 4** and **Sub-alternative 5a**. For **sub-alternative 5c,** some fishery participants may favor this method of allocation over others considered, because it may be perceived as the most equitable option. However, in terms of biological impacts all sub-alternatives under **Alternative 5** would be expected to result in no greater adverse or positive impacts on the biological environment compared to the status-quo, or any of the other alternatives under consideration.

The lower the ACL for the commercial sector, the sooner there would be a potential in-season closure, creating a potential for a larger direct negative economic effect do to lost opportunity. Regardless of the season length that would result under any of the alternatives considered, the economic impacts are not likely to be significant. The order of greatest direct negative economic effects to the least potential for direct negative economic effects for the commercial sector is **Alternative 1 (No Action)**, **Sub-alternative 5c**, **Preferred Alternative 4**, **Sub-alternative 5a**, **Sub-alternative 5b**, **Alternative 2** and **Alternative 3**. However, reducing potential direct negative economic effects for the commercial sector comes at the expense of increasing the potential direct negative economic effects for the recreational sector. The order of greatest potential direct negative economic effects to the least for the recreational sector is **Alternative 3**, **Alternative 2**, **Preferred Alternative 4**, **Sub-alternative 5a**, **Sub-alternative 5b**, **Sub-alternative 5c**, and **Alternative 1 (No Action).** None of the potential economic effects on the recreational sector are expected to be significant.

In general, the higher the allocation, the more short-term and long-term benefits to the sector by allowing continued level of harvest and possibly room for growth in the future. For the recreational sector, **Alternative 1 (No Action)** (92.46%) would be the most beneficial, followed by **Sub-alternative 5c** (91%); **Preferred Alternative 4** and **Sub-alternatives 5a-5b** (90%); **Alternative 2** (87%); and then **Alternative 3** (86%). The reverse is true for benefits to the commercial sector, in that **Alternative 3** (14%) would be the most beneficial , followed by **Alternative 2** (13%); **Preferred Alternative 4** and **Sub-alternatives 5a-5b** (10%); **Sub-alternative 5c** (9%); and then **Alternative 1 (No Action)** (7.54%). The method of calculating the proportion to each sector under **Alternatives 2-5** could result in some concerns of fairness from each sector, but in general, any shift in allocation considered under this action is not likely to result in significant social impacts.

Chapter 3. Affected Environment

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

- **Habitat environment** (Section 3.1)
- **Biological and Ecological environment** (Section 3.2)
- **Economic and Social environment** (Sections 3.3)
- **Administrative environment** (Section 3.4)

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://www.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 of 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. There are several notable shipwrecks along the southeast coast in state and federal waters including Lofthus (eastern Florida), SS Copenhagen (southeast Florida), Half Moon (southeast Florida), Hebe (Myrtle Beach, South Carolina), Georgiana (Charleston, South Carolina), U.S.S. Monitor (Cape Hatteras, North Carolina), Huron (Nags Head, North Carolina), and Metropolis (Corolla, North Carolina).

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

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

Additional information on the habitat utilized by snapper grouper, dolphin, and golden crab is included in Volume II of the Fishery Ecosystem Plan (SAFMC 2009b). The FEP can be found at: http://www.safmc.net/ecosystem/Home/EcosystemHome/tabid/435/Default.aspx.

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.

EFH for dolphin is the Gulf Stream, Charleston Gyre, Florida Current, and pelagic *Sargassum*. EFH for golden crab includes the U.S. Continental Shelf from Chesapeake Bay south through the Florida Straits (and into the Gulf of Mexico). In addition, the Gulf Stream is an essential fish habitat

because it provides a mechanism to disperse golden crab larvae. The detailed description of seven essential fish habitat types (a flat foraminferan ooze habitat; distinct mounds, primarily of dead coral; ripple habitat; dunes; black pebble habitat; low outcrop; and soft-bioturbated habitat) for golden crab is provided above and in Wenner et al. (1987).

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; South Atlantic Council-designated Artificial Reef Special Management Zones (SMZs); and deep-water MPAs. Areas that meet the criteria for EFH-HAPCs include habitats required during each life stage (including egg, larval, postlarval, juvenile, and adult stages).

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

EFH-HAPCs for dolphin in the Atlantic include The Point, The Ten-Fathom Ledge, and Big Rock (North Carolina); The Charleston Bump and The Georgetown Hole (South Carolina); The Point off Jupiter Inlet (Florida); The Hump off Islamorada, Florida; The Marathon Hump off Marathon, Florida; The ―Wall‖ off of the Florida Keys; and Pelagic Sargassum. There is insufficient knowledge of the biology of golden crabs to identify spawning and nursery areas and to identify HAPCs at this time. As information becomes available, the Council will evaluate such data and identify HAPCs as appropriate. Refer to **Appendix G** for detailed information on EFH and EFH-HAPCs for all Council managed species.

The potential impacts the actions in this amendment may have on EFH, and EFH-HAPCs are discussed in Chapter 4 of this document. Overall, modifying the AMs for select snapper grouper species and golden crab, and modifying the sector allocations for dolphin are not expected to significantly modify the way in which these fisheries are prosecuted. Nor would they change the gear types used or areas fished. Therefore, adverse effects on EFH and EFH-HAPCs are not anticipated.

3.2 Biological and Ecological Environment

3.2.1 Fish Populations Affected by this Amendment

Snapper Grouper Species

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 (e.g., 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 (e.g., 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 dictates the nature of the fishery (multi-species) and further forms the type of management regulations proposed in this document.

Many snapper grouper species would be affected by the proposed action. For assessed snapper grouper species, the life history, biological characteristics, and stock status may be found in their respective Southeast Data, Assessment, and Review (SEDAR) reports listed below, which are available on the SEDAR Web site http://www.sefsc.noaa.gov/sedar/ (see **Section 3.2.3** of this document for more information on the SEDAR process).

- Vermilion Snapper – SEDAR 17 Update Assessment (2012)*
- Yellowtail Snapper – SEDAR 3 (2012)
- Gag – SEDAR 10 Assessment Update (2014)
- Black Grouper – SEDAR 19 (2010)
- Red Grouper – SEDAR 19 (2010)
- Greater Amberjack – SEDAR 15 (2008)
- Red Porgy –SEDAR Assessment Update (2012)
- Blueline Tilefish – SEDAR 32 (2013)
- Snowy Grouper – SEDAR 36 (2013)
- Golden Tilefish – SEDAR 25 (2011)
- Goliath Grouper – SEDAR 23 (2011)*
- Black Sea Bass – SEDAR 25 (2011)*
- Blueline Tilefish – SEDAR 32 (2013)*
- Hogfish – SEDAR 37 (2014)
- Red Snapper – SEDAR 24 (2010)*

*Not addressed by this amendment

An expanded discussion of life history traits, population characteristics, and stock status of snapper grouper species affected by this amendment can be found in **Sections 3.2.1** and **3.3** of the Comprehensive Annual Catch Limit (ACL) Amendment (SAFMC 2011c), which are hereby incorporated by reference and may be found at https://www.dropbox.com/s/mp3xwedsrarfpjn/Comp%20ACL%20Am%20101411%20FINAL.pdf.

Golden Crab

The golden crab, *Chaceon fenneri* is a large gold or buff colored species whose diagnostic characters include a hexagonal carapace; five anterolateral teeth on each side of carapace; well-developed, large frontal teeth; shallow, rounded orbits; chelipeds unequal; and the dactyli of the walking legs laterally compressed (Manning and Holthuis 1984, 1986). Golden crabs inhabit the continental slope of Bermuda (Luckhurst 1986, Manning and Holthuis 1986) and the southeastern U.S. from off Chesapeake Bay (Schroeder 1959), south through the Straits of Florida and into the eastern Gulf of Mexico (Manning and Holthuis 1984, 1986; Otwell *et al.* 1984; Wenner *et al.* 1987; Erdman 1990).

Reported depth distributions of *C. fenneri* range from 205 meters (672 feet) off the Dry Tortugas (Manning and Holthuis 1984) to 1,007 meters (3,304 feet) off Bermuda (Manning and Holthuis 1986). Size of males examined range from 34 to 139 millimeters (1.3-5.5 inches) carapace length (CL) and females range from 39 to 118 millimeters (1.5-4.6 inches) CL. Ovigerous females have been reported during September, October, and November, and range in size from 91 to 118 millimeters (3.6-4.6 inches) CL (Manning and Holthuis 1984, 1986).

Golden crab abundance studies are limited. Data from the South Atlantic Bight (Wenner *et al.* 1987) estimated abundance from visual assessment was 1.9 crabs per hectare while traps caught between 2 and 10 kilograms (4-22 pounds) per trap. Wenner and Barans (1990) estimated the golden crab population in small areas of 26-29 square kilometers (10-11 square miles) between 300-500 meters (984-1,640 feet) off Charleston to be 5,000-6,000 adult crabs. In the eastern Gulf of Mexico adult standing stock was estimated to be 7.8 million golden crabs and the biomass was estimated to be 6.16 million kilograms (13.6 million pounds) (Lindberg *et al.* 1989). Experimental trapping off Georgia yielded an average catch of 7 kilograms (15 pounds) per trap (Kendall 1990). According to the fourth quarter update of the Status of U.S. Fisheries 2013, the overfished and overfishing status of golden crab are unknown.

Dolphin

Dolphin and wahoo are highly migratory pelagic species occurring in tropical and subtropical waters worldwide. In the western Atlantic, dolphin and wahoo are distributed from Nova Scotia to Brazil, including Bermuda and the greater Caribbean region, and the Gulf of Mexico. They are found near the surface around natural and artificial floating objects, including *Sargassum* (in the Atlantic).

Dolphin eat a wide variety of species, including small pelagic fish, juvenile tuna, billfish, jacks, and pompano, and pelagic larvae of near shore, bottom-living species. They also eat invertebrates such as cephalopods, mysids, and jellyfish. Large tuna, rough-toothed dolphin, marlin, sailfish, swordfish, and sharks feed on dolphin, particularly juveniles. Dolphin are likely to be caught when longline fishermen target other species such as billfish and tuna. According to the fourth quarter update of the Status of U.S. Fisheries 2013, the overfished and overfishing status of dolphin are unknown. Additional background information regarding the fish populations for dolphin and wahoo can be found in the Fishery Management Plan for the Dolphin and Wahoo Fishery of the Atlantic (Dolphin Wahoo FMP; SAFMC 2003) at: http://www.safmc.net/Library/Dolphin/Wahoo/tabid/410/Default.aspx.

3.2.2 Other Species Affected

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

3.2.3 The Stock Assessment Process

SEDAR is a cooperative Fishery Management Council process initiated to improve the quality and reliability of fishery stock assessments in the South Atlantic, Gulf of Mexico, and U.S. Caribbean. The Caribbean, Gulf of Mexico, and South Atlantic Fishery Management Councils manage SEDAR in coordination with the National Marine Fisheries Service (NMFS) and the Atlantic and Gulf States Marine Fisheries Commissions. SEDAR seeks improvements in the scientific quality of stock assessments, constituent and stakeholder participation in assessment development, transparency in the assessment process, and a rigorous and independent scientific review of completed stock assessments.

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

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

3.2.4 Protected Species

There are 49 species, or distinct population segments (DPSs) of species, protected by federal law 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 six species of coral [elkhorn coral (*Acropora palmata*), staghorn coral (*A. cervicornis*) ("*Acropora*" collectively); lobed star coral (*Orbicella annularis*), mountainous star coral (*O. faveolata*), and knobby star coral (*O. franksi*) ("*Orbicella*" collectively); and rough cactus coral (*Mycetophylia ferox*)] 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 South Atlantic Council's jurisdiction. NMFS has conducted specific analyses ("Section 7 consultations") to evaluate the potential adverse effects from the South Atlantic snapper grouper fishery on species and critical habitat protected under the ESA. Information on these, as well as sea turtles and smalltooth sawfish and how they are adversely affected by the snapper grouper fishery are discussed below.

Subsequent to the June 7, 2006, biological opinion, elkhorn and staghorn coral (*Acropora cervicornis* and *Acropora palmata*) were listed as threatened. In a consultation memorandum dated July 9, 2007, NMFS concluded the continued authorization of the South Atlantic snapper grouper fishery is not likely to adversely affect these *Acropora* species. On November 26, 2008, an *Acropora* critical habitat was designated. In a consultation memorandum dated December 2, 2008, NMFS concluded the continued authorization of the snapper grouper fishery is not likely to adversely affect *Acropora* critical habitat. On September 10, 2014, NMFS listed 20 new coral species under the ESA, five of those species occur in the Caribbean (including Florida) and all of these are listed as threatened. The 2 previously listed *Acropora* coral species remain protected as threatened. In a memorandum dated September 11, 2014, NMFS indicated that the previous determination remains valid and the South Atlantic snapper grouper fishery is still not likely to adversely affect *Acropora* corals.

The September 10, 2014, final listing rule provided some new information on the threats facing *Acropora*; however, none of the information suggested that previous determinations were no longer valid. For this reason, a memo dated September 11, 2014, indicates that previous determination remains valid and the South Atlantic snapper grouper fishery is still not likely to adversely affect *Acropora* corals. For the remaining 5 species of coral (*Mycetophyllia ferox, Dendrogyra cylindrus, Orbicella annularis, O. faveolata, and O. franksi*), the threats to corals from fishing identified in the status review for these species (SSR) include (1) trophic effects, (2) human- induced physical damage, and (3) destructive fishing practices. The September 11, 2014, memo indicates South Atlantic snapper grouper fishery will not cause trophic effects because it does not capture herbivorous fish.

3.2.4.1 ESA-Listed Sea Turtles

Green, hawksbill, Kemp's ridley, leatherback, and loggerhead sea turtles are all highly migratory and travel widely throughout the South Atlantic. The following sections are a brief overview of the general life history characteristics of the sea turtles found in the South Atlantic

region. Several volumes exist that cover the biology and ecology of these species more thoroughly (i.e., Lutz and Musick (eds.) 1997, Lutz et al. (eds.) 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, 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 routines dives of 4 to 14.5 minutes (Standora et al. 1984, Eckert et al. 1986, Eckert et al. 1989, Keinath and Musick 1993). Leatherbacks may spend 74% to 91% of their time submerged (Standora et al. 1984).

Loggerhead hatchlings forage in the open ocean and are often associated with *Sargassum* rafts (Hughes 1974, Carr 1987, Walker 1994, Bolten and Balazs 1995). The pelagic stage of these sea turtles 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 1986). Benthic foraging loggerheads eat a variety of invertebrates with crabs and mollusks being an important prey source (Burke et al. 1993). Estimates of the maximum diving depths of loggerheads range from 211 m to 233 m (692-764ft.) (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).

Sea turtles are vulnerable to capture by bottom longline and vertical hook-and-line gear. The magnitude of the interactions between sea turtles and the South Atlantic snapper grouper fishery was evaluated in NMFS (2006) using data from the Supplementary Discard Data Program (SDDP). Three loggerheads and three unidentified sea turtles were caught on vertical lines; one leatherback and one loggerhead were caught on bottom longlines, all were released alive. The effort reported in the program represented between approximately 5% and 14% of all South Atlantic snapper grouper fishing effort. These data were extrapolated in NMFS (2006) to better estimate the number of interactions between the entire snapper-grouper fishery and ESA-listed sea turtles. The extrapolated estimate was used to project future interactions (**Table 3.2.4.1**).

Table 3.2.4.1. Three-year South Atlantic anticipated takes sea turtles in the snapper grouper fishery.

Species	Amount of Take	Total
Green	Total Take	39
	Lethal Take	14
Hawksbill	Total Take	4
	Lethal Take	3
Kemp's Ridley	Total Take	19
	Lethal Take	8
Leatherback	Total Take	25
	Lethal Take	15
Loggerhead	Total Take	202
	Lethal Take	67

Source: NMFS 2006. NMFS (National Marine Fisheries Service). 2006. Endangered Species Act Section 7 consultation on the continued authorization of snapper grouper fishing under the Snapper Grouper FMP and Proposed Amendment 13C. Biological Opinion. June 7.

The SDDP does not provide data on recreational fishing interactions with ESA-listed sea turtle species. However, anecdotal information indicates that recreational fishermen occasionally take sea turtles with hook-and-line gear. The biological opinion also used the extrapolated data from the SDDP to estimate the magnitude of recreational fishing on sea turtles (**Table 3.2.4.1**).

Regulations implemented through Amendment 15B to the Snapper Grouper FMP (SAFMC 2008b) required all commercial or charter/headboat vessels with a South Atlantic snapper grouper permit, carrying hook-and-line gear on board, to possess required literature and release gear to aid in the safe release of incidentally caught sea turtles and smalltooth sawfish. Comprehensive Ecosystem-Based Amendment 2 modified these requirements (76 FR 82183; December 30, 2011) by requiring different gear for vessels with different freeboard heights, mirroring the requirements in the Gulf of Mexico. These regulations are thought to decrease the mortality associated with accidental interactions with sea turtles and smalltooth sawfish.

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

On September 22, 2011, NMFS and the U.S. Fish and Wildlife Service determined the loggerhead sea turtle population consists of nine distinct population segments (DPSs) (76 FR 58868). Previously, loggerhead sea turtles were listed as threatened species throughout their global range. The snapper grouper fishery interacts with loggerhead sea turtles from what is now considered the Northwest Atlantic (NWA) DPS, which remains listed as threatened. Five DPSs of Atlantic sturgeon were also listed since the completion of the 2006 biological opinion. In a consultation memorandum dated February 15, 2012, NMFS concluded the continued

authorization of the South Atlantic snapper grouper fishery is not likely to adversely affect the Atlantic sturgeon. The February 15, 2012, memorandum also stated that because the 2006 biological opinion had evaluated the impacts of the fishery on the loggerhead subpopulations now wholly contained within the NWA DPS, the opinion's conclusion that the fishery is not likely to jeopardize the continued existence of loggerhead sea turtles remains valid. Additionally, a September 16, 2014 consultation memorandum concluded the golden crab fishery operates outside loggerhead critical habitats and; therefore, will have no effect on its designated critical habitat.

3.2.4.2 ESA-Listed Marine Fish

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

3.3 Economic and Social Environment

3.3.1 Economic Environment

3.3.1.1 Economic Description of the Commercial Sector

The South Atlantic Fishery Management Council manages 6 key species groups, in addition to sargassum and coral/coral reefs. The distributions of commercial landings and dockside revenues for these 6 species groups over a 5-year period from 2009 through 2013 are presented in **Figure 3.3.1.1** and **Figure 3.3.1.2**. The 2013 landings for most species groups are preliminary. The snapper grouper complex accounted for the highest percentage of commercial landings (gutted weight) at 39% followed by coastal migratory pelagics at 37% and spiny lobster at 14%. The rest of the species groups represented 10% of commercial landings, with golden crab accounting for 4% of total landings. In terms of dockside revenues (2013 dollars), the snapper grouper complex represented the highest share at 38%, followed by spiny lobster at 33%, with coastal migratory pelagics ranking third at 19%. Golden crab accounted for 3% of total dockside revenues.

Within the snapper grouper fishery, snappers ranks first by both weight and revenue (**Figure 3.3.1.3** and **Figure 3.3.1.4)**. Sea basses and groupers ranks second by both weight and revenue. Jacks ranks third by weight but falls to fourth place behind tilefishes in terms of revenues. Tilefishes ranks fourth by weight and third by revenues.

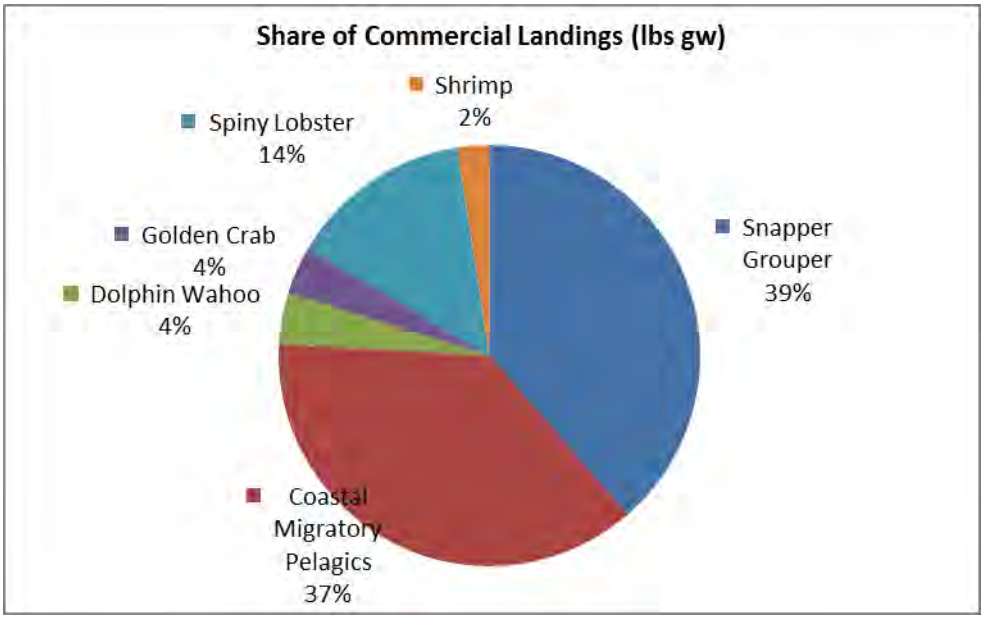


Figure 3.3.1.1. Share of commercial landings (lbs gw) by categories of species managed by the South Atlantic Fishery Management Council, 5-year period from 2009 – 2013.

Source: SEFSC Commercial ACL Dataset, excluding confidential data (April 2014).

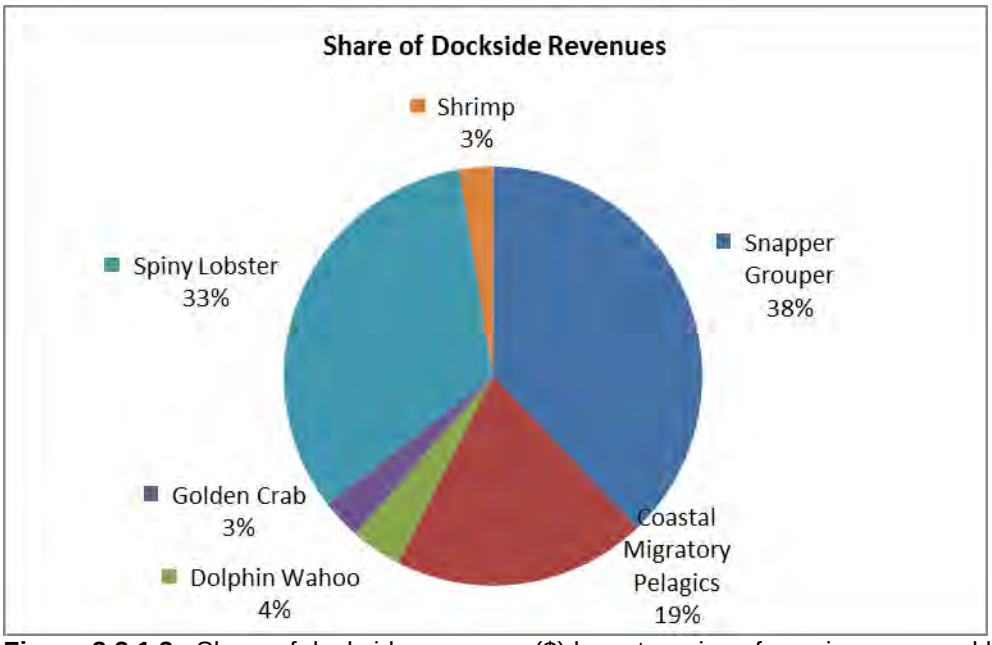


Figure 3.3.1.2. Share of dockside revenues ($) by categories of species managed by the South Atlantic Fishery Management Council, 5-year period from 2009–2013.

Source: SEFSC Commercial ACL Dataset, excluding confidential data (April 2014).

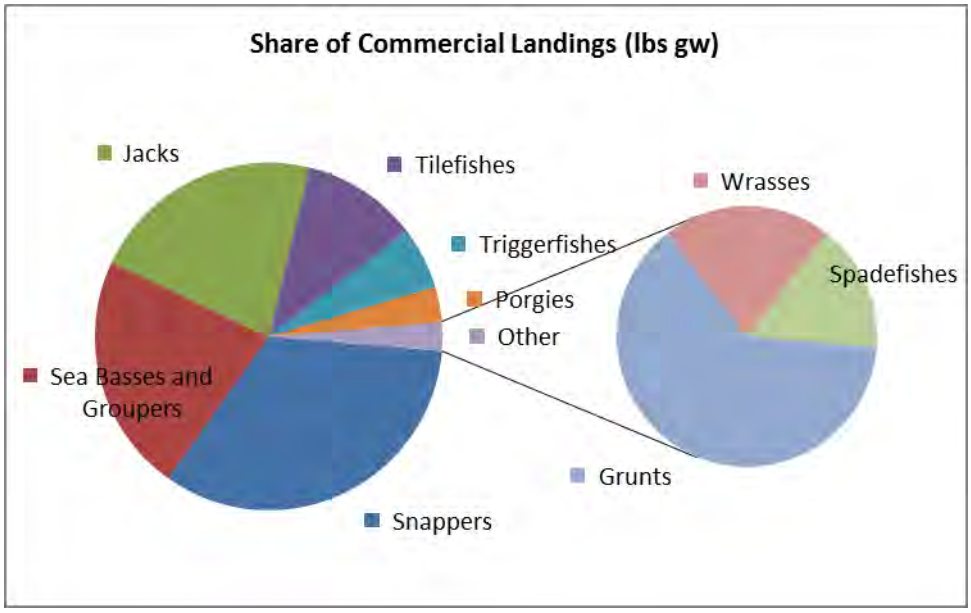


Figure 3.3.1.3. Share of commercial landings (lbs gw) by group of snapper grouper species managed by the South Atlantic Fishery Management Council, 5-year period from 2009–2013.
Source: SEFSC Commercial ACL Dataset, excluding confidential data (April 2014).

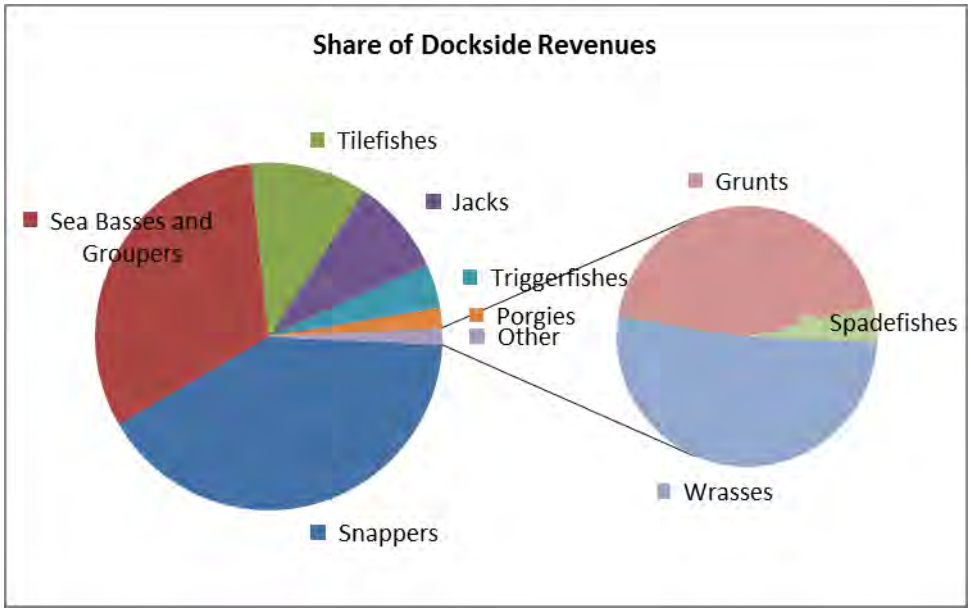


Figure 3.3.1.4. Share of dockside revenues ($) by group of snapper grouper species managed by the South Atlantic Council, 5-year period from 2009–2013.
Source: SEFSC Commercial ACL Dataset, excluding confidential data (April 2014).

Any fishing vessel that harvests and sells any of the snapper grouper species from the South Atlantic EEZ must have a valid South Atlantic commercial snapper grouper permit, which is a limited access permit. There are currently 547 valid South Atlantic Snapper Grouper Unlimited Permits and 117 valid 225 Pound (lb) Trip Limited Permits (**Table 3.3.1.1**). After a permit expires, it can be renewed and transferred up to one year after it expires. The numbers of valid and transferrable/renewable permits have declined since 2008 (**Table 3.3.1.2**). Wreckfish is currently managed under an Individual Transferable Quota (ITQ) program. A limited access

permit is required to harvest golden crab in the South Atlantic. Since 2008 (even earlier), the number of commercial golden crab permits has consistently remained at 11. Commercial permits are also required for commercial harvest of dolphin/wahoo. A commercial dolphin/wahoo permit is an open access permit. **Table 3.3.1.3** shows the number of commercial dolphin/wahoo permits.

Table 3.3.1.1. Valid and transferrable/renewable South Atlantic commercial snapper grouper permits as of January 30, 2014.

South Atlantic S-G Permits	Unlimited lb	225 lb
Valid	547	117
Transferrable/Renewable	22	8
Total	569	125

Source: NMFS SERO PIMS, 2014.

Table 3.3.1.2. Number of South Atlantic commercial snapper grouper permits.

	Unlimited	Limited 225 lb
2009	640	144
2010	624	139
2011	569	126
2012	558	123
2013	593	130
Average	597	132

Source: NMFS SERO PIMS, 2014.

Table 3.3.1.3. Number of South Atlantic commercial dolphin/wahoo permits.

	Number of Permits
2009	2,507
2010	2,563
2011	2,614
2012	2,685
2013	2,684
Average	2,611

Source: NMFS SERO PIMS, 2014.

The following focuses on commercial landings and revenues for the following key species in this amendment: black grouper, mutton snapper, yellowtail snapper, greater amberjack, red porgy, gag, golden tilefish, red grouper, snowy grouper, certain unassessed snapper grouper species not in the deepwater complex, dolphin, and golden crab. The major sources of data summarized in this description are the Southeast Fisheries Science Center (SEFSC) Commercial ACL Dataset, as summarized by SERO-LAPP, and Federal Logbook System (FLS), supplemented by average prices calculated from the Accumulated Landings System (ALS) and price indices taken from the Bureau of Labor Statistics. Landings from the FLS do not include all landings shown from the ACL dataset due to landings by fishermen who do not have the federal snapper grouper permit and are not required to complete the logbook; non-reporting in the logbook program is also an issue. The 2013 data are incomplete, including the unavailability of the South Carolina landings and revenues. Additional information on commercial landings and fishing for the snapper grouper fishery, dolphin/wahoo, and golden crab can be found in

previous amendments [Amendment 13C to the Snapper Grouper FMP (SAFMC 2006), Amendment 15A to the Snapper Grouper FMP (SAFMC 2008a), Amendment 15B to the Snapper Grouper FMP (SAFMC 2008b), Amendment 16 to the Snapper Grouper FMP (SAFMC 2009a), Regulatory Amendment 9 to the Snapper Grouper FMP (SAFMC 2011a), Amendment 5 to the Dolphin Wahoo FMP (SAFMC 2013), and Comprehensive ACL Amendment (SAFMC 2011c)] and is incorporated herein by reference.

3.3.1.1.1 Black Grouper

Black grouper is within the sea basses and groupers group of the snapper grouper fishery. From 2009 through 2013, black grouper's 5-year commercial landings ranked 22nd by weight and 18th by revenue among the 59 species within the snapper grouper complex. Annual commercial landings of black grouper in the South Atlantic ranged from about 44,000 lbs whole weight (ww) to 57,000 lbs ww from 2009 through 2013 (**Figure 3.3.1.5**). Dockside revenues from those landings ranged from about $165,000 to $221,000 (2013 dollars) (**Figure 3.3.1.5**). The average dockside price during those five years was $3.79 per lb ww (2013 dollars). Commercial landings of black grouper peaked in 2011 and troughed in 2010 by both weight and revenue.

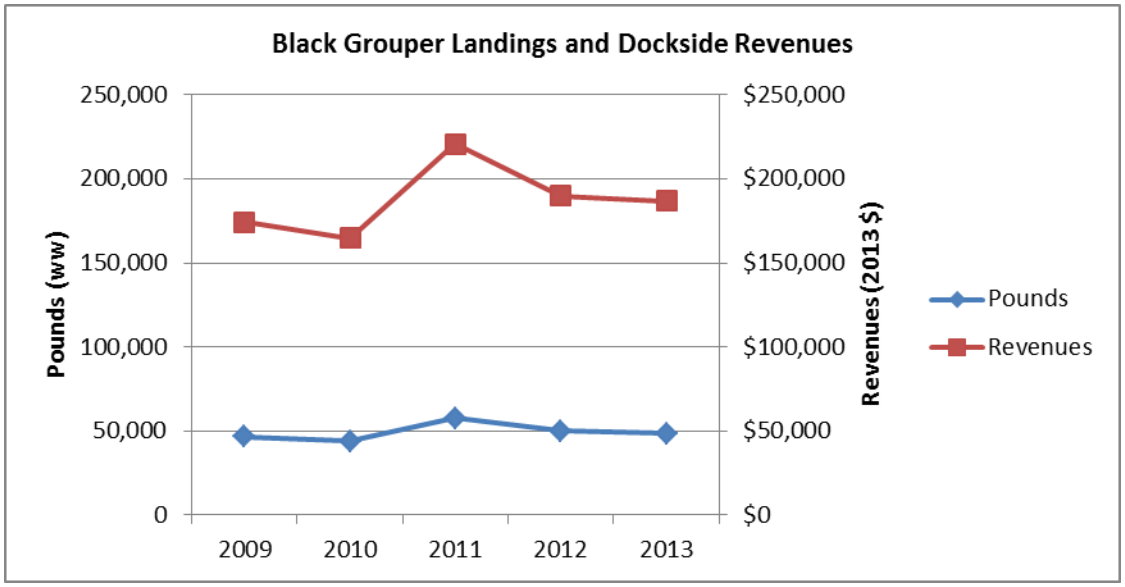


Figure 3.3.1.5. Annual commercial landings of black grouper by weight (lbs ww) and dockside revenue (2013 $).

Source: SEFSC Commercial ACL Dataset, excluding confidential data (April 2014).

Among the South Atlantic states, Florida/Georgia accounted for most of the black grouper landings both in weight (**Figure 3.3.1.6**) and dockside revenue (**Figure 3.3.1.7**). This area accounted for over 90% of black grouper landings and dockside revenues. Black grouper landings for South Carolina are not yet available for 2013.

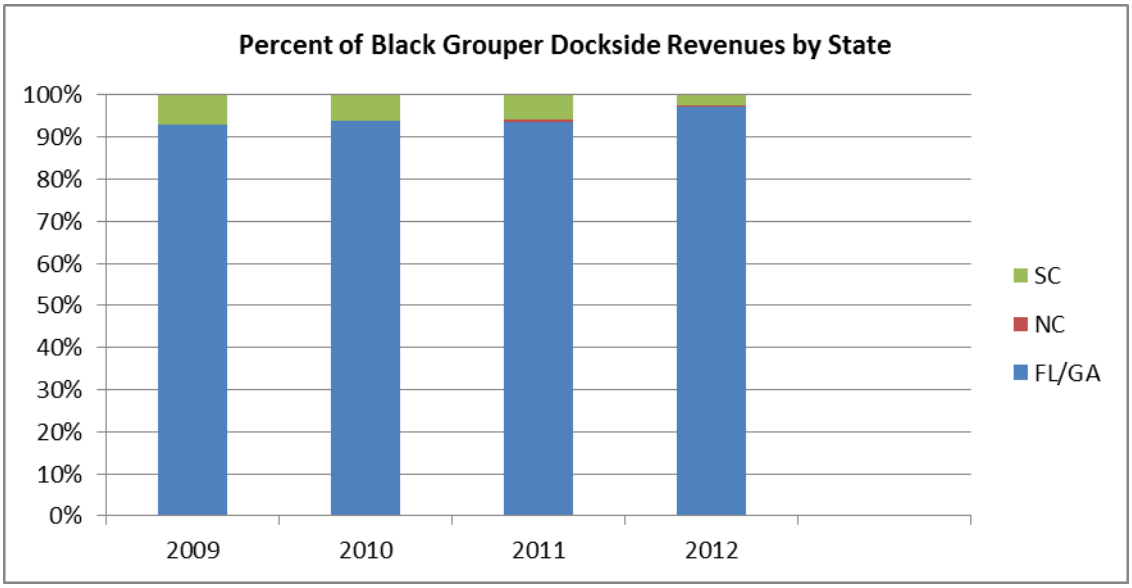


Figure 3.3.1.6. Percent of black grouper landings (lbs ww) by state, 2009–2012.
Source: SEFSC Commercial ACL Dataset, excluding confidential data (April 2014).

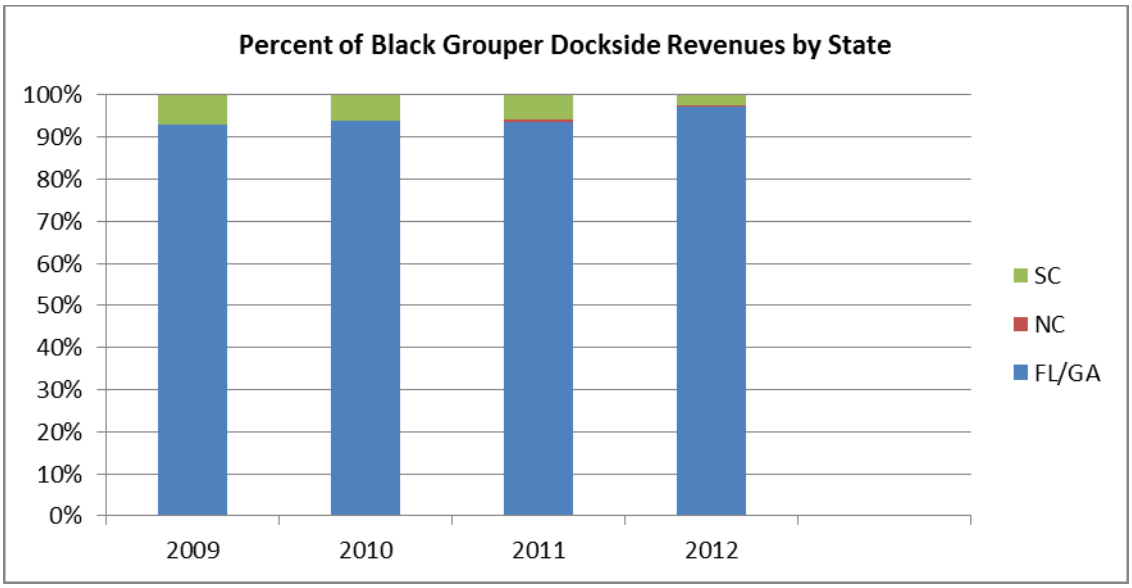


Figure 3.3.1.7. Percent of black grouper dockside revenues (2013 $) by state, 2009–2012.
Source: SEFSC Commercial ACL Dataset, excluding confidential data (April 2014).

Average monthly distribution of landings and dockside revenues for the years 2009 through 2013 are shown in **Figure 3.3.1.8**. Average landings and revenues peaked in May, with March and April recording the lowest average landings by both weight and revenues.

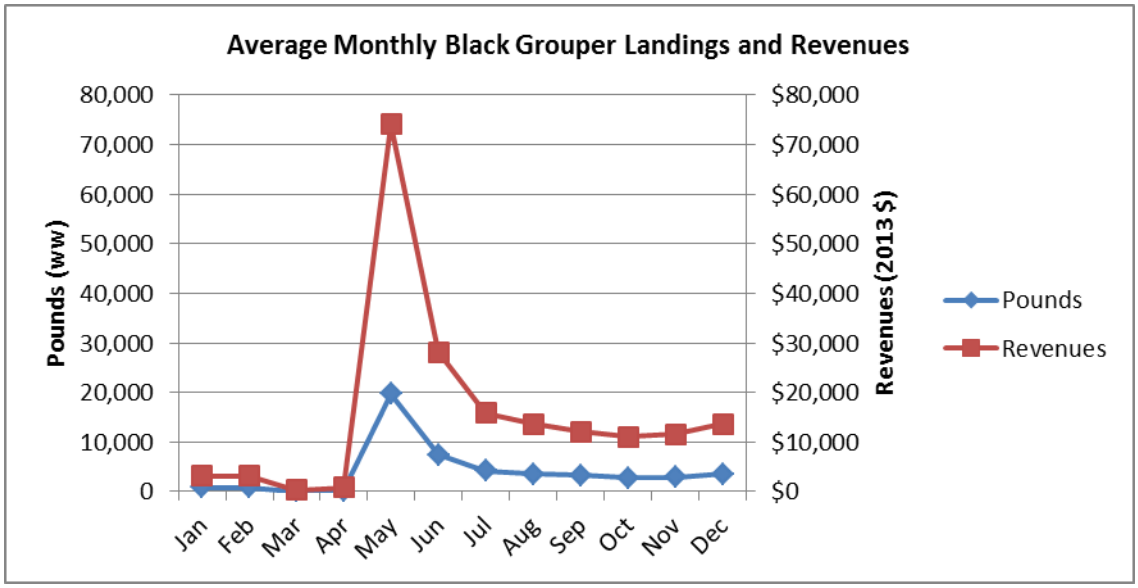


Figure 3.3.1.8. Average monthly black grouper landings (lbs ww) and revenues (2013 $), 2009–2013. Source: SEFSC Commercial ACL Dataset, excluding confidential data (April 2014).

From 2009 through 2013, an annual average of 188 vessels took 677 commercial trips that combined landed an average of 55,830 lbs gutted weight (gw) of black grouper annually with a dockside value (2013 dollars) of $259,320 (**Table 3.3.1.4**). Average annual dockside revenue from black grouper landings represented approximately 14% of total dockside revenue from trips that landed black grouper from 2009 through 2013.

Table 3.3.1.4. Vessels and trips with black grouper landings by weight (lbs gw) and dockside revenue (2013 $), 2009–2013.

Year	Number vessels that landed black grouper	Number trips that landed black grouper	Black grouper landings (lb gw)	Dockside revenue from black grouper (2013 $)	'Other species' landed with black grouper (lb gw)	Dockside revenue from 'other species' (2013 $)	Total dockside revenue (2013 $) from trips with black grouper landings
2009	238	908	70,818	$324,291	590,901	$1,520,346	$1,844,637
2010	193	693	63,334	$303,067	480,534	$1,314,232	$1,617,299
2011	202	774	66,427	$316,766	496,027	$1,482,941	$1,799,707
2012	175	625	44,717	$201,637	323,400	$969,952	$1,171,589
2013	132	384	33,856	$150,840	730,643	$2,528,174	$2,679,014
Average	188	677	55,830	$259,320	524,301	$1,563,129	$1,822,449

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

On average, the vessels that harvested black grouper also took 5,470 trips per year without black grouper landings. Combining all sources of revenues, the average annual dockside revenues of vessels that landed black grouper was about $54,292 (2013 dollars) (**Table 3.3.1.5**). Annual dockside revenue from black grouper landings represented, on average, approximately 2.7% of the total dockside revenue from all commercial landings from 2009 through 2013. Average annual dockside revenue per vessel from all landings was $54,292 as compared to $1,379 per vessel from black grouper only.

Table 3.3.1.5. Dockside revenues (2013 $) from all sources for vessels that landed black grouper, 2009–2013.

Year	Number vessels that landed black grouper	Dockside revenue from black grouper (2013 $)	Dockside revenue from 'other species' jointly landed with black grouper (2013 $)	Dockside revenue from 'other species' landed on trips without black grouper (2013 $)	Total dockside revenue (2013 $)	Average total dockside revenue per vessel (2013 $)
2009	238	$324,291	$1,520,346	$8,434,135	$10,278,772	$43,188
2010	193	$303,067	$1,314,232	$6,810,591	$8,427,890	$43,668
2011	202	$316,766	$1,482,941	$8,423,092	$10,222,799	$50,608
2012	175	$201,637	$969,952	$7,887,996	$9,059,585	$51,769
2013	132	$150,840	$2,528,174	$8,174,804	$10,853,818	$82,226
Average	188	$259,320	$1,563,129	$7,946,123	$9,768,573	$54,292

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

3.3.1.1.2 Mutton Snapper

Mutton snapper is within the snapper group of the snapper grouper fishery. From 2009 through 2013, mutton snapper's 5-year commercial landings ranked 20th by weight and 17th by revenue among the 59 species within the snapper grouper complex. Annual commercial landings of mutton snapper in the South Atlantic ranged from about 64,000 lbs ww to 78,000 lbs ww from 2009 through 2013 (**Figure 3.3.1.9**). Dockside revenues from those landings ranged from about $180,000 to $213,000 (2013 $) (**Figure 3.3.1.9**). The average dockside price during those five years was $2.77 per lb ww (2013 dollars). Commercial landings of mutton snapper peaked in 2012 and troughed in 2011 by both weight and revenue.

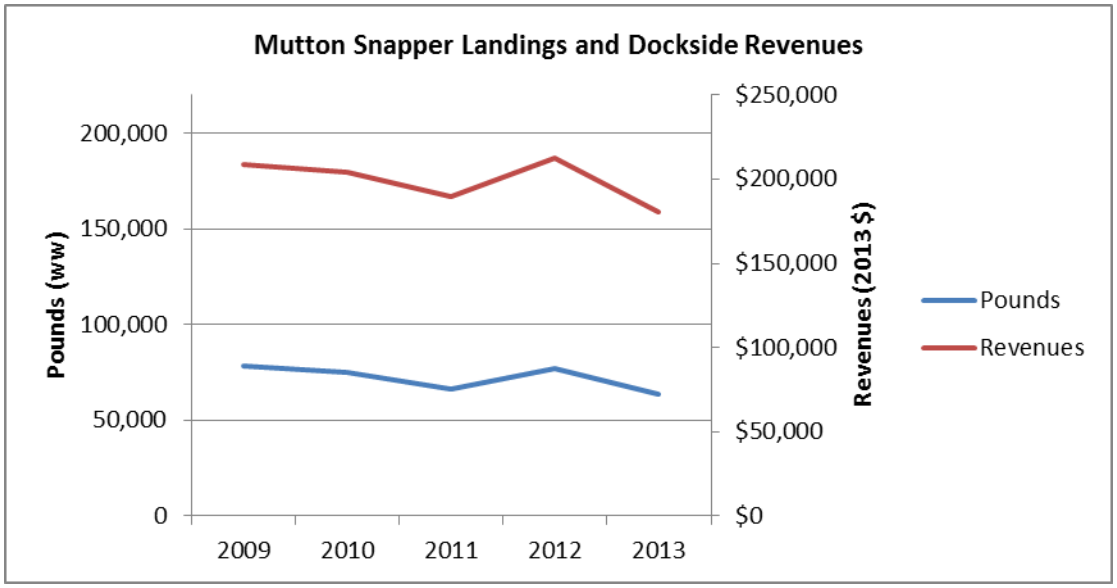


Figure 3.3.1.9. Annual commercial landings of mutton snapper by weight (lbs ww) and dockside revenue (2013 $).
Source: SEFSC Commercial ACL Dataset, excluding confidential data (April 2014).

Among the South Atlantic states, Florida/Georgia accounted for most of the mutton snapper landings both in weight (Figure 3.3.1.10) and dockside revenue (Figure 3.3.1.11). This area accounted for over 90% of mutton snapper landings and dockside revenues. Mutton snapper landings for South Carolina are not yet available for 2013.

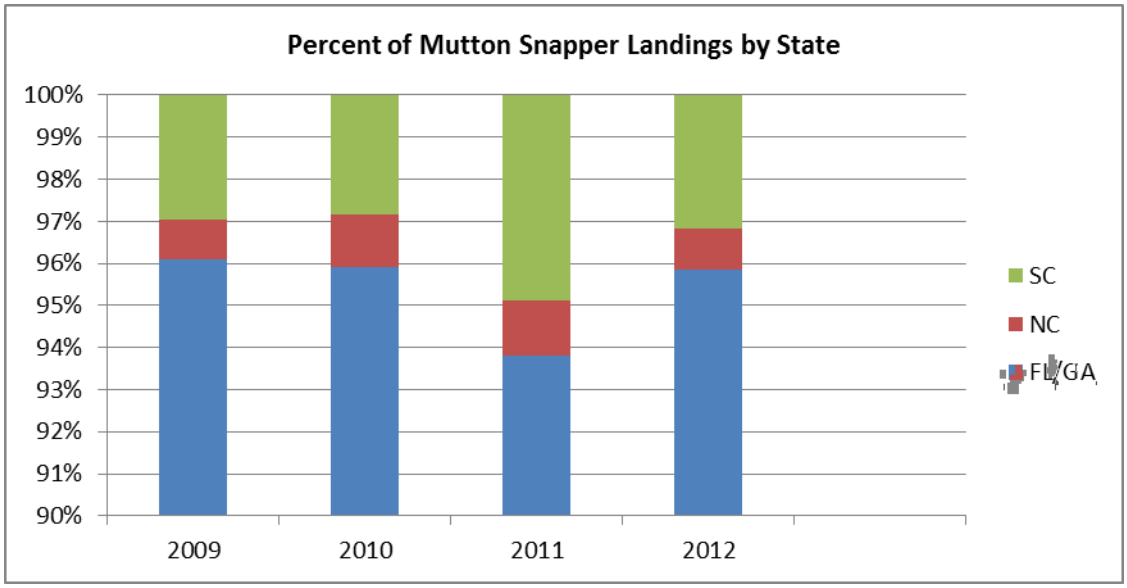


Figure 3.3.1.10. Percent of mutton snapper landings (lbs ww) by state, 2009–2012.
Source: SEFSC Commercial ACL Dataset, excluding confidential data (April 2014).

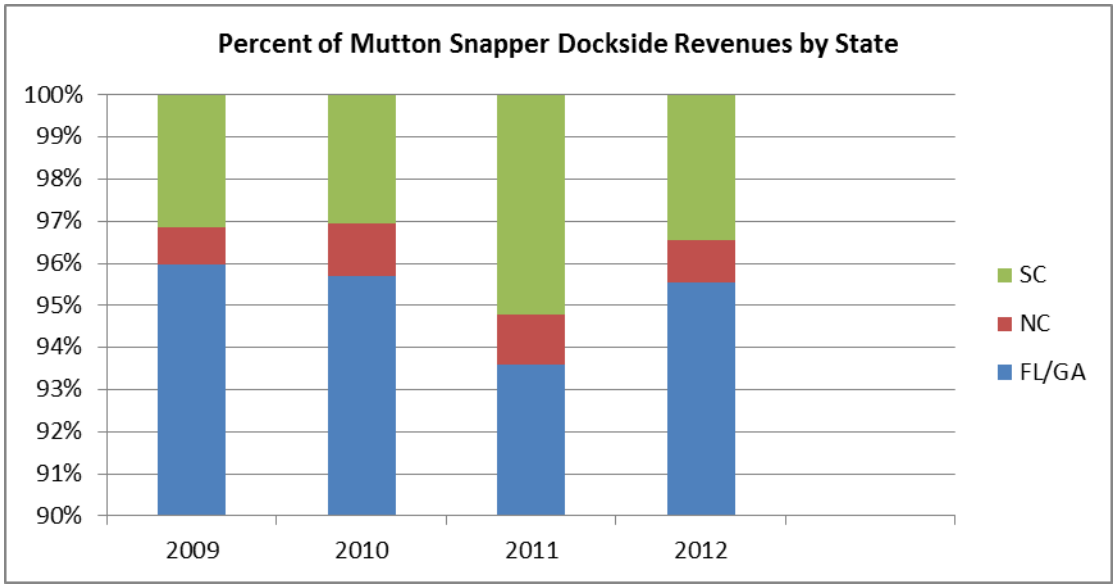


Figure 3.3.1.11. Percent of mutton snapper dockside revenues (2013 $) by state, 2009–2012. Source: SEFSC Commercial ACL Dataset, excluding confidential data (April 2014).

Average monthly distribution of landings and dockside revenues for the years 2009 through 2013 are shown in **Figure 3.3.1.12**. Average landings and revenues peaked in May, with December recording the lowest average landings by both weight and revenues.

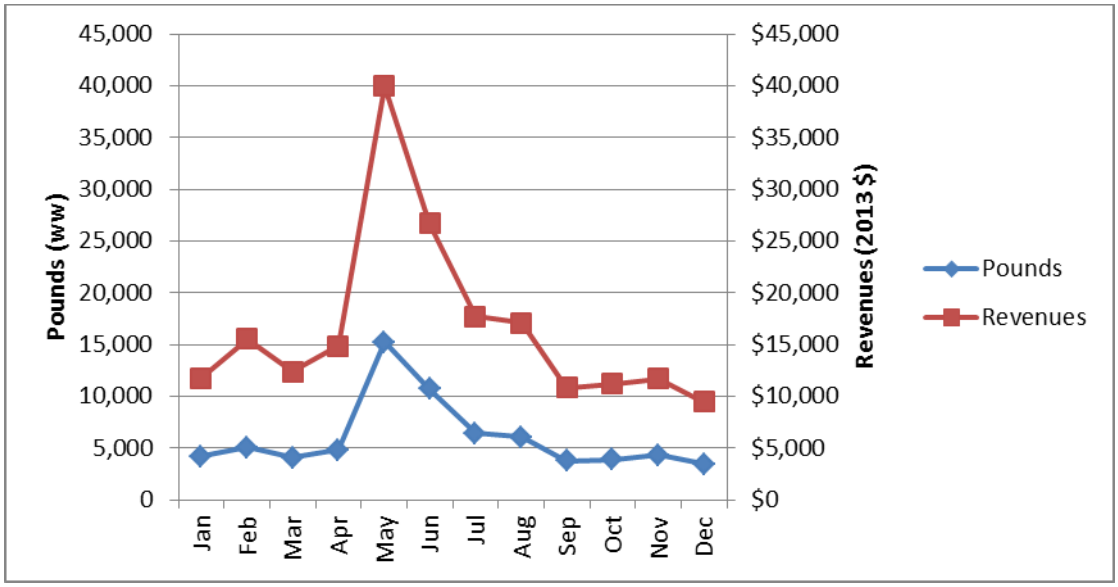


Figure 3.3.1.12. Average monthly mutton snapper landings (lbs ww) and revenues (2013 $), 2009–2013. Source: SEFSC Commercial ACL Dataset, excluding confidential data (April 2014).

From 2009 through 2013, an annual average of 266 vessels took 1,349 commercial trips that combined landed an average of 52,300 lb gw of mutton snapper annually with a dockside value (2013 dollars) of $152,895 (**Table 3.3.1.6**). Average annual dockside revenue from mutton snapper landings represented approximately 6% of total dockside revenue from trips that landed mutton snapper from 2009 through 2013.

Table 3.3.1.6. Vessels and trips with mutton snapper landings by weight (lbs gw) and dockside revenue (2013 $), 2009–2013.

Year	Number vessels that landed mutton snapper	Number trips that landed mutton snapper	Mutton Snapper grouper landings (lb gw)	Dockside revenue from mutton snapper (2013 $)	'Other species' landed with mutton snapper (lb gw)	Dockside revenue from 'other species' (2013 $)	Total dockside revenue (2013 $) from trips with mutton snapper landings
2009	321	1,625	48,749	$139,334	858,578	$2,200,365	$2,339,700
2010	315	1,497	51,965	$146,730	770,757	$2,216,385	$2,363,115
2011	278	1,470	52,740	$160,148	752,221	$2,454,384	$2,614,532
2012	258	1,410	61,889	$178,994	728,820	$2,437,961	$2,616,956
2013	160	744	46,158	$139,269	904,009	$3,159,733	$3,299,002
Average	266	1,349	52,300	$152,895	802,877	$2,493,766	$2,646,661

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

On average, the vessels that harvested mutton snapper also took 7,606 trips per year without mutton snapper landings. Combining all sources of revenues, the average annual dockside revenues of vessels that landed mutton snapper was about $51,405 (2013 $) (**Table 3.3.1.7**). Annual dockside revenue from mutton snapper landings represented, on average, approximately 12% of the total dockside revenue from all commercial landings from 2009 through 2013. Average annual dockside revenue per vessel from all landings was $51,405 as compared to $575 per vessel from mutton snapper only.

Table 3.3.1.7. Dockside revenues (2013 $) from all sources for vessels that landed mutton snapper, 2009–2013.

Year	Number vessels that landed mutton snapper	Dockside revenue from mutton snapper (2013 $)	Dockside revenue from 'other species' jointly landed with mutton snapper (2013 $)	Dockside revenue from 'other species' landed on trips without mutton snapper (2013 $)	Total dockside revenue (2013 $)	Average total dockside revenue per vessel (2013 $)
2009	321	$139,334	$2,200,365	$11,437,563	$13,777,262	$42,920
2010	315	$146,730	$2,216,385	$10,894,911	$13,258,026	$42,089
2011	278	$160,148	$2,454,384	$10,523,840	$13,138,372	$47,260
2012	258	$178,994	$2,437,961	$9,728,587	$12,345,542	$47,851
2013	160	$139,269	$3,159,733	$9,005,745	$12,304,747	$76,905
Average	266	$152,895	$2,493,766	$10,318,129	$12,964,790	$51,405

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

3.3.1.1.3 Yellowtail Snapper

Yellowtail snapper is within the snapper group of the snapper grouper fishery. From 2009 through 2013, yellowtail snapper's 5-year commercial landings ranked 1st by both weight and revenue among the 59 species within the snapper grouper complex. Annual commercial landings of yellowtail snapper in the South Atlantic ranged from about 1.1 million lbs ww to 1.4 million

lbs ww from 2009 through 2013 (**Figure 3.3.1.5**). Dockside revenues from those landings ranged from about $3 million to $4.2 million (2013 dollars) (**Figure 3.3.1.5**). The average dockside price during those five years was $2.82 per lb ww (2013 dollars). Commercial landings of yellowtail snapper peaked in 2012 and troughed in 2009 by both weight and revenue.

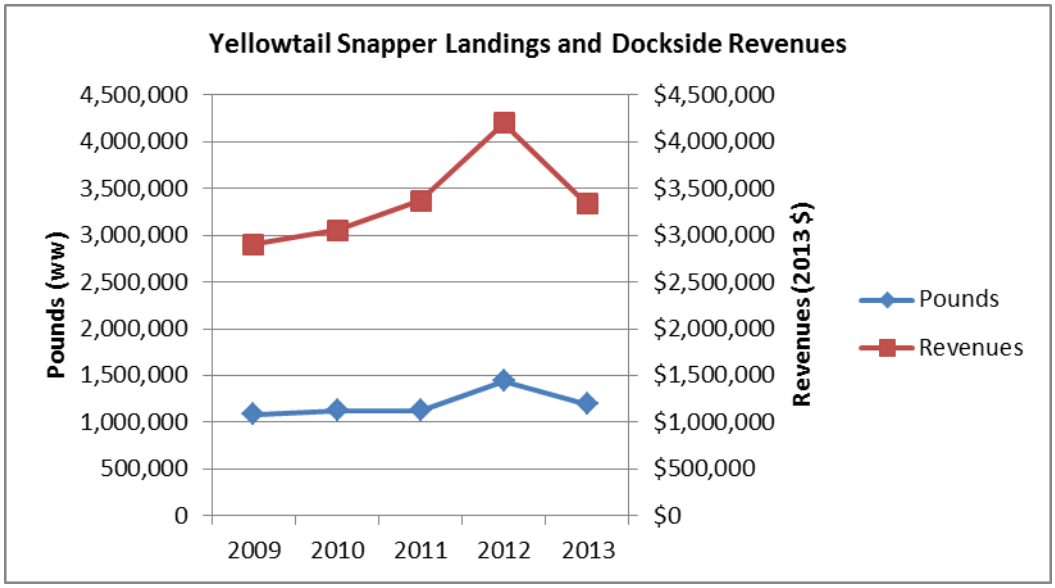


Figure 3.3.1.13. Annual commercial landings of yellowtail snapper by weight (lbs ww) and dockside revenue (2013 $).
Source: SEFSC Commercial ACL Dataset, excluding confidential data (April 2014).

Among the South Atlantic states, Florida/Georgia accounted for most of the yellowtail snapper landings both in weight and revenue. The other states accounted for less than 1% of total landings by weight and revenues.

Average monthly distribution of landings and dockside revenues for the years 2009 through 2013 are shown in **Figure 3.3.1.14**. Average landings and revenues peaked in May, with December recording the lowest average landings by both weight and revenues.

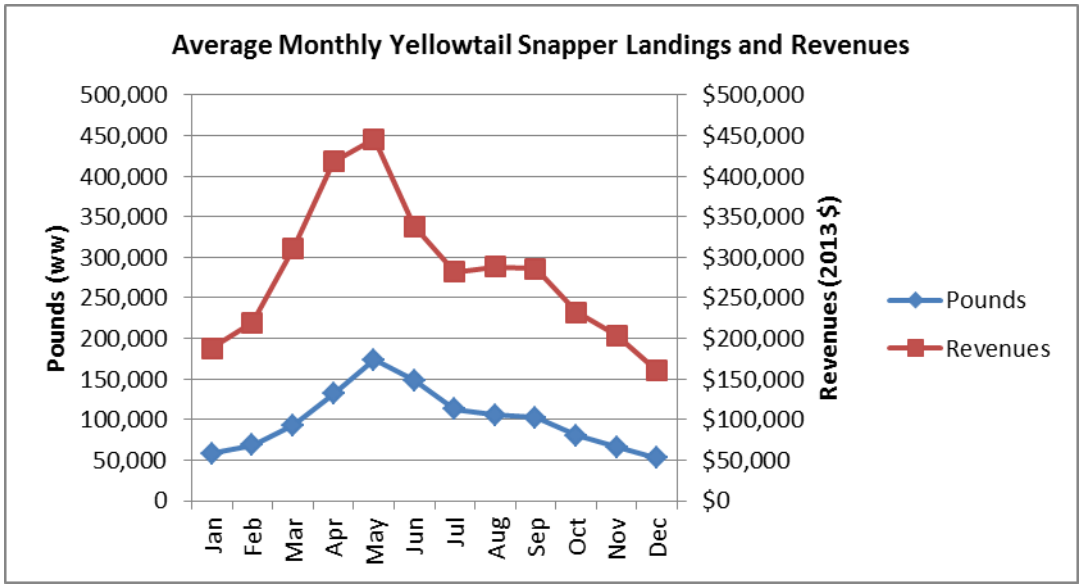


Figure 3.3.1.14. Average monthly yellowtail snapper landings (lbs ww) and revenues (2013 $), 2009–2013.
Source: SEFSC Commercial ACL Dataset, excluding confidential data (April 2014).

From 2009 through 2013, an annual average of 252 vessels took 3,364 commercial trips that combined landed an average of 837,578 lbs gw of yellowtail snapper annually with a dockside value (2013 dollars) of $2,579,783 (**Table 3.3.1.8**). Average annual dockside revenue from yellowtail snapper landings represented approximately 75% of total dockside revenue from trips that landed yellowtail snapper from 2009 through 2013.

Table 3.3.1.8. Vessels and trips with yellowtail snapper landings by weight (lbs gw) and dockside revenue (2013 $), 2009–2013.

Year	Number vessels that landed yellowtail snapper	Number trips that landed yellowtail snapper	Yellowtail Snapper grouper landings (lb gw)	Dockside revenue from yellowtail snapper (2013 $)	'Other species' landed with yellowtail snapper (lb gw)	Dockside revenue from 'other species' (2013 $)	Total dockside revenue (2013 $) from trips with yellowtail snapper
2009	334	4,659	1,116,593	$3,116,233	423,651	$1,000,318	$4,116,550
2010	293	3,727	919,540	$2,761,739	437,446	$989,607	$3,751,345
2011	267	3,917	1,033,376	$3,365,040	366,465	$823,109	$4,188,149
2012	255	3,878	1,053,864	$3,437,633	388,850	$800,535	$4,238,168
2013	109	639	64,516	$218,273	204,230	$623,211	$841,484
Average	252	3,364	837,578	$2,579,783	364,128	$847,356	$3,427,139

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

On average, the vessels that harvested yellowtail snapper also took 3,952 trips per year without yellowtail snapper landings. Combining all sources of revenues, the average annual dockside revenues of vessels that landed yellowtail snapper was about $38,355 (2013 dollars) (**Table 3.3.1.9**). Annual dockside revenue from yellowtail snapper landings represented, on average, approximately 28% of the total dockside revenue from all commercial landings from

2009 through 2013. Average annual dockside revenue per vessel from all landings was $38,355 as compared to $10,237 per vessel from yellowtail snapper only.

Table 3.3.1.9. Dockside revenues (2013 $) from all sources for vessels that landed yellowtail snapper, 2009–2013.

Year	Number vessels that landed yellowtail snapper	Dockside revenue from yellowtail snapper (2013 $)	Dockside revenue from 'other species' jointly landed with yellowtail snapper (2013 $)	Dockside revenue from 'other species' landed on trips without yellowtail snapper (2013 $)	Total dockside revenue (2013 $)	Average total dockside revenue per vessel (2013 $)
2009	334	$3,116,233	$1,000,318	$6,536,432	$10,652,982	$31,895
2010	293	$2,761,739	$989,607	$6,391,028	$10,142,373	$34,616
2011	267	$3,365,040	$823,109	$5,738,761	$9,926,909	$37,179
2012	255	$3,437,633	$800,535	$5,590,152	$9,828,321	$38,542
2013	109	$218,273	$623,211	$4,558,643	$5,400,127	$49,542
Average	252	$2,579,783	$847,356	$5,763,003	$9,190,142	$38,355

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

3.3.1.1.4 Greater Amberjack

Greater amberjack is within the jacks group of the snapper grouper fishery. From 2009 through 2013, greater amberjack's 5-year commercial landings ranked 3rd by weight and 6th by revenue among the 59 species within the snapper grouper complex. Annual commercial landings of greater amberjack in the South Atlantic ranged from about 658,000 lbs ww to 981,000 lbs ww from 2009 through 2013 (**Figure 3.3.1.15**). Dockside revenues from those landings ranged from about $826,000 to $1.1 million (2013 dollars) (**Figure 3.3.1.15**). The average dockside price during those five years was $1.15 per lb ww (2013 $). Commercial landings of greater amberjack peaked in 2010 and troughed in 2012 whereas dockside revenues peaked in 2012 and troughed in 2009.

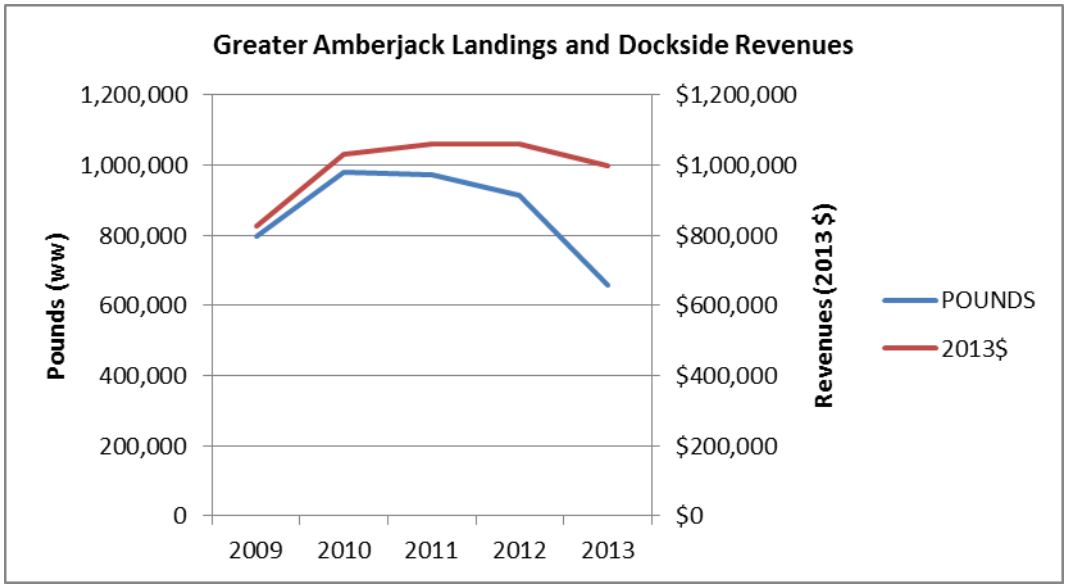


Figure 3.3.1.15. Annual commercial landings of greater amberjack by weight (lbs ww) and dockside revenue (2013 $).
Source: SEFSC Commercial ACL Dataset, excluding confidential data (April 2014).

Among the South Atlantic states, Florida/Georgia accounted for most of the greater amberjack landings both in weight and revenue (Figure 3.3.1.16 and Figure 3.3.1.17). This area's share fell in 2010 and 2011 in both weight and revenues, with South Carolina increasing its shares in those two years. Greater amberjack landings for South Carolina are not yet available for 2013.

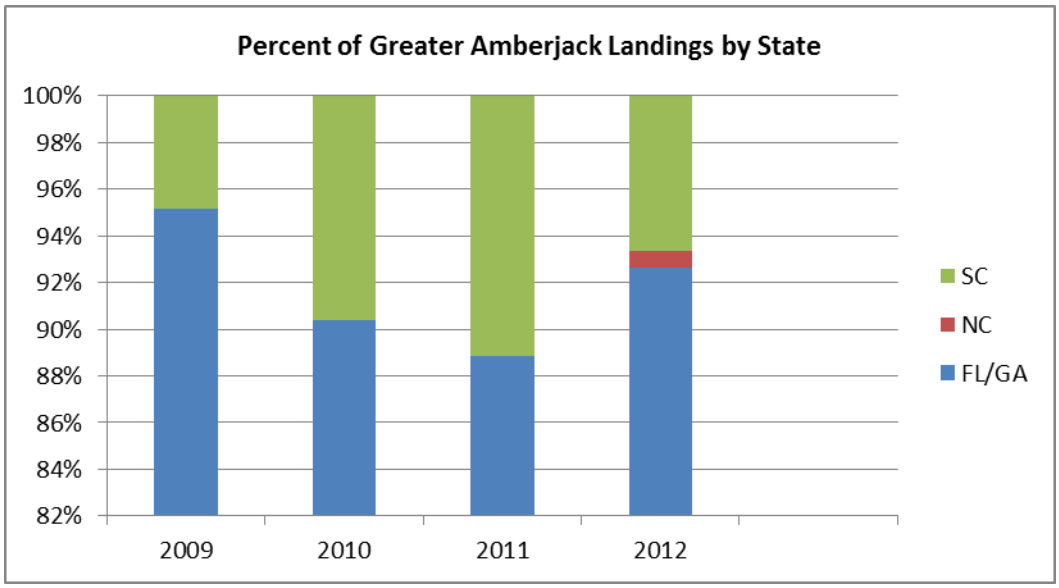


Figure 3.3.1.16. Percent of greater amberjack landings (lbs ww) by state, 2009–2012.
Source: SEFSC Commercial ACL Dataset, excluding confidential data (April 2014).

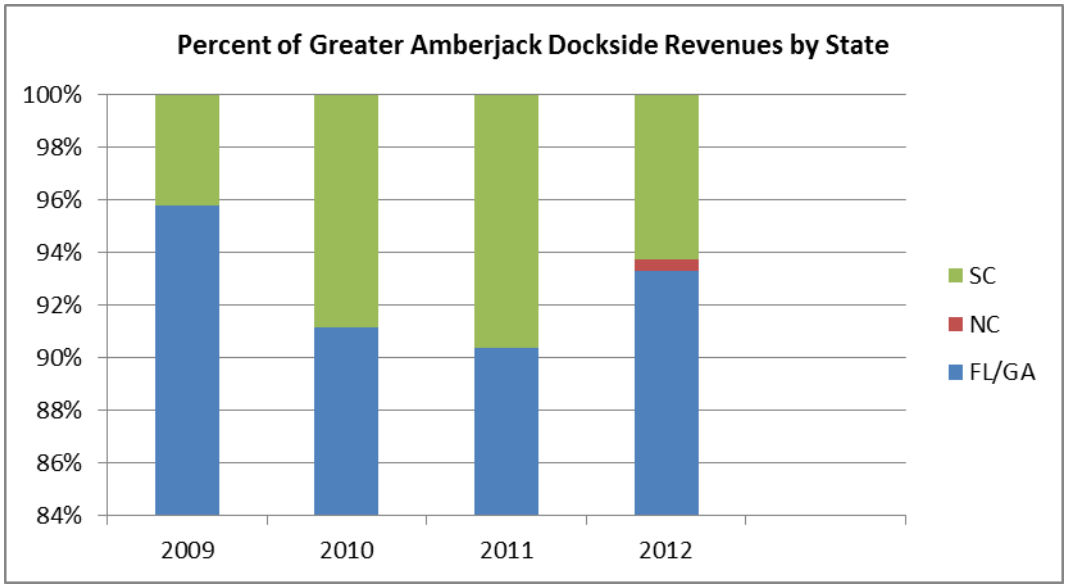


Figure 3.3.1.17. Percent of greater amberjack dockside revenues (2013 $) by state, 2009–2012.
Source: SEFSC Commercial ACL Dataset, excluding confidential data (April 2014).

Average monthly distribution of landings and dockside revenues for the years 2009 through 2013 are shown in **Figure 3.3.1.18**. Average landings and revenues peaked in May, with April recording the lowest average landings by both weight and revenues.

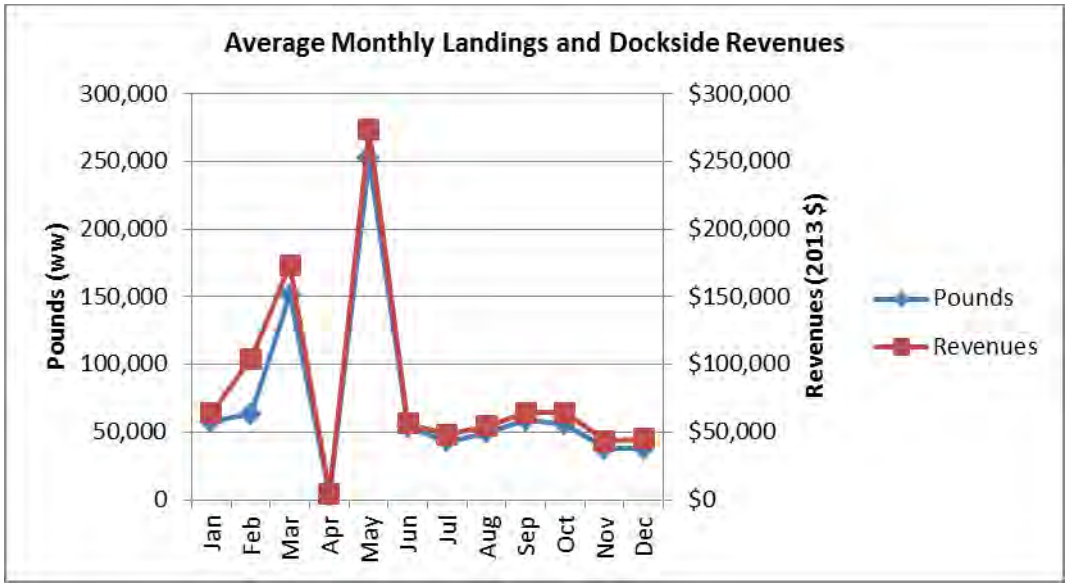


Figure 3.3.1.18. Average monthly greater amberjack landings (lbs ww) and revenues (2013 $), 2009–2013.
Source: SEFSC Commercial ACL Dataset, excluding confidential data (April 2014).

From 2009 through 2013, an annual average of 295 vessels took 2,187 commercial trips that combined landed an average of 856,598 lbs gw of greater amberjack annually with a dockside value (2013 dollars) of $972,561 (**Table 3.3.1.10**). Average annual dockside revenue from greater amberjack landings represented approximately 12% of total dockside revenue from trips that landed greater amberjack from 2009 through 2013.

Table 3.3.1.10. Vessels and trips with greater amberjack landings by weight (lbs gw) and dockside revenue (2013 $), 2009–2013.

Year	Number vessels that landed greater amberjack	Number trips that landed greater amberjack	Greater amberjack landings (lb gw)	Dockside revenue from greater amberjack (2013 $)	'Other species' landed with greater amberjack (lb gw)	Dockside revenue from 'other species' (2013 $)	Total dockside revenue (2013 $) from trips with greater amberjack
2009	385	2,516	821,106	$878,753	1,819,262	$5,510,310	$6,389,063
2010	300	2,370	944,966	$1,036,147	1,731,548	$5,094,230	$6,130,377
2011	269	2,345	918,627	$1,040,258	1,606,927	$4,902,085	$5,942,344
2012	248	2,054	923,966	$1,053,575	1,216,230	$3,757,611	$4,811,186
2013	271	1,650	674,322	$854,071	1,429,813	$4,451,688	$5,305,759
Average	295	2,187	856,598	$972,561	1,560,756	$4,743,185	$5,715,746

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

On average, the vessels that harvested greater amberjack also took 6,196 trips per year without greater amberjack landings. Combining all sources of revenues, the average annual dockside revenues of vessels that landed greater amberjack was about $52,782 (2013 dollars) (**Table 3.3.1.11**). Annual dockside revenue from greater amberjack landings represented, on average, approximately 6.3% of the total dockside revenue from all commercial landings from 2009 through 2013. Average annual dockside revenue per vessel from all landings was $52,782 as compared to $3,297 per vessel from greater amberjack only.

Table 3.3.1.11. Dockside revenues (2013 $) from all sources for vessels that landed greater amberjack, 2009–2013.

Year	Number vessels that landed greater amberjack	Dockside revenue from greater amberjack (2013 $)	Dockside revenue from 'other species' jointly landed with greater amberjack (2013 $)	Dockside revenue from 'other species' landed on trips without greater amberjack (2013 $)	Total dockside revenue (2013 $)	Average total dockside revenue per vessel (2013 $)
2009	385	$878,753	$5,510,310	$11,144,295	$17,533,358	$45,541
2010	300	$1,036,147	$5,094,230	$8,961,204	$15,091,581	$50,305
2011	269	$1,040,258	$4,902,085	$8,922,242	$14,864,586	$55,259
2012	248	$1,053,575	$3,757,611	$9,179,785	$13,990,971	$56,415
2013	271	$854,071	$4,451,688	$9,975,645	$15,281,404	$56,389
Average	295	$972,561	$4,743,185	$9,636,634	$15,352,380	$52,782

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

3.3.1.1.5 Red Porgy

Red porgy is within the porgies group of the snapper grouper fishery. From 2009 through 2013, red porgy's 5-year commercial landings ranked 14th by both weight and revenue among the 59 species within the snapper grouper complex. Annual commercial landings of red porgy in the South Atlantic ranged from about 111,000 lbs ww to 198,000 lbs ww from 2009 through

2013 (**Figure 3.3.1.19**). Dockside revenues from those landings ranged from about $197,000 to $365,000 (2013 dollars) (**Figure 3.3.1.19**). The average dockside price during those five years was $1.77 per lb ww (2013 dollars). Commercial landings and dockside revenues for red porgy peaked in 2011 and declined thereafter.

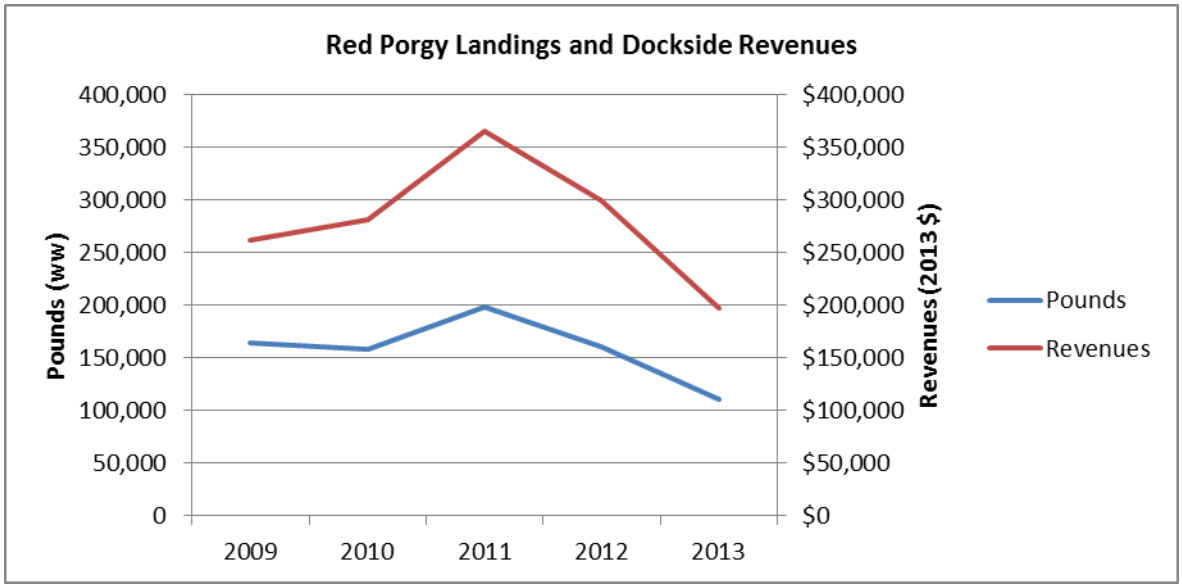


Figure 3.3.1.19. Annual commercial landings of red porgy by weight (lbs ww) and dockside revenue (2013 $).
Source: SEFSC Commercial ACL Dataset, excluding confidential data (April 2014).

Among the South Atlantic states, North Carolina accounted for most of the red porgy landings both in weight and revenue (**Figure 3.3.1.20** and **Figure 3.3.1.21**). This area's share fell in 2010 and 2011 in both weight and revenues, with South Carolina increasing its shares in those two years. Red porgy landings for South Carolina are not yet available for 2013.

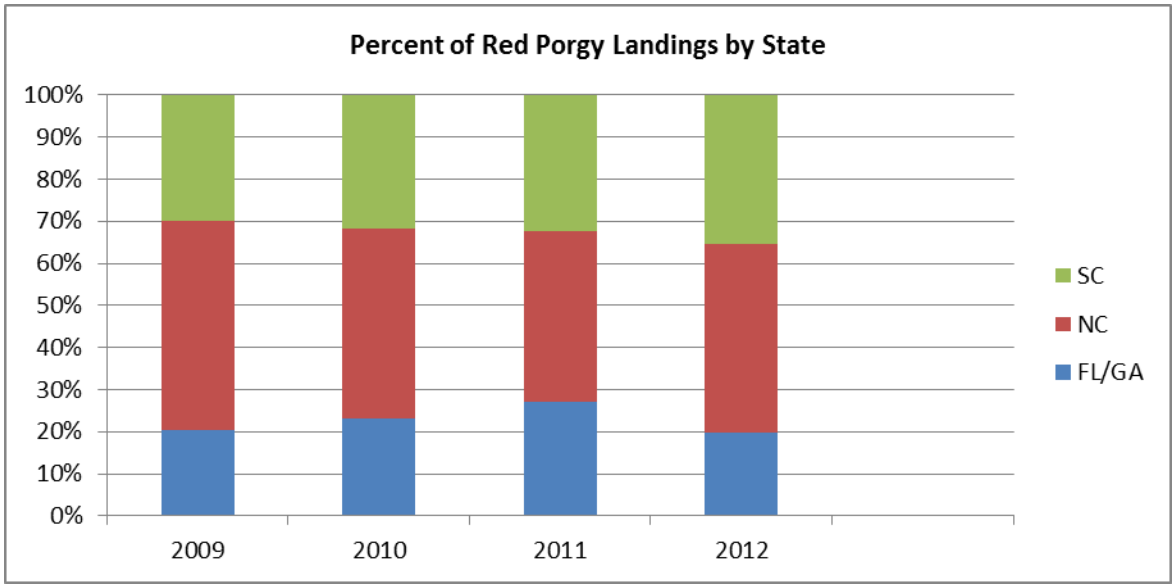


Figure 3.3.1.20. Percent of red porgy landings (lbs ww) by state, 2009–2012.
Source: SEFSC Commercial ACL Dataset, excluding confidential data (April 2014).

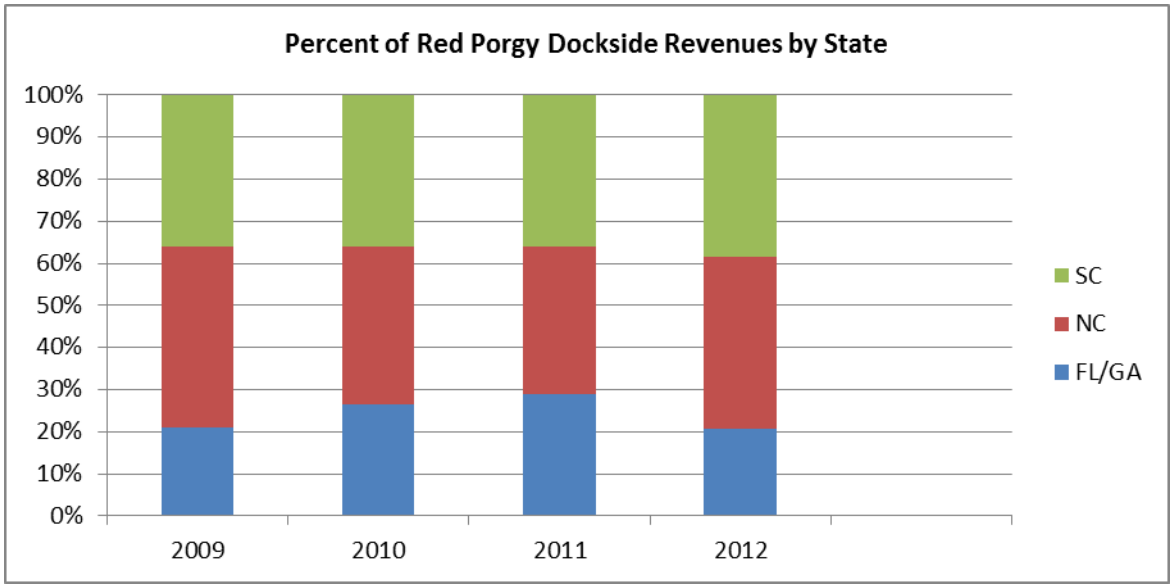


Figure 3.3.1.21. Percent of red porgy dockside revenues (2013 $) by state, 2009–2012.
Source: SEFSC Commercial ACL Dataset, excluding confidential data (April 2014).

Average monthly distribution of landings and dockside revenues for the years 2009 through 2013 are shown in **Figure 3.3.1.22**. Average landings and revenues peaked in July, with January through April recording the lowest average landings by both weight and revenues.

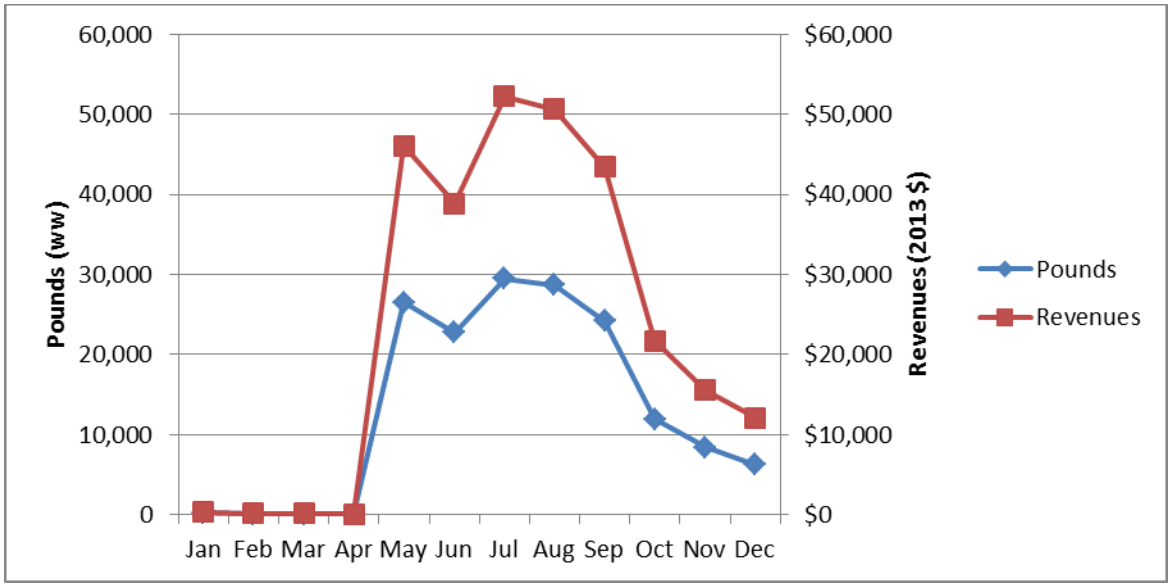


Figure 3.3.1.22. Average monthly red porgy landings (lbs ww) and revenues (2013 $), 2009–2013.
Source: SEFSC Commercial ACL Dataset, excluding confidential data (April 2014).

From 2009 through 2013, an annual average of 191 vessels took 1,502 commercial trips that combined landed an average of 140,172 lbs gw of red porgy annually with a dockside value (2013 dollars) of $251,483 (**Table 3.3.1.12**). Average annual dockside revenue from red porgy landings represented approximately 4.2% of total dockside revenue from trips that landed red porgy from 2009 through 2013.

Table 3.3.1.12. Vessels and trips with red porgy landings by weight (lbs gw) and dockside revenue (2013 $), 2009–2013.

Year	Number vessels that landed red porgy	Number trips that landed red porgy	Red Porgy landings (lb gw)	Dockside revenue from red porgy (2013 $)	'Other species' landed with red porgy (lb gw)	Dockside revenue from 'other species' landings (2013 $)	Total dockside revenue (2013 $) from trips with red porgy landings
2009	197	1,535	130,048	$213,134	1,862,196	$5,428,887	$5,642,021
2010	170	1,424	126,620	$235,362	1,770,625	$5,241,352	$5,476,714
2011	174	1,588	160,186	$304,707	1,866,052	$5,742,156	$6,046,863
2012	158	1,378	132,062	$254,491	1,487,385	$4,692,673	$4,947,164
2013	254	1,586	151,946	$249,722	2,235,601	$7,257,718	$7,507,440
Average	191	1,502	140,172	$251,483	1,844,372	$5,672,557	$5,924,041

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

On average, the vessels that harvested red porgy also took 2,939 trips per year without red porgy landings. Combining all sources of revenues, the average annual dockside revenues of vessels that landed red porgy was about $59,836 (2013 dollars) (**Table 3.3.1.13**). Annual dockside revenue from red porgy landings represented, on average, approximately 2.2% of the total dockside revenue from all commercial landings from 2009 through 2013. Average annual dockside revenue per vessel from all landings was $59,836 as compared to $1,316 per vessel from red porgy only.

Table 3.3.1.13. Dockside revenues (2013 $) from all sources for vessels that landed red porgy, 2009–2013.

Year	Number vessels that landed red porgy	Dockside revenue from red porgy (2013 $)	Dockside revenue from 'other species' jointly landed with red porgy (2013 $)	Dockside revenue from 'other species' landed on trips without red porgy (2013 $)	Total dockside revenue (2013 $)	Average total dockside revenue per vessel (2013 $)
2009	197	$213,134	$5,428,887	$6,403,243	$12,045,264	$61,143
2010	170	$235,362	$5,241,352	$4,908,026	$10,384,740	$61,087
2011	174	$304,707	$5,742,156	$4,216,692	$10,263,555	$58,986
2012	158	$254,491	$4,692,673	$4,229,177	$9,176,341	$58,078
2013	254	$249,722	$7,257,718	$7,703,406	$15,210,846	$59,885
Average	191	$251,483	$5,672,557	$5,492,109	$11,416,149	$59,836

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

3.3.1.1.6 Gag

Gag is within the sea basses and groupers (family Serranidae) of the snapper grouper complex. From 2009 through 2013, gag's 5-year commercial landings ranked 6th by weight and 3rd by revenue among the 59 species within the snapper grouper complex. Annual commercial landings of gag in the South Atlantic ranged from about 268,000 lbs ww to 522,000 lbs ww from 2009

through 2013 (**Figure 3.3.1.19**). Dockside revenues from those landings ranged from about $1.1 million to $2.2 million (2013 dollars) (**Figure 3.3.1.19**). The average dockside price during those five years was $4.14 per pound ww (2013 dollars). Commercial landings for gag peaked in 2011 and declined thereafter; while, dockside revenues peaked in 2009 and declined thereafter.

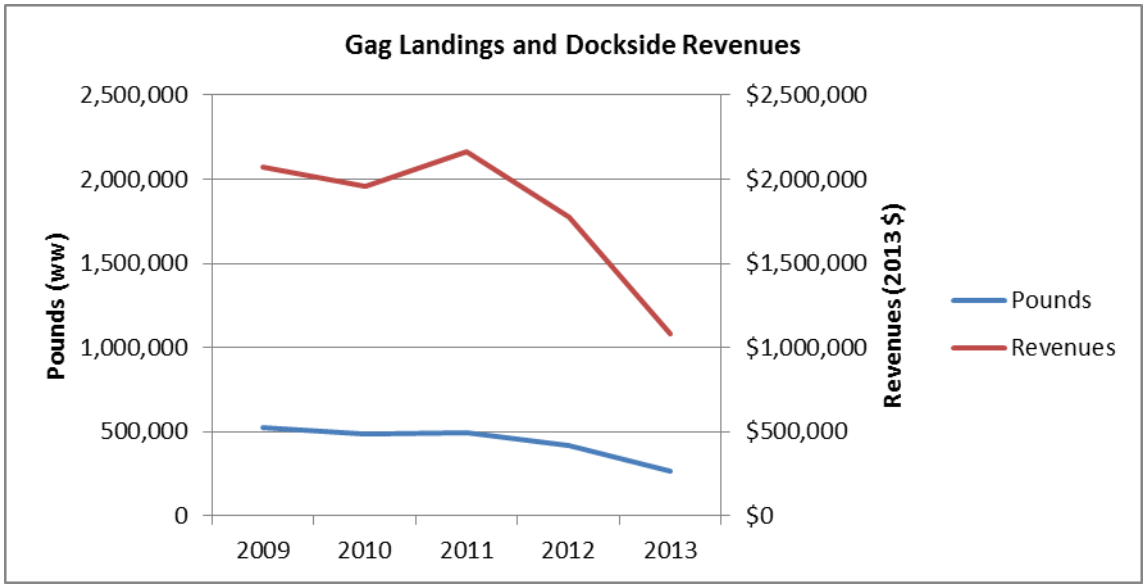


Figure 3.3.1.23. Annual commercial landings of gag by weight (lbs ww) and dockside revenue (2013 $).
Source: SEFSC Commercial ACL Dataset, excluding confidential data (April 2014).

Among the South Atlantic states, North Carolina accounted for most of the gag landings both in weight and revenue (Figure 3.3.1.24 and Figure 3.3.1.25). This area's share fell in 2010 and 2011 in both weight and revenues, with South Carolina increasing its shares in those two years. Gag landings for South Carolina are not yet available for 2013.

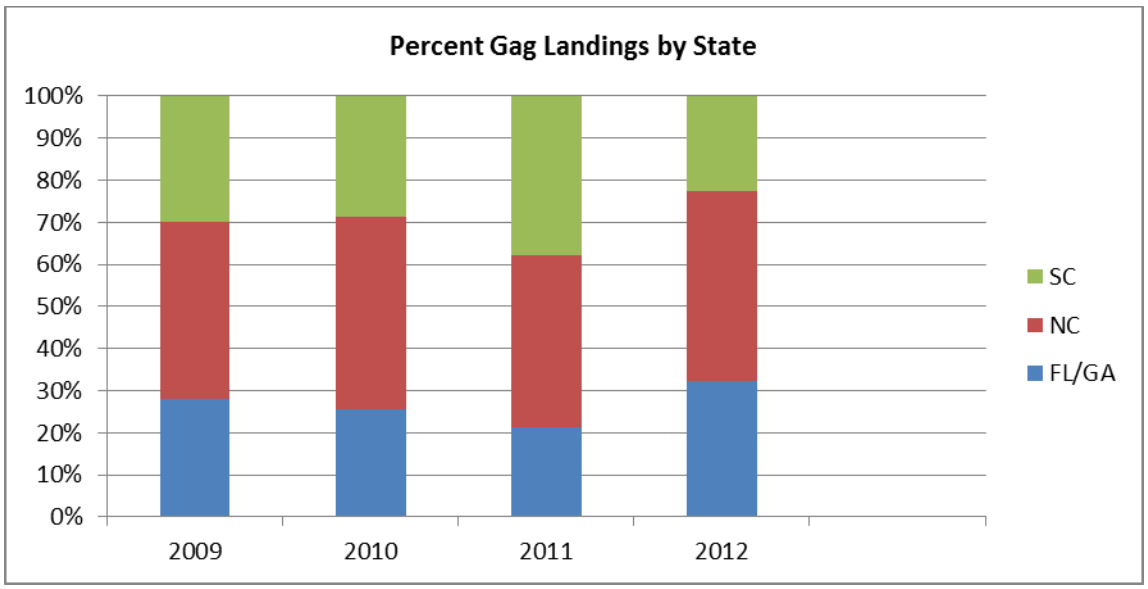


Figure 3.3.1.24. Percent of gag landings (lbs ww) by state, 2009–2012.
Source: SEFSC Commercial ACL Dataset, excluding confidential data (April 2014).

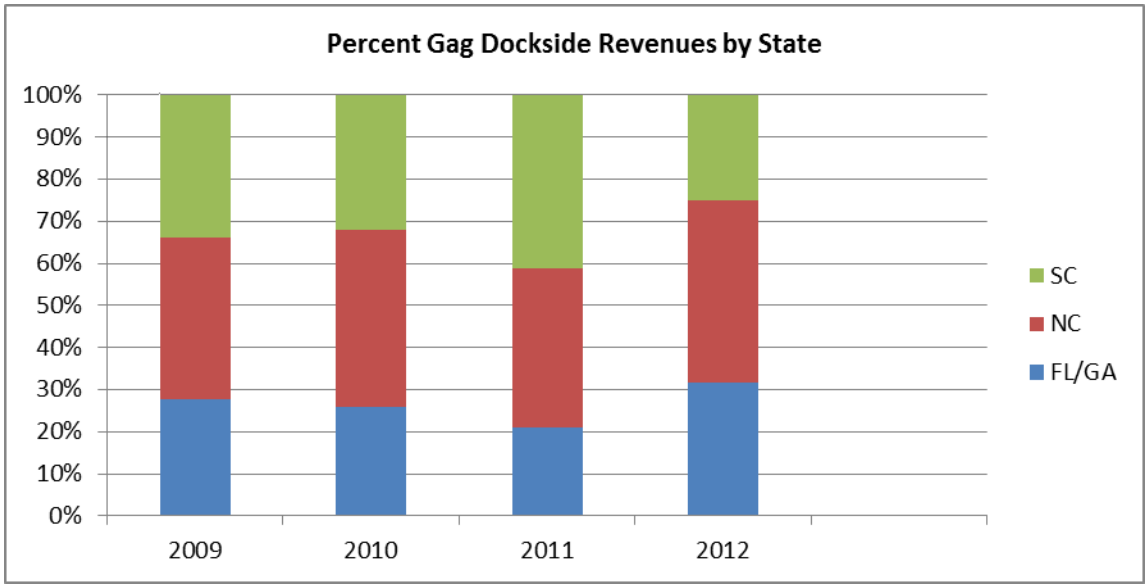


Figure 3.3.1.25. Percent of gag dockside revenues (2013 $) by state, 2009–2012.
Source: SEFSC Commercial ACL Dataset, excluding confidential data (April 2014).

Average monthly distribution of landings and dockside revenues for the years 2009 through 2013 are shown in **Figure 3.3.1.26**. Average landings and revenues peaked in May, with March and April recording the lowest average landings by both weight and revenues.

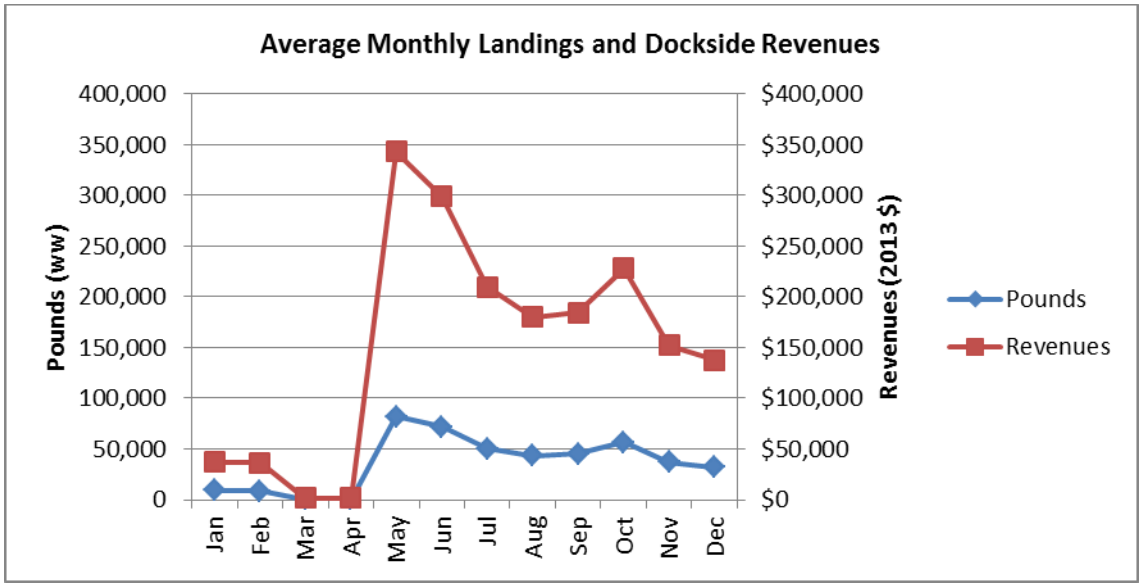


Figure 3.3.1.26. Average monthly gag landings (lbs ww) and revenues (2013 $), 2009–2013.
Source: SEFSC Commercial ACL Dataset, excluding confidential data (April 2014).

From 2009 through 2013, an annual average of 273 vessels took 2,167 commercial trips that combined landed an average of 379,734 lbs gw of gag annually with a dockside value (2013 dollars) of $1,860,674 (**Table 3.3.1.14**). Average annual dockside revenue from gag landings represented approximately 3% of total dockside revenue from trips that landed gag from 2009 through 2013.

Table 3.3.1.14. Vessels and trips with gag landings by weight (lbs gw) and dockside revenue (2013 $), 2009–2013.

Year	Number vessels that landed gag	Number trips that landed gag	Gag landings (lb gw)	Dockside revenue from gag (2013 $)	'Other species' landed with gag (lb gw)	Dockside revenue from 'other species' landings (2013 $)	Total dockside revenue (2013 $) from trips with gag landings
2009	292	2,370	383,161	$1,801,490	1,772,776	$4,842,459	$6,643,949
2010	243	2,126	375,504	$1,793,483	1,457,171	$3,804,952	$5,598,436
2011	233	2,155	378,770	$1,942,380	1,503,104	$3,929,209	$5,871,589
2012	224	1,847	327,133	$1,658,904	1,187,337	$3,208,821	$4,867,725
2013	371	2,336	434,100	$2,107,112	2,758,240	$8,661,933	$10,769,045
Average	273	2,167	379,734	$1,860,674	1,735,725	$4,889,475	$6,750,149

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

On average, the vessels that harvested gag also took 4,530 trips per year without gag landings. Combining all sources of revenues, the average annual dockside revenues of vessels that landed gag was about $49,097 (2013 dollars) (**Table 3.3.1.15**). Annual dockside revenue from gag landings represented, on average, approximately 1.4% of the total dockside revenue from all commercial landings from 2009 through 2013. Average annual dockside revenue per vessel from all landings was $49,097 as compared to $6,816 per vessel from gag only.

Table 3.3.1.15. Dockside revenues (2013 $) from all sources for vessels that landed gag, 2009–2013.

Year	Number vessels that landed gag	Dockside revenue from gag (2013 $)	Dockside revenue from 'other species' jointly landed with gag (2013 $)	Dockside revenue from 'other species' landed (2013 $)	Total dockside revenue (2013 $)	Average total dockside revenue per vessel (2013 $)
2009	292	$1,801,490	$4,842,459	$6,823,681	$13,467,630	$46,122
2010	243	$1,793,483	$3,804,952	$6,219,445	$11,817,880	$48,633
2011	233	$1,942,380	$3,929,209	$5,794,883	$11,666,472	$50,071
2012	224	$1,658,904	$3,208,821	$6,017,366	$10,885,091	$48,594
2013	371	$2,107,112	$8,661,933	$8,546,630	$19,315,675	$52,064
Average	273	$1,860,674	$4,889,475	$6,680,401	$13,430,550	$49,097

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

3.3.1.1.7 Golden Tilefish

Golden tilefish is within the tilefishes group of the snapper grouper fishery. From 2009 through 2013, golden tilefish's 5-year commercial landings ranked 5th by weight and 4th by revenue among the 59 species within the snapper grouper complex. Annual commercial landings of golden tilefish in the South Atlantic ranged from about 366,000 lbs ww to 579,000 lbs ww from 2009 through 2013 (**Figure 3.3.1.19**). Dockside revenues from those landings ranged from about $1.1 million to $1.6 million (2013 $) (**Figure 3.3.1.19**). The average dockside price during those five years was $4.14 per pound ww (2013$). Commercial landings and revenues for golden tilefish peaked in 2012, 2009 recording the lowest landings and revenues.

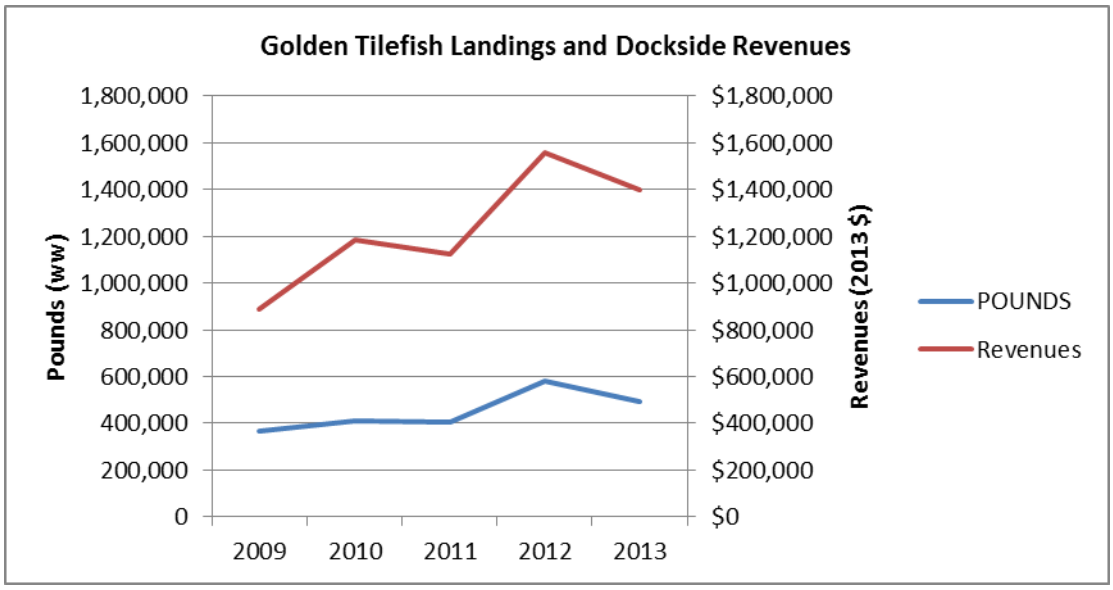


Figure 3.3.1.26. Annual commercial landings of golden tilefish by weight (lbs ww) and dockside revenue (2013 $).
Source: SEFSC Commercial ACL Dataset, excluding confidential data (April 2014).

Among the South Atlantic states, Florida/Georgia accounted for most of the golden tilefish landings both in weight and revenue (Figure 3.3.1.27 and Figure 3.3.1.28). South Carolina accounted for most of other landings and dockside revenues. Golden tilefish landings for South Carolina are not yet available for 2013.

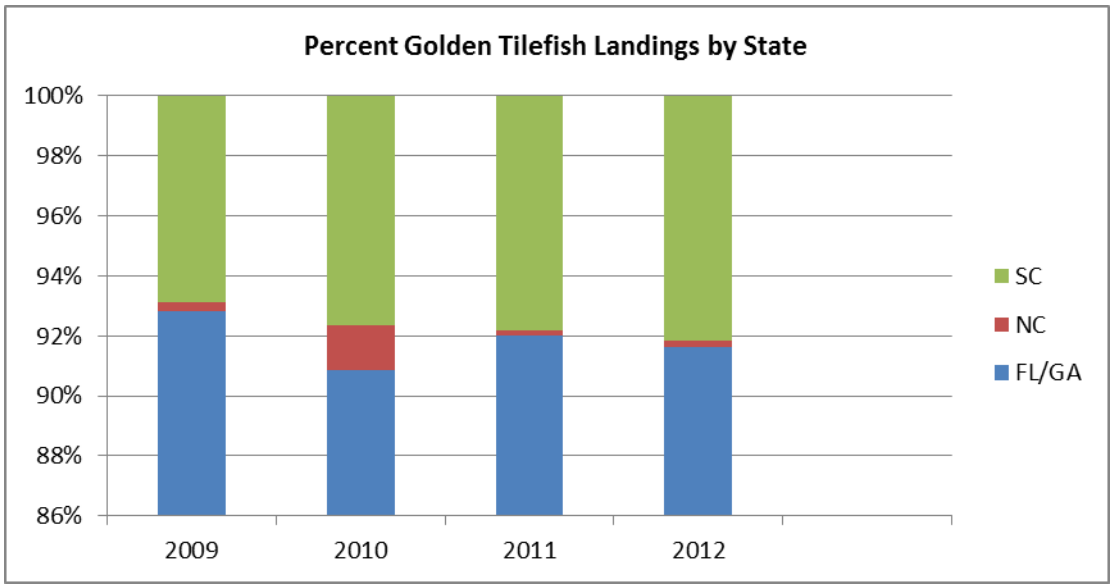


Figure 3.3.1.27. Percent of golden tilefish landings (lbs ww) by state, 2009–2012.
Source: SEFSC Commercial ACL Dataset, excluding confidential data (April 2014).

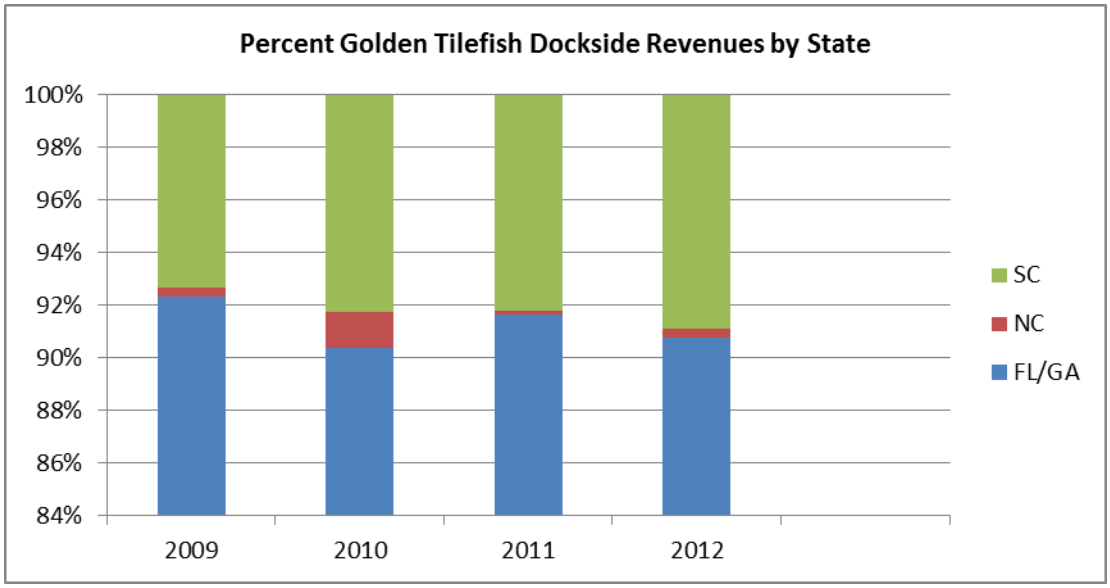


Figure 3.3.1.28. Percent of golden tilefish dockside revenues (2013 $) by state, 2009–2012. Source: SEFSC Commercial ACL Dataset, excluding confidential data (April 2014).

Average monthly distribution of landings and dockside revenues for the years 2009 through 2013 are shown in **Figure 3.3.1.29**. Average landings and revenues peaked in January and declined thereafter, with slight uptick in October through December.

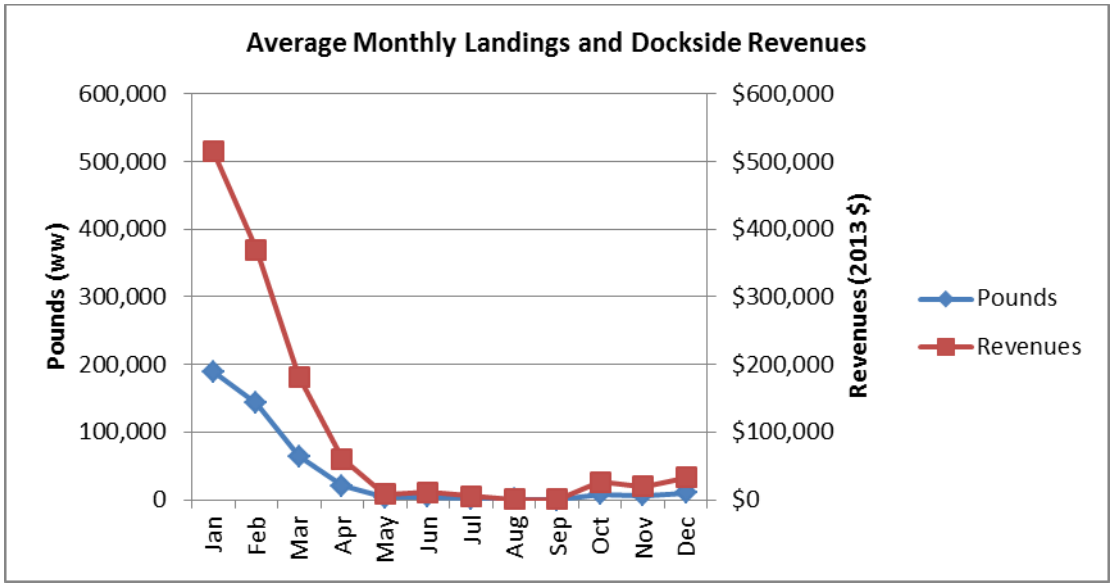


Figure 3.3.1.29. Average monthly golden tilefish landings (lbs ww) and revenues (2013 $), 2009–2013. Source: SEFSC Commercial ACL Dataset, excluding confidential data (April 2014).

From 2009 through 2013, an annual average of 63 vessels took 453 commercial trips that combined landed an average of 435,973 lbs gw of golden tilefish annually with a dockside value (2013 dollars) of $1,319,731 (**Table 3.3.1.16**). Average annual dockside revenue from golden tilefish landings represented approximately 75% of total dockside revenue from trips that landed golden tilefish from 2009 through 2013.

Table 3.3.1.16. Vessels and trips with golden tilefish landings by weight (lbs gw) and dockside revenue (2013 $), 2009–2013.

Year	Number vessels that landed golden tilefish	Number trips that landed golden tilefish	Golden tilefish landings (lb gw)	Dockside revenue from golden tilefish (2013 $)	'Other species' landed golden tilefish (lb gw)	Dockside revenue from 'other species' landings (2013 $)	Total dockside revenue (2013 $) from trips with golden tilefish landings
2009	49	384	313,311	$834,187	67,671	$148,511	$982,698
2010	51	352	369,556	$1,158,913	52,665	$114,105	$1,273,018
2011	40	265	365,716	$1,139,580	21,840	$45,565	$1,185,144
2012	74	687	491,268	$1,515,017	50,215	$111,595	$1,626,612
2013	99	576	640,012	$1,950,960	502,918	$1,826,544	$3,777,504
Average	63	453	435,973	$1,319,731	139,062	$449,264	$1,768,995

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

On average, the vessels that harvested golden tilefish also took 2,211 trips per year without golden tilefish landings. Combining all sources of revenues, the average annual dockside revenues of vessels that landed golden tilefish was about $67,936 (2013 dollars) (**Table 3.3.1.17**). Annual dockside revenue from golden tilefish landings represented, on average, approximately 1.4% of the total dockside revenue from all commercial landings from 2009 through 2013. Average annual dockside revenue per vessel from all landings was $67,936 as compared to $20,948 per vessel from golden tilefish only.

Table 3.3.1.17. Dockside revenues (2013 $) from all sources for vessels that landed golden tilefish, 2009–2013.

Year	Number vessels that landed golden tilefish	Dockside revenue from golden tilefish (2013 $)	Dockside revenue from 'other species' jointly landed with golden tilefish (2013 $)	Dockside revenue from 'other species' landed on trips without golden tilefish (2013 $)	Total dockside revenue (2013 $)	Average total dockside revenue per vessel (2013 $)
2009	49	$834,187	$148,511	$1,785,766	$2,768,464	$56,499
2010	51	$1,158,913	$114,105	$2,241,415	$3,514,433	$68,910
2011	40	$1,139,580	$45,565	$1,233,162	$2,418,306	$60,458
2012	74	$1,515,017	$111,595	$3,251,127	$4,877,739	$65,915
2013	99	$1,950,960	$1,826,544	$4,924,098	$8,701,602	$87,895
Average	63	$1,319,731	$449,264	$2,687,114	$4,456,109	$67,936

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

3.3.1.1.8 Red Grouper

Red grouper is within the sea basses and grouper group of the snapper grouper fishery. From 2009 through 2013, red grouper's 5-year commercial landings ranked 9th by weight and 7th by revenue among the 59 species within the snapper grouper complex. Annual commercial landings of red grouper in the South Atlantic ranged from about 97,000 lbs ww to 431,000 lbs ww from

2009 through 2013 (**Figure 3.3.1.30**). Dockside revenues from those landings ranged from about $318,000 to $1.3 million (2013 dollars) (**Figure 3.3.1.31**). The average dockside price during those five years was $3.14 per lb ww (2013$). Commercial landings and revenues for red grouper peaked in 2009 and declined thereafter.

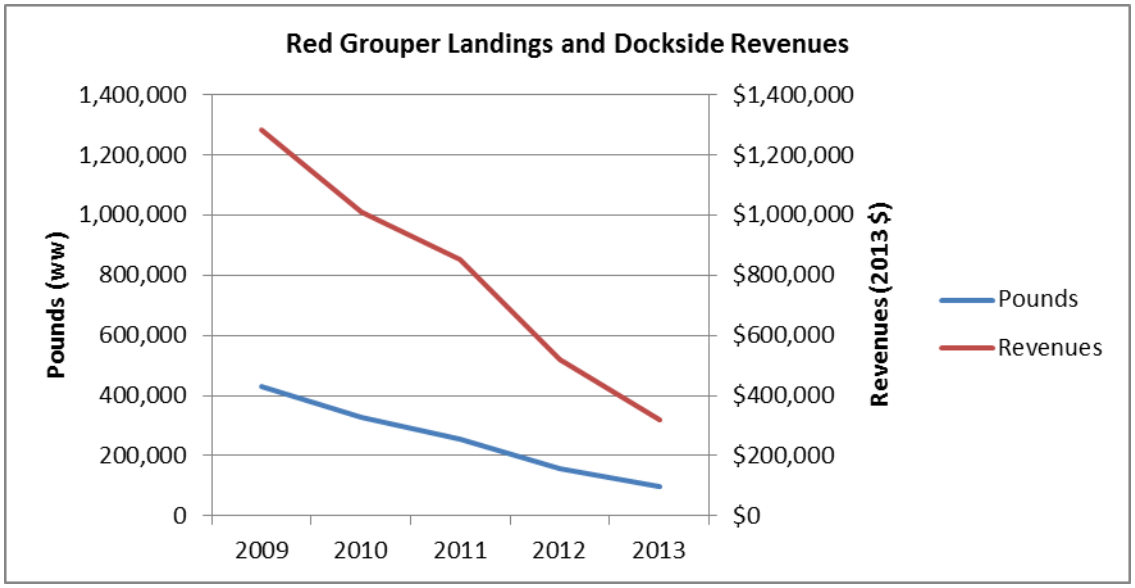


Figure 3.3.1.30. Annual commercial landings of red grouper by weight (lbs ww) and dockside revenue (2013 $).
Source: SEFSC Commercial ACL Dataset, excluding confidential data (April 2014).

Among the South Atlantic states, North Carolina accounted for most of the red grouper landings both in weight and revenue (**Figure 3.3.1.31** and **Figure 3.3.1.32**). South Carolina accounted for most of other landings and dockside revenues. Red grouper landings for South Carolina are not yet available for 2013.

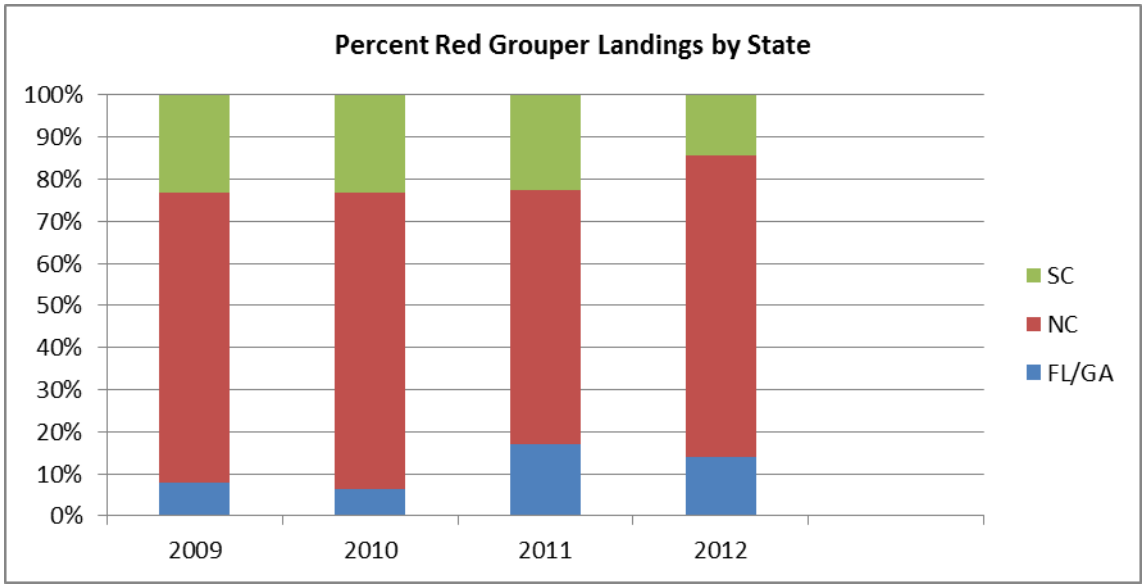


Figure 3.3.1.31. Percent of red grouper landings (lbs ww) by state, 2009–2012.
Source: SEFSC Commercial ACL Dataset, excluding confidential data (April 2014).

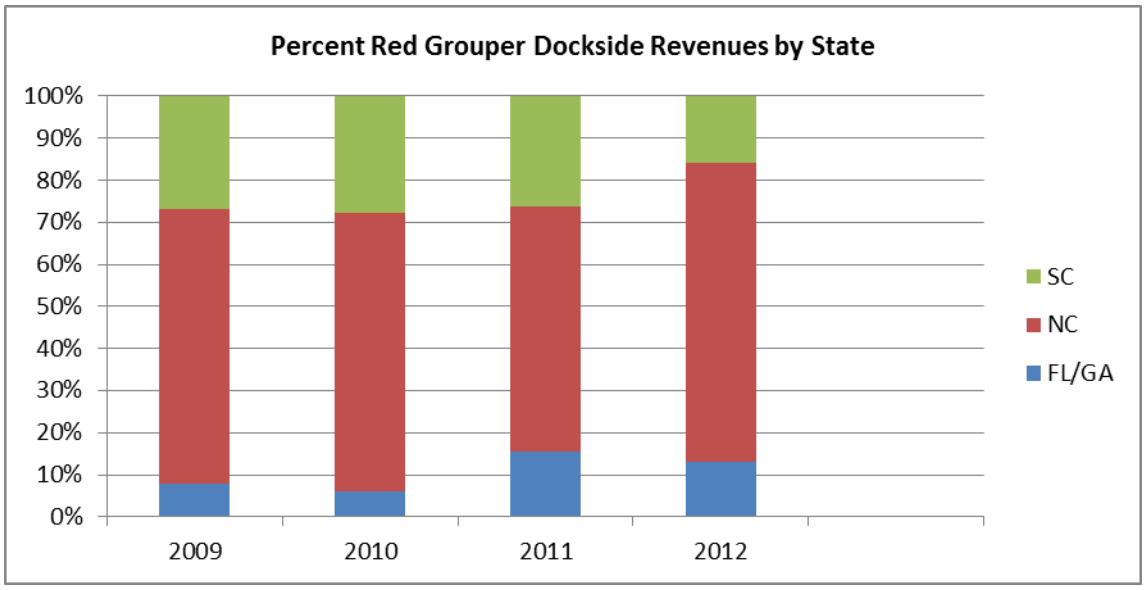


Figure 3.3.1.32. Percent of red grouper dockside revenues (2013 $) by state, 2009–2012.
Source: SEFSC Commercial ACL Dataset, excluding confidential data (April 2014).

Average monthly distribution of landings and dockside revenues for the years 2009 through 2013 are shown in **Figure 3.3.1.33**. Average landings and revenues peaked in May and were lowest in January through March.

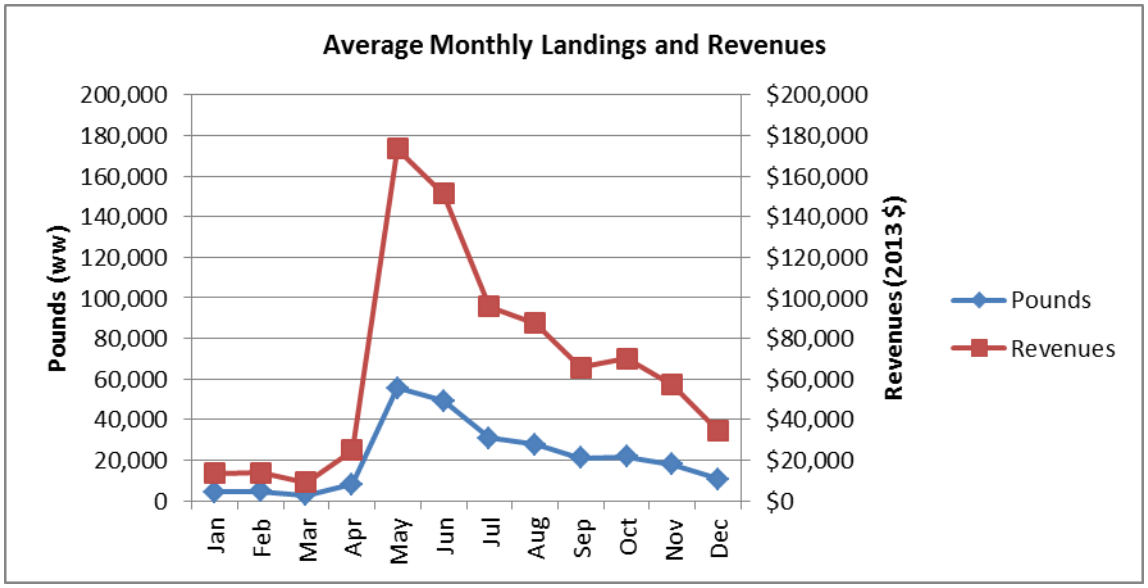


Figure 3.3.1.33. Average monthly red grouper landings (lbs ww) and revenues (2013 $), 2009–2013.
Source: SEFSC Commercial ACL Dataset, excluding confidential data (April 2014).

There remain some data issues to be resolved regarding the 2013 vessel level landings and revenues, so data for this year is not included in this part of the discussions. From 2009 through 2012, an annual average of 278 vessels took 1,652 commercial trips that combined landed an average of 225,947 lbs gw of red grouper annually with a dockside value (2013 dollars) of $842,558 (**Table 3.3.1.18**). Average annual dockside revenue from red grouper landings

represented approximately 16% of total dockside revenue from trips that landed red grouper from 2009 through 2012.

Table 3.3.1.18. Vessels and trips with red grouper landings by weight (lbs gw) and dockside revenue (2013 $), 2009–2012.

Year	Number vessels that landed red grouper	Number trips that landed red grouper	Red grouper landings (lb gw)	Dockside revenue from red grouper (2013 $)	'Other species' landed with red grouper (lb gw)	Dockside revenue from 'other species' from trips with red grouper landings (2013 $)	Total dockside revenue (2013 $) from trips with red grouper landings
2009	319	2,326	326,053	$1,157,513	2,220,794	$6,205,354	$7,362,867
2010	252	1,467	262,377	$962,645	1,385,408	$3,988,509	$4,951,154
2011	278	1,566	184,432	$738,266	1,426,383	$4,300,088	$5,038,354
2012	261	1,250	130,924	$511,806	1,024,511	$3,217,815	$3,729,621
Average	278	1,652	225,947	$842,558	1,514,274	$4,427,941	$5,270,499

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

On average, the vessels that harvested red grouper also took 6,210 trips per year without red grouper landings. Combining all sources of revenues, the average annual dockside revenues of vessels that landed red grouper was about $49,691 (2013 dollars) (**Table 3.3.1.19**). Annual dockside revenue from red grouper landings represented, on average, approximately 6% of the total dockside revenue from all commercial landings from 2009 through 2012. Average annual dockside revenue per vessel from all landings was $49,691 as compared to $3,030 per vessel from red grouper only.

Table 3.3.1.19. Dockside revenues (2013 $) from all sources for vessels that landed red grouper, 2009–2012.

Year	Number vessels that landed red grouper	Dockside revenue from red grouper (2013 $)	Dockside revenue from 'other species' jointly landed with red grouper (2013 $)	Dockside revenue from 'other species' landed on trips without red grouper (2013 $)	Total dockside revenue (2013 $)	Average total dockside revenue per vessel (2013 $)
2009	319	$1,157,513	$6,205,354	$7,544,107	$14,906,973	$46,730
2010	252	$962,645	$3,988,509	$7,823,365	$12,774,519	$50,693
2011	278	$738,266	$4,300,088	$8,700,820	$13,739,174	$49,421
2012	261	$511,806	$3,217,815	$9,821,696	$13,551,317	$51,921
Average	278	$842,558	$4,427,941	$8,472,497	$13,742,996	$49,691

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

3.3.1.1.9 Snowy Grouper

Snowy grouper is within the sea basses and grouper group of the snapper grouper fishery. From 2009 through 2013, snowy grouper's 5-year commercial landings ranked 18th by weight and 13th by revenue among the 59 species within the snapper grouper complex. Annual commercial landings of snowy grouper in the South Atlantic ranged from about 43,000 lbs ww to

105,000 lbs ww from 2009 through 2013 (**Figure 3.3.1.38**). Dockside revenues from those landings ranged from about $152,000 to $373,000 (2013 dollars) (**Figure 3.3.1.38**). The average dockside price during those five years was $3.48 per lb ww (2013$). Commercial landings and revenues for snowy grouper peaked in 2012 and were lowest in 2011.

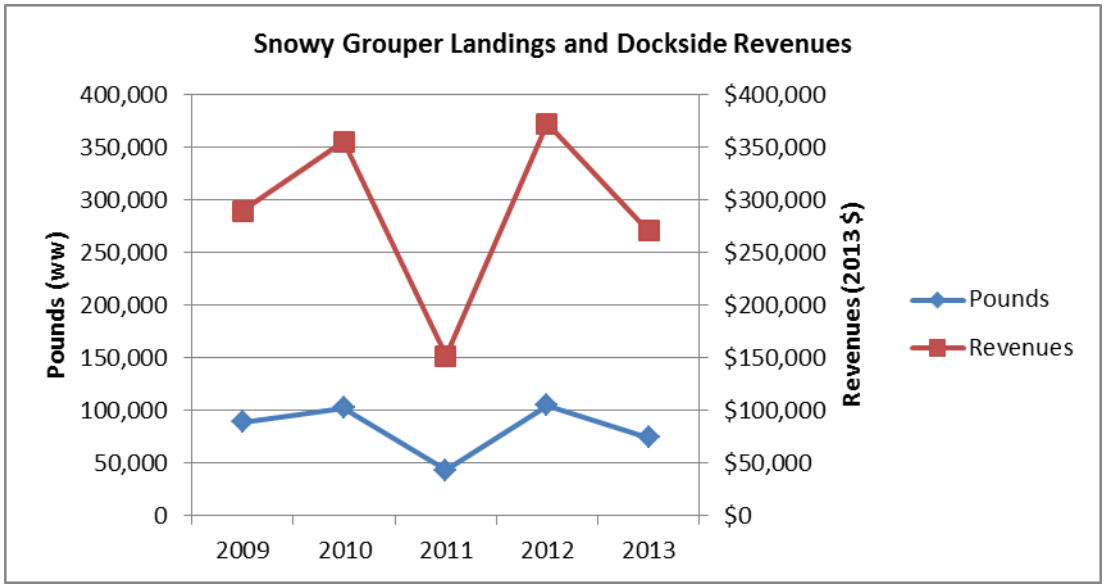


Figure 3.3.1.34. Annual commercial landings of snowy grouper by weight (lbs ww) and dockside revenue (2013 $).
Source: SEFSC Commercial ACL Dataset, excluding confidential data (April 2014).

Among the South Atlantic states, Florida/Georgia accounted for most of the snowy grouper landings both in weight and revenue for most years **(Figure 3.3.1.39** and **Figure 3.3.1.40**). South Carolina had about the same share as Florida/Georgia in 2011. Snowy grouper landings for South Carolina are not yet available for 2013.

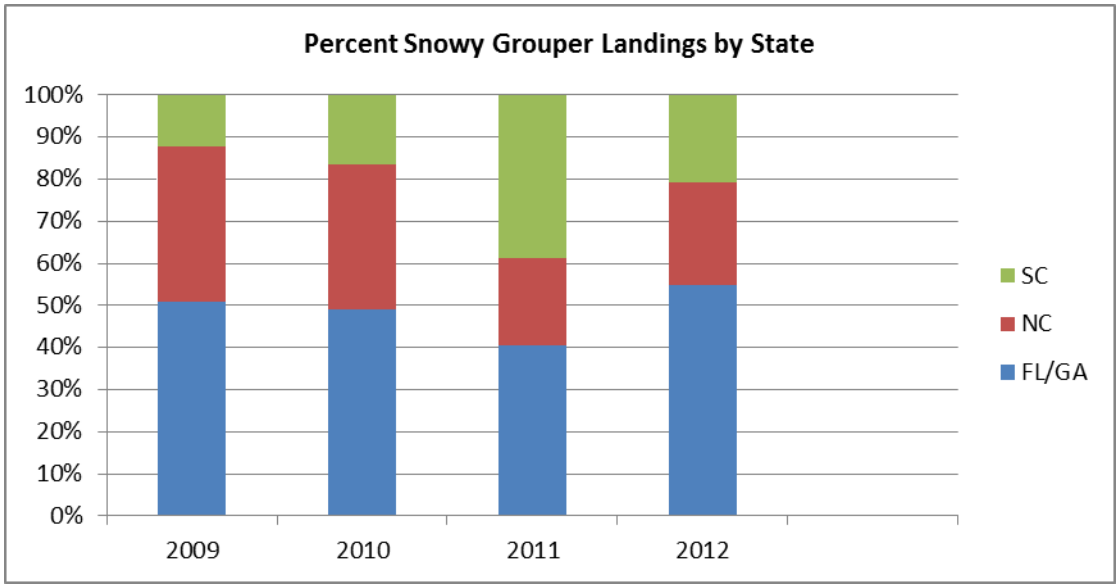


Figure 3.3.1.35. Percent of snowy grouper landings (lbs ww) by state, 2009–2012.
Source: SEFSC Commercial ACL Dataset, excluding confidential data (April 2014).

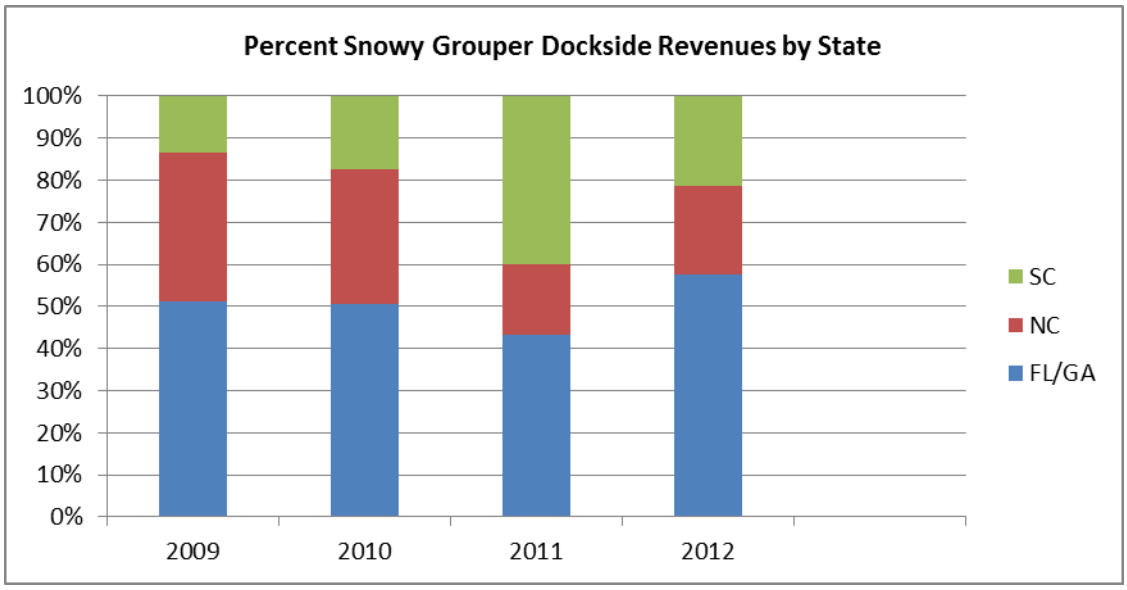


Figure 3.3.1.36. Percent of snowy grouper dockside revenues (2013 $) by state, 2009–2012. Source: SEFSC Commercial ACL Dataset, excluding confidential data (April 2014).

Average monthly distribution of landings and dockside revenues for the years 2009 through 2013 are shown in **Figure 3.3.1.41**. Average landings and revenues peaked in June and were lowest in December.

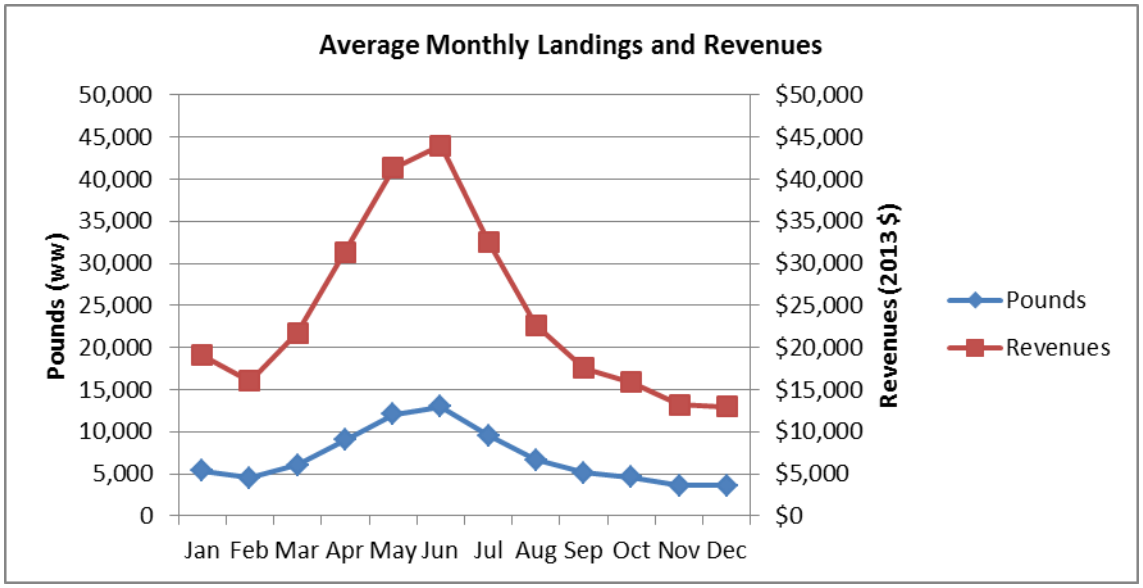


Figure 3.3.1.37. Average monthly snowy grouper landings (lbs ww) and revenues (2013 $), 2009–2013. Source: SEFSC Commercial ACL Dataset, excluding confidential data (April 2014).

From 2009 through 2013, an annual average of 138 vessels took 935 commercial trips that combined landed an average of 70,218 lbs gw of snowy grouper annually with a dockside value (2013 dollars) of $284,024 (**Table 3.3.1.20**). Average annual dockside revenue from snowy grouper landings represented approximately 9% of total dockside revenue from trips that landed snowy grouper from 2009 through 2012.

Table 3.3.1.20. Vessels and trips with snowy grouper landings by weight (lbs gw) and dockside revenue (2013 $), 2009–2013.

Year	Number vessels that landed snowy grouper	Number trips that landed snowy grouper	Snowy grouper landings (lb gw)	Dockside revenue from snowy grouper (2013 $)	'Other species' landed with snowy grouper (lb gw)	Dockside revenue from 'other species' landings (2013 $)	Total dockside revenue (2013 $) from trips with snowy grouper landings
2009	151	1,057	66,013	$254,473	1,091,322	$2,742,902	$2,997,376
2010	134	1,088	74,693	$298,355	969,160	$2,467,975	$2,766,330
2011	112	592	35,472	$148,354	781,586	$2,174,886	$2,323,240
2012	128	1,080	80,490	$338,892	829,793	$2,283,829	$2,622,721
2013	166	856	94,425	$380,047	1,486,015	$4,730,487	$5,110,534
Average	138	935	70,218	$284,024	1,031,575	$2,880,016	$3,164,040

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

On average, the vessels that harvested snowy grouper also took 3,412 trips per year without snowy grouper landings. Combining all sources of revenues, the average annual dockside revenues of vessels that landed snowy grouper was about $77,860 (2013 dollars) (**Table 3.3.1.21**). Annual dockside revenue from snowy grouper landings represented, on average, approximately 3% of the total dockside revenue from all commercial landings from 2009 through 2012. Average annual dockside revenue per vessel from all landings was $77,860 as compared to $2,058 per vessel from snowy grouper only.

Table 3.3.1.21. Dockside revenues (2013 $) from all sources for vessels that landed snowy grouper, 2009–2013.

Year	Number vessels that landed snowy grouper	Dockside revenue from snowy grouper (2013 $)	Dockside revenue from 'other species' jointly landed with snowy grouper (2013 $)	Dockside revenue from 'other species' landed on trips without snowy grouper (2013 $)	Total dockside revenue (2013 $)	Average total dockside revenue per vessel (2013 $)
2009	151	$254,473	$2,742,902	$7,291,820	$10,289,196	$68,140
2010	134	$298,355	$2,467,975	$7,260,791	$10,027,121	$74,829
2011	112	$148,354	$2,174,886	$7,055,797	$9,379,037	$83,741
2012	128	$338,892	$2,283,829	$6,819,137	$9,441,858	$73,765
2013	166	$380,047	$4,730,487	$9,634,449	$14,744,983	$88,825
Average	138	$284,024	$2,880,016	$7,612,399	$10,776,439	$77,860

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

3.3.1.1.10 Golden Crab

Annual commercial landings of golden crab in the South Atlantic ranged from about 545,000 lbs ww to 792,000 lbs ww from 2009 through 2013 (**Figure 3.3.1.42**). Dockside revenues from those landings ranged from about $1.0 million to $2.1 million (2013 $) (**Figure 3.3.1.42**). The

average dockside price during those five years was $2.32 per lb ww (2013$). Commercial landings and revenues for golden crab peaked in 2012 and were lowest in 2013 by weight and 2009 by revenue.

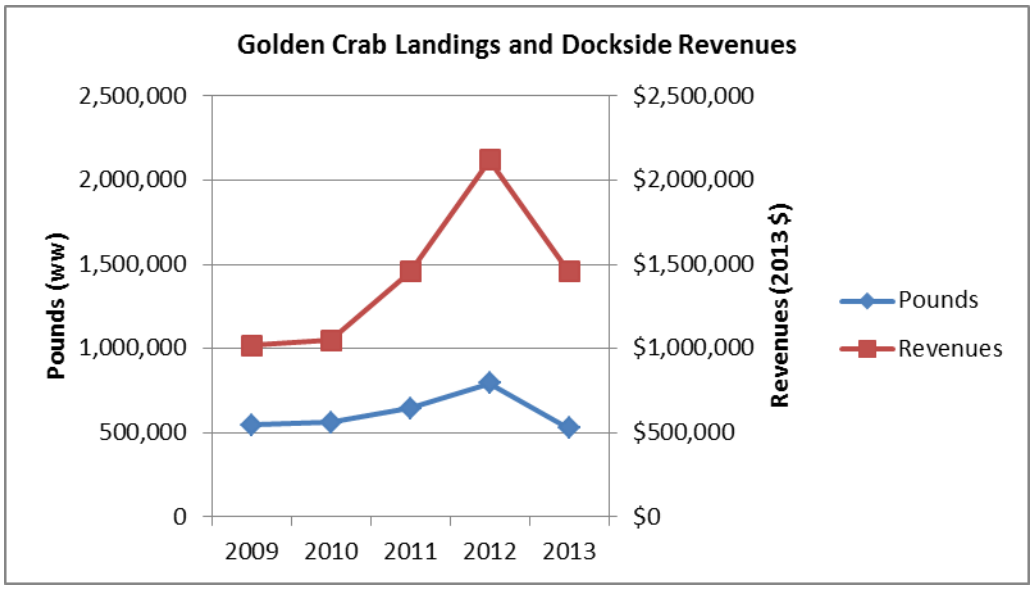


Figure 3.3.1.38. Annual commercial landings of golden crab by weight (lbs ww) and dockside revenue (2013 $).
Source: SEFSC Commercial ACL Dataset, excluding confidential data (April 2014).

Florida is the only state reporting landings of golden crab. Average monthly distribution of landings and dockside revenues for the years 2009 through 2013 are shown in **Figure 3.3.1.43**. Average landings and revenues peaked in May-June and were lowest in November.

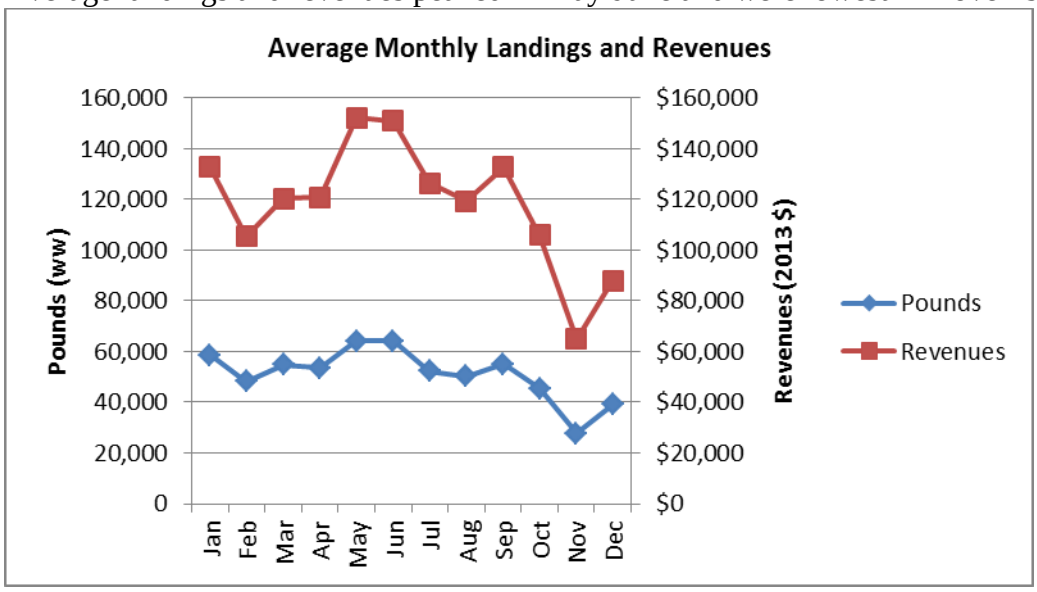


Figure 3.3.1.39. Average monthly golden crab landings (lbs ww) and revenues (2013 $), 2009–2013.
Source: SEFSC Commercial ACL Dataset, excluding confidential data (April 2014).

3.3.1.1.11 Dolphin

Annual commercial landings of dolphin in the South Atlantic ranged from about 497,000 lbs ww to 1.2 million lbs ww from 2009 through 2013 (**Figure 3.3.1.44**). Dockside revenues from those landings ranged from about $1.3 million to $2.3 million (2013 $) (**Figure 3.3.1.44**). The average dockside price during those five years was $2.28 per lb ww (2013$). Commercial landings and revenues for dolphin peaked in 2009 and declined thereafter.

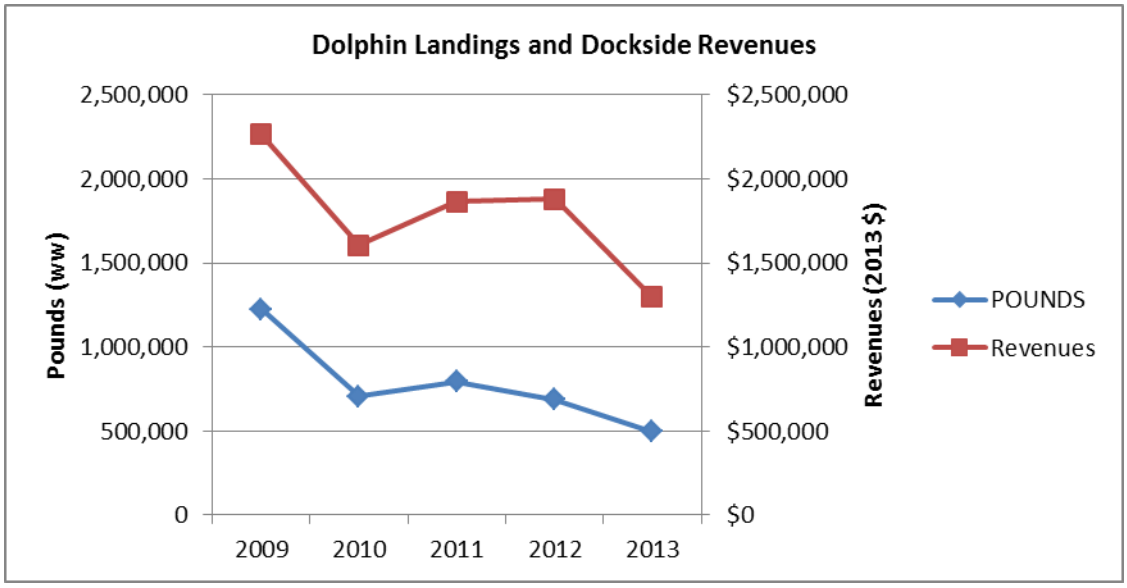


Figure 3.3.1.40. Annual commercial landings of dolphin by weight (lbs ww) and dockside revenue (2013 $).
Source: SEFSC Commercial ACL Dataset, excluding confidential data (April 2014).

The management area for dolphin extends from Florida to Maine. Among the Atlantic states, Florida/Georgia accounted for most of the dolphin landings both in weight and revenue for most years (**Figure 3.3.1.45** and **Figure 3.3.1.46**). North Carolina followed next, except in 2011 when South Carolina had a larger share than North Carolina. The Northeast region has accounted for much less than 10 % of landings by both weight and dockside revenues. Dolphin landings for South Carolina are not yet available for 2013.

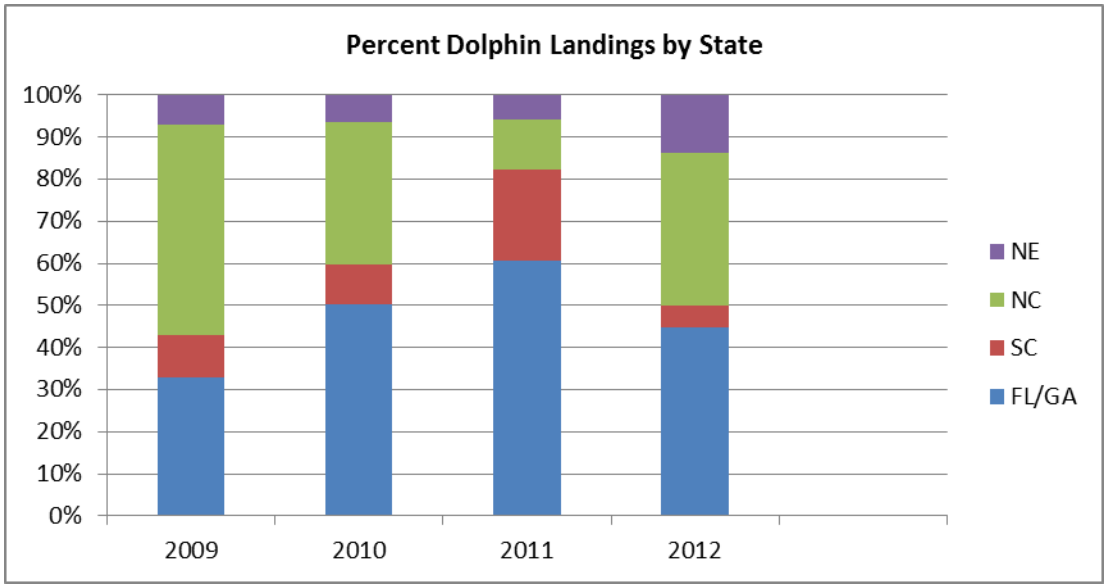


Figure 3.3.1.41. Percent of dolphin landings (lbs ww) by state, 2009–2012.
Source: SEFSC Commercial ACL Dataset, excluding confidential data (April 2014).

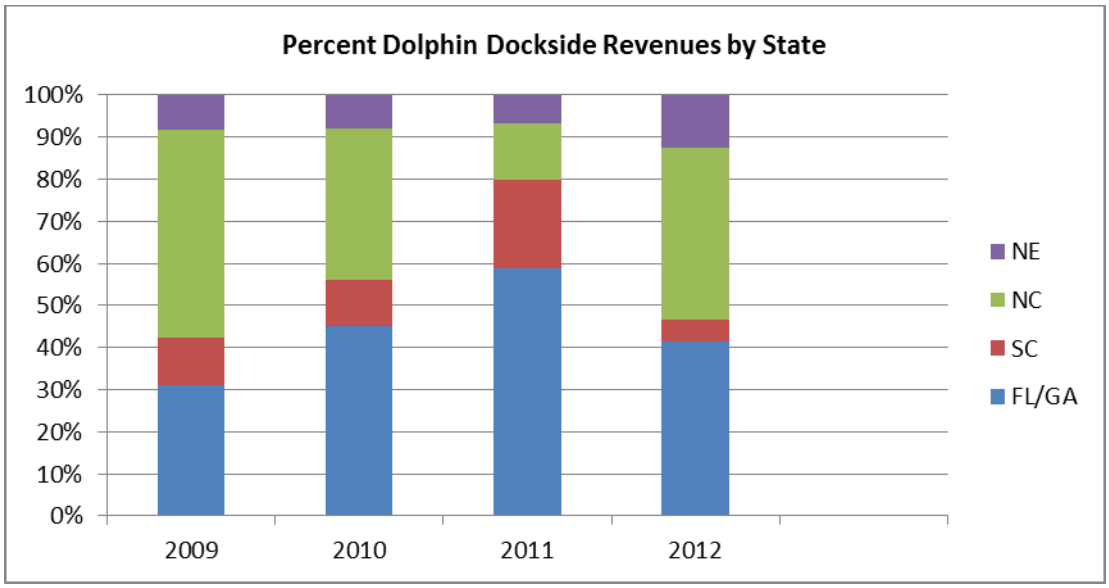


Figure 3.3.1.42. Percent of dolphin dockside revenues (2013 $) by state, 2009–2012.
Source: SEFSC Commercial ACL Dataset, excluding confidential data (April 2014).

Average monthly distribution of landings and dockside revenues for the years 2009 through 2013 are shown in **Figure 3.3.1.47**. Average landings and revenues peaked in May and were relatively lower in the colder months.

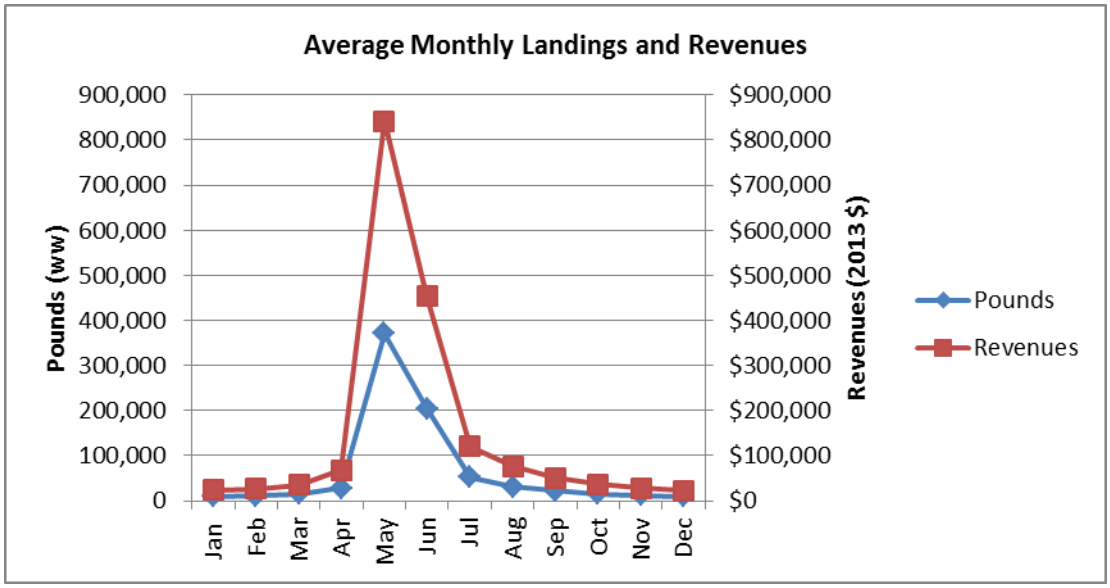


Figure 3.3.1.43. Average monthly dolphin landings (lbs ww) and revenues (2013 $), 2009–2013. Source: SEFSC Commercial ACL Dataset, excluding confidential data (April 2014).

From 2009 through 2013, excluding the Northeast, an annual average of 489 vessels took 1,935 commercial trips that combined landed an average of 200,871 lbs gw of dolphin annually with a dockside value (2013 dollars) of $541,196 (**Table 3.3.1.22**). Average annual dockside revenue from dolphin landings represented approximately 11% of total dockside revenue from trips that landed dolphin from 2009 through 2012.

Table 3.3.1.22. Vessels and trips with dolphin landings by weight (lb gw) and dockside revenue (2013 $), 2009–2013.

Year	Number vessels that landed dolphin	Number trips that landed dolphin	Dolphin landings (lb gw)	Dockside revenue from dolphin (2013 $)	'Other species' landed with dolphin (lb gw)	Dockside revenue from 'other species' landings (2013 $)	Total dockside revenue (2013 $) from trips with dolphin landings
2009	556	2,500	398,291	$878,752	1,791,695	$4,755,827	$5,634,579
2010	480	1,713	187,476	$511,249	1,336,836	$3,576,033	$4,087,282
2011	450	1,785	127,401	$376,242	1,229,178	$3,408,562	$3,784,804
2012	467	1,886	142,330	$478,291	1,309,880	$3,676,323	$4,154,615
2013	490	1,792	148,858	$461,443	1,869,484	$5,815,286	$6,276,730
Average	489	1,935	200,871	$541,196	1,507,414	$4,246,406	$4,787,602

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

On average, the vessels that harvested dolphin also took 12,285 trips per year without dolphin landings. Combining all sources of revenues, the average annual dockside revenues of vessels that landed dolphin was about $41,030 (2013 dollars) (**Table 3.3.1.23**). Annual dockside revenue from dolphin landings represented, on average, approximately 3% of the total dockside revenue from all commercial landings from 2009 through 2012. Average annual dockside revenue per vessel from all landings was $41,030 as compared to $1,109 per vessel from dolphin only.

Table 3.3.1.23. Dockside revenues (2013 $) from all sources for vessels that landed dolphin, 2009–2013.

Year	Number vessels that landed dolphin	Dockside revenue from dolphin (2013 $)	Dockside revenue from 'other species' jointly landed with dolphin (2013 $)	Dockside revenue from 'other species' landed on trips without dolphin (2013 $)	Total dockside revenue (2013 $)	Average total dockside revenue per vessel (2013 $)
2009	556	$878,752	$4,755,827	$14,904,214	$20,538,793	$36,940
2010	480	$511,249	$3,576,033	$12,552,180	$16,639,462	$34,666
2011	450	$376,242	$3,408,562	$12,036,809	$15,821,613	$35,159
2012	467	$478,291	$3,676,323	$11,710,722	$15,865,337	$33,973
2013	490	$461,443	$5,815,286	$25,286,211	$31,562,941	$64,414
Average	488	$541,196	$4,246,406	$15,298,027	$20,085,629	$41,030

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

3.3.1.1.12 Wreckfish

Wreckfish is currently managed as an ITQ program, which was established in 1992 through Amendment 5 to the Snapper Grouper FMP. The ITQ program was modified particularly relating to redistribution of unused shares through Amendment 20A (see Amendment 5 and Amendment 20A for more details on the ITQ program for wreckfish). The current commercial ACL is 223,250 lbs ww; however, Regulatory Amendment 22 to the Snapper Grouper FMP, which has been approved by the South Atlantic Council, would increase the commercial ACL to 411,350 lbs ww in 2015, if it is implemented.

Wreckfish landings by weight and revenue are shown in **Table 3.3.1.24**. For the period 2009-2010 through 2013-2014, wreckfish landings averaged 244,527 lbs ww valued at $719,564 (2013 dollars). Revenue numbers were generated using average price information from the SEFSC ACL Dataset, and are considered here preliminary until more accurate revenue figures become available.

Table 3.3.1.24. Wreckfish landings (lbs ww) and dockside revenues (2013 $), 2009-2013.

Fishing Year	Pounds (ww)	Revenues (2013 $)*
2009-2010	216,449	$619,748
2010-2011	257,320	$745,390
2011-2012	318,673	$977,331
2012-2013	213,701	$712,115
2013-2014	216,543	$709,820
Average	244,537	$752,881

Source: David Gloeckner, pers. comm., 2014

3.3.1.1.13 Unassessed Species

Unassessed species not in the deepwater complex are also subject to the provisions in this amendment. These species are grouped into 6 categories: jacks (3 species); snappers (5 species); grunts (4 species); shallow-water groupers (6 species); porgies (5 species); and, individual stocks (5 species). Average landings for these species for the period 2009-2013 are presented in **Table 3.3.1.25**, and their respective average dockside revenues are presented in **Table 3.3.1.26**.

Table 3.3.1.25. Average landings (lb ww) of selected species by gear type, 2009–2013.

Stock	Landings (lbs ww)		
Jacks	**Hook & Line**	**Longline**	**Other**
Almaco jack	174,130	281	12,417
Banded rudderfish	63,552	4	510
Lesser amberjack	16,292	697	359
Snappers			
Gray snapper	106,624	77	12,867
Lane snapper	2,849	0	158
Cubera snapper	2,852	23	1,233
Dog snapper*	282	0	17
Mahogany snapper*	36	0	9
Grunts			
White grunt	84,481	5	19,331
Sailors choice	2	0	0
Tomtate	169	0	1
Margate	2,738	97	969
Shallow Water Groupers			
Red hind	7,698	0	80
Rock hind	11,156	0	419
Yellowmouth grouper	208	0	242
Yellowfin grouper	2,745	3	295
Coney	33	0	17
Graysby	109	0	509
Porgies			
Jolthead porgy	1,774	0	3,189
Knobbed porgy	19,665	7	3,144
Saucereye porgy	0	0	0
Scup	0	0	0
Whitebone porgy	10	0	0
Individual Stocks			
Atlantic spadefish	963	0	25,976
Bar jack	3,627	0	597
Gray triggerfish	431,697	1,580	43,877
Scamp	156,673	899	20,223
Hogfish	13,118	12	26,351

Source: SEFSC Commercial ACL Dataset, excluding confidential data (April 2014).

* Dog snapper and mahogany snapper are being considered for removal from the Snapper Grouper FMP in Amendment 35 to the Snapper Grouper FMP.

Table 3.3.1.26. Dockside revenues from selected species by gear type, 2009–2013.

Stock	Landings (lbs ww)		
Jacks	**Hook & Line**	**Longline**	**Other**
Almaco jack	$159,598	$261	$11,544
Banded rudderfish	$45,322	$3	$447
Lesser amberjack	$12,843	$512	$449
Snappers			
Gray snapper	$225,350	$154	$37,984
Lane snapper	$6,757	$1	$429
Cubera snapper	$5,467	$28	$1,911
Dog snapper*	$263	$0	$54
Mahogany snapper*	$75	$0	$21
Grunts			
White grunt	$86,441	$6	$17,495
Sailors choice	$2	$0	$0
Tomtate	$82	$0	$1
Margate	$2,879	$71	$1,025
Shallow Water Groupers			
Red hind	$23,300	$1	$195
Rock hind	$44,740	$0	$1,609
Yellowmouth grouper	$866	$0	$774
Yellowfin grouper	$11,219	$9	$1,204
Coney	$73	$0	$53
Graysby	$349	$0	$1,447
Porgies			
Jolthead porgy	$2,375	$0	$3,033
Knobbed porgy	$18,964	$8	$1,524
Saucereye porgy	$0	$0	$0
Scup	$0	$0	$0
Whitebone porgy	$6	$0	$0
Individual Stocks			
Atlantic spadefish	$713	$0	$10,184
Bar jack	$4,012	$0	$1,027
Gray triggerfish	$773,985	$2,211	$68,675
Scamp	$632,226	$3,107	$83,064
Hogfish	$41,476	$31	$85,806

Source: SEFSC Commercial ACL Dataset, excluding confidential data (April 2014).

* Dog snapper and mahogany snapper are being considered for removal from the Snapper Grouper FMP in Amendment 35 to the Snapper Grouper FMP.

3.3.1.2 Economic Description of the Recreational Sector

The recreational sector of the snapper grouper fishery is comprised of the private sector and the for-hire sector. The private sector includes anglers fishing from shore (all land-based structures) and private/rental boats. The for-hire sector is composed of the charter boat and headboat (also called partyboat) sectors. Charter boats generally carry fewer passengers and charge a fee on an entire vessel basis, whereas headboats carry more passengers and payment is per person.

For-hire vessels are required to have a for-hire snapper grouper permit to fish for or possess snapper grouper species in the U.S. EEZ. The number of vessels with for-hire snapper grouper permits for the period 2009-2013 is provided in **Table 3.3.1.27**. This sector operates as an open access fishery and not all permitted vessels are necessarily active in the fishery. Some vessel owners may have obtained open access permits as insurance for uncertainties in the fisheries in which they currently operate.

The number of for-hire vessel permits issued for the South Atlantic snapper grouper fishery decreased from 1,852 permits in 2009 to 1,799 permits in 2013. It may be noted, though, that for-hire vessel permits increased slightly in the last two years from their lowest in 2011. The majority of snapper grouper for-hire permitted vessels were home-ported in Florida; a relatively high proportion of these permitted vessels were also home-ported in North Carolina and South Carolina. Many vessels with South Atlantic for-hire snapper grouper permits were home-ported in states outside of the South Atlantic Council's area of jurisdiction, particularly in the Gulf states of Alabama through Texas. The number of vessels with South Atlantic for-hire snapper grouper permits home-ported in states outside of South Atlantic Council's area of jurisdiction has accounted for about the same proportion (10-11%) of the total number of permits.

Table 3.3.1.27. Number of South Atlantic for-hire snapper grouper permits, by homeport state, 2008-2012.

Home Port	2009	2010	2011	2012	2013	Average
North Carolina	349	331	330	312	307	326
South Carolina	146	145	132	138	150	142
Georgia	30	27	26	26	30	28
Florida	1,131	1,109	1,099	1,122	1,121	1,116
Gulf (AL-TX)	83	86	91	93	91	89
Others	113	114	103	106	100	107
TOTAL	1,852	1,812	1,781	1,797	1,799	1,808

Source: NMFS SERO Permits Dataset, 2014.

For-hire vessels are also required to have a for-hire snapper dolphin/wahoo permit to fish for or possess dolphin or wahoo in the U.S. EEZ. The number of vessels with for-hire dolphin/wahoo permits for the period 2009-2013 is provided in **Table 3.3.1.28**. This sector operates as an open access fishery and not all permitted vessels are necessarily active in the fishery. Some vessel owners may have obtained open access permits as insurance for uncertainties in the fisheries in which they currently operate. The number of permits fluctuated from year to year, with the highest in 2010 and lowest in 2009.

Table 3.3.1.28. Number of South Atlantic for-hire dolphin-wahoo vessel permits, 2008-2012.

Home Port State	2009	2010	2011	2012	2013	Average
Florida	1,011	1,021	1,015	1,031	1,063	1,028
Georgia	24	28	24	23	27	25
North Carolina	401	412	394	393	354	391
South Carolina	137	148	147	140	143	143
Mid-Atlantic	291	299	313	303	282	298
North Atlantic	14	19	21	21	22	19
Gulf States (AL-TX)	66	73	78	86	88	78
Other States	21	21	14	17	6	16
Total	1,965	2,021	2,006	2,014	1,985	1,998

Source: NMFS, SERO Permits Dataset, 2014.

For-hire permits do not distinguish charter boats from headboats. Based on a 1997 survey, Holland et al. (1999) estimated that a total of 1,080 charter vessels and 96 headboats supplied for-hire services in all South Atlantic fisheries during 1997. By 2014, the estimated number of headboats supplying for-hire services in all South Atlantic fisheries had fallen to 77, indicating a decrease in fleet size of approximately 20% between 1997 and 2014 (K. Brennan, Beaufort Laboratory, SEFSC, personal communication, 2014).

According to the Southeast Regional Office Website, the Constituency Services Branch (Permits) unofficially listed 1,416 current holders of South Atlantic for-hire snapper grouper permits and 1,544 current holders of South Atlantic for-hire dolphin/wahoo permits as of April 21, 2014. There are no specific permitting requirements for recreational anglers to harvest snapper grouper. Instead, anglers are required to possess either a state recreational fishing permit that authorizes saltwater fishing in general, or be registered in the federal National Saltwater Angler Registry system, subject to appropriate exemptions

The following description focuses on the recreational landings and effort (angler trips) for the key species in this amendment. The major sources of data summarized in this description are the Recreational ACL Dataset (mrfssassess_rec81_13wv6_24feb14), as summarized by SERO-LAPP, for landings and the NOAA fisheries website for accessing recreational data (**http://www.st.nmfs.noaa.gov/recreational-fisheries/access-data/run-a-data-query/index)** for effort. The 2013 data are preliminary or incomplete, including the unavailability of the 2013 headboat landings. Additional information on the recreational sector of the snapper grouper fishery and dolphin/wahoo fishery as a whole is contained in previous or concurrent amendments and is incorporated herein by reference [see Amendment 13C to the Snapper Grouper FMP (SAFMC 2006), Amendment 15A to the Snapper Grouper FMP (SAFMC 2008a), Amendment 15B to the Snapper Grouper FMP (SAFMC 2008b), Amendment 16 to the Snapper Grouper FMP (SAFMC 2009a), Amendment 17A to the Snapper Grouper FMP (SAFMC 2010a), Amendment 17B to the Snapper Grouper FMP (SAFMC 2010b), Regulatory Amendment 9 to the Snapper Grouper FMP (SAFMC 2011a), Regulatory Amendment 11 to the Snapper Grouper FMP (SAFMC 2011b), Comprehensive ACL Amendment (SAFMC 2011c), and Amendment 24 to the Snapper Grouper FMP (SAFMC 2011d), Amendment 5 to the Dolphin Wahoo FMP (SAMFC 2013)].

Landings

3.3.1.2.1 Black Grouper Landings

For the period 2009-2013, the private mode was been the dominant fishing mode for harvesting black grouper (**Table 3.3.1.29**). The for-hire mode, particularly headboats, lagged far behind the private mode.

Table 3.3.1.29. Black grouper recreational landings by mode, 2009-2013.

	Charter	Headboat	Private	Shore	Total
2009	14,498	2,478	120,796	0	137,772
2010	13,008	2,904	20,273	0	36,185
2011	10,188	3,730	37,980	0	51,898
2012	26,072	4,940	118,342	0	149,354
2013	7,800	u/a	90,425	0	98,225
Average	14,313	2,810	77,563	0	94,687

Source: SEFSC ACL Recreational Dataset (mrfssassess_rec81_13wv6_24feb14).
u/a – unavailable.

Black grouper are landed in Florida, with the other states recording no landings of the species. A strong seasonality characterized the recreational landings for black grouper (**Figure 3.3.1.44**). Landings were highest in May/June and lowest in March/April.

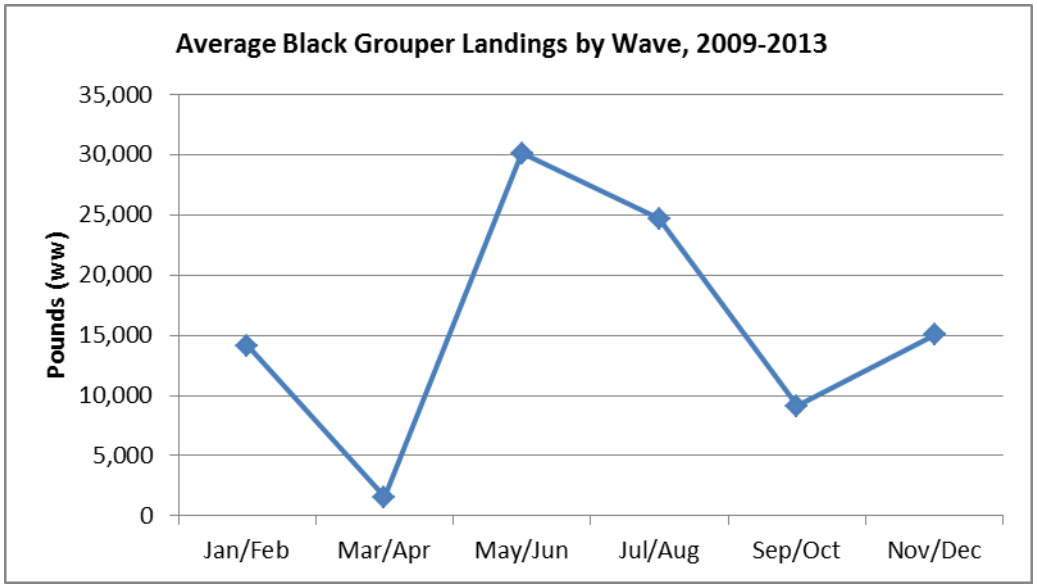


Figure 3.3.1.44. Average black grouper landings (lbs ww) by wave, 2009–2013.
Source: SEFSC ACL Recreational Dataset (mrfssassess_rec81_13wv6_24feb14).

3.3.1.2.2 Mutton Snapper Landings

Although the private mode dominated in the landings of mutton snapper throughout the period 2009-2013, landings by the charter mode were relatively large in 2012 and 2013 (**Table 3.3.1.30**). A fair amount of landings is reported for the shore mode.

Table 3.3.1.30. Mutton snapper recreational landings by mode, 2009-2013.

	Charter	Headboat	Private	Shore	Total
2009	70,384	72,386	277,861	15,490	436,121
2010	60,230	49,645	420,655	38,942	569,472
2011	79,066	53,171	129,696	19,313	281,246
2012	184,174	74,640	212,602	5,606	477,022
2013	106,377	u/a	307,627	37,434	451,438
Average	100,046	49,968	269,688	23,357	443,060

Source: SEFSC ACL Recreational Dataset (mrfssassess_rec81_13wv6_24feb14)
u/a – unavailable.

Mutton snapper are mostly landed in Florida, with minimal landings in other states. Peak landings for mutton snapper occurred in May/June while the lowest landings occurred in September/October and November/December (**Figure 3.3.1.45**).

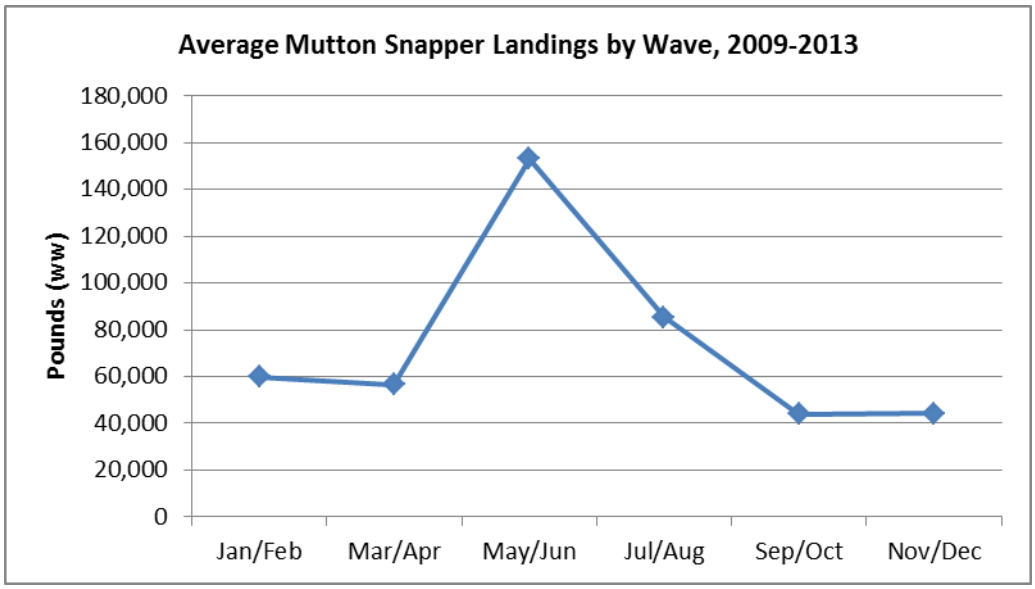


Figure 3.3.1.45. Average mutton snapper landings (lbs ww) by wave, 2009–2013.
Source: SEFSC ACL Recreational Dataset (mrfssassess_rec81_13wv6_24feb14).

3.3.1.2.3 Yellowtail Snapper Landings

The private mode was, on average, the dominant harvesting sector for yellowtail snapper, but in 2012 and 2013 chaterboats landed more yellowtail snapper than the private mode (**Table 3.3.1.31**). A relatively large increase in headboat landings occurred in 2012.

Table 3.3.1.31. Yellowtail snapper recreational landings by mode, 2009-2013.

	Charter	Headboat	Private	Shore	Total
2009	97,299	75,073	174,821	1,343	348,536
2010	138,801	85,552	208,675	1,231	434,259
2011	115,057	85,024	190,916	0	390,997
2012	214,566	116,524	158,711	3,609	493,410
2013	329,348	u/a	246,711	9,371	585,430
Average	179,014	72,435	195,967	3,111	450,526

Source: SEFSC ACL Recreational Dataset (mrfssassess_rec81_13wv6_24feb14)
u/a – unavailable.

Yellowtail snapper are mostly landed in Florida, with minimal landings in other states. On average, peak landings for yellowtail snapper occurred in May/June (**Figure 3.3.1.46**). The lowest landings occurred in the last four months of the year.

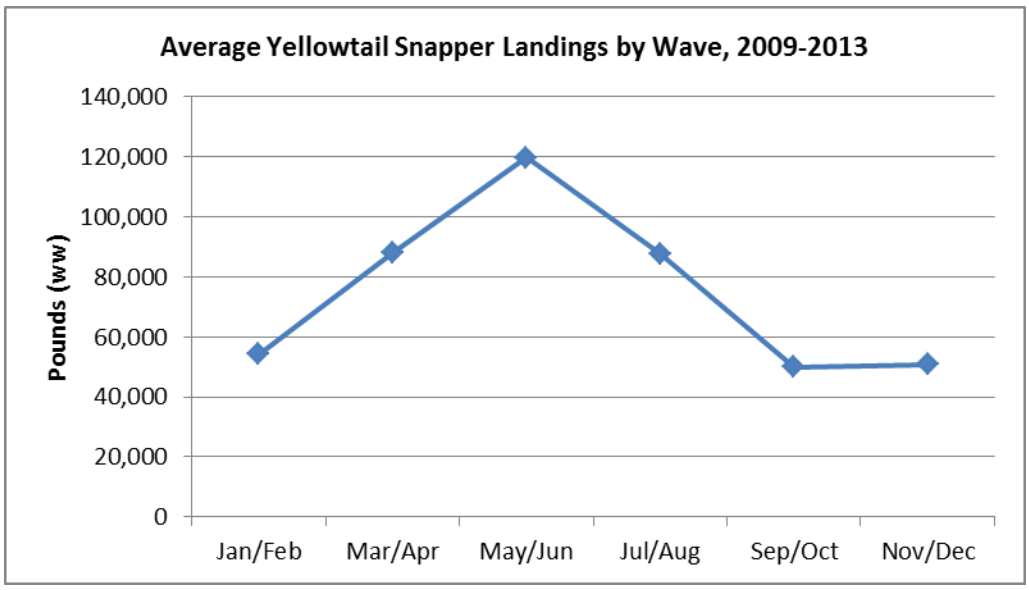


Figure 3.3.1.46. Average yellowtail snapper landings (lbs ww) by wave, 2009–2013.
Source: SEFSC ACL Recreational Dataset (mrfssassess_rec81_13wv6_24feb14).

3.3.1.2.4 Greater Amberjack Landings

Except for 2012, the private mode was the dominant sector in harvesting greater amberjack (**Table 3.3.1.32**). In 2012, the charter mode landed more greater amberjack than the private mode.

Table 3.3.1.32. Greater amberjack recreational landings by mode, 2009-2013.

	Charter	Headboat	Private	Shore	Total
2009	622,464	89,215	737,034	0	1,448,713
2010	493,418	74,697	506,804	0	1,074,919
2011	203,069	36,161	223,744	28,891	491,865
2012	399,688	44,931	300,385	0	745,004
2013	373,677	u/a	442,328	0	816,005
Average	418,463	49,001	442,059	5,778	915,301

Source: SEFSC ACL Recreational Dataset (mrfssassess_rec81_13wv6_24feb14)
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Among the South Atlantic states, Florida and South Carolina accounted for most of the greater amberjack landings (**Figure 3.3.1.47**). Landings in Florida, however, were substantially more than those in South Carolina.

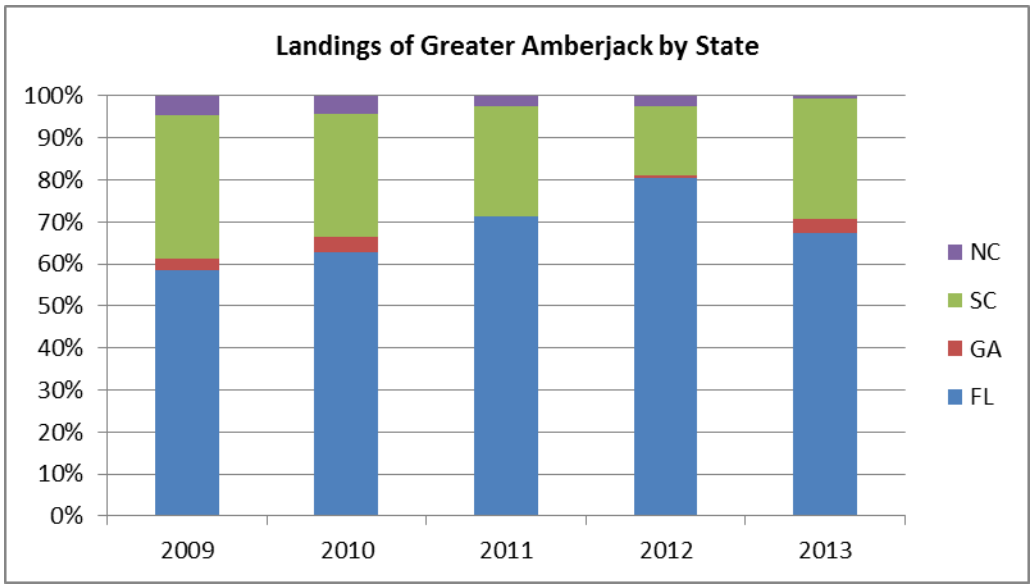

Figure 3.3.1.47. Greater amberjack landings (lbs ww) by state, 2009–2013.
Source: SEFSC ACL Recreational Dataset (mrfssassess_rec81_13wv6_24feb14).

Like many of the previous species, greater amberjack landings peaked in May/June (**Figure 3.3.1.48**). The lowest landings occurred in January/February.

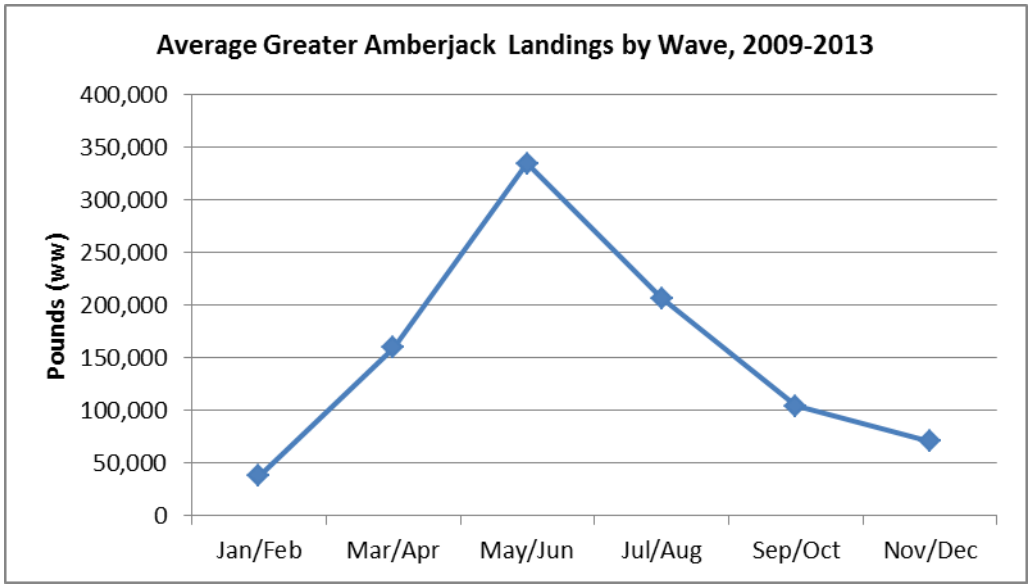

Figure 3.3.1.48. Average greater amberjack landings (lbs ww) by wave, 2009–2013.
Source: SEFSC ACL Recreational Dataset (mrfssassess_rec81_13wv6_24feb14).

3.3.1.2.5 Red Porgy Landings

Unlike the case with the previous species, headboats landed more red porgy than the other fishing modes (**Table 3.3.1.33**). Not counting 2013 for which headboat landings are not yet available, it was only in 2009 that headboat landings lagged behind those by the private mode.

Table 3.3.1.33. Red porgy recreational landings by mode, 2009-2013.

	Charter	Headboat	Private	Shore	Total
2009	12,244	33,752	52,596	0	98,592
2010	17,270	37,413	27,810	0	82,493
2011	9,598	39,191	18,687	0	67,476
2012	28,566	41,086	31,048	0	100,700
2013	19,875	u/a	20,137	1,956	41,968
Average	17,511	30,288	30,056	391	78,246

Source: SEFSC ACL Recreational Dataset (mrfssassess_rec81_13wv6_24feb14).
u/a – unavailable.

Among the South Atlantic states, North Carolina accounted for most of red porgy landings each year from 2009 through 2013 (**Figure 3.3.1.49**). South Carolina ranked second, although in the last two years (2012 and 2013), Florida/Georgia recorded higher landings than South Carolina.

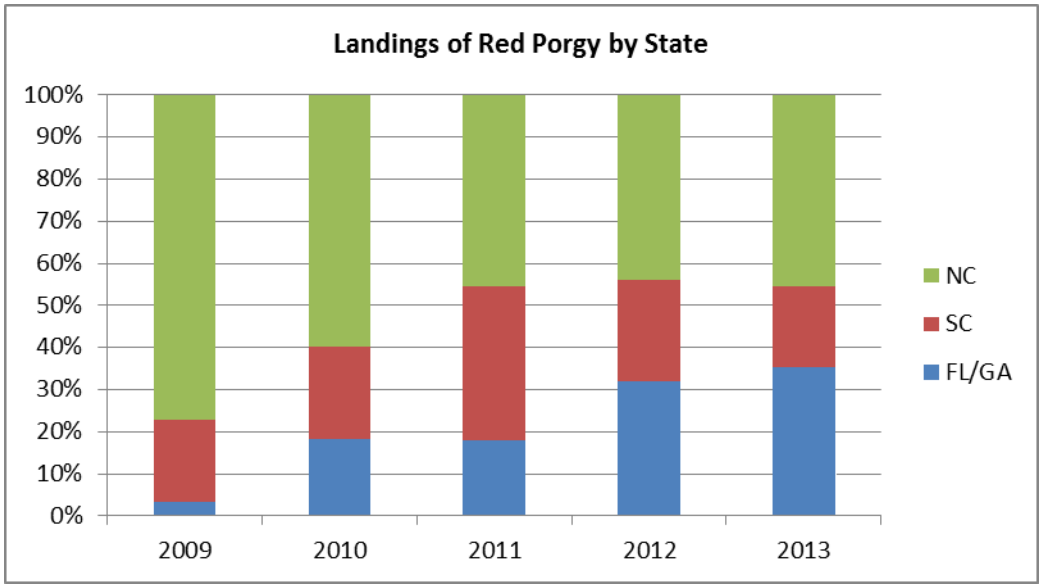

Figure 3.3.1.49. Red porgy landings (lbs ww) by state, 2009–2013.
Source: SEFSC ACL Recreational Dataset (mrfssassess_rec81_13wv6_24feb14).

Like the case with the previous species, red porgy landings peaked in May/June (**Figure 3.3.1.50**). The lowest landings occurred in November/December.

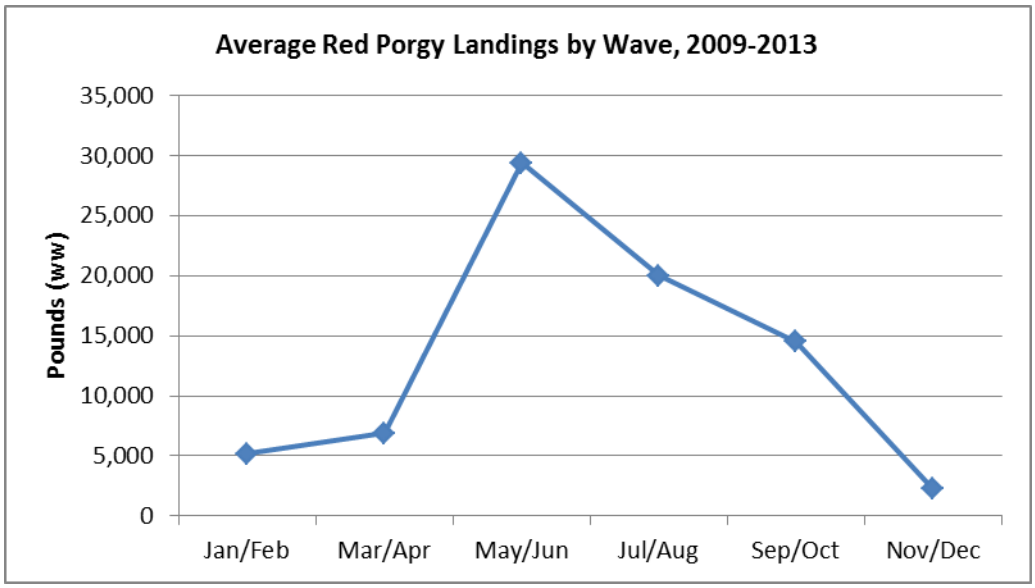

Figure 3.3.1.50. Average red porgy landings (lbs ww) by wave, 2009–2013.
Source: SEFSC ACL Recreational Dataset (mrfssassess_rec81_13wv6_24feb14).

3.3.1.2.6 Gag Landings

The private mode dominated by far all other modes in the harvest for gag (**Table 3.3.1.34**). The charter mode came in second, followed by headboats. There were some landings reported for the shore in 2009, but none thereafter.

Table 3.3.1.34. Gag recreational landings by mode, 2009-2013.

	Charter	Headboat	Private	Shore	Total
2009	57,053	31,556	222,882	7,019	318,510
2010	31,690	32,366	142,999	0	207,055
2011	13,209	30,116	160,618	0	203,943
2012	21,083	19,904	169,131	0	210,118
2013	3,064	u/a	71,979	0	75,043
Average	25,220	22,788	153,522	1,404	202,934

Source: SEFSC ACL Recreational Dataset (mrfssassess_rec81_13wv6_24feb14).
u/a – unavailable.

Florida/Georgia accounted for most of the gag landings, followed by South Carolina and North Carolina (**Figure 3.3.1.51**). South Carolina had its highest landings in 2012.

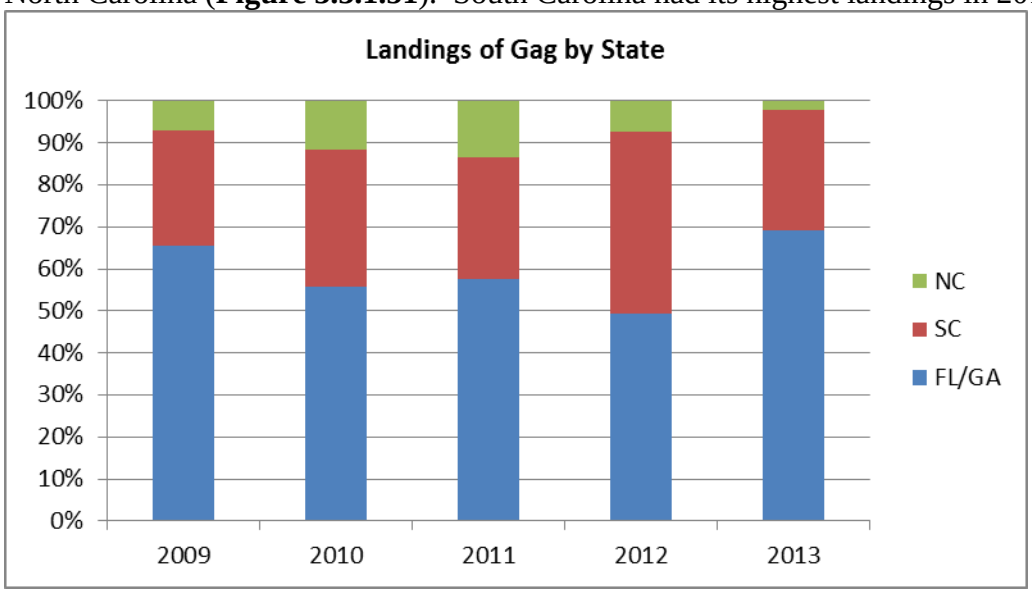

Figure 3.3.1.51. Gag landings (lbs ww) by state, 2009–2013.
Source: SEFSC ACL Recreational Dataset (mrfssassess_rec81_13wv6_24feb14).

Very similar to the previous species, gag landings peaked in May/June (**Figure 3.3.1.52**). March/April recorded the lowest landings for gag.

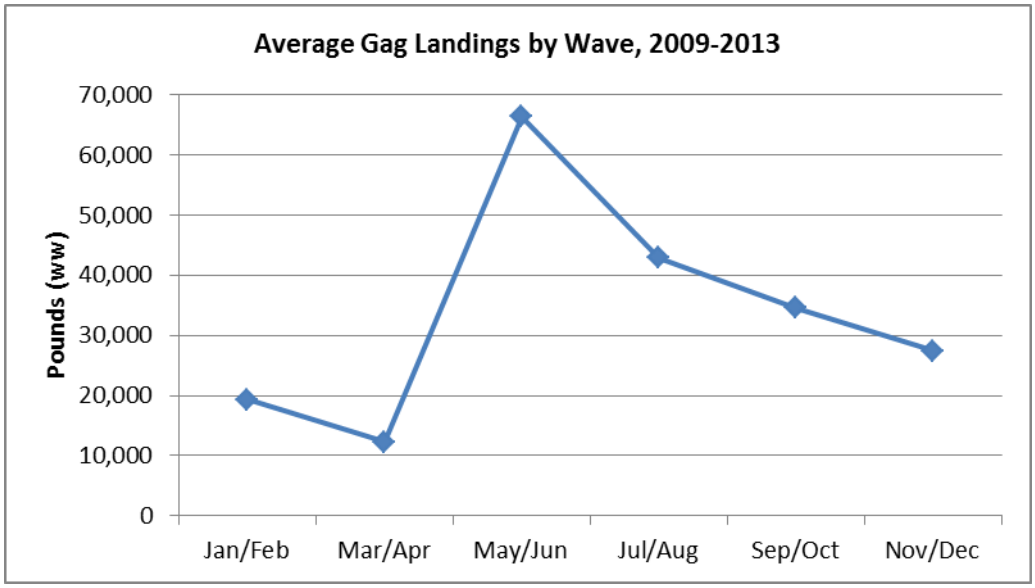

Figure 3.3.1.52. Average gag landings (lbs ww) by wave, 2009–2013.
Source: SEFSC ACL Recreational Dataset (mrfssassess_rec81_13wv6_24feb14).

3.3.1.2.7 Golden Tilefish Landings

Golden tilefish are mostly harvested by the private and charter modes, with the other modes reporting no landings of the species (**Table 3.3.1.35**). The private mode was the dominant mode in each year from 2009 through 2013.

Table 3.3.1.35. Golden tilefish recreational landings by mode, 2009-2013.

	Charter	Headboat	Private	Shore	Total
2009	12,300	0	42,213	0	54,513
2010	3,064	0	25,147	0	28,211
2011	874	0	87,300	0	88,174
2012	4,646	0	13,822	0	18,468
2013	9,880	0	6,315	0	16,195
Average	6,153	0	34,959	0	41,112

Source: SEFSC ACL Recreational Dataset (mrfssassess_rec81_13wv6_24feb14).
u/a – unavailable.

Golden tilefish are mainly landed in Florida, with relatively low landings in other states. As the case with the previous species, golden tilefish landings peaked in May/June (**Figure 3.3.1.53**). The lowest landings occurred in January/February.

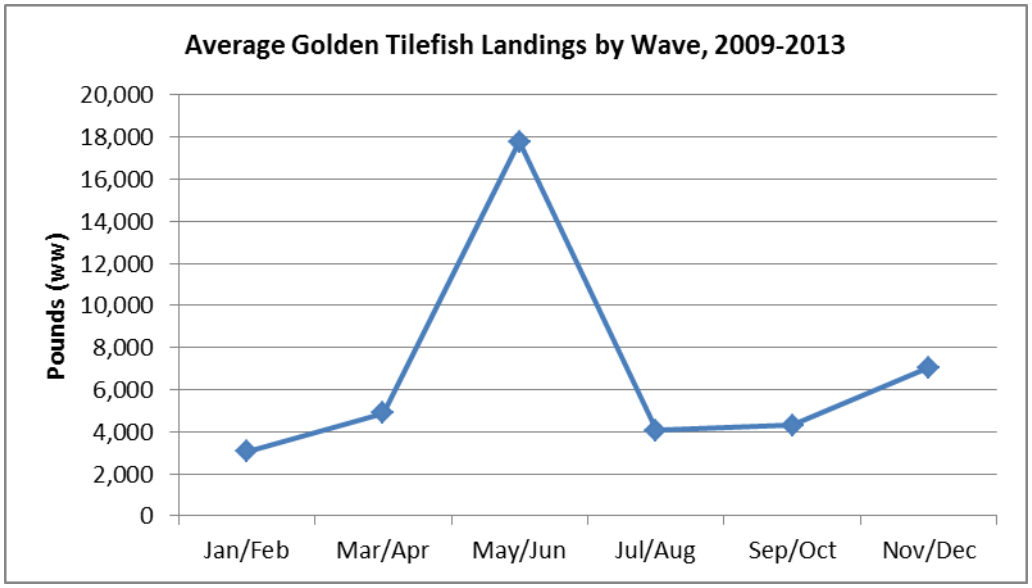

Figure 3.3.1.53. Average golden tilefish landings (lbs ww) by wave, 2009–2013.
Source: SEFSC ACL Recreational Dataset (mrfssassess_rec81_13wv6_24feb14).

3.3.1.2.8 Red Grouper Landings

The private mode, by far, dominated all other modes in the harvest for red grouper (**Table 3.3.1.36**). While on average, headboat landings were higher than those of charterboats, the landings for these two modes did not differ by much, except for 2012.

Table 3.3.1.36. Red grouper recreational landings by mode, 2009-2013.

	Charter	Headboat	Private	Shore	Total
2009	12,037	15,693	255,836	0	283,566
2010	8,533	9,509	85,154	0	103,196
2011	9,791	10,163	91,362	0	111,316
2012	4,617	11,515	85,458	0	101,590
2013	471	u/a	75,210	0	75,681
Average	7,090	9,376	118,604	0	135,070

Source: SEFSC ACL Recreational Dataset (mrfssassess_rec81_13wv6_24feb14).
u/a – unavailable.

North and South Carolina reported most landings of red grouper in the early years, but in the last three years (2011-2013), most landings were accounted for by Florida/Georgia (**Figure 3.3.1.54**).

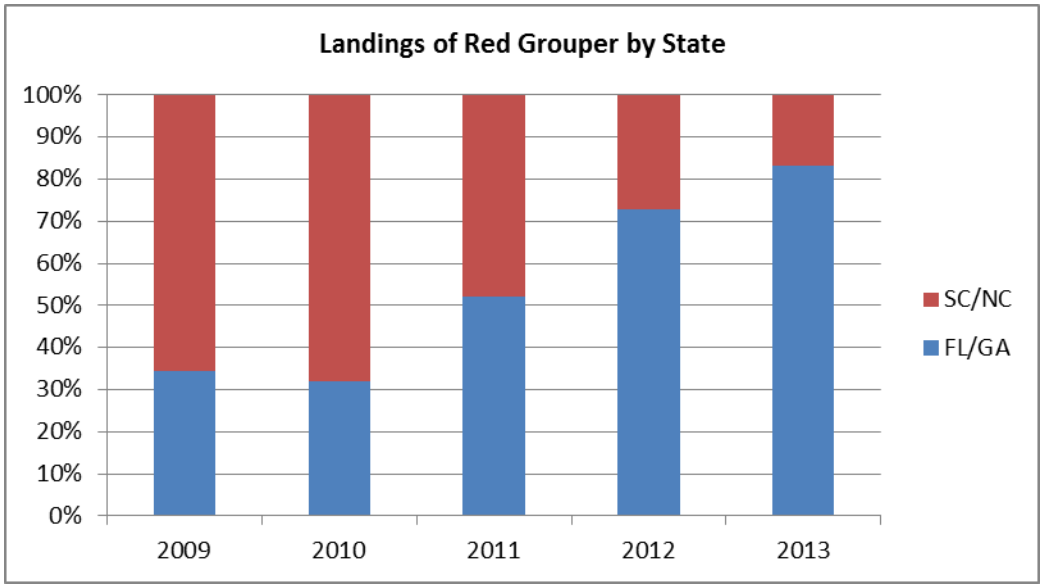

Figure 3.3.1.54. Red grouper landings (lbs ww) by state, 2009–2013.
Source: SEFSC ACL Recreational Dataset (mrfssassess_rec81_13wv6_24feb14).

Like the previous species, red grouper had its peak landings in May/June (**Figure 3.3.1.55**). The lowest landings occurred in September/October.

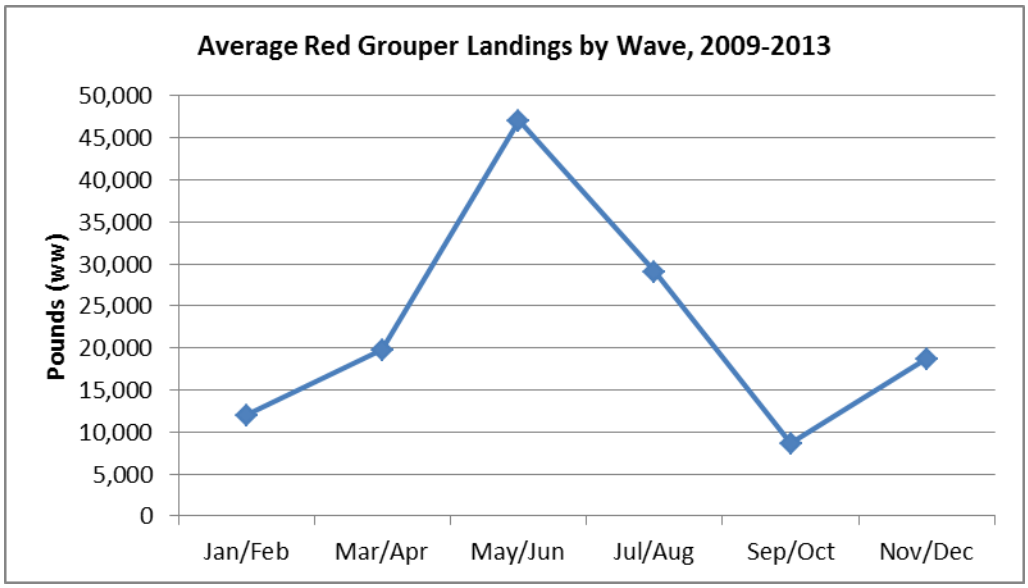

Figure 3.3.1.55. Average red grouper landings (lb ww) by wave, 2009–2013.
Source: SEFSC ACL Recreational Dataset (mrfssassess_rec81_13wv6_24feb14).

3.3.1.2.9 Snowy Grouper Landings

Most landings of snowy grouper were accounted for by the private mode, followed by charter mode and headboats (**Table 3.3.1.37**). Relatively low landings were reported for headboats.

Table 3.3.1.37. Snowy grouper recreational landings by mode, 2009-2013.

	Charter	Headboat	Private	Shore	Total
2009	25,968	204	51,001	0	77,173
2010	38,561	139	9,423	0	48,123
2011	1,429	67	0	0	1,496
2012	12,274	85	33,817	0	46,176
2013	10,674	u/a	36,012	0	46,686
Average	17,781	99	26,051	0	43,931

Source: SEFSC ACL Recreational Dataset (mrfssassess_rec81_13wv6_24feb14).
u/a – unavailable.

Florida/Georgia accounted for most of snowy grouper landings in 2009 and in 2012-2013 (**Figure 3.3.1.56**). In the intervening years, North/South Carolina accounted for almost all landings of snowy grouper.

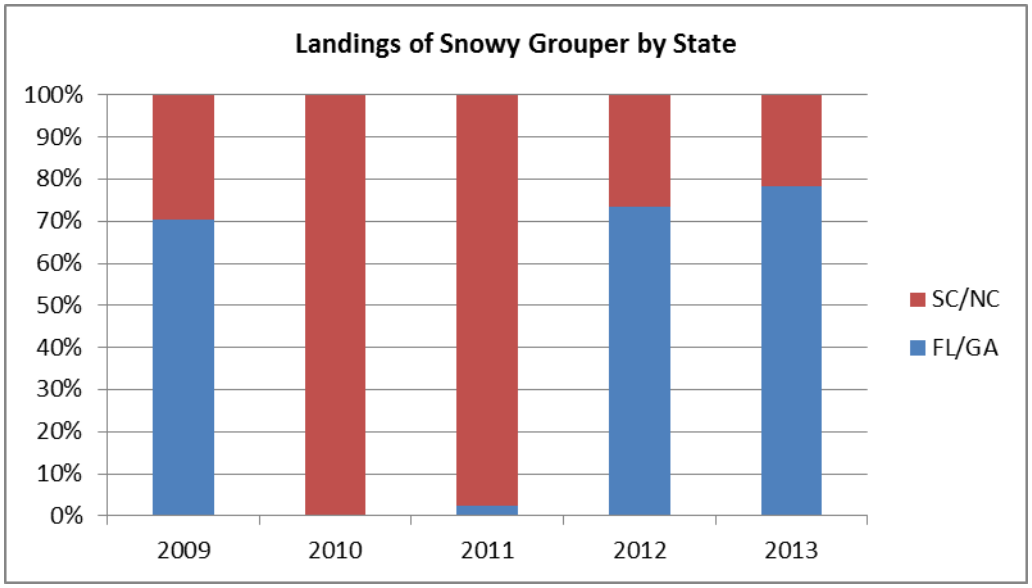

Figure 3.3.1.56. Snowy grouper landings (lbs ww) by state, 2009–2013.
Source: SEFSC ACL Recreational Dataset (mrfssassess_rec81_13wv6_24feb14).

Unlike the previous species, snowy grouper had its peak landings in September/October (**Figure 3.3.1.57**). January/February recorded the lowest landings for snowy grouper.

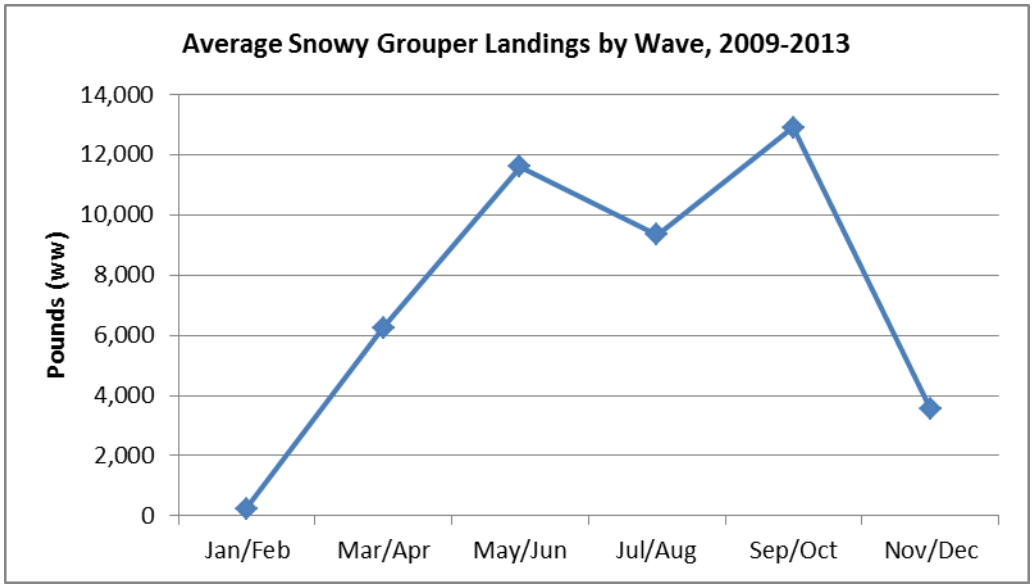

Figure 3.3.1.57. Average snowy grouper landings (lbs ww) by wave, 2009–2013.
Source: SEFSC ACL Recreational Dataset (mrfssassess_rec81_13wv6_24feb14).

3.3.1.2.10 Dolphin Landings

Unlike all the other species discussed above, the private mode recorded the highest landings for dolphin, followed by the charter mode, and headboats (**Table 3.3.1.38**). Private mode and charterboat landings were relatively high, whereas those for headboats were relatively low.

Table 3.3.1.38. Dolphin recreational landings by mode, 2009-2013.

	Charter	Headboat	Private	Shore	Total
2009	1,710,180	24,138	5,835,877	0	7,570,195
2010	2,489,546	19,535	3,734,319	0	6,243,399
2011	2,263,865	20,128	4,234,313	0	6,518,306
2012	2,095,035	20,437	3,981,821	0	6,097,292
2013	1,673,899	u/a	2,852,666	0	4,526,565
Average	2,046,505	21,059	4,127,799	0	6,195,363

Source: SEFSC ACL Recreational Dataset (mrfssassess_rec81_13wv6_24feb14).
u/a – unavailable.

Among the states in the Atlantic, including the Mid-Atlantic and North Atlantic states, North Carolina accounted for highest dolphin landings, on average (**Figure 3.3.1.58**). However, Florida/Georgia surpassed North Carolina in 2012 and 2013, although the 2013 landings are still preliminary. The Northeast (Mid-Atlantic and North Atlantic) states accounted for about 6 percent of total dolphin landings.

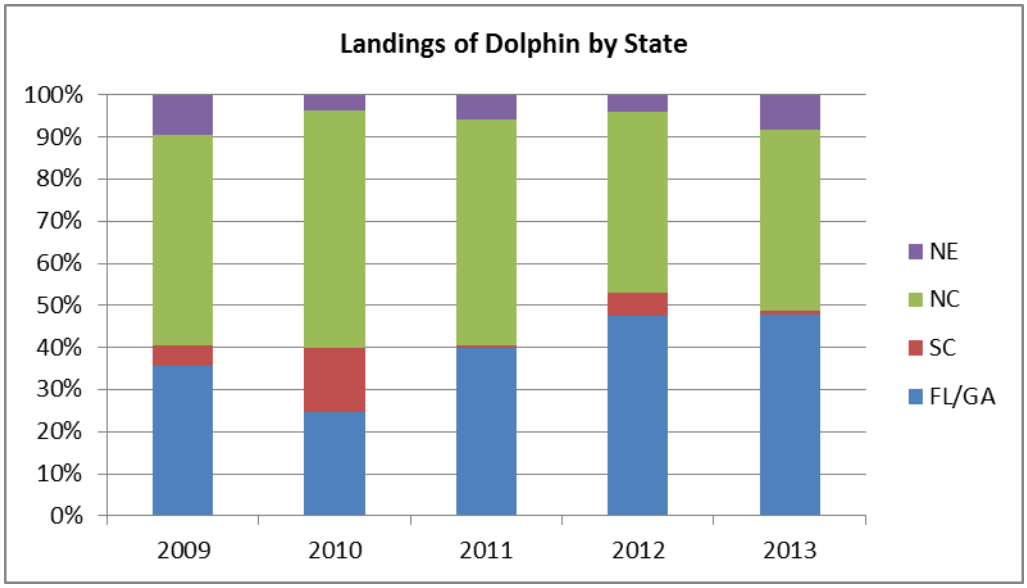

Figure 3.3.1.58. Dolphin landings (lbs ww) by state, 2009–2013.
Source: SEFSC ACL Recreational Dataset (mrfssassess_rec81_13wv6_24feb14).

Like the case for most of the previous species, dolphin landings peaked in May/June (**Figure 3.3.1.59**). The colder months of January/February and November/December recorded the lowest landings.

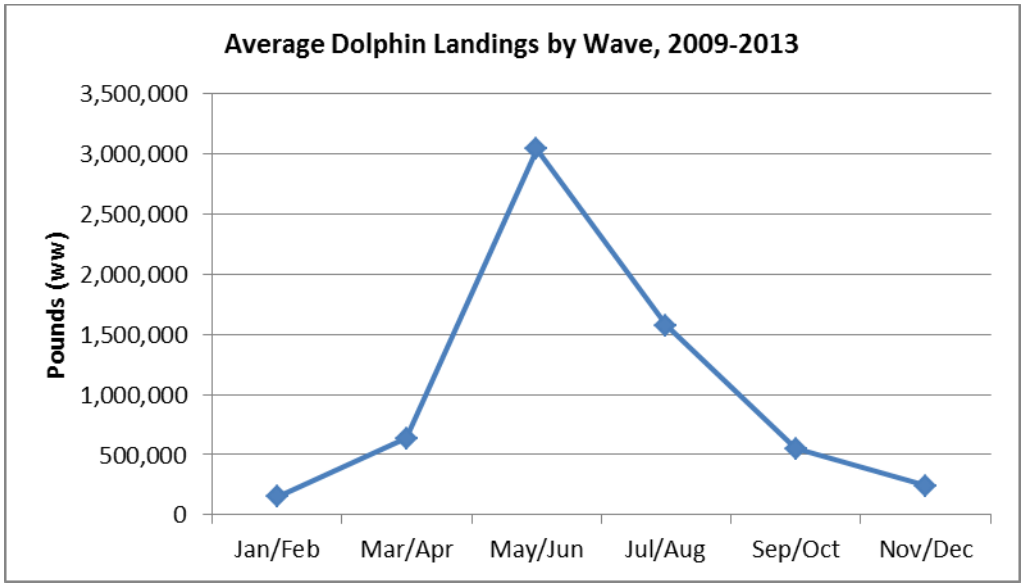

Figure 3.3.1.59. Average dolphin landings (lbs ww) by wave, 2009–2013.
Source: SEFSC ACL Recreational Dataset (mrfssassess_rec81_13wv6_24feb14).

3.3.1.2.11 Wreckfish Landings

A wreckfish recreational ACL of 11,750 lbs ww was established in 2012. Regulatory Amendment 22 to the Snapper Grouper FMP would, if implemented, increase the recreational

ACL to 21,650 lbs ww. There is no record of target or catch trips for wreckfish, but about 964 lbs ww were caught in 2012 and none was reported for 2013.

3.3.1.2.12 Unassessed Species Landings

Recreational landings for the unassessed species and species complexes (including individual species within each group) addressed by this amendment are presented in **Table 3.3.1.39**, by fishing mode, and **Table 3.3.1.40**, by state.

Table 3.3.1.39. Unassessed species recreational landings by mode, 2009-2013.

Stock	Landings (lb ww)				
Jacks	**Charter**	**Headboat**	**Private**	**Shore**	**Mean Total**
Almaco jack	20,420	12,544	29,215	0	62,179
Banded rudderfish	11,578	36,784	31,260	89	79,711
Lesser amberjack	36	84	148	0	268
Snappers					
Gray snapper	21,723	49,258	215,793	59,788	346,561
Lane snapper	9,512	11,358	29,103	1,104	51,078
Cubera snapper	36	5,026	15,427	1,541	22,030
Dog snapper	87	175	1,270	0	1,533
Mahogany snapper	0	22	0	27	49
Grunts					
White grunt	29,570	100,186	148,019	5,560	283,335
Sailors choice	17	74	4,741	2,685	7,517
Tomtate	401	15,332	13,797	7,182	36,712
Margate	174	1,453	3,108	68	4,802
Shallow Water Groupers					
Red hind	138	316	742	0	1,196
Rock hind	163	2,730	1,012	0	3,905
Yellowmouth grouper	91	59	0	0	150
Yellowfin grouper	0	99	651	0	750
Coney	11	29	729	0	769
Graysby	1,137	1,352	5,259	0	7,749
Porgies					
Jolthead porgy	6,263	10,211	21,923	638	39,035
Knobbed porgy	1,225	4,838	12,894	0	18,956
Saucereye porgy	0	200	1,480	0	1,680
Scup	180	6,858	319	18	7,375
Whitebone porgy	4,200	5,295	12,464	139	22,098
Atlantic spadefish	516	444	68,139	105,114	174,213
Bar jack	0	456	3,426	2,058	5,940
Scamp	14,307	16,081	28,098	0	58,486
Hogfish	142	322	69,953	470	70,887
Gray triggerfish	82,468	128,891	228,146	8,451	447,957

Source: SEFSC ACL Recreational Dataset (mrfssassess_rec81_13wv6_24feb14).

Table 3.3.1.40. Unassessed species recreational landings by state, 2009-2013.

Stock	Landings (lb ww)			
Jacks	**FL**	**GA**	**SC**	**NC**
Almaco jack	46,074	812	3,833	11,461
Banded rudderfish	56,695	735	16,723	5,558
Lesser amberjack	59	27	25	158
Snappers				
Gray snapper	334,191	11,486	619	265
Lane snapper	51,077	0	0	0
Cubera snapper	21,962	50	4	13
Dog snapper	1,460	72	0	0
Mahogany snapper	49	0	0	0
Grunts				
White grunt	227,918	686	33,622	97,385
Sailors choice	7,514	3	0	0
Tomtate	28,921	57	3,052	4,682
Margate	4,545	6	250	0
Shallow Water Groupers				
Red hind	714	3	308	171
Rock hind	847	0	1,903	1,154
Yellowmouth grouper	51	0	6	92
Yellowfin grouper	738	0	5	7
Coney	670	0	0	99
Graysby	6,054	1	899	795
Porgies				
Jolthead porgy	33,592	3	4,873	567
Knobbed porgy	14,394	0	604	3,958
Saucereye porgy	1,680	0	0	0
Scup	18	2	1,842	5,513
Whitebone porgy	19,723	127	1,140	1,109
Stock	**Landings (lb ww)**			
Individual Stocks	**FL**	**GA**	**SC**	**NC**
Atlantic spadefish	89,672	2,800	35,694	46,047
Bar jack	4,654	0	0	1,285
Scamp	6,140	2,468	16,859	33,019
Hogfish	68,870	0	448	1,569
Gray triggerfish	211,834	8,770	40,586	186,767

Source: SEFSC ACL Recreational Dataset (mrfssassess_rec81_13wv6_24feb14).

Effort

Recreational effort can be characterized in terms of the number of trips as follows:

1. Target effort - The number of individual angler trips, regardless of trip duration, where the intercepted angler indicated that the species was targeted as either the first or the second primary target for the trip. The species did not have to be caught.
2. Catch effort - The number of individual angler trips, regardless of trip duration and target intent, where the individual species was caught. The fish caught did not have to be kept.
3. All recreational trips - The total estimated number of recreational trips taken, regardless of target intent or catch success.

The source of the following target and catch trips is NOAA fisheries website for accessing recreational data: http://www.st.nmfs.noaa.gov/recreational-fisheries/access-data/run-a-data-query/index

3.3.1.2.13 Black Grouper Effort

Targeting for black grouper has been relatively absent in all modes, although there are occasions when targeting of the species were reported (**Table 3.3.1.41**). Most catch trips were made through the private mode.

Table 3.3.1.41. Target and catch trips by mode, 2009-2013.

	Charter	Private	Shore
Target Trips			
2009		673	
2010	1,163	593	
2011		995	
2012			
2013			
Average	233	452	
Catch Trips			
2009	525	11,638	
2010	1,314	5,124	
2011	145	2,839	
2012	445	8,699	434
2013	141	7,084	1,073
Average	525	11,638	301

3.3.1.2.14 Mutton Snapper Effort

There appears to be relatively heavy targeting for mutton snapper, particularly by private mode anglers (**Table 3.3.1.42**). Catch trips are dominated by private mode anglers although the shore mode also recorded relatively good amount of catch trips.

Table 3.3.1.42. Target and catch trips by mode, 2009-2013.

	Charter	Private	Shore
Target Trips			
2009	919	15,001	10,458
2010	786	18,984	1,552
2011		26,075	
2012	513	13,542	1,993
2013	39	21,848	5,996
Average	564	19,090	5,000
Catch Trips			
2009	13,113	100,036	24,063
2010	8,490	72,968	13,589
2011	2,671	28,625	4,502
2012	4,601	45,795	30,394
2013	8,977	83,378	8,291
Average	7,570	66,160	16,168

3.3.1.2.15 Yellowtail Snapper Effort

While targeting for yellowtail snapper has been strong with private mode anglers, the other fishing modes show a fair amount of catch trips (**Table 3.3.1.43**).

Table 3.3.1.43. Target and catch trips by mode, 2009-2013.

	Charter	Private	Shore
Target Trips			
2009	1,641	25,013	239
2010	693	33,140	
2011		13,522	
2012		28,032	2,380
2013	245	41,748	
Average	860	28,291	1,310
Catch Trips			
2009	8,535	106,349	77,777
2010	10,183	114,593	7,526
2011	2,332	52,069	6,298
2012	8,468	83,225	21,572
2013	22,000	103,195	14,448
Average	10,304	91,886	25,524

3.3.1.2.16 Greater Amberjack Effort

Greater amberjack received some fairly good amount of targeting effort from the charter and private mode anglers (**Table 3.3.1.44**). The private mode, however, dominates in terms of target and catch trips.

Table 3.3.1.44. Target and catch trips by mode, 2009-2013.

	Charter	Private	Shore
Target Trips			
2009	1,671	494	
2010	3,753	4,578	
2011	338	1,128	
2012	1,739	6,655	
2013	4,208	9,793	
Average	2,342	4,530	
Catch Trips			
2009	13,292	41,057	660
2010	12,003	19,146	
2011	3,260	11,549	2,379
2012	6,286	18,792	2,383
2013	7,709	18,577	
Average	8,510	21,824	1,807

3.3.1.2.17 Red Porgy Effort

There has been practically no reported of target trips for red porgy (**Table 3.3.1.45**). Catch trips nevertheless have been reported for both the charter and private modes.

Table 3.3.1.45. Target and catch trips by mode, 2009-2013.

	Charter	Private	Shore
Target Trips			
2009			
2010			
2011			
2012			
2013			
Average			
Catch Trips			
2009	1,858	10,525	
2010	2,923	12,509	
2011	1,843	7,519	
2012	3,406	7,016	
2013	2,732	4,753	449
Average	2,552	8,464	90

3.3.1.2.18 Gag Effort

A relatively heavy targeting for gag came from private mode anglers (**Table 3.3.1.46**). The private mode also reported the most catch trips, with some catch trips recorded for the other modes.

Table 3.3.1.46. Target and catch trips by mode, 2009-2013.

	Charter	Private	Shore
Target Trips			
2009	0	31,590	1,542
2010	0	26,380	0
2011	0	24,000	0
2012	0	12,862	779
2013	559	22,031	0
Average	112	23,373	464
Catch Trips			
2009	9,197	77,118	6,577
2010	2,527	60,305	2,241
2011	1,448	34,271	8,277
2012	2,590	44,791	6,869
2013	1,130	36,422	1,604
Average	3,378	50,581	5,114

3.3.1.2.19 Golden Tilefish Effort

Both target and catch trips for golden tilefish have been relatively low (**Table 3.3.1.47**). Private mode anglers recorded some good amount of target trips but mainly in the earlier years.

Table 3.3.1.47. Target and catch trips by mode, 2009-2013.

	Charter	Private	Shore
Target Trips			
2009	0	5,622	
2010	104	3,291	
2011	0	0	
2012	0	939	
2013	0	0	
Average	21	1,970	
Catch Trips			
2009	276	3,633	
2010	0	0	
2011	79	982	
2012	473	1,864	
2013	2,088	1,611	
Average	583	1,618	

3.3.1.2.20 Red Grouper Effort

Most target and catch trips for red grouper were reported for the private mode anglers (**Table 3.3.1.48**). In terms of catch trips, the charter mode also reported relative good amount of trips.

Table 3.3.1.48. Target and catch trips by mode, 2009-2013.

	Charter	Private	Shore
Target Trips			
2009	0	4,268	
2010	0	1,129	
2011	0	1,959	
2012	39	243	
2013	10	1,900	
Average	0	4,268	
Catch Trips			
2009	8,739	59,267	0
2010	7,601	46,121	1,998
2011	4,792	18,800	0
2012	2,093	27,487	0
2013	2,952	53,148	0
Average	5,235	40,965	400

3.3.1.2.21 Snowy Grouper Effort

There were no reported target trips for snowy grouper by any of the fishing modes (**Table 3.3.1.49**). In addition, relatively low catch trips were reported for the charter and private modes.

Table 3.3.1.49. Target and catch trips by mode, 2009-2013.

	Charter	Private	Shore
Target Trips			
2009			
2010			
2011			
2012			
2013			
Average			
Catch Trips			
2009	568	1,899	
2010	1,053	175	
2011	70		
2012	911	1,588	
2013	691	1,270	
Average	659	1,233	

3.3.1.2.22 Dolphin Effort

Unlike the previous species, targeting for dolphin has been very high, especially by the private mode anglers (**Table 3.3.1.50**). The same high level can also be said of catch trips. Dolphin is probably one of the few exceptions with respect to the relationship between target and catch trips in the sense that unlike most other species target trips for the species have been much higher than catch trips.

Table 3.3.1.50. Target and catch trips by mode, 2009-2013.

	Charter	Private	Shore
Target Trips			
2009	25,985	859,162	0
2010	38,174	596,645	10,535
2011	37,815	654,861	0
2012	25,013	646,047	0
2013	39,891	541,580	0
Average	33,376	659,659	2,107
Catch Trips			
2009	28,026	294,113	0
2010	37,511	258,817	642
2011	27,515	251,689	0
2012	28,888	256,758	1,582
2013	54,863	185,058	0
Average	35,361	249,287	445

Similar analysis of recreational effort is not possible for the headboat sector because headboat data are not collected at the angler level. Estimates of effort in the headboat sector are provided in terms of angler days, or the number of standardized 12-hour fishing days that account for the different half-, three-quarter-, and full-day fishing trips by headboats. **Table 3.3.1.51** displays the annual angler days by state for 2009-2013 and **Table 3.3.1.52** displays their average (2009-2013) monthly distribution. Confidentiality issues required combining Georgia estimates with those of Northeast Florida.

Headboat angler days (trips) varied from year to year across various states. Total headboat angler trips fell in 2010 and 2011 but increased in the succeeding years (**Table 3.3.1.50**). Southeast Florida registered the highest number of angler trips, followed by Georgia/Northeast Florida, South Carolina, and North Carolina. Clearly, Florida dominated all other states in terms of headboat angler days.

On average (2009-2013), overall angler days peaked in July and troughed in November (**Table 3.3.1.51**). All states recorded peak angler trips in July, similar to the overall peak month. None of the states, however, had the same trough month as the overall angler trips. North Carolina had a trough in December, South Carolina in January, Georgia/Northeast Florida in November, and Southeast Florida in October.

Table 3.3.1.51. South Atlantic headboat angler days, by state, 2009-2013.

	2009	2010	2011	2012	2013	AVERAGE
NC	19,468	21,071	18,457	20,766	20,547	20,062
SC	40,919	44,951	44,645	41,003	40,963	42,496
GA/NEFL	66,447	53,676	46,256	8,800	66,587	48,353
SEFL	69,973	69,986	77,785	130,823	99,092	89,532
TOTAL	196,807	189,684	187,143	201,392	227,189	200,443

Source: SEFSC Headboat Survey, NOAA Fisheries, SEFSC, Beaufort Lab.

Table 3.3.1.52. Average monthly distribution of headboat angler days in the South Atlantic, by state, 2009-2013.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
NC	26	12	198	1,020	2,227	3,959	4,631	3,791	2,114	1,758	316	7
SC	59	114	1,077	2,793	3,496	8,822	11,350	8,337	3,439	2,316	567	125
GA/NEFL	443	299	478	1,080	1,622	2,735	3,490	2,612	1,400	1,152	147	176
SEFL	8,047	9,377	12,784	13,104	11,617	14,270	15,345	11,156	6,326	5,836	5,898	8,488
TOTAL	8,574	9,801	14,536	17,997	18,962	29,787	34,816	25,896	13,279	11,062	6,929	8,797

Source: SEFSC Headboat Survey, NOAA Fisheries, SEFSC, Beaufort Lab.

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

The NMFS Southeast Science Center (Carter and Lies 2012) developed estimates of consumer surplus per fish, per angler trip. These estimates were culled from various studies – Haab et al. (2009), Dumas et al. (2009), and NOAA SEFSC (2009). The values/ranges of consumer surplus estimates are (in 2013 dollars) $121 to $139 for red snapper, $134 to $143 for grouper, $11.9 for other snappers, and $87 for snapper grouper. Haab et al. (2009) also estimated consumer surplus for snapper in general to range from $12 to $34 (2013 dollars) for one additional fish caught and kept. Haab et al. (2009) also estimated consumer surplus for dolphin of two general sizes. They estimated that for one additional fish caught and kept this consumer surplus would range from $50 to $5,557 (2013 dollars) for dolphin greater than 20 inches and from $5.18 to $31.07 (2011 dollars) for smaller dolphin. Carter and Liese (2012) also estimated the mean willingness to pay per fish, per trip for dolphin (in 2013 dollars) of $14.91, $9.94, $7.35, $5.80, and $4.76, respectively for the second, third, fourth, fifth, and sixth fish caught and kept. They also estimated declining mean willingness to pay for additional fish caught and released due to the size or bag limit.

While anglers receive economic value as measured by the consumer surplus associated with fishing, for-hire businesses receive value from the services they provide. Producer surplus (PS) is the measure of the economic value these operations receive. Producer surplus is the difference

between the revenue a business receives for a good or service, such as a charter or headboat trip, and the cost the business incurs to provide that good or service. Estimates of the producer surplus associated with for-hire trips are not available. However, proxy values in the form of net operating revenues are available (C. Liese, NMFS SEFSC, personal communication, August 2010). These estimates were culled from several studies – Liese et al. (2009), Dumas et al. (2009), Holland et al. (1999), and Sutton et al. (1999). Estimates of net operating revenue per angler trip (2013 dollars) on representative charter trips (average charter trip regardless of area fished) are $158 for Louisiana through east Florida, $147 for east Florida, $170 for northeast Florida, and $139 for North Carolina. For charter trips into the EEZ only, net operating revenues are $153 in east Florida and $161 in northeast Florida. For full-day and overnight trips only, net operating revenues are estimated to be $169-$174 in North Carolina. Comparable estimates are not available for Georgia or South Carolina.

Net operating revenues per angler trip are lower for headboats than for charter boats. Net operating revenue estimates (2013 dollars) for a representative headboat trip are $52 in the Gulf of Mexico (all states and all of Florida), and $68-$74 in North Carolina. For full-day and overnight headboat trips, net operating revenues are estimated to be $81-$84 in North Carolina. Comparable estimates are not available for Georgia or South Carolina.

A study of the North Carolina for-hire fishery provides some information on the financial status of the for-hire fishery in the state (Dumas et al. 2009). Depending on vessel length, regional location, and season, charter fees per passenger per trip ranged from $182.58 to $273.20 for a full-day trip and from $101.70 to $134.63 for a half-day trip; headboat fees ranged from $78.71 to $88.75 for a full-day trip and from $41.32 to $43.70 for a half-day trip. Charter boats generated a total of $60.48 million in passenger fees, $3.5 million in other vessel income (e.g., food and beverages), and $5.2 million in tips. The corresponding figures for headboats were $10.67 million in passenger fees, $0.22 million in other vessel income, and $0.97 million in tips. Non-labor expenditures (e.g., boat insurance, dockage fees, bait, ice, fuel) amounted to $46.6 million for charter boats and $5.8 million for headboats. Summing across vessel lengths and regions, charter vessels had an aggregate value (depreciated) of $130.70 million and headboats had an aggregate value (depreciated) of $11.08 million. All these values are in 2013 dollars.

A more recent study of the for-hire sector provides estimates on gross revenues generated by the charter boats and headboats in the South Atlantic (Holland et al. 2012). Average annual revenues (2013 dollars) for charter boats are estimated to be $130,524 for Florida vessels, $55,348 for Georgia vessels, $104,417 for South Carolina vessels, and $105,593 for North Carolina vessels. For headboats, the corresponding estimates are $216,975 for Florida vessels and $159,332 for vessels in the other states. Due to limited sample size, revenue information for headboats in states other than Florida is aggregated to avoid disclosure of sensitive information.

3.3.2 Social Environment

The social environment includes a description of the commercial and recreational components of the snapper grouper fishery; the commercial component of the golden crab fishery; and the recreational and commercial components of the dolphin wahoo fishery. The

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

3.3.2.1 Snapper Grouper

The snapper grouper fishery is considered to be of substantial social and cultural importance in the South Atlantic region. The description of the snapper grouper fishery focuses on available geographic and demographic data to identify communities with strong relationships with snapper grouper harvest (i.e., significant landings and revenue), because positive or negative impacts from regulatory change may occur in places with greater landings of snapper grouper species.

Descriptions of the social and cultural environment of the snapper grouper fishery are contained in Jepson et al. (2005), Amendment 17A to the Snapper Grouper FMP (SAFMC 2010a), and the Comprehensive ACL Amendment (SAFMC 2011c) and are incorporated herein by reference.

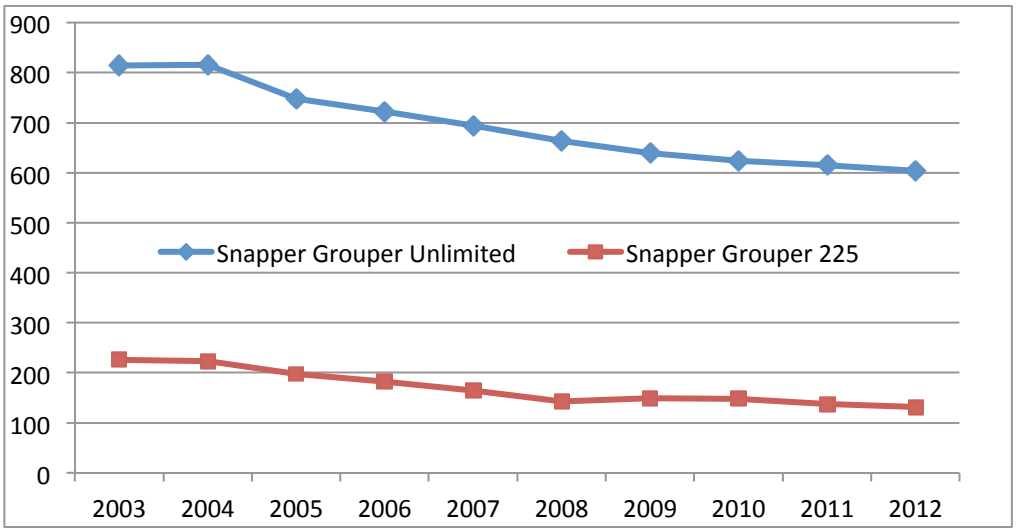

Figure 3.3.2.1. Snapper grouper Unlimited and 225-pound trip limit permits 2003-2012. Source: NMFS SERO (2013).

Since 2003, South Atlantic Snapper Grouper Unlimited Permits and Snapper Grouper 225-pound Trip Limit Permits have shown a downward trend (**Figure 3.3.2.1**). With a limited entry program in place since 1998 and a "2 for 1" requirement, a reduction in permits would be expected over time and will likely continue as long as the criteria are a continued part of management.

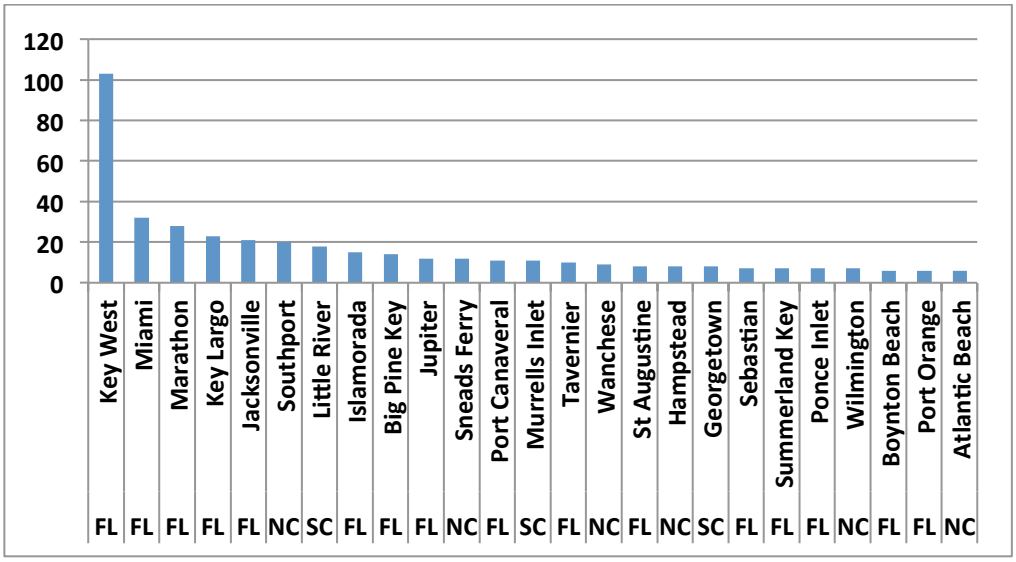

Figure 3.3.2.2. Snapper grouper unlimited 2012 permit frequency by homeport.
Source: NMFS SERO Permits 2014.

Florida communities have the majority of snapper grouper unlimited permits. Communities in North Carolina within the top 25 are Southport, Sneads Ferry, Hampstead, Wilmington, Atlantic Beach and Wanchese; and in South Carolina Little River, Murrell's Inlet and Georgetown (**Figure 3.3.2.2**). Florida also dominates the 225 lb trip limited permits with Hatteras, North Carolina the only community outside of the Florida listed in the top twenty communities with the 225 lb trip limited permits (**Figure 3.3.2.3**).

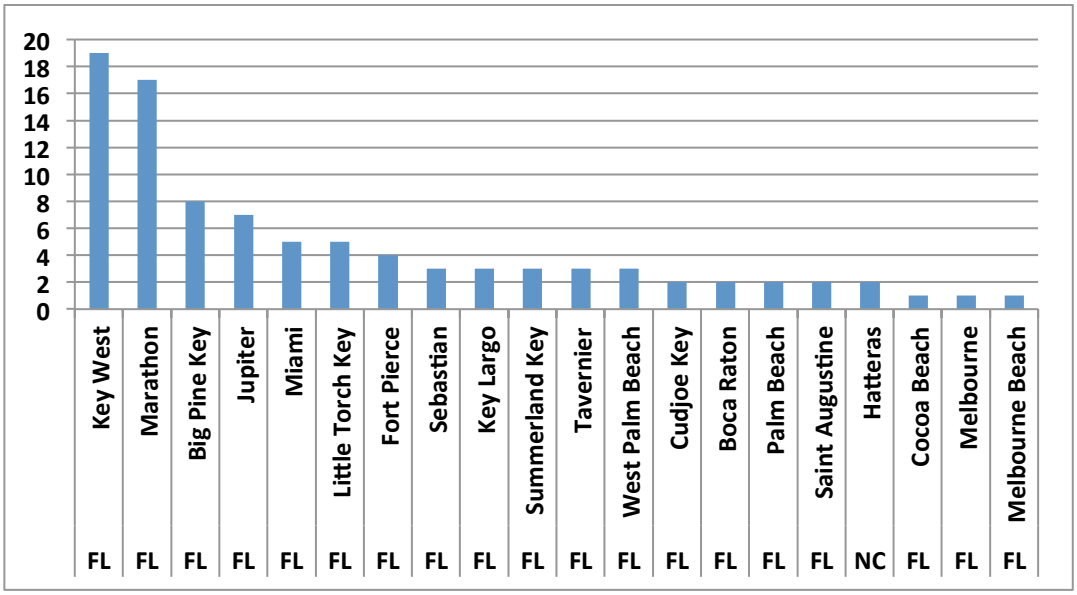

Figure 3.3.2.3. Snapper grouper 225-pound trip limit 2012 permits frequency by homeport
Source: NMFS SERO Permits 2014.

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 and the recent recession 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 percent decline in the number of fish houses (Garrity-Blake 2012).

The factors that affect the loss of working waterfronts in fishing communities are coastal development, rising property taxes, decreasing access to waterfront due to increasing privatization of public resources, rising cost of dockage and fuel, lack of maintenance of waterways and ocean passages, competition with imported fish, and other less tangible (often political) factors. These along with increasingly strict regulations have combined to place a great deal of stress on many communities and their associated fishing sectors including commercial, charter/headboat and private recreational.

While some of the same social factors above have affected the for-hire fishery in terms of loss of working waterfronts, other issues such as a downturn in the economy and competition have affected the growth of that sector. The recreational sector is also subjected to permit requirements as vessels in the South Atlantic for-hire snapper grouper fishery are required to have a permit to fish for or possess species in the EEZ.

The number of for-hire permits issued in the South Atlantic snapper grouper fishery increased over the period 2003-2007, from 1,477 permits in 2003 to 1,754 permits in 2007. Increases occurred for those vessels that were strictly for-hire businesses, since permits issued for vessels operating as for-hire and commercial entities were flat from 2005 to 2006 and fell in 2007. Today there are approximately 1,390 snapper grouper charter permits in effect (SERO Permits 2014). Most of these for-hire permitted vessels were home-ported in Florida; with vessels also home-ported in North Carolina and South Carolina; some in the Gulf of Mexico, Mid-Atlantic and Northeast.

While studies on the general identification of fishing communities have been undertaken in the past few years, little social or cultural investigation into the nature of the snapper grouper fishery itself has occurred. A socioeconomic study by Waters et al. (1997) covered the general characteristics of the fishery in the South Atlantic, but those data are now over 10 years old and do not capture more recent important changes in the fishery. Cheuvront and Neal (2004) conducted survey work with the North Carolina commercial snapper grouper fishery south of Cape Hatteras, but did not include ethnographic research on communities dependent upon fishing.

Commercial Snapper Grouper Communities in the South Atlantic

To identify commercial fishing communities where fishing has importance to the local economy, a measure called the regional quotient (RQ) is used to identify those communities which land a substantial amount of a particular species. The RQ measures the proportional distribution of commercial landings and value of a particular species. The RQ is calculated by dividing the total pounds (or value) of a species landed in a given community, by the total pounds (or value) for that species for all communities in the region. The actual percentage of RQ is not provided in the following tables to prevent any disclosure of confidential information.

Communities where snapper grouper are an important target species are depicted in **Figure 3.3.2.4** which uses a regional quotient of all snapper grouper species and includes the top 25 communities ranked by their regional quotient value of snapper grouper. Communities in North Carolina where snapper grouper make up a substantial portion of their regional quotient include Winnabow, Wanchese, Morehead City, Beaufort, Sneads Ferry, Shallotte, Wilmington, and Hampstead. The South Carolina communities of Murrells Inlet, Little River, Wadmalaw Island, and McClellanville also contribute substantially to the regional quotient of snapper grouper overall. In Florida, the communities include Key West, Miami, Mayport, Marathon, Cocoa, Port Orange, Key Largo, Hialeah, Fort Lauderdale, St Augustine, Fort Pierce, Palm Beach Gardens, and Islamorada are all included in the top twenty-five communities. No Georgia communities are included in the top 25, but communities such as Savannah and Townsend have vessels that depend on snapper grouper species.

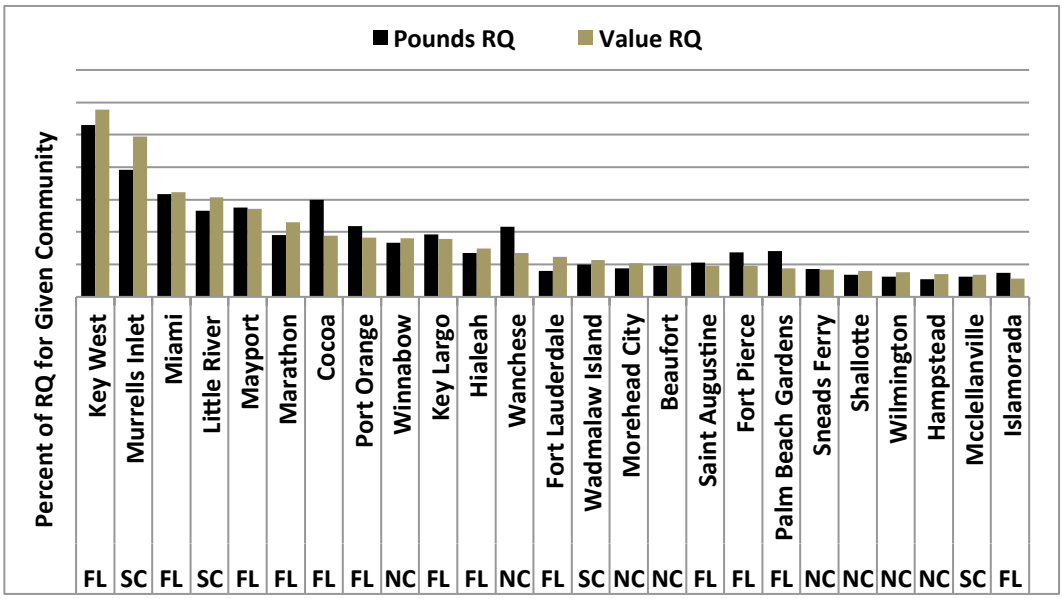

Figure 3.3.2.4. South Atlantic fishing communities ranked by total 2011 snapper grouper value RQ. Source: SERO Community ALS 2011

Commercial and Recreational Engagement and Reliance

While we can characterize the fleet landings with regard to those communities that have high regional quotients for landings and value, it is more difficult to characterize the fleet and its labor force regarding demographics and places of residence for captains and crew of vessels. There is little to no information on captains and crew, including demographic makeup of crew, so we are left with descriptions regarding the engagement and reliance of fishing communities and their social vulnerability. To further delineate which communities are more dependent upon fishing, another measure has been developed which uses the top communities identified in the RQ graphics, and applies indices of fishing engagement and reliance.

To better understand how South Atlantic fishing communities are engaged and reliant on fishing overall, several indices composed of existing permit and landings data were created to provide a more empirical measure of fishing dependence (Jacob et al. 2012; Colburn and Jepson 2013; Jepson and Colburn 2013). Fishing engagement uses the absolute numbers of permits,

landings and value, while fishing reliance includes many of the same variables as engagement, but divides by population to give an indication of the per capita impact of this activity.

Using a principal component and single solution factor analysis each community receives a factor score for each index to compare to other communities. Factor scores are represented by colored bars and are standardized, therefore the mean is zero. Two thresholds of 1 and ½ standard deviation above the mean are plotted onto the graphs to help determine thresholds for significance. Because the factor scores are standardized, a score above 1 is also above one standard deviation.

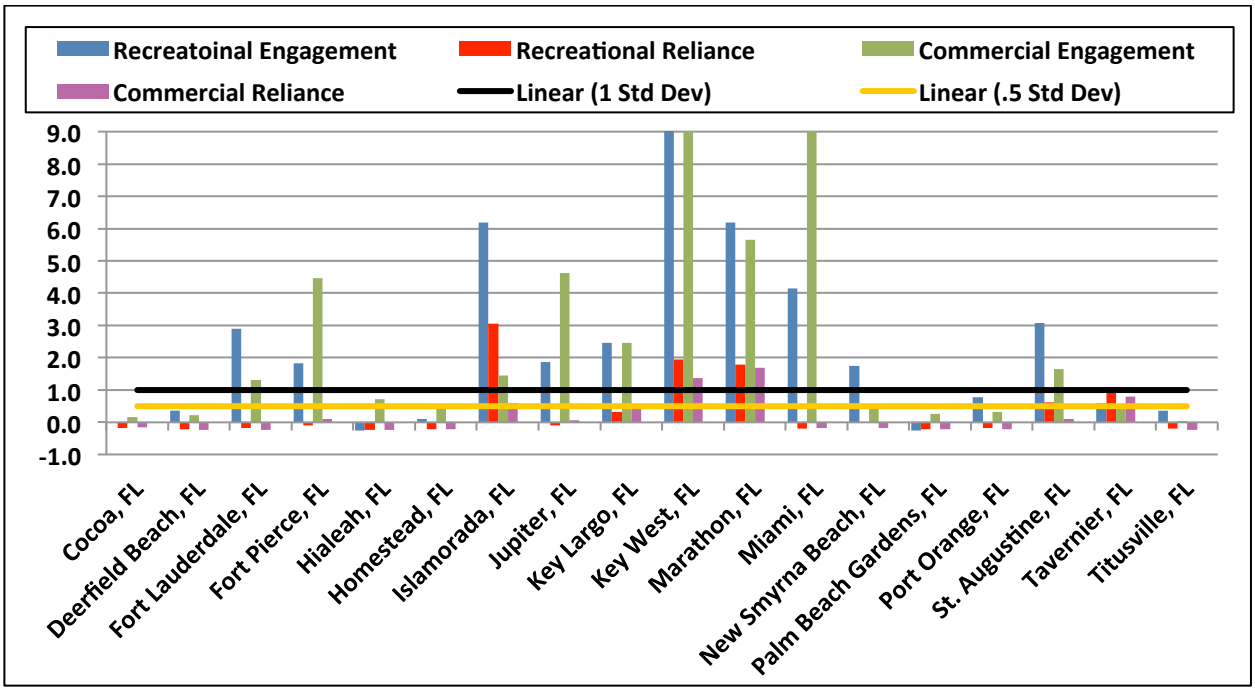

Figure 3.3.2.5. Commercial and recreational fishing engagement and reliance indices for top Florida snapper grouper communities in the South Atlantic region.
Source: SERO Social Indicator Database

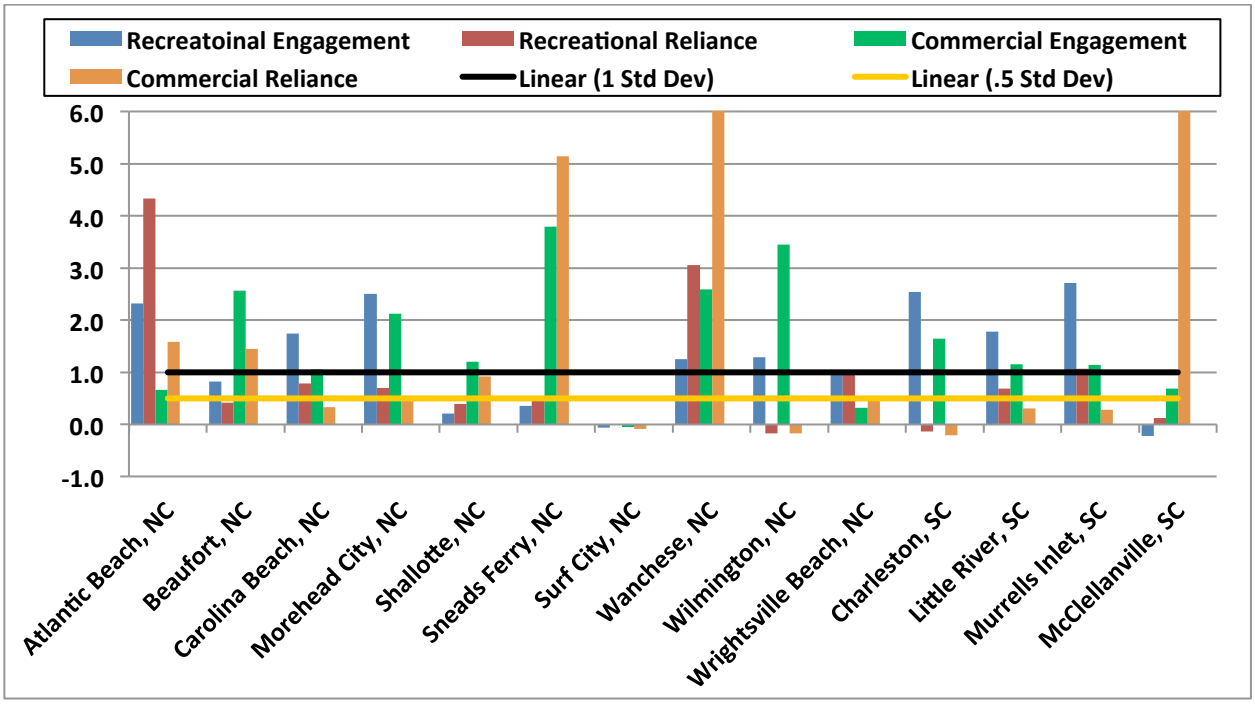

Figure 3.3.2.6. Commercial and recreational fishing engagement and reliance indices for top South and North Carolina snapper grouper communities in the South Atlantic region.
Source: SERO Social Indicator Database

The communities included in **Figures 3.3.2.5** and **3.3.2.6** have varying combinations of reliance and engagement. The communities of Key West, Islamorada, Marathon, Florida; Atlantic Beach and Wanchese, North Carolina are considered likely dependent upon fishing overall as they exceed both thresholds for the four fishing reliance and engagement measures. Other communities might be considered recreationally and commercially engaged as they exceed the highest threshold for both recreational and commercial engagement. Those communities are: Fort Lauderdale, Fort Pierce, Jupiter, Key Largo, Miami, and St. Augustine, Florida; Carolina Beach, Morehead City, and Wilmington, North Carolina; Charleston, Little River and Murrell's Inlet, South Carolina. Finally, communities like Beaufort, Shallote, Sneads Ferry, North Carolina and McClellanville, South Carolina are commercially dependent. The community of Wrightsville Beach, North Carolina was the only community that was recreationally dependent alone.

Snapper Grouper Species in this Amendment

The proposed actions in this amendment could affect fishermen, businesses, and communities with relatively higher association with the specific species in the amendment. Following are detailed descriptions of areas with higher levels of landings, engagement, and reliance on the individual species. Expected effects at the community level of the proposed actions in this amendment will be discussed in Section 4.

Black Grouper

Black grouper is primarily harvested in Florida, particularly in south Florida and the Florida Keys, as part of a catch combination for both recreational and commercial fishing trips. There are minimal landings in South Carolina. Figure 3.3.2.6 shows the top communities for commercial landings of black grouper in the region. Almost all commercial landings occur in Miami-Dade County and Monroe County (Florida Keys), with some landings in Murrells Inlet, South Carolina.

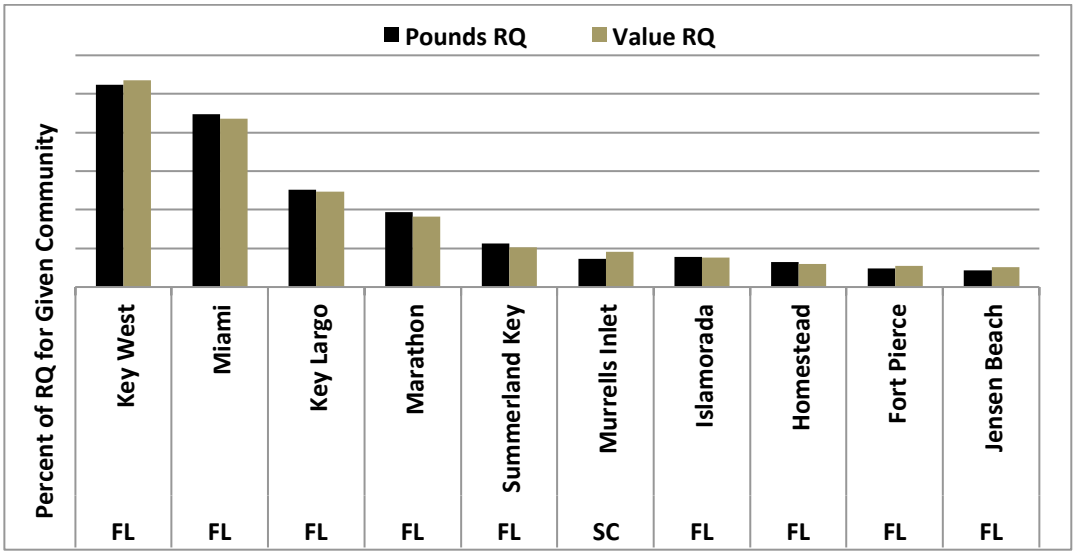

Figure 3.3.2.6. Top communities ranked by pounds of regional quotient of black grouper. The actual RQ values (y-axis) are omitted from the figure to maintain confidentiality.
Source: SERO Community ALS 2011.

Overall, recreational landings of black grouper are concentrated in Florida with some landings in South Carolina in recent years.

Mutton Snapper

Mutton snapper is also primarily harvested in Florida, particularly in south Florida and the Florida Keys, as part of a catch combination for both recreational and commercial fishing trips. **Figure 3.3.2.7** shows the top communities for commercial regional quotient of mutton snapper in the region. Almost all commercial landings occur in Key West, Miami and Key Largo.

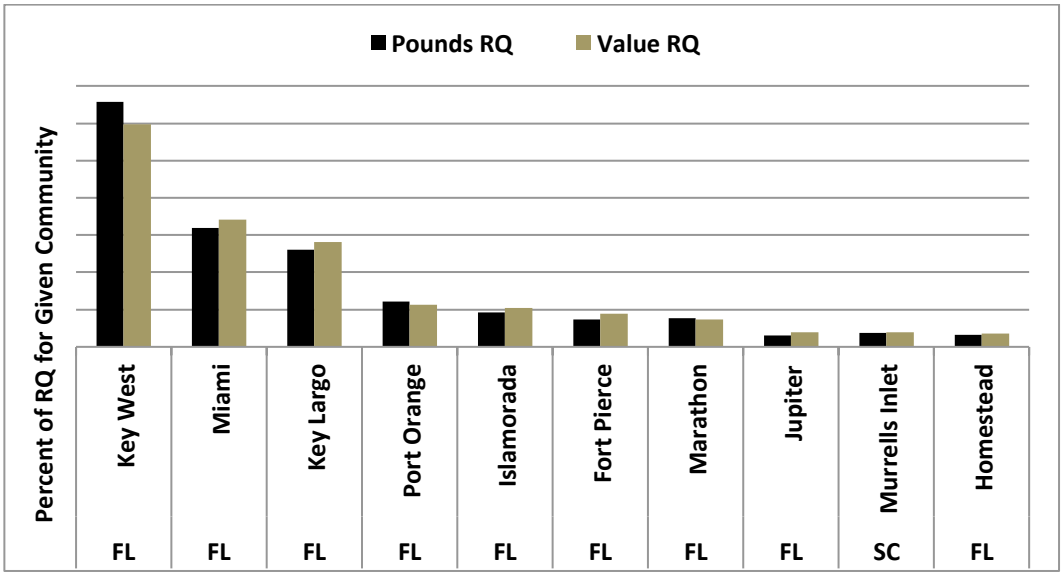

Figure 3.3.2.7. Top communities ranked by pounds and value of regional quotient of mutton snapper. Source: SERO, Community ALS 2011.

The recreational allocation of the mutton snapper ACL is 87%, although the recreational effort has not reached the recreational ACL in the past. Overall, recreational landings of mutton snapper are concentrated in south Florida and the Florida Keys.

Yellowtail Snapper

Yellowtail snapper is an important recreational and commercial species in the snapper grouper fishery, primarily in south Florida and the Florida Keys. Regulatory Amendment 15to the Snapper Grouper FMP (SAFMC 2013b) contains a detailed description of communities associated with yellowtail snapper, and is incorporated herein by reference.

The primary communities that would be most likely to be affected by changes to yellowtail snapper management for the commercial sector include Key West, Miami, Marathon, Hialeah, Fort Lauderdale, Key Largo, Islamorada, Summerland Key, Tavernier and Opa Locka. The communities that would most likely be affected by changes to management for the recreational sector include Key West, Marathon, Islamorada, Miami and Fort Lauderdale (SAFMC 2013b).

Atlantic Spadefish

Commercial Communities

Commercial landings are greatest for Atlantic spadefish in Florida, although this species is also landed commercially in South Carolina. **Figure 3.3.2.8** identifies the top communities with regional quotient of atlantic spadefish. The majority of dealer reported landings are located along the mid Florida coast, through Florida's lower east coast, and in South Carolina (McClellanville).

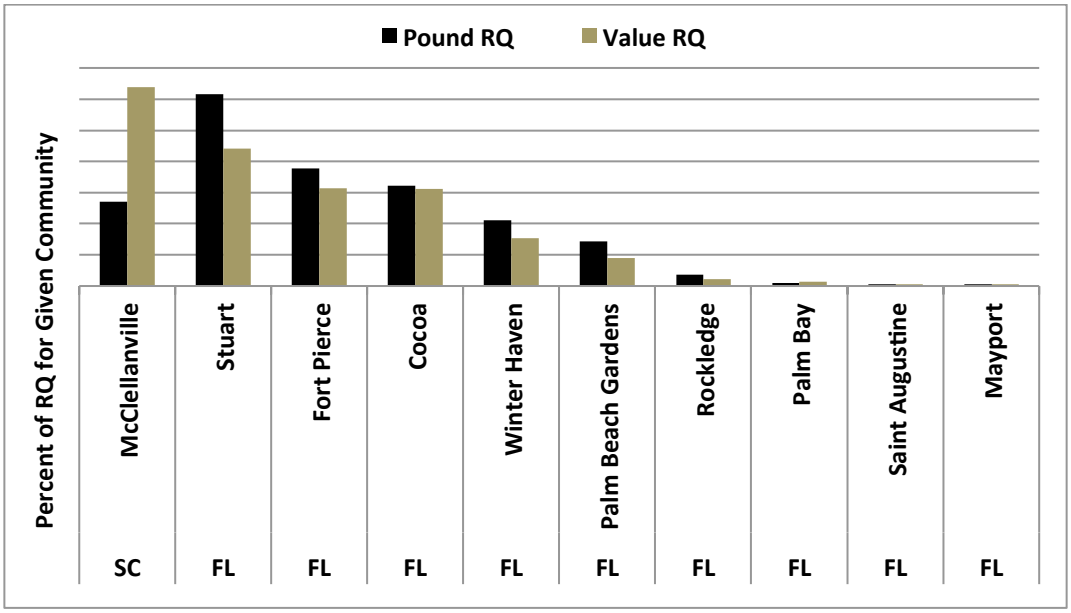

Figure 3.3.2.8. Proportion (RQ) of Atlantic spadefish commercial landings (pounds and value) for South Atlantic communities out of total landings and value of Atlantic spadefish.
Source: SERO Community ALS 2011.

Bar Jack

Commercial Communities

Bar jack is landed commercially in Florida. **Table 3.3.2.16** identifies the top communities with commercial landings of bar jack (the regional quotient is not displayed for bar jack for confidentiality reasons). Dealer reported landings are located in the Florida Keys, Miami, and in a few communities located on the mid Florida coast.

Table 3.3.2.16. Communities with commercial bar jack landings in descending order based on pounds landed.

STATE	CITY
FL	Key West
FL	Key Largo
FL	Cocoa
FL	Miami
FL	Mayport
FL	Islamorada
FL	Sebastian

Source: SERO Community ALS 2011.

Cubera Snapper

Commercial Communities

Commercial landings are greatest for cubera snapper in Florida, although this species is also landed in North Carolina and South Carolina. **Figure 3.3.2.10** identifies the communities with the most commercial landings of cubera snapper. The majority of dealer reported landings are

located in northern South Carolina, along the Florida coast, in North Carolina (Shallotte), and in the Florida Keys.

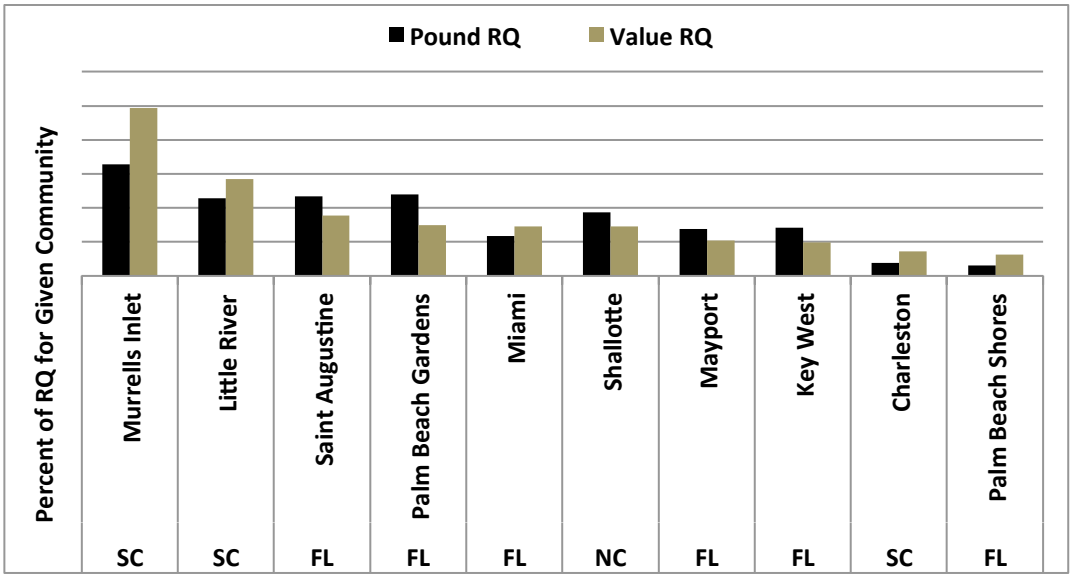

Figure 3.3.2.10. Proportion (RQ) of cubera snapper commercial landings (pounds and value) for top 10 South Atlantic communities out of total landings and value of cubera snapper.
Source: SERO Community ALS 2011

Gray Snapper

Commercial Communities

Commercial landings are greatest for gray snapper in Florida, although this species is also landed in North Carolina and South Carolina. **Figure 3.3.2.11**identifies the communities with the highest commercial landings of gray snapper. The majority of dealer reported landings are located in the Florida Keys and along the lower east coast of Florida (Miami, Hialeah, Fort Lauderdale, and North Palm Beach).

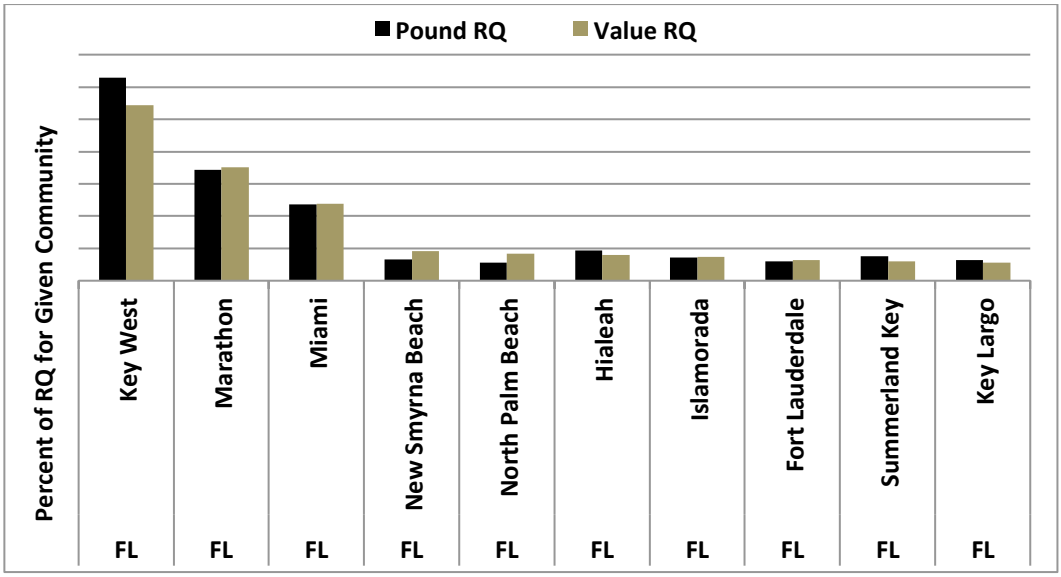

Figure 3.3.2.11 Proportion (RQ) of gray snapper commercial landings (pounds and value) for top 10 South Atlantic communities out of total landings and value of gray snapper.
Source: SERO Community ALS 2011

Grunts

The grunts species complex includes white grunt, margate, sailor's choice, and tomtate. All species in this complex except for sailor's choice are unassessed and are thus included in this amendment; however all grunts complex species are included in the below community level analysis because a large portion of the landings are reported as unclassified grunts.

Commercial Communities

Commercial landings are highest for grunts in Florida (52.4%), although grunts complex species are also landed in North Carolina (33.6%) and South Carolina (14%, ALS 2011). **Figure 3.3.2.12** identifies the communities with the most commercial landings of grunts complex species. The majority of dealer reported landings are located in the Florida Keys (Key West and Key Largo make up 22.4% of landings in the year 2011), the southern coast of North Carolina, and the northern coast of South Carolina.

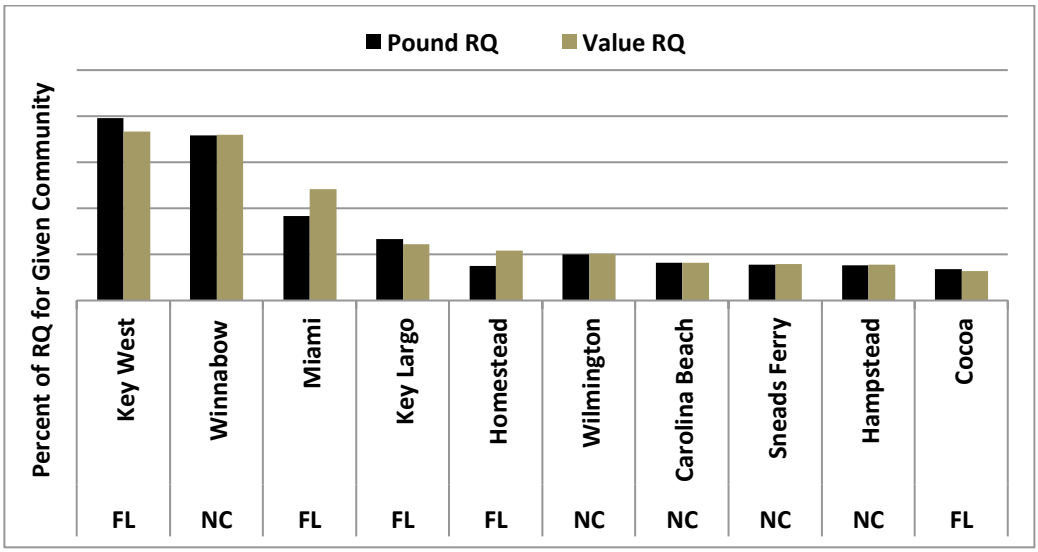

Figure 3.3.2.12 Proportion (RQ) of grunts complex commercial landings (pounds and value) for top 10 South Atlantic communities out of total landings and value of grunts complex.
Source: SERO Community ALS 2011.

Hogfish

Commercial Communities

Commercial landings for hogfish are highest in South Carolina, although this species is also landed in North Carolina and Florida. **Figure 3.3.2.13** identifies the communities with the most commercial landings of hogfish. The majority of dealer reported landings are located in South Carolina (Murrells Inlet), North Carolina, and the Florida Keys (Key West, Key Largo, Islamorada, and Summerland Key make up about 17.8% of landings in 2011).

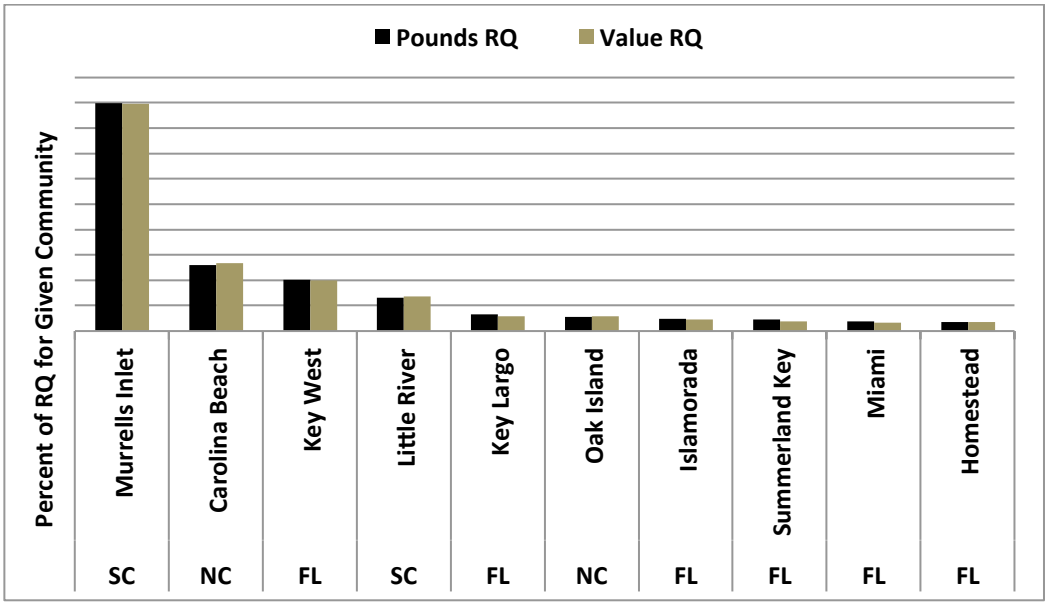

Figure 3.3.2.13 Proportion (RQ) of hogfish commercial landings (pounds and value) for top 10 South Atlantic communities out of total landings and value of hogfish.
Source: SERO Community ALS 2011.

Lane Snapper

Commercial Communities

Lane snapper is landed commercially in Florida. **Figure 3.3.2.14** identifies the communities with the most commercial landings of lane snapper. The majority of dealer reported landings are located in the Florida Keys, along the central coast of Florida (Cocoa), and along the lower east coast of Florida (Miami and Jupiter).

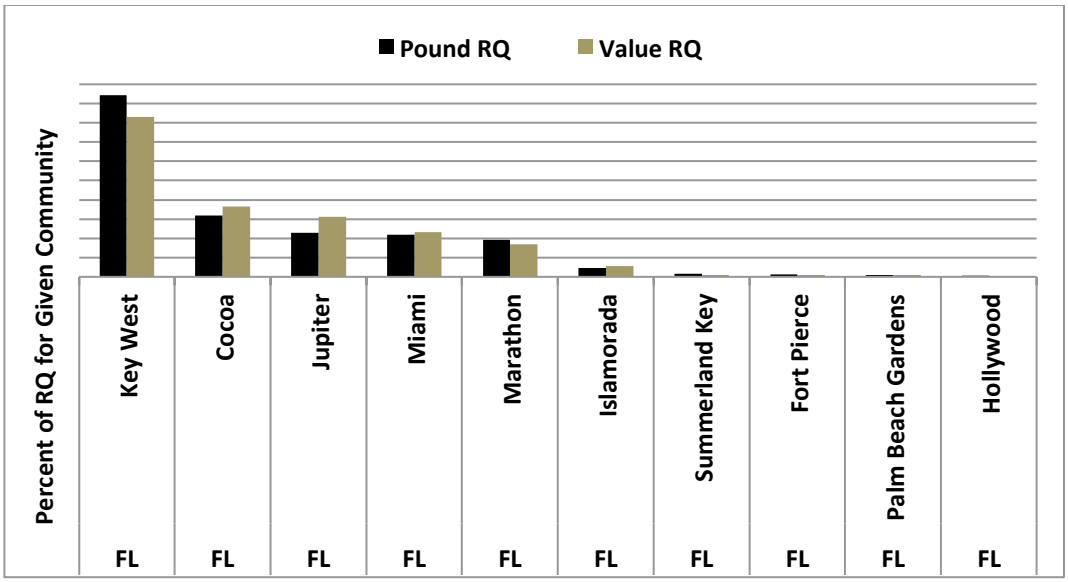

Figure 3.3.2.14 Proportion (RQ) of lane snapper commercial landings (pounds and value) for top 10 South Atlantic communities out of total landings and value of hogfish.
Source: SERO Community ALS 2011.

Red Hind

Commercial Communities

Commercial landings for red hind are highest in North Carolina, although this species is also landed in Florida. **Figure 3.3.2.15** identifies the communities with the most commercial landings of red hind with the majority located in North Carolina (ALS 2011).

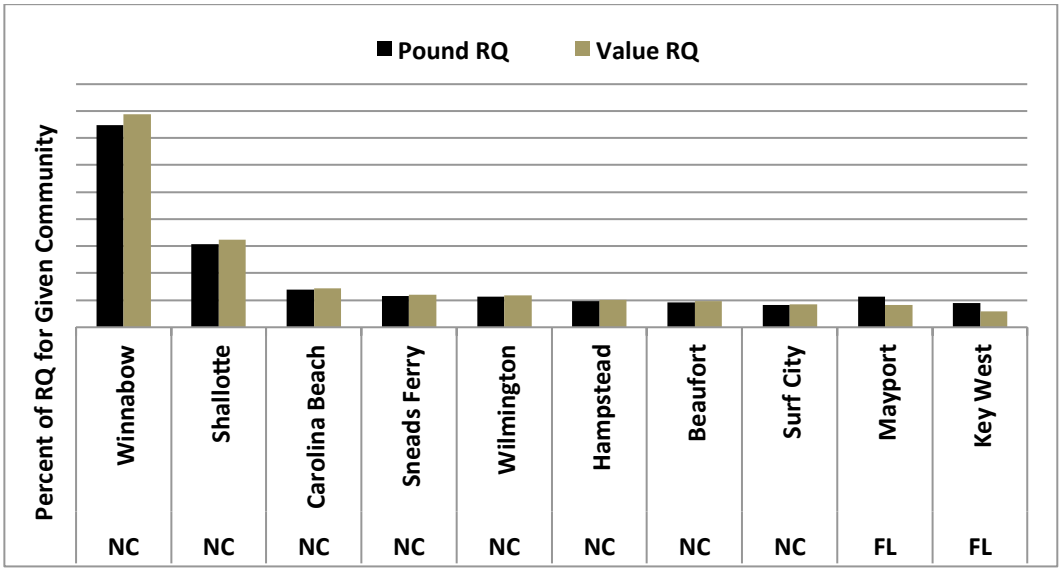

Figure 3.3.2.15 Proportion (RQ) of red hind commercial landings (pounds and value) for top 10 South Atlantic communities out of total landings and value of red hind.
Source: SERO Community ALS 2011.

Rock Hind

Commercial Communities

Commercial landings for rock hind are highest in South Carolina, although this species is also landed in Florida and North Carolina. **Figure 3.3.2.16** identifies the communities with the most commercial landings of rock hind. The majority of dealer reported landings are located in South Carolina in Horry and Georgetown Counties.

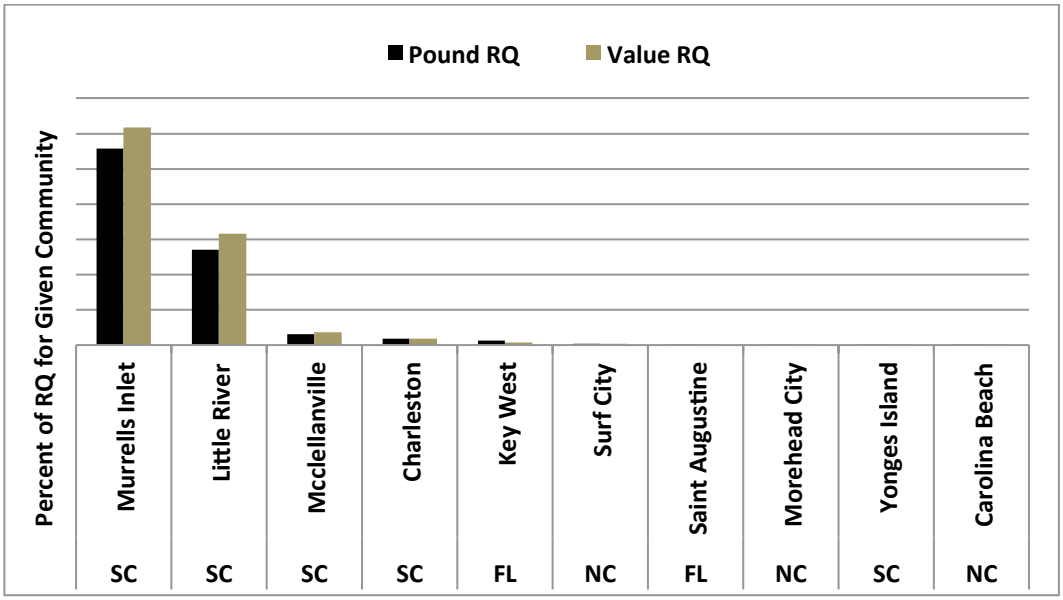

Figure 3.3.2.16 Proportion (RQ) of rock hind commercial landings (pounds and value) for top 10 South Atlantic communities out of total landings and value of rock hind.
Source: SERO Community ALS 2011.

Scamp

Commercial Communities

Commercial landings of scamp are highest in South Carolina, although smaller quantities of this species are also landed in North Carolina and Florida. **Figure 3.3.2.17** identifies the communities with the most commercial landings of scamp. The majority of dealer reported landings are located in South Carolina (Murrells Inlet, Little River, Charelston, and McClellanville make up over 65% of landings in 2011) and North Carolina.

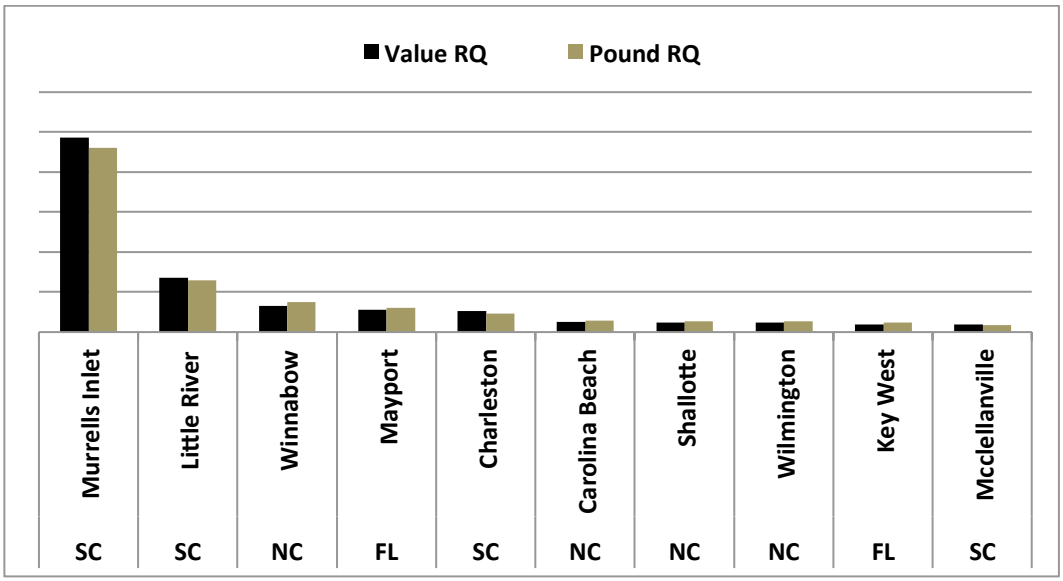

Figure 3.3.2.17 Proportion (RQ) of scamp commercial landings (pounds and value) for top 10 South Atlantic communities out of total landings and value of scamp.
Source: SERO Community ALS 2011.

Greater Amberjack

Greater amberjack is primarily a Florida fishery. Regulatory Amendment 14 (SAFMC 2013a) contains a detailed description of communities associated with greater amberjack, and is incorporated herein by reference. The one community outside of Florida in the top ten for regional quotient for commercial harvest of greater amberjack is Murrells Inlet, South Carolina. Cocoa, Key Largo, and Miami are the top three Florida communities, with a large proportion of commercial landings of greater amberjack occurring in these areas (SAFMC 2013a).

In general, areas with a higher level of recreational fishing engagement and reliance that could be affected by changes to management for greater amberjack include the Florida communities of Key West, Key Largo, Islamorada, Miami, Fort Pierce, and New Smyrna Beach, in addition to the community of Murrells Inlet, South Carolina (SAFMC 2013a).

Red Porgy

Red porgy has been an important species for both commercial and recreational fishermen in several communities in the South Atlantic region for some time. However, because of the rebuilding plan in Amendment 12 red porgy access has been limited (SAFMC 2000c). As a result, many commercial and recreational harvesters have shifted effort to other species. Although red porgy is not as socially and economically important as prior to the rebuilding plan, it remains an important part of catch composition during multi-species trips. Regulatory Amendment 18 to the Snapper Grouper FMP (SAFMC 2013c) contains a detailed description of communities associated with red porgy, and is incorporated herein by reference.

In the commercial component of the red porgy fishery, North Carolina communities outnumber all other states in terms of commercial landings and value. These include the communities of Winnabow, Morehead City, Sneads Ferry, Hampstead, Beaufort, Carolina Beach, Shallotte, Wilmington, Surf City, Wrightsville Beach, New Bern, Atlantic Beach, and Wanchese. However, the top five red porgy communities in terms of regional quotient are Murrells Inlet, South Carolina and Mayport, Florida outpacing all other communities in terms of value and pounds. Most of the communities with high regional quotients for red porgy are also identified as communities with high level of reliance and engagement with commercial fishing (SAFMC 2013c). Relative to the rest of the region, Georgia communities have low levels of commercial landings of red porgy. However, some commercial vessels in the community of Townsend may target some red porgy.

In the recreational component of the red porgy fishery, information was combined with vermilion snapper because these species are commonly caught together. Areas with high levels of recreational fishing engagement and reliance that could be affected by management changes to red porgy include the Florida communities of St. Augustine and Port Orange; the North Carolina communities of Atlantic Beach, Beaufort, Carolina Beach, Morehead City, Wrightsville Beach, Sneads Ferry and Wanchese; and the South Carolina communities of Little River and Murrells Inlet (SAFMC 2013c). Relative to the rest of the region, Georgia communities have low levels of recreational landings of red porgy. However, for-hire businesses and private anglers in communities such as Savannah, Darien, Brunswick, and St Simons Island likely target some red porgy.

Gag

Gag is a socially and economically important species for both the commercial and recreational sectors. Regulatory Amendment 14 to the Snapper Grouper FMP (SAFMC 2013a) contains a detailed description of communities associated with gag grouper, and is incorporated herein by reference. Most commercial landings of gag occur in South Carolina and North Carolina, with Murrells Inlet, South Carolina, having the highest regional quotient (relative commercial landings and value). Other important commercial communities for gag grouper include the South Carolina communities of Little River, Charleston, and McClellanville; the North Carolina communities of Wilmington, Hampstead, Morehead City, Surf City, Wrightsville Beach, Winnabow, Shallotte, Emerald Isle, Sneads Ferry, Beaufort, Carolina Beach and Atlantic Beach; and the Florida communities of Mayport, Cocoa, St Augustine, and Fort Pierce. Most of these communities have high levels of engagement and reliance on commercial fishing also (SAFMC 2013a). Relative to the rest of the region, Georgia communities have low levels of commercial landings of gag, although some commercial vessels in the community of Townsend may target some gag.

In the recreational component of the gag fishery, areas with high levels of recreational fishing engagement and reliance that could be affected by management changes to gag include the North Carolina communities of Atlantic Beach, Carolina Beach, Morehead City, and Wanchese; and the South Carolina community of Murrells Inlet (SAFMC 2014). Relative to the rest of the region, Georgia communities have low levels of recreational landings of red porgy. However, for-hire businesses and private anglers in communities such as Savannah, Darien, Brunswick, and St Simons Island may target some gag.

Golden Tilefish

Golden tilefish is an increasingly important commercial species in the snapper grouper fishery, primarily in south Florida and the Florida Keys. Amendment 18B to the Snapper Grouper FMP (SAFMC 2012) established an endorsement system for the longline portion of the commercial sector in addition to separate quotas for longline (75%) and hook-and-line (25%) harvest (effective May 2013). The purpose of the endorsement system for longline harvest was to cap participation in the longline component, which had grown substantially and created derby conditions, with commercial harvest being closed in only three to four months. However, the endorsement program has not slowed the rate of harvest. In 2014 (the first year of the endorsements), 75% of the longline quota was met by February 18, and longline harvest was closed on March 5.

As of April 23, 2014, there are 21 active longline endorsements (source: SERO vessel permits webpage). Almost all endorsements are registered to Florida vessels, primarily located around commutes in Brevard County, St Lucie County, Martin County, and Palm Beach County. Amendment 18B (SAFMC 2012) contains a detailed description of communities associated with golden tilefish, and is incorporated herein by reference. The primary communities that would be most likely to be affected by changes to golden tilefish management for the commercial sector are shown in **Figure 3.3.2.20**.

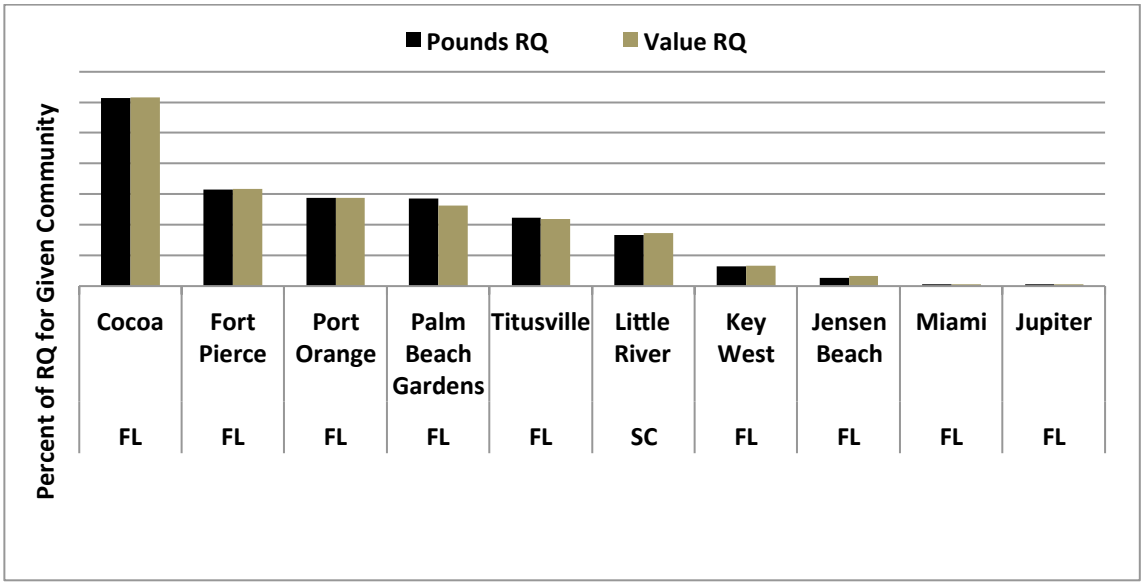

Figure 3.3.2.20. Proportion (RQ) of golden tilefish commercial landings (pounds and value) for top 10 South Atlantic communities out of total landings and value of golden tilefish.
Source: SERO Community ALS 2011.

The recreational component of the golden tilefish fishery is described in detail in Amendment 18B to the Snapper Grouper FMP (SAFMC 2012) and incorporated herein as a reference. Recreational fishing for golden tilefish is growing in popularity as the special type of fishing known as deep-dropping, which targets deepwater fish such as tilefish and snowy grouper, increases. Golden tilefish are not often caught by private anglers and recreational fishermen on charter trips due to the specific gear and knowledge required to deep-drop. Most recreational landings of golden tilefish are in Florida, with some landings in North Carolina.

Red Grouper

Red grouper is an important recreational and commercial species in the snapper grouper fishery, and is currently under a rebuilding plan. Amendment 24 to the Snapper Grouper FMP (SAFMC 2011d) contains a detailed description of communities associated with red grouper, and is incorporated herein by reference. A majority of commercial landings of red grouper occur in North Carolina, with some in South Carolina for the top commercial communities (**Figure 3.3.2.21**).

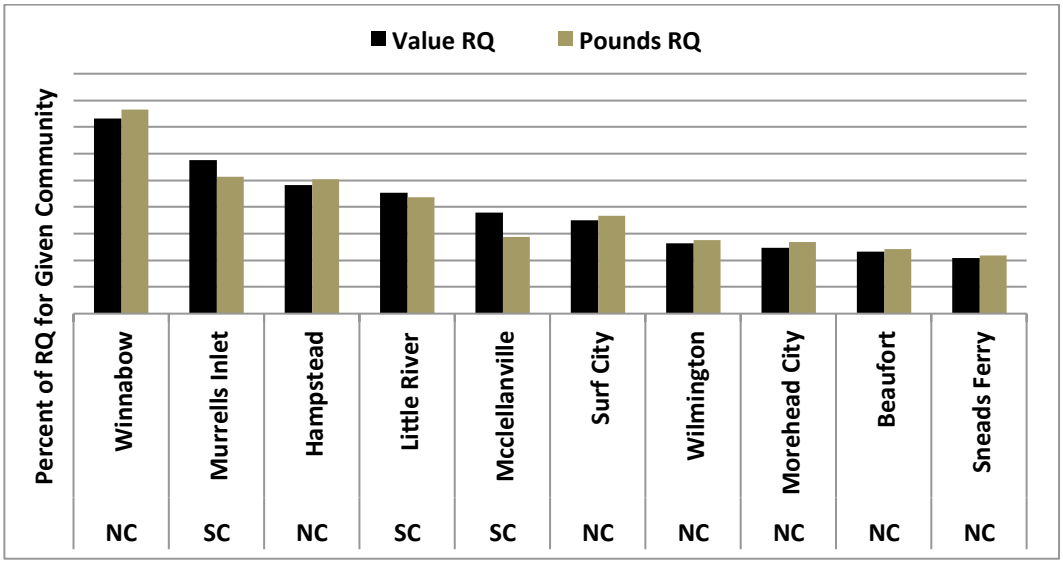

Figure 3.3.2.21. Proportion (RQ) of red grouper commercial landings (pounds and value) for top 10 South Atlantic communities out of total landings and value of red grouper.
Source: SERO Community ALS 2011.

Several of the communities identified as general South Atlantic recreational fishing communities are also the most involved in commercial fishing for red grouper, specifically the North Carolina communities of Carolina Beach and Morehead City, and the South Carolina communities of Murrells Inlet and Little River (SAFMC 2011b).

Snowy Grouper

Snowy grouper is landed recreationally in Florida, North Carolina, and South Carolina (**Table 3.3.2.17**). In 2012, recreational landings for snowy grouper are greatest in Florida (92.7%) and a small amount of snowy grouper are landed recreationally in North Carolina (7.3%). Of the recreational landings in 2012, over 81% occurred in Monroe County, Florida (SEDAR 36). A very small amount of snowy grouper has been landed recreationally in South Carolina within the last five years.

Table 3.3.2.17. Snowy grouper recreational landings in lbs gutted weight, by state.

Year	FL	GA	NC	SC	Total
2008	3017	0	23359	21	26397
2009	38909	0	19293	19	58221
2010	11063	0	69204	0	80267
2011	197	0	532	0	729
2012	74836	0	5935	0	80770

Commercial landings for snowy grouper are greatest in Florida (54.4% in 2012), followed by North Carolina (23.4%) and South Carolina (22.2%, SEDAR 36). There were no commercial landings of snowy grouper in Georgia in 2012 (SEDAR 36).

Figure 3.3.2.22 identifies the communities with the most commercial landings of snowy grouper. The top two communities of Murrells Inlet and Little River, South Carolina land about 31% of snowy grouper, and those landings represent over 31% of total value (**Figure 3.3.2.21**). One other South Carolina community makes up the top fifteen, seven Florida communities (including about 38% of landings in pounds and 41% in value), and five North Carolina communities (including about 19% of landings in pounds and 15% in value). No Georgia communities were included.

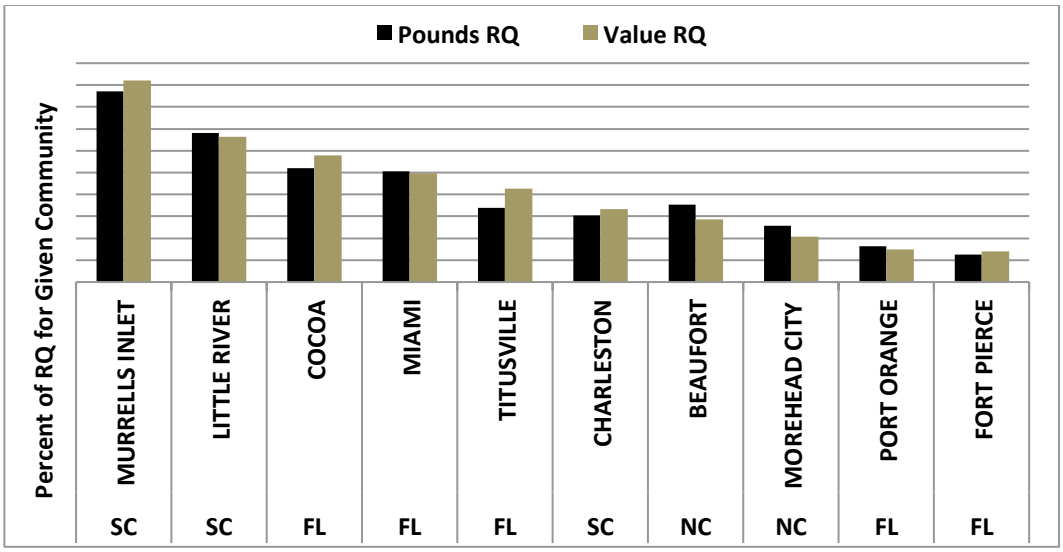

Figure 3.3.2.22. Proportion (RQ) of snowy grouper commercial landings (pounds and value) for top 10 South Atlantic communities out of total landings and value of snowy grouper.
Source: SERO Community ALS 2011.

Wreckfish

In the 1990s, wreckfish was one of the most important commercial species in the snapper grouper fishery. Participation in the wreckfish portion of the snapper grouper fishery led to derby conditions and subsequently, an individual ITQ through Amendment 5 to the Snapper Grouper FMP (SAFMC 1992). Over the next 10-20 years, participation in the wreckfish portion of the snapper grouper fishery declined with only a handful of active fishermen. Amendment 20A (SAFMC 2011b) transferred wreckfish shares from inactive permit holders to active permit holders, and currently there are five shareholders in Florida and South Carolina (source: SERO vessel permits webpage). Landings are overall split between the harvesters in Florida and South Carolina (personal comm., SERO). Data at the community level are not shown to maintain confidentiality, but total wreckfish commercial landings are shown in **Table 3.3.1.24**.

Amendment 20A to the Snapper Grouper FMP (SAFMC 2011d) contains a detailed description of the social environment and the history of the wreckfish portion of the snapper grouper fishery, and is incorporated herein by reference. In general, the areas most associated with the commercial component of the wreckfish fishery are Charleston, South Carolina; Port Orange, Florida; and Key Largo, Florida (SAFMC 2011d).

The Comprehensive ACL Amendment (SAFMC 2011c) allocated a portion (5%) of the total ACL for wreckfish to the recreational sector for the first time. Wreckfish requires specialized

gear and knowledge, and it is likely that only a small group of recreational fishermen and for-hire businesses target wreckfish, although some incidental catch could occur.

Gray Triggerfish

Commercial Communities

Gray triggerfish are landed commercially in North Carolina, South Carolina, and Florida. **Figure 3.3.2.23** identifies the communities with the most commercial landings of triggerfish. The majority of dealer reported landings are located in along the north coast of Florida (Mayport and St. Augustine), the northern state line of South Carolina (Murrells Inlet and Little River, and McClellanville), and along the southern North Carolina coast (Brunswick and Carteret Counties). Unclassified triggerfishes were included in this analysis because unclassified triggerfish are usually gray triggerfish.

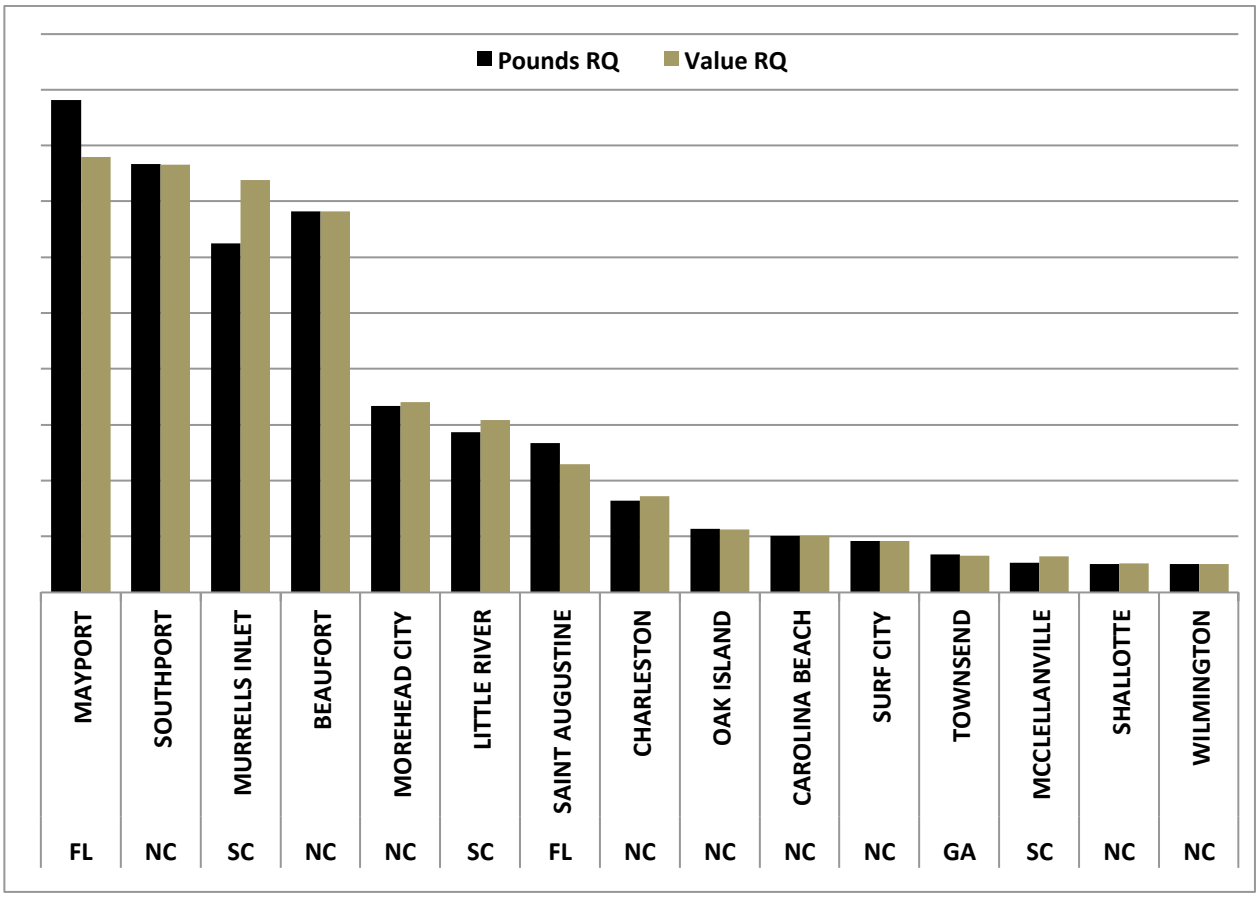

Figure 3.3.2.23. Proportion (RQ) of triggerfish commercial landings (pounds and value) for top 15 South Atlantic communities out of total landings and value of gray triggerfish.
Source: SERO Community ALS 2012

Reliance and Engagement with Commercial and Recreational Fishing

Amendment 29 to the Snapper Grouper FMP (SAFMC 2014) contains a detailed description of communities associated with gray triggerfish, and is incorporated herein by reference. The primary communities that demonstrate high levels of commercial fishing engagement and/or reliance include St. Augustine, Florida; Beaufort, Morehead City, and Shallotte, North Carolina; and Little River and Murrells Inlet, South Carolina. Communities with substantial recreational

engagement and/or reliance include St. Augustine, Florida; Morehead City, North Carolina; and Little River and Murrells Inlet, South Carolina (SAFMC 2014).

3.3.2.2. Golden Crab

The golden crab fishery has only a commercial component and is a small, specialized fishery off the southeast coast of Florida. The eleven existing permits are under a limited access program and each permit includes a designated fishing area. The Comprehensive ACL Amendment (SAFMC 2011c) contains a detailed description of the social environment and the history of the golden crab fishery, and is incorporated herein by reference. In general, the areas most associated with the golden crab fishery are the Florida communities of Fort Lauderdale, Marathon, Hollywood, and Miami (SAFMC 2011c).

3.3.2.3 Dolphin

A description of the social environment of the dolphin wahoo fishery is contained in Amendment 5 to the Dolphin Wahoo FMP(SAFMC 2013) and is incorporated herein by reference where appropriate. The South Atlantic, Mid-Atlantic, and New England regions are included in the description of the social environment. The referenced description focuses on available geographic and demographic data to identify communities with strong relationships with dolphin or wahoo fishing (i.e., significant landings and revenue), and positive or negative impacts from regulatory change are expected to occur in places with greater landings of wahoo or dolphin.

The descriptions of South Atlantic communities in Amendment 5 to the Dolphin Wahoo FMP (SAFMC 2013) include information about the top communities based upon regional quotients of commercial landings and value for dolphin and wahoo. These top communities are referred to in this document as “dolphin communities” and “wahoo communities” because these are the areas that would be most likely to experience the effects of proposed actions that could change the dolphin or wahoo fisheries and impact the participants and associated businesses and communities within the region. Additionally, the descriptions in Amendment 5 (SAFMC 2013) for all Atlantic regions also include reliance and engagement indices to identify other areas in which dolphin and wahoo fishing is important, and provide information of how a community overall is involved with commercial and recreational fishing and could experience effects from regulatory actions for any species (see Amendment 5 for more details about the reliance and engagement indices). The identified communities in this section are referenced in the social effects analyses in Section 4 in order to provide information on how the alternatives could affect specific areas. Overall, the dolphin and wahoo fishery is primarily recreational, and effort and landings predominantly occur in south Florida and the Florida Keys.

Commercial Dolphin and Wahoo Communities in the South Atlantic

Using the regional quotient to identify dolphin communities, Wadmalaw Island, South Carolina and Palm Beach Gardens, Florida make up about 1/3 of the total commercial dolphin landings and value. Most commercial dolphin communities are in Florida and include Mayport, St. Augustine, Cocoa, and Margate in addition to a few communities in the Florida Keys (Key West, Key Largo, Marathon, and Islamorada). North Carolina communities with higher regional quotients include Wanchese, Wrightsville Beach, Hatteras, and Beaufort. In addition to

Wadmalaw Island, the community of McClellanville, South Carolina also has a high regional quotient for dolphin. No Georgia communities are identified as dolphin communities.

Communities with high regional quotients for wahoo are similar to those for dolphin. Wadmalaw Island, South Carolina and Palm Beach Gardens, Florida make up the highest levels of commercial dolphin landings and value. Wahoo communities in Florida include Key West, Margate, St. Augustine, Ft. Lauderdale, Miami, Jupiter, New Smyrna Beach, and Hialeah. North Carolina communities with higher regional quotients include Wanchese, Wrightsville Beach, and Morehead City. In addition to Wadmalaw Island, the community of Yonges Island, South Carolina also has a high regional quotient for wahoo. No areas in Georgia are identified as wahoo communities.

Mid-Atlantic and New England Regions

The South Atlantic Council manages dolphin and wahoo through the Mid-Atlantic and New England regions. Overall, landings of these species in the Mid-Atlantic and New England regions are very low compared to landings in the South Atlantic, and management actions by the South Atlantic Council likely have minimal impacts on Mid-Atlantic and New England communities. More detailed information about these communities and how they were identified is described in Amendment 5 (SAFMC 2013).

Commercial Dolphin and Wahoo Communities in the Mid-Atlantic and New England Regions

Using the regional quotient to identify dolphin communities (SAFMC 2013), New Bedford, Massachusetts is the leading port in terms of dolphin landings with Ocean City, Maryland a distant second. Several other communities follow with near comparable amounts of dolphin landed but far less than the leading community. Wahoo landings for 2011were far less than dolphin with only three communities reporting landings: New Bedford, Massachusetts; Hatteras, North Carolina; and Cape May, New Jersey.

Reliance on and Engagement with Commercial and Recreational Fishing in the Mid-Atlantic and New England Regions

Ocean City, Maryland; Belmar, Barnegat Light, Cape May, and Point Pleasant, New Jersey; Montauk, New York; Virginia Beach, and Wachapreague, Virginia; Boston, and New Bedford, Massachusetts; and Point Lookout, New York are all over either the engaged or reliant threshold for commercial fishing or both. In terms of recreational fishing engagement and reliance for Northeast communities with dolphin and wahoo landings, almost every community is over the threshold for either engagement or reliance for recreational fishing (SAFMC 2013).

3.3.3 Environmental Justice Considerations

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

patterns of populations who principally rely on fish and/or wildlife for subsistence. The main focus of Executive Order 12898 is to consider "the disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States and its territories…" This executive order is generally referred to as environmental justice (EJ).

Commercial fishermen, recreational fishermen, and coastal communities could be impacted by the proposed actions in the South Atlantic. However, information on the race and income status for these individuals is not available. Because the proposed action could be expected to impact fishermen and community members in numerous communities in the South Atlantic, census data have been assessed to examine whether any coastal counties have poverty or minority rates that exceed thresholds for raising EJ concerns.

In order to assess whether a community may be experiencing EJ issues, a suite of indices created to examine the social vulnerability of coastal communities (Colburn and Jepson 2012; Jacob et al. 2012) is presented in **Figure 4.2.1**. 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 children under the age of 5, disruptions such as higher separation rates, higher crime rates, and unemployment all are signs of vulnerable populations. These indicators are closely aligned to previously used measures of EJ which used thresholds for the number of minorities and those in poverty, but are more comprehensive in their assessment. 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.

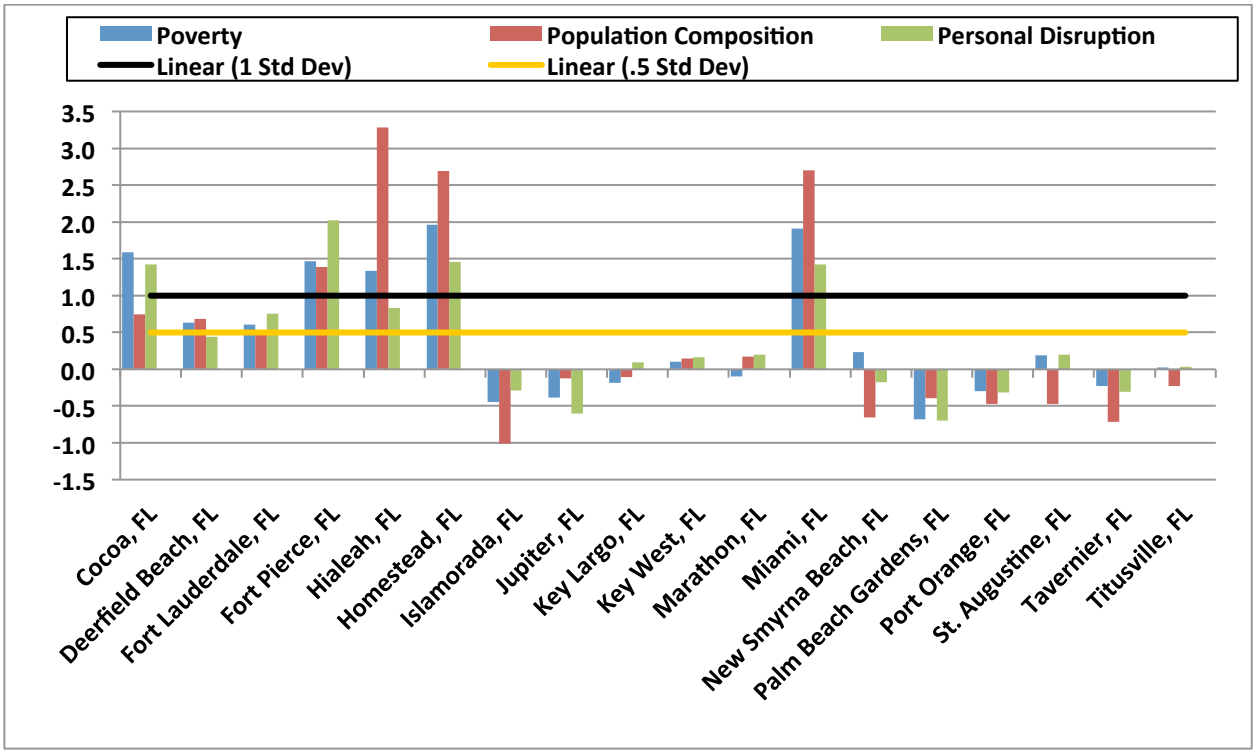

Figure 3.3.3.1. Social Vulnerability indices for top Florida communities in terms of pounds and value regional quotient for snapper grouper in the South Atlantic.
Source: SERO Social Indicator Database 2014.

Of the Florida communities depicted in **Figure 3.3.3.1**, five exceed the thresholds for at least three of the indicators, including: Cocoa, Fort Pierce, Hialeah, Homestead and Miami. Of those communities Fort Pierce and Miami are both commercially and recreationally engaged, while the others do not exhibit either engagement or reliance on fishing.

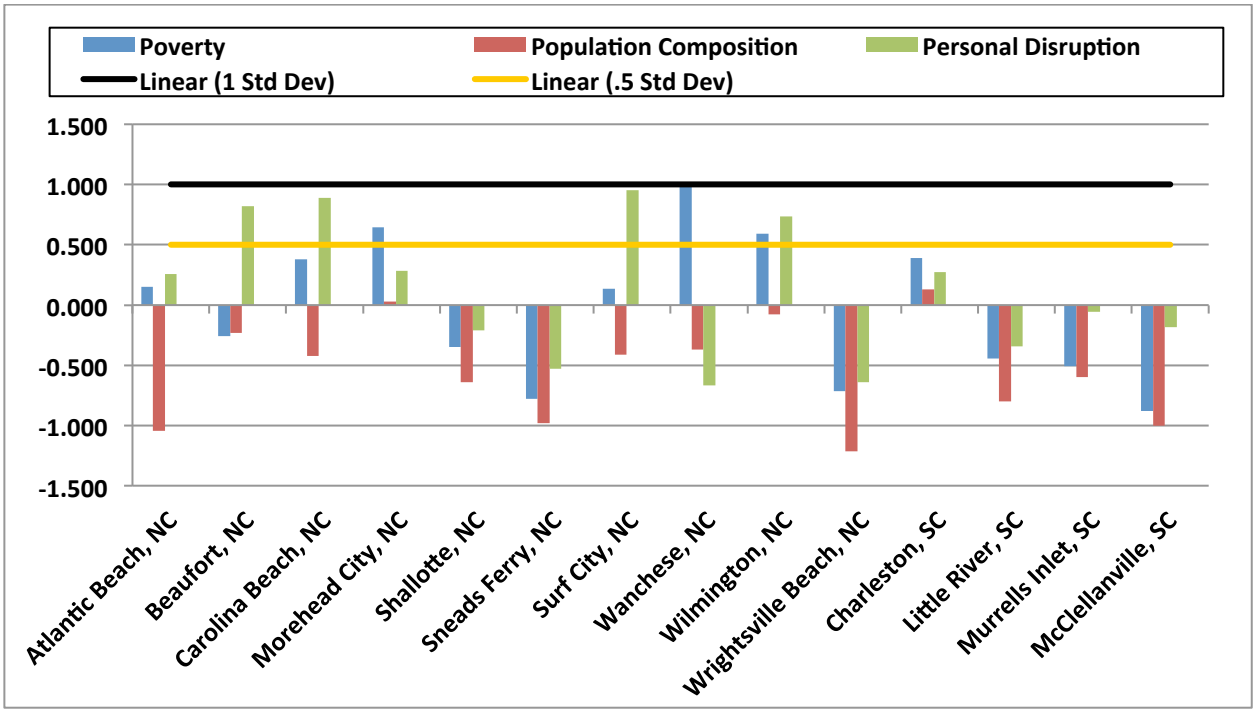

Figure 3.3.3.2. Social Vulnerability indices for top communities in in North and South Carolina in terms of pounds and value regional quotient for snapper grouper in the South Atlantic.
Source: SERO Social Indicator Database 2014

While several Florida communities exceed the thresholds for several social vulnerability indices, there are no communities in **Figure 3.3.3.2** that exceed both thresholds for any index. Wilmington, NC exceeds the lower threshold for poverty and personal disruption, with a few other communities exceeding the lower threshold for one or the other. While the communities in **Figure 3.3.3.2** are not experiencing much social vulnerability, there could still be some negative social effects that are exacerbated by other vulnerabilities that occur but are not represented by these indicators. However, these measures of social vulnerability are representative of many common social vulnerability factors.

While some communities affected by this proposed amendment may have minority or economic profiles that exceed the EJ thresholds and, therefore, may constitute areas of concern, significant EJ issues are not expected to arise as a result of this proposed amendment. It is anticipated that the impacts from the proposed regulations may impact minorities or the poor, but not through discriminatory application of these regulations.

Finally, the general participatory process used in the development of fishery management measures (e.g., scoping meetings, public hearings, and open South Atlantic Council meetings) is expected to provide sufficient opportunity for meaningful involvement by potentially affected individuals to participate in the development process of this amendment and have their concerns factored into the decision process. Public input from individuals who participate in the fishery has been considered and incorporated into management decisions throughout development of the amendment.

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 nm from the seaward boundary of each of the coastal states, and authority over U.S. anadromous species and continental shelf resources that occur beyond the U.S. EEZ.

Responsibility for federal fishery management decision-making is divided between the U.S. Secretary of Commerce (Secretary) and eight regional fishery management councils that represent the expertise and interests of constituent states. Regional councils are responsible for preparing, monitoring, and revising management plans for fisheries needing management within their jurisdiction. The Secretary is responsible for collecting and providing the data necessary for the councils to prepare fishery management plans and for promulgating regulations to implement proposed plans and amendments after ensuring that management measures are consistent with the Magnuson-Stevens Act and with other applicable laws. In most cases, the Secretary has delegated this authority to NMFS.

The South Atlantic Council 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 mi offshore from the seaward boundary of North Carolina, South Carolina, Georgia, and east Florida to Key West. The South Atlantic Council has thirteen voting members: one from NMFS; one each from the state fishery agencies of North Carolina, South Carolina, Georgia, and Florida; and eight public members appointed by the Secretary. On the South Atlantic Council, there are two public members from each of the four South Atlantic States. Non-voting members include representatives of the U.S. Fish and Wildlife Service, U.S. Coast Guard, State Department, and Atlantic States Marine Fisheries Commission (ASMFC). The South Atlantic Council has adopted procedures whereby the non-voting members serving on the South Atlantic Council Committees have full voting rights at the Committee level but not at the full South Atlantic Council level. The South Atlantic Council also established two voting seats for the Mid-Atlantic Council on the South Atlantic Mackerel Committee. South Atlantic Council members serve three-year terms and are recommended by state governors and appointed by the Secretary from lists of nominees submitted by state governors. Appointed members may serve a maximum of three consecutive terms.

Public interests also are involved in the fishery management process through participation on Advisory Panels and through council meetings, which, with few exceptions for discussing personnel and legal matters, are open to the public. The South Atlantic 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 three nautical miles 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 South Atlantic Council. The purpose of state representation at the South Atlantic Council level is to ensure state participation in federal fishery management decision-making and to promote the development of compatible regulations in state and federal waters.

The 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 South Atlantic Council level, but does not have voting authority at the South Atlantic 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 South Atlantic Council regulations. NOAA/OLE agents, who specialize in living marine resource violations, provide fisheries expertise and investigative support for the overall fisheries mission. The USCG is a multi- mission agency, which provides at sea patrol services for the fisheries mission.

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

The NOAA Office of General Counsel Penalty Policy and Penalty Schedule is available online at http://www.gc.noaa.gov/enforce-office3.html.

Chapter 4. Environmental Effects and Comparison of Alternatives

4.1 Action 1. Revise accountability measures (AMs) for black grouper, mutton snapper, yellowtail snapper, greater amberjack, red porgy, gag, golden tilefish, red grouper, snowy grouper, gray triggerfish, hogfish, scamp, Atlantic spadefish, bar jack, snappers complex, jacks complex, shallow-water grouper complex, porgies complex, wreckfish (recreational), and golden crab (commercial).

4.1.1 Biological Effects

Species addressed by this action include black grouper, mutton snapper, yellowtail snapper, greater amberjack, red porgy, gag, golden tilefish, red grouper, snowy grouper, gray triggerfish, hogfish, scamp, Atlantic spadefish, bar jack, snappers complex, jacks complex, shallow-water grouper complex, porgies complex, wreckfish (recreational), and golden crab (commercial). **Table 4.1.1.1** lists the unassessed species affected by this action. AMs for vermilion snapper, gray triggerfish, black sea bass, deepwater complex species, and blueline tilefish are being addressed in other amendments, which would incorporate these elements.

Under **Alternative 1 (No Action)**, the current

Summary of Alternatives
*(preferred alternatives in **bold**)*

Alternative 1 (No Action). Do not revise AMs for snapper grouper species and golden crab.

Preferred Alternative 2 affects only the commercial sector. In-season closure would take place if the commercial ACL, or quota component, is met or projected to be met (already part of the current commercial AMs for species affected under this action). The commercial ACL in the following fishing year will be reduced by the amount of a commercial overage only if:
Sub-alt 2a. The species is overfished.
Sub-alt 2b. The total ACL is exceeded.
Preferred Sub-alt 2c. The species, or one or more species in a species complex, is overfished AND the total ACL is exceeded.

Preferred Alternative 3 affects only the recreational sector. The recreational ACL in the following fishing year will be reduced by the amount of a recreational overage only if:
Sub-alt 3a. The species is overfished.
Sub-alt 3b. The total ACL is exceeded.
Sub-alt 3c. The species, or one or more species in a species complex, is overfished AND the total ACL is exceeded.

Preferred Alternative 4. If recreational landings reach or are projected to reach the recreational ACL, NMFS will close the recreational sector for the remainder of the fishing year, unless, the RA determines that a closure is unnecessary.
Sub-alt 4a. If the species is overfished.
Sub-alt 4b. Regardless if the stock status of the species, or one or more species in a species complex is overfished.

AMs in place for black grouper, mutton snapper, yellowtail snapper, greater amberjack, red porgy, gag, golden tilefish, red grouper, snowy grouper, gray triggerfish, hogfish, scamp, Atlantic spadefish, bar jack, snappers complex, jacks complex, shallow-water grouper complex, porgies complex, wreckfish (recreational), and golden crab (commercial) would not be modified. **Table 4.1.1.2** provides a summary of the current commercial and recreational AMs for species in the snapper grouper complex, and golden crab addressed by this amendment. There is little consistency of AMs among species, except for the in-season closure of commercial sector when a commercial annual catch limit (ACL) is met or projected to be met. Some current AMs either do not allow the Regional Administrator to take action to close a recreational sector when information becomes available indicating a recreational ACL has been or is going to be reached (as is the case for black grouper, mutton snapper, yellowtail snapper, greater amberjack, red porgy, gray triggerfish, hogfish, scamp, Atlantic spadefish, bar jack, snappers complex, jacks complex, shallow-water grouper complex, and porgies complex,); or they may not require an ACL payback in the year following an overage of a commercial ACL (as is the case for gag, golden tilefish, snowy grouper, and golden crab) (See **Table 4.1.1.2**).

The variability in AMs has created a complex regulatory environment, and could result in negative biological impacts if fishermen are unaware or do not understand the AMs. Confusion regarding AMs could result in fishing activity for species that have been closed to harvest. Additionally, some current AMs may not yield the highest level of biological benefit for some species when compared to the other alternatives considered under this action. Changes in AMs may be needed because of the amount of fishing effort on a single species or species group, the ability to monitor landings of a species or species group in season, and magnitude of a sector ACL. Issues such as these have led the South Atlantic Fishery Management Council (South Atlantic Council) to reexamine the system of AMs currently in place for the subject species under **Preferred Alternatives 2-4**.

Table 4.1.1.1. Species and species complexes addressed in this action with sector ACLs for all species including those affected by Amendment 29, Regulatory Amendment 20, and Regulatory Amendment 22 if implemented; and ACLs for those species in the absence of ACL revisions in Amendment 29, Regulatory Amendment 20, and Regulatory Amendment 22. ACLs are in pounds whole weight (lbs ww) unless otherwise noted.

Unassessed Species Complexes	Commercial ACL	Recreational ACL	Commercial ACLs Without Implementation of Amendment 29, and Reg. Amendments 20 and 22	Recreational ACLs Without Implementation of Amendment 29, and Reg. Amendments 20 and 22
Jacks Complex[(a)]	189,422	267,799	--	--
Snappers Complex[(b)]	344,884*(**)	1,172,832*(**)	215,662	728,577
Grunts Complex[(c)]	217,903**	618,122**	218,539	588,113
Shallow Water Groupers Complex[(d)]	55,542**	48,648**	49,776	46,656
Porgies Complex[(e)]	36,348	106,914	--	--
Individual Unassessed Species				
Atlantic spadefish	150,552**	661,926**	35,108	154,352
Bar jack	13,228**	49,021**	5,265	19,515
Scamp	219,375**	116,369**	333,100	176,688
Hogfish	49,569	85,355	--	--
Gray triggerfish	312,325	404,675	--	--
Individual Assessed Stocks				
Black grouper	96,844	165,750	--	--
Mutton snapper	157,743	768,857	--	--
Yellowtail snapper	1,596,510	1,440,990	--	--
Greater amberjack	769,388 (gw)	1,167,837	--	--
Red porgy	157,692 (gw)	157,692 (gw)	--	--
Gag	295,459 (gw)***	310,023 (gw)***	326,722 (gw)	340,060 (gw)
Golden tilefish hook-and-line	135,324 (gw)	3,019 (fish)	--	--
Golden tilefish longline	405,971(gw)	N/A	--	--
Red grouper	343,200	436,800	--	--
Snowy grouper	115,451 (gw)****	4,152 (fish)****	82,900 (gw)	523 (fish)
Wreckfish (Recreational)	411,350***	21,650***	223,250	11,750
Golden crab (Commercial)	2,000,000	N/A	--	--

* Dog snapper and mahogany snapper are considered for removal from the Snapper Grouper FMP in Amendment 35 to the Snapper Grouper FMP.
****** ACL values as updated through Amendment 29 to the Snapper Grouper FMP
*** ACL values as updated through Regulatory Amendment 22 to the Snapper Grouper FMP
**** ACL values as updated through Regulatory Amendment 20 to the Snapper Grouper FMP
(f) Almaco jack, banded rudderfish, lesser amberjack
(g) Gray snapper, lane snapper, cubera snapper, dog snapper, mahogany snapper
(h) White grunt, margate, sailor's choice, tomtate
(i) Red hind, rock hind, coney, graysby, yellowfin grouper, yellowmouth grouper
(j) Jolthead porgy, knobbed porgy, saucereye porgy, scup, whitebone porgy

Table 4.1.1.2 Summary table of current AMs for species addressed in this amendment.

	Black Grouper, Mutton Snapper, Yellowtail Snapper, Greater Amberjack, Red Porgy, gray triggerfish, hogfish, scamp, Atlantic spadefish, bar jack, snappers complex, jacks complex, shallow-water grouper complex, porgies complex	**Gag**	**Golden Tilefish**	**Red Grouper**	**Snowy Grouper**	**Wreckfish**	**Golden Crab**
Commercial Sector AMs							
In-season closure	X	X	X	X	X	ITQ***	X
Payback in following year if overfished	X*			X			X*
Recreational AMs							
In-season closure		X**	X	X			N/A
Payback following year		X		X	X		N/A
Monitor landings and reduce following fishing season length if necessary	X		X			X	N/A

* This pay back occurs only if the species, or one or species in a species complex, is overfished.
** For gag, a recreational in-season closure is triggered only if the species is overfished.
*** Individual transferable quota.

Preferred Alternative 2 would allow the Regional Administrator to close the commercial sector in-season if the ACL is met or projected to be met. For the species addressed in this amendment, this provision already exists; therefore, this aspect of the current system of commercial AMs would not change from the status quo. Commercial wreckfish harvest is currently managed through an individual transferable quota (ITQ) program, which the South Atlantic Council does not wish to modify at this time. Therefore, this alternative and its sub-alternatives does not apply to the commercial sector for wreckfish and would not modify the current ITQ program. **Preferred Alternative 2** would change the commercial payback provisions for the subject species or species group as proposed under **Sub-alternatives 2a-2c** (**Preferred**). Currently, gag, golden tilefish, and snowy grouper have no built in mechanism to correct an ACL overage if were one to occur. Therefore, these species would likely realize some biological benefits under any of the three sub-alternatives being considered. **Sub-alternative 2a** would trigger a reduction of the ACL in the fishing year following a commercial ACL overage but only if the species is overfished or one of the species in a species group 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 or one of the species in a species group is overfished. In all cases, 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 a species is overfished. This provision is currently in place for black grouper, mutton snapper, yellowtail snapper, greater amberjack, red porgy, gray triggerfish, hogfish, scamp, Atlantic spadefish, bar jack, snappers complex, jacks complex, shallow-water grouper complex, and porgies complex. 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. 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 combined 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) modifies the current overfished definition (minimum stock size threshold (MSST)) for four species addressed in this amendment including gag, red porgy, yellowtail snapper, and greater amberjack, 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, for those species, the risk of exceeding the commercial ACL while the species are overfished would be minimized, and the **Sub-Alternative 2a** AM could be triggered less often than the **Sub-Alternative 2b** AM.

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, the species (or a species in species group) is overfished *and* the total ACL has been exceeded. The likelihood of both of these scenarios taking place at the same time is small. **Preferred Sub-alternative 2c** may implement a commercial payback under such infrequently encountered simultaneous events that it may lead to a payback provision not being triggered when it is actually biologically necessary. Therefore, **Preferred Sub-alternative 2c**, may be associated with the lowest level of biological benefits compared to **Sub-alternatives 2a** and **2b**. However, **Preferred Alternatives 2** and **4** would prohibit commercial and recreational harvest in-season if the sector ACLs for the species and species complexes addressed by this amendment was met or was projected to be met. Thus, since overages of the total ACL (commercial and recreational combined) would be unlikely to occur, the biological benefits that may be expected under **Sub-Alternatives 2a-Preferred Sub-Alternative 2c** are likely to be minor and would not result in significant direct or indirect biological effects on target or non-target species. For golden tilefish, the in season closure portion of the commercial AM would be

triggered separately for the hook-and-line and the longline sectors. When either the longline and/or hook-and-line quotas are harvested, that sector would be closed to harvest of golden tilefish. However, the payback provision would only be triggered when the commercial golden tilefish ACL (the hook-and-line quota plus the longline quota) and the recreational golden tilefish ACL combined is exceeded and the species is overfished.

Preferred Alternative 3 would apply to the recreational sector for the species and species groups addressed in this amendment. Under this alternative, if the recreational ACL is exceeded, recreational landings during the following year would be monitored for persistence in increased landings. If increased landings persist through the following fishing year, one of the AMs provided in the sub-alternatives for **Preferred Alternative 3** would be triggered for the applicable recreational sector. The **Preferred Alternative 3** sub-alternatives are almost identical to those found for the commercial sector under **Preferred Alternative 2**; however, the Regional Administrator would determine, based upon the best scientific information available, whether a payback is actually needed. The Regional Administrator may determine that a payback is not needed in a case where the combined total ACL has been met and the species is overfished, but an ongoing stock assessment indicates the species, or a species in a species group, is no longer overfished; or if ACL overages are shown to be caused by increased rates of harvest due to increasing stock abundance rather than increased fishing effort.

Currently, black grouper, mutton snapper, yellowtail snapper, greater amberjack, red porgy, golden tilefish, wreckfish, gray triggerfish, hogfish, scamp, Atlantic spadefish, bar jack, snappers complex, jacks complex, shallow-water grouper complex, and porgies complex have an AM that monitors recreational landings following a recreational ACL overage to determine if there is a persistence in landings before an AM is triggered. This provision is not in place for gag, red grouper, and snowy grouper. For species with very low recreational ACLs, landings are extremely variable. Therefore, for species with very small recreational ACLs such as golden tilefish and snowy grouper, using an AM that would allow landings to be monitored closely for persistence of increased harvest rates over time would be a useful tool for fishery managers, and would help ensure the most appropriate corrective/preventive action is taken according to the needs of the species. Golden crab does not have a recreational component, and would not be affected by **Preferred Alternative 3**.

Sub-Alternatives 3a, **3b**, and **3c** (**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, compared to **Alternative 1 (No Action)** for black grouper, mutton snapper, yellowtail snapper, greater amberjack, red porgy, golden tilefish, wreckfish, gray triggerfish, hogfish, scamp, Atlantic spadefish, bar jack, snappers complex, jacks complex, shallow-water grouper complex, and porgies complex, which only allows for a season length reduction as a form of payback. **Preferred Alternative 4** of this action would allow the Regional Administrator to close the recreational sectors for the affected species when the ACL is met or projected to be met. Therefore, if in-season closures are implemented when needed and prevent recreational ACLs from being exceeded, the need to initiate an ACL payback the following year would be greatly reduced.

Gag, red grouper, and snowy grouper, already have payback provisions in place under their current AMs, which are triggered by very specific circumstances (see **Table 4.1.1.2**). However, the triggers for implementing a recreational payback for these species may be changed under any of the **Preferred Alternative 3** sub-alternatives. Currently, a payback is not triggered automatically for black grouper, mutton snapper, yellowtail snapper, greater amberjack, red porgy, golden tilefish, wreckfish, gray triggerfish, hogfish, scamp, Atlantic spadefish, bar jack, snappers complex, jacks complex, shallow-water grouper complex, and porgies complex. Instead, the season length reduction is implemented at the discretion of the Regional Administrator based on the best available scientific information.

Sub-alternative 3a would allow the Regional Administrator to correct for a recreational ACL overage for the species addressed in this amendment, except golden crab, 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 the species is overfished. Therefore, if the recreational ACL is exceeded and increased landings through the next fishing year are detected, but the 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 of a stock.

Sub-alternative 3b 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 four species in this amendment is now changed through the implementation of Regulatory Amendment 21 making them less likely to be determined to be overfished. Thus, it is expected that the AM under **Sub-alternative 3b** would be triggered more frequently and have a greater biological benefit than **Sub-alternative 3a**, though neither alternative would yield significant biological benefits.

Preferred Sub-alternative 3c would only trigger a recreational ACL payback (in the form of a reduced recreational ACL and season length following an ACL overage) if a species is overfished *and* the total ACL is exceeded. This AM is the least likely to be implemented considering the infrequently encountered scenario of a total ACL being exceeded and a species being overfished in the same fishing year. Under **Preferred Sub-alternative 3c**, no action would be taken to correct for a recreational ACL overage unless both of those criteria are met. Therefore, **Preferred Sub-alternative 3c** may be the least biologically beneficial compared to the other **Preferred Alternative 3** sub-alternatives considered. However, **Preferred Alternatives 2** and **4** would prohibit commercial and recreational harvest in-season if the sector ACLs for the species and species complexes addressed by this amendment was met or was projected to be met. Thus, since overages of the total ACL (commercial and recreational combined) would be unlikely to occur, significant biological impacts, beneficial or adverse, on target and non-target species are not expected under any of the sub-alternatives considered under **Preferred Alternative 3**.

Like **Preferred Alternative 3, Preferred Alternative 4** would also affect the recreational sector. For black grouper, mutton snapper, yellowtail snapper, greater amberjack, red porgy, snowy grouper, wreckfish, gray triggerfish, hogfish, scamp, Atlantic spadefish, bar jack, snappers complex, jacks complex, shallow-water grouper complex, and porgies complex, current regulations (**Alternative 1 No Action**) specify that if recreational landings data indicate a recreational ACL is going to be met or exceeded while the fishing season is still open there is no provision for an in-season closure. The Regional Administrator must wait until the next fishing season to take corrective action to address recreational ACL overages. Therefore, **Preferred Alternative 4** 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 indicate 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. **Preferred Alternative 4** may not be practicable; however, for species with extremely small recreational ACLs, such as snowy grouper. Monitoring in season harvest of species with very small ACLs is extremely difficult because they may be rarely encountered by recreational fishermen and infrequently reported through the Marine Recreational Information Program (MRIP) reporting system. By the time recreational landings data for species such as snowy grouper are available, the recreational ACL may already be exceeded making an in season closure before the ACL is met impossible. For this reason, the most biologically beneficial option would be to implement a system of recreational AMs that combines **Preferred Alternatives 3** and **4**.

Under **Preferred Alternative 4**, an in-season action to close a recreational sector could be triggered under one of two circumstances specified in **Sub-alternative 4a** or **Preferred Sub-alternative 4b**. 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 will 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, **Preferred Sub-alternative 4b** 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. **Preferred Sub-alternative 4b** is the biologically preferable sub-alternative under **Preferred Alternative 4**, since a recreational closure could be implemented regardless of overfished status. However, under **Preferred Alternative 4**, 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. Under that scenario, the biological benefits of **Preferred Sub-alternative 4b** may be equal to those under **Sub-alternative 4a**; however, none of the **Preferred Alternative 4** sub-alternatives would result in biologically significant impacts.

Compared to **Alternative 1 (No Action)**, **Preferred Alternatives 2**, **3**, and **4** 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 likely a combination of **Preferred Alternatives 3** and **4**. For the commercial sector, the most

biologically beneficial option compared to **Alternative 1 (No Action)** is likely to be **Sub-alternative 2b**. None of the alternatives being considered under this action would significantly alter the way in which the snapper grouper or golden crab fisheries are prosecuted in the South Atlantic exclusive economic zone, and none of the anticipated impacts, direct or indirect, are likely to significant. 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.

4.1.2 Economic Effects

Action 1 considers alternatives that would modify AMs for black grouper, mutton snapper, yellowtail snapper, greater amberjack, red porgy, gag, golden tilefish, red grouper, snowy grouper, gray triggerfish, hogfish, scamp, Atlantic spadefish, bar jack, snappers complex, jacks complex, shallow-water grouper complex, porgies complex, wreckfish (recreational), and golden crab (commercial). Under **Alternative 1 (No Action)**, the current AMs in place for these species would not be modified. **Preferred Alternatives 2** and **3** specify conditions that would require paybacks of overages in the commercial sector and recreational sector, respectively. **Preferred Alternative 4** considers an in-season closure for the recreational sector.

Sub-alternatives 2a and **3a** would reduce the ACL the following season by the amount of the overage only if a species is overfished. **Sub-alternatives 2b** and **3b** would reduce the ACL the following season by the amount of the overage only if the combined landings of the commercial and recreational sectors for that species or species group exceeds the overall ACL. **Preferred Sub-alternatives 2c** and **3c** would reduce the ACL the following season by the amount of the overage only if the species or one of the species in a species group is overfished <u>and</u> the combined landings of the commercial and recreational sectors for that species exceeded the overall ACL.

The selection of any of the sub-alternatives of **Preferred Alternatives 2** or **Preferred 3** does not change the basic premise of **Alternative 1 (No Action)** that commercial fishing would be stopped when the commercial ACL has been met or projected to be met or the following recreational fishing season shortened when recreational ACL is exceeded. Thus, only when overages occur would the various alternatives have possibly differing economic effects. The relative magnitude of short-term economic effects of the various alternatives would depend on the likelihood of triggering AMs, particularly those that have a payback proviso. The alternatives' long-term economic effects would depend on their effects on the sustainability of the stock to support continued fishing opportunities for the commercial and recreational fishing participants, overall the potential economic impacts of **Preferred Alternatives 2** and **3** are not expected to be significant.

Currently, there are payback provisions in place for gray triggerfish, hogfish, scamp, Atlantic spadefish, bar jack, snappers complex, jacks complex, shallow-water grouper complex, porgies complex (commercial), red grouper (commercial and recreational), snowy grouper (recreational), and gag (recreational) (**Table 4.1.1.2**). Because **Alternative 1** (**No Action**) does not contain payback provisions for some species considered in this amendment, it may be considered to

result in the least adverse economic effects in the short term. In fact, **Alternative 1 (No Action)** has the highest probability of providing positive short-term economic benefits when overages occur. The nature of the other alternatives/sub-alternatives is that should overages occur, economic benefits would tend to be higher in the year overages occur; however, the following year's ACL would be reduced and likely reduce economic benefits as well. While it cannot be readily determined whether an increase in economic benefits in the year overages occur would more than compensate for the reduction in economic benefits the following year when ACLs are reduced, it would appear that the expected long-term net economic effects would be positive with the lowest payback probability.

Of the remaining alternatives/sub-alternative combinations, **Sub-alternatives 2b** and **3b** have the greatest probability of triggering paybacks in the short term. **Sub-alternative 2a, Preferred Sub-alternative 2c, Sub-alternative 3a,** and **Preferred Sub-alternative 3c** all require that to trigger paybacks, the stock must be overfished.

In general, AMs help ensure that ACLs are not exceeded, particularly on a consistent basis. Exceeding an ACL on a consistent basis presents a high likelihood of overfishing which could possibly derail a rebuilding strategy adopted for an overfished stock or even drive an otherwise healthy stock to being overfished. Once overfishing occurs, or a stock become overfished, and more restrictive regulations are adopted, affected fishers could redirect their effort to other species that could also experience overfishing or be overfished over time. This could eventually trigger untoward repercussions on the ecological environment for a stock and other associated species. Incorporating paybacks in AMs may not eliminate the occurrence of overages but it does decrease the likelihood that overages (and overfishing) would occur over time.

Among the alternatives, **Alternative 1** (**No Action**) has the highest likelihood of allowing overages to consistently occur over time. In a sense, this alternative has the highest likelihood that economic benefits would erode over time, first due to the adoption of more restrictive management measures as overfishing occurs and later as fishing opportunities severely diminish with an overfished stock. In a similar manner, alternatives, such as **Preferred Sub-alternatives 2c** and **3c**, which have a lower probability of adopting paybacks would be associated with a higher probability of allowing overfishing to occur over time that could possibly lead to an overfished condition for the stock. A similar statement may be made for the remaining sub-alternatives. In summary, the lower the probability of arresting any overfishing due to consistent ACL overages, the higher the likelihood that long-term economic benefits would be eroded.

One key issue brought about by the scenario just described is the appropriate balancing of higher economic benefits in the short term but lower benefits in the long term, by retaining AM **Alternative 1** (**No Action**) or adopting AM alternatives **Preferred Sub-alternatives 2c** and **3c**; or of possibly lower economic benefits in the short term but a more sustainable fishery in the long term, by adopting any of the other sub-alternatives, particularly **Sub-alternatives 2b** and **3b**. Currently available economic information is not sufficient to estimate the net economic effects of the various alternatives. However, there appears to be a better chance of higher net economic benefits with AMs that have a higher likelihood of limiting consistent ACL overages over time.

Generally speaking, the probability of a species being both overfished and the total ACL being exceeded (**Preferred Sub-alternatives 2c** and **3c**), is lower than just one of the conditions occurring. Therefore, **Preferred Sub-alternatives 2c** and **3c** have the lowest probability of triggering paybacks in response to ACL overages. Thus, the alternatives may be ranked from lowest to highest probability of paybacks and associated short-term adverse, though not significantly adverse, economic effects as follows: **Alternative 1 (No Action)**, **Preferred Sub-alternatives 2c** and **3c**, **Sub-alternatives 2b** and **3b**, followed by **Sub-alternatives 2a** and **3a**.

More specifically, the likelihood a species would be affected by this action is based primarily on whether or not there is a probability that its total ACL would be reached, and whether or not the species is overfished. **Table 4.1.1.3** shows the species groupings that have an overall ACL or individual species with their 2013 total landings (commercial and recreational sectors combined). It also shows whether it exceeded its total ACL and whether or not the species is overfished. The overfished designation is unknown for species that have not been formally assessed. The table shows which sub-alternatives under **Preferred Alternatives 2** and **Preferred 3** would have the criteria met to trigger the AMs for the species or species grouping.

Wreckfish are not included in **Table 4.1.1.3.** The commercial sector is managed under a catch share program (ITQ). Therefore, the sub-alternatives of **Preferred Alternative 2** would not apply to wreckfish. In most years, there are no recorded recreational landings for wreckfish. A total of 964 lbs ww were reported in 2012, but no recreational landings were noted by MRIP in 2013.

Table 4.1.1.3. 2013 landings (lb ww) by species (or species groupings), whether or not the total ACL was exceeded, overfished status, and which sub-alternatives of Alternatives 2 and 3 of Action 1 would be met to implement AMs.

Species or Groupings	2013 Landings (lb ww)			ACL	ACL Exceeded in 2013?	Overfished?	Sub-alts
	Total	Comm	Rec				
Jacks	362,386	201,398	160,988	457,221	No	Unassessed	None
Snappers	955,315	151,865	803,450	944,239	Yes	Unassessed	B
Grunts	462,784	103,402	359,382	806,652	No	Unassessed	None
Shallow Water Groupers	45,085	18,126	26,959	96,432	No	Unassessed	None
Gray Triggerfish	696,100	322,117	373,983	626,518	Yes	Unassessed	B
Porgies	146,325	29,032	117,293	143,262	Yes	Unassessed	B
Atlantic spadefish	77,367	23,489	53,878	189,460	No	Unassessed	None
Bar jack	7,881	5,672	2,209	24,780	No	Unassessed	None
Scamp	188,277	142,464	45,813	509,788	No	Unassessed	None
Hogfish	98,353	33,268	65,085	134,824	No	Unassessed	None
Black grouper	153,171	54,075	99,096	256,430	No	No	None
Mutton snapper	555,123	73,392	481,731	926,600	No	No	None
Yellowtail snapper	1,971,031	1,305,002	666,029	3,037,500	No	No	None
Greater amberjack*	2,343,348	800,103	1,543,245	1,968,000	Yes	No	B
Red porgy	230,144	155,967	74,177	306,000	No	Yes	A, B, C
Gag	438,999	360,528	78,471	666,782	No	No	None
Golden tilefish	563,678	537,950	25,728	558,036**	Yes	No	B
Red grouper	204,584	117,461	87,123	718,000	No	No	None
Snowy grouper	96,617	79,393	17,224	87,254***	Yes	Yes	A, B, C
Golden Crab	629,836	629,836	N/A	2,000,000	No	Unassessed	None

*Fishing year from May 2013-April 2014.
**ACL Value from Regulatory Amendment 12. Conversion from fish to pounds is 6.21.
***ACL value from Amendment 17B. Conversion from fish to pounds is 8.41.
Source: SERO quota monitoring landings Web site (December 15, 2014).

The economic effects to the fishing sectors in the future would be determined by the size of the overage. According to **Table 4.1.1.3**, fishing participation for snowy grouper would likely be affected by this action based on 2013 landings. Snowy grouper had their recreational ACL exceeded by 325%. However, when snowy grouper recreational sector was closed on May 31, 2013, only 76% of the 523 fish recreational ACL had been caught. The remaining recreational landings for snowy grouper occurred after the recreational sector had already been closed. Significant overages are less likely for the commercial sector because of the closer monitoring of the commercial snapper grouper fishery through the use of logbooks and trip tickets.

Constraining landings to the ACLs could result in short term, direct, negative economic effects, the severity of which would be determined by the size of the payback in terms of shortened seasons, or a reduced ACL in the next fishing year. However, in the long term,

constraining fishery participation to the ACL is good for fish stocks and long term economic outcomes.

Preferred Alternative 4 is designed to help prevent recreational fishing for a species or species complex from continuing when it is known through MRIP landings that the recreational ACL has been or will soon be exceeded. Allowing fishing to continue under these conditions would only exacerbate the magnitude of ACL paybacks, shorten future seasons even more, or depending on the size of the overage, eliminate a recreational fishing season altogether for one or more years. Of the species in **Table 4.1.1.3**, the recreational portion of the snapper grouper fisheries for snowy grouper is the species most vulnerable to such a scenario. However, an increase in the commercial and recreational ACLs is proposed for snowy grouper through Regulatory Amendment 22 to the Snapper Grouper FMP, which has been approved by the South Atlantic Council. While it is not possible to determine the specific economic effects without knowing the potential extent of the impact of the AMs, minimizing recreational overages would reduce the longer term direct negative economic impacts. **Sub-alternative 4a** would allow the Regional Administrator to close a recreational sector during a season only if the stock is overfished. **Preferred Sub-alternative 4b** would give the Regional Administrator more flexibility to close a recreational sector during a season regardless of the status of the stock. **Sub-alternative 4a** would be less likely to cause short term direct economic effects compared to **Preferred Sub-alternative 4b** because fewer species potentially would be affected. However, **Preferred Sub-alternative 4b** would be more likely to prevent long term, direct economic effects compared to **Sub-alternative 4a.** Regardless of which alternatives are chosen under Action 1, none of the potential direct or indirect economic effects are expected to be significant when compared to the status quo.

4.1.3 Social Effects

Accountability measures can result in direct and indirect social effects because, when triggered, they 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. 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 in the economy then increased unemployment and other disruptions to the social fabric may occur. While these negative effects are usually short term, they may at times induce other indirect effects through the loss of fishing infrastructure that can have a lasting effect on a community.

In general, the most beneficial alternatives in the long term for the stock and for sustainable fishing opportunities area 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.

For the commercial sector of the snapper grouper and golden crab fisheries, maintaining the current AMs under **Alternative 1 (No Action)** would not be expected to result in additional negative effects on the commercial fleets, but could negate benefits by not allowing flexibility in the payback provisions, such as those in **Sub-alternatives a-c** under **Preferred Alternative 2. Preferred Sub-alternative 2c** would provide the most flexibility for triggering the payback AM and would be expected to be most beneficial, though not significantly beneficial, to commercial snapper grouper and golden crab fishermen because it would be less likely that a payback would be triggered. Additionally, **Preferred Sub-alternative 2c** would be more consistent with AMs for other species such as king mackerel and Spanish mackerel.

For the recreational sector of the snapper grouper fishery, maintaining the current AMs under **Alternative 1 (No Action)** would not be expected to result in additional negative effects on recreational fishermen and for-hire businesses, other than inconsistency in AMs. For stocks without a recreational post-season AM under **Preferred Alternative 3,** establishment of a payback provision would create an increased likelihood that an overage by the recreational could reduce fishing opportunities in the following year. However, **Sub-alternatives 3a- Preferred 3c** provide some flexibility in how a post-season payback would be triggered, with **Preferred Sub-alternative 3c** being the least likely alternative to trigger a payback and affect recreational fishing opportunities in the subsequent year.

The in-season closure AM for the recreational sector in **Preferred Alternative 4** could have negative effects on recreational fishing opportunities and for-hire businesses for the stocks that do not have an in-season AM in place for the recreational catch. However, **Sub-alternative 4a** would reduce the likelihood of an in-season closure of the species in this action for the recreational sector.

4.1.4 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 **Preferred Alternatives 2-4** 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)**, and would not modify the administrative environment for implementing commercial AMs. The **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 less 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 potential impacts on the administrative environment under **Preferred Alternative 2** are likely to be minor and would not be considered significant.

The administrative impacts associated with **Preferred Alternative 3** are largely the same as those under **Preferred Alternative 2**, 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 and recreational AMs are in place, the addition of the payback provision of the recreational AM would not constitute an additional administrative burden for those species that do not already have this AM. Therefore, compared to **Alternative 1 (No action)**, **Preferred Alternative 3** would not constitute a significant increase in the need for increased staff time or agency funds. As with **Preferred Alternative 2**, the sub-alternatives under **Preferred Alternative 3** would be associated with different administrative burdens based on the frequency with which they are triggered. **Sub-alternative 3b** is the most likely to be triggered, and **Preferred Sub-alternative 3c** is the least likely to be triggered. **Sub-alternative 3a** represents a mid-point of potential administrative impacts that may result from any of the three sub-alternatives considered.

Preferred Alternative 4 is the most simplistic recreational AM considered under this action, but may result in the implementation of an AM more frequently than **Alternative 1 (No Action)** and **Preferred Alternative 3**. For species where recreational landings data are able to be tracked on an in-season basis, in-season closures under **Preferred Alternative 4** could be triggered every year. **Sub-Alternative 4a** would be triggered less frequently than **Preferred Sub-Alternative 4b** and would; therefore, result in a lower administrative impact in the form of public notification of an in-season closure, compared to **Preferred Sub-Alternative 4b**. Overall, the administrative impacts of all the alternatives considered under this action, compared to **Alternative 1 (No Action)**, are expected to be minimal.

4.2 Action 2. Revise the sector allocations for dolphin.

4.2.1 Biological Effects

The South Atlantic Council is addressing sector allocations for South Atlantic dolphin because the current method for determining allocations, established in the Comprehensive ACL Amendment (SAFMC 2011c) was based on the time series of data from 1999-2008, and 2006-2008. Dolphin landings data starting from 1986 are available and the South Atlantic Council would like to reexamine the sector allocations based on this expanded times series of data (**Alternative 5**). Additionally, the South Atlantic Council is considering other options for modifying the method for determining sector allocations for dolphin in this amendment (**Alternatives 2-4**).

Alternative 1 (No Action) would maintain the current sector allocations, 92.46% for the recreational sector and 7.54% for the commercial sector. The current allocation amounts are 1,157,001 lbs ww for the commercial sector and 14,187,845 lbs ww for the recreational sector (recently updated through Amendment 5 to the Dolphin Wahoo FMP; SAFMC 2013). **Alternative 1 (No Action)** would not modify the current method for establishing sector allocations, nor would it result in any change to the current allocation amounts for each sector. Neither sector of the dolphin segment of the dolphin wahoo fishery has met or exceeded their catch limits since the dolphin wahoo fishery came under federal management (**Table 4.1.2.1**). Therefore, **Alternative 1 (No Action)** is not expected to result in any direct or indirect biological impacts.

***Alternatives*[1]**

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

Alternative 1 - No Action. The recreational sector allocation for dolphin is 92.46%. The commercial sector allocation for dolphin is 7.54%.

Alternative 2 allocates the recreational sector 87%, and commercial sector 13%.

Alternative 3 allocates the recreational sector 86%, and commercial sector 14%.

Alternative 4 allocates the recreational sector 90%, and commercial sector 10%.

Alternative 5 modifies the time series by which allocations were specified for the two sectors.
Sub-alt. 5a. Catch history = average landings 1986-2011, current trend = average landings 2009-2011. The recreational sector allocation for dolphin is 90%, and commercial sector allocation is 10%.
Sub-alt. 5b. Catch history = average landings 1986-2012, current trend = average landings 2010-2012. The recreational sector allocation for dolphin is 90%, and commercial sector allocation is 10%.
Sub-alt. 5c. Catch history = average landings 1986-2012, current trend = average landings 2006-2012. The recreational sector allocation for dolphin is 91%, and commercial sector allocation is 9%.

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

Table 4.1.2.1. Dolphin landings by sector 2008-2012 and percentage of sector ACL harvested each year.

Year	Commercial Landings lb ww	Commercial ACL/soft cap	% of Commercial ACL Harvested	Recreational Landings** lb ww	Recreational ACL*	% of Recreational ACL Harvested
2008	780,818	1,500,000	52%	7,833,547		
2009	1,222,944	1,500,000	82%	7,570,195		
2010	706,281	1,500,000	47%	6,243,399		
2011	791,457	1,500,000	53%	6,518,306		
2012	687,140	1,065,524	64%	6,097,292	13,530,692	45%

*Prior to 2011, there was a soft cap in place for the commercial sector rather than a hard quota (13% for the commercial sector and 87% of the total allowable catch (TAC) for the recreational sector). Percentage of ACLs harvested prior to 2011 are based on the commercial soft cap and the previously used TAC.
**Recreational landings are in MRFSS-based units.
SOURCES: SEFSC Commercial and Recreational ACL Datasets (2014).

Alternative 2 would reinstate the allocation methodology used prior to implementation of the Comprehensive ACL Amendment. At that time, the 13% allocation to the commercial sector was treated as a "soft cap" harvest limit. **Alternative 2** would use the same allocation percentages; however, the soft cap for the commercial sector has been replaced with a commercial ACL (a "hard cap" harvest limit), which would remain in place as required by Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act). Although the alternative references "soft cap allocations", the current Magnuson-Stevens Act requirements to establish ACLs and AMs for each federally managed fishery prevents the allocation method in **Alternative 2** from incorporating the amount of flexibility the term "soft cap" implies. Once the commercial ACL is met or projected to be met, the sector is closed to harvest to prevent the ACL from being exceeded. Despite the use of the term, "soft cap" in the alternative, an ACL is a hard cap so that the commercial ACL is used to control harvest and trigger an AM when needed. The biological impacts of **Alternative 2** compared to **Alternative 1 (No Action),** and the other alternatives under consideration, are expected to be neutral; both the commercial and recreational sectors would be limited to their respective ACLs and the AMs in place for dolphin.

Eighty-seven percent of the total ACL would result in a recreational sector ACL of 13,344,846 lbs ww, and 13% of the total ACL would result in a commercial sector allocation of 1,994,830 lbs ww. The biological impacts of **Alternative 2** compared to **Alternative 1 (No Action),** and the other alternatives under consideration, are expected to be neutral; both the commercial and recreational sectors would be limited to their respective ACLs and the AMs in place for dolphin. The current system of ACLs and AMs are designed to prevent the ACLs from being exceeded, and to correct for any ACLs overages if they occur.

Table 4.2.1.2. Sector ACLs that would result under each of the alternatives considered.

Alternative	Commercial Sector ACL (lb ww)	Recreational Sector ACL (lb ww)
Alternative 1 (No Action)	1,157,001	14,187,845
Alternative 2	1,994,830	13,344,846
Alternative 3	2,148,278	13,196,567
Preferred Alternative 4	1,534,485	13,810,361
Sub-Alternative 5a	1,534,485	13,810,361
Sub-Alternative 5b	1,534,485	13,810,361
Sub-Alternative 5c.	1,381,036	13,963,809

Alternative 3, like **Alternatives 1 (No Action)** and **2**, is not expected to result in adverse biological impacts since it would not alter the overall cap on harvest established by the total ACL of 15,344,846 lbs ww. **Alternative 3** would use commercial landings estimates as an anchor from which the sector allocations would be derived. Based on the highest percentage of the commercial catch history during 2008 and 2012, 86% of the total ACL would be allocated to the recreational sector and the remainder (14%) would be allocated to the commercial sector. This method would allocate the largest amount of the total ACL to the commercial sector of the alternatives considered and help ensure the commercial sector's allocation is large enough to allow continuation of the most recent year's harvest levels. However, it might not allow the commercial sector to expand in the future without exceeding the commercial ACL. The commercial sector allocation would almost double under **Alternative 3** and the recreational allocation would be reduced by 6.46%; however, the impacts of this alternative compared to the no-action alternative would be negligible because harvest in both sectors is controlled by the ACL. Regardless of how much the commercial or recreational sector is allowed to catch individually, the AMs currently in place would prevent unsustainable levels of harvest from occurring; and thus, impacts would not be significant.

Like **Alternatives 2** and **3**, **Preferred Alternative 4** would result in a slightly reduced recreational allocation and an increased commercial allocation compared to **Alternative 1 (No Action)**. The method of establishing allocations for the dolphin segment of the dolphin wahoo fishery under **Preferred Alternative 4** would use total catch over between 2008 and 2012 to determine sector allocations. The commercial sector would receive 10% of the total ACL (1,534,485 lbs ww), and the recreational sector would receive 90% of the total ACL (13,810,361 lbs ww). Again, the biological impacts of this alternative are expected to be neutral due to the presence of a harvest control mechanism that was created to prevent the sector ACLs from being exceeded.

Alternative 5 and its sub-alternatives would use a combination of historical landings data and current landings data to determine commercial and recreational sector allocations. This alternative would utilize the same methodology for establishing allocations as **Alternative 1 (No Action)**, but the time series of landings data used would be different. All sub-alternatives under **Alternative 5** would use catch history data starting in 1986; however, the end date for the catch history time series is different for each sub-alternative. **Sub-alternative 5a** would use 50% * the average landings from 1986-2011 plus 50% * average current landings from 2009-2011. Using this formula, the commercial sector would receive 10% of the total ACL (1,534,485 lbs ww) and the recreational sector would receive 90% of the ACL (13,810,361 lbs ww). The biological

effects of **Sub-alternative 5a** are expected to be identical to **Preferred Alternative 4**, which also results in a 90%-10% allocation for the recreational and commercial sectors, respectively. **Sub-alternative 5b** would use the average landings from 1986-2012*50% plus average landings from 2010-2012*50% to determine the sector allocations. **Sub-alternative 5b**, would also result in a 90% allocation for the recreational sector, and 10% allocation for the commercial sector. Therefore, the biological impacts are anticipated to be neutral as described under **Preferred Alternative 4** and **Sub-alternative 5a**.

Sub-alternative 5c would allocate the total ACL between the commercial and recreational sectors using the following formula: average landings from 1986-2012*50% plus average landings from 2006-2012*50%. This arrangement of the average landings time series results in the recreational sector receiving 91% of the total ACL and the commercial sector receiving 9% of the ACL. These percentages translate to 1,381,036 lbs ww for the commercial sector and 13,963,809 lbs ww for the recreational sector. In general, because a longer time series of historical landings information is used to determine the allocations under **Alternative 5**, some fishery participants may favor this method of allocation over others considered, because it may be perceived as the most equitable option. However, in terms of biological impacts, **Alternative 5** would be expected to result in no greater adverse or positive impacts on the biological environment compared to the status-quo, or any of the other alternatives under consideration.

Table 4.2.1.3. Number of South Atlantic Dolphin Wahoo Permits.

	Number of Permits
2008	2,526
2009	2,526
2010	2,563
2011	2,614
2012	2,685
Average	2,583

Source: NMFS SERO Permits Data Base

Table 4.2.1.3 shows the number of dolphin wahoo permits for each year from 2008-2012. Commercial permit holders predominantly use hook and line gear, and trolling gear to harvest dolphin. However, a small subset of South Atlantic Dolphin Wahoo Permit holders use pelagic longlines to harvest dolphin (see **Table 4.2.1.4**).

Table 4.2.1.4. Selected average characteristics for trips landing at least one lb (ww) of dolphin and wahoo by gear type in the South Atlantic, 2007-2011.

Dolphin	Hook & Line	Longline	Trolling	Other
Trips	1,591	91	673	24
Vessels	177	11	112	11
Days Away	2.74	2.79	1.13	2.03
lb (ww) Dolphin	99,810	16,870	39,855	901

Source: NMFS SEFSC Coastal Fisheries Logbook and Accumulated Landings Data Base Systems, (2013).

The use of longlines for fishing for pelagic species is associated with incidental capture of protected species such as sea turtles. Under all of the alternatives being considered, the commercial sector ACL would increase. If the commercial ACL is increased, there is a chance the small portion of the fishery that uses longlines may grow or those that already use that gear type may increase their fishing effort. Increasing the amount of longline gear in the water is likely to increase the risk of protected resources interactions. However, considering the very low proportion of the fishery that utilizes longline gear (11 vessels) and the small increase in the commercial allocation being considered, it is unlikely longlining effort for dolphin would substantially increase. Longlines are not a readily used gear type for harvesting dolphin, and unless fishermen's behavior changes significantly in the near future, no increased risks to species listed under the Endangered Species Act beyond the status quo are anticipated as a result of this action.

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

4.2.2 Economic Effects

In Amendment 5 to the Snapper Grouper FMP (SAFMC 2013), the total ACL for dolphin was set to 15,344,846 lbs ww. **Table 4.2.1.2** indicates what the sector ACLs would be for dolphin given the alternatives/sub-alternatives of **Action 2**, while **Table 4.2.1.5** shows the dolphin landings for 2008 through 2012.

Table 4.2.1.5. Commercial and recreational sector landings of dolphin for 2008 through 2013.

Year	Commercial Landings lb ww	Recreational Landings lb ww
2008	780,818	7,833,547
2009	1,222,944	7,570,195
2010	706,281	6,243,399
2011	791,457	6,518,306
2012	687,140	6,097,292
2013	496,981	4,526,565

Note: Data from 2013 are preliminary.
Source: SEFSC Commercial and Recreational ACL Datasets (2014)

A comparison of the proposed sector ACLs from **Table 4.2.1.2** to the landings of dolphin from 2008 through 2012 as shown in **Table 4.2.1.5**, shows the recreational ACL would not have been exceeded in any of the years in the time series. The commercial ACL would have been exceeded in 2009 only under **Alternative 1 (No Action)**.

To understand the potential economic effects of the alternatives of this action, it must be understood that there would only be negative economic effects if one or both sectors would be required to stop fishing or have its ACL reduced in a future season, and that to reduce the

potential for direct negative economic effects in one sector would be at the expense of potentially increasing the direct negative economic effects for the other sector.

The lower the ACL for the commercial sector, the sooner there would be a potential in-season closure, creating a potential for a larger direct negative economic effect due to lost opportunity. The order of greatest direct negative economic effects to the least potential for direct negative economic effects for the commercial sector is **Alternative 1 (No Action)**, **Sub-alternative 5c**, **Preferred Alternative 4**, **Sub-alternative 5a**, **Sub-alternative 5b**, **Alternative 2** and **Alternative 3**. However, reducing potential direct negative economic effects for the commercial sector comes at the expense of increasing the potential direct negative economic effects for the recreational sector. The order of greatest potential direct negative economic effects to the least for the recreational sector is **Alternative 3**, **Alternative 2**, **Preferred Alternative 4**, **Sub-alternative 5a**, **Sub-alternative 5b**, **Sub-alternative 5c**, and **Alternative 1 (No Action)**.

Considering that, based on historical landings, neither the commercial sector nor the recreational sector would likely reach their respective ACLs under any of the alternatives, it may be concluded that none of the alternatives would result in significant short-term or long-term negative economic effects on either sector.

4.2.3 Social Effects

Changes to sector allocations for dolphin could have negative and positive effects on both the recreational and commercial sectors, if one sector's allocation is decreased. As a fishery changes over time, the catch ratio between commercial and recreational sectors may also change. Adaptive allocations are useful in helping to meet the overall ACL by providing each sector with the opportunity to contribute to the overall ACL. Overall, the effects of allocation changes to each sector would depend on the catch patterns of the sector over the past few years, and if the sector is growing. Maintaining the current allocations under **Alternative 1 (No Action)** may not result in any negative effects in the short term, but could limit one sector if the allocation is not enough to provide opportunity for the sector to grow.

In general, the higher the allocation, the more short-term and long-term benefits would accrue for the sector by allowing continued level of harvest and possibly room for growth in the future. For the recreational sector, **Alternative 1 (No Action)** (92.46%) would be the most beneficial, followed by **Sub-alternative 5c** (91%); **Preferred Alternative 4** and **Sub-alternatives 5a-5b** (90%); **Alternative 2** (87%); and then **Alternative 3** (86%). The reverse is true for benefits to the commercial sector, in that **Alternative 3** (14%) would be the most beneficial , followed by **Alternative 2** (13%); **Preferred Alternative 4** and **Sub-alternatives 5a-5b** (10%); **Sub-alternative 5c** (9%); and then **Alternative 1 (No Action)** (7.54%). The method of calculating the proportion to each sector under **Alternatives 2-5** could result in some concerns of fairness from each sector, but in general, none of the allocation alternatives under consideration are expected to result in significant social impacts.

4.2.4 Administrative Effects

Compared to the no-action alternative, none of the action alternatives under consideration for dolphin allocations would result in significant impacts on the administrative environment. **Alternative 5** would use the same formula that was used in 2011 when the first sector ACLs were established for dolphin, but would apply different time series of landings data to the formula. Therefore, no change in methodology would be required to update the current dolphin allocations and no increase in staff time, agency resources, or law enforcement effort would result from **Alternative 5**. **Alternatives 2-Preferred Alternative 4** utilize similar methods of establishing sector allocations for dolphin, the outcomes of which are largely dependent on the time series of data used to determine the allocations. In the case of **Alternative 2**, the allocations would simply revert back to what they were prior to implementation of the Comprehensive ACL Amendment (SAFMC 2011c). Similar to **Alternative 5**, **Alternative 2-Preferred Alternative 4** are not likely to result in increased staff time, require increased agency funding, or alter the manner in which law enforcement efforts are presently carried out. Overall, because sector allocations are currently in place for dolphin, the impacts of the proposed action to modify those allocations on the administrative environment are expected to be neutral.

Chapter 5. Council's Choice for the Preferred Alternatives

5.1 Revise accountability measures (AMs).

5.1.1 Snapper Grouper Advisory Panel Comments and Recommendations

At the April 2014 meeting, the Snapper Grouper Advisory Panel (AP) discussed this action. They chose as their preferred alternatives, **Preferred Alternative 2, Preferred Sub-Alternative 2c; Preferred Alternative 3, Preferred Sub-Alternative 3c;** and **Preferred Alternative 4**, **Preferred Sub-Alternative 4b** for all snapper grouper species covered by the action. The AP selected **Preferred Sub-Alternative 3c** and **4c** because the alternatives provide the most flexibility before taking action for paying back an annual catch limit (ACL) overage since both sectors would have to exceed the total ACL and a species would have to be overfished before triggering the AM. The AP also felt that an in-season recreational closure when the recreational ACL was met (**Preferred Sub-Alternative 4b**) was the best choice under **Preferred Alternative 4** because if there was very large overage of the recreational ACL, there might not be a recreational fishery in a subsequent year.

5.1.2 Golden Crab Advisory Panel Comments and Recommendations

At the May 2014 meeting, the Golden Crab AP discussed this action. They chose either **Sub-Alternative 2a** or **Preferred Alternative 2c** under **Preferred Alternative 2** as their preferred sub-alternatives. Because the golden crab fishery is only a commercial fishery, **Alternatives 2a** and **Preferred Alternative 2c** under **Preferred Alternative 2** are functionally equivalent. The AP felt it was appropriate to payback an overage of the ACL is the stock is overfished.

5.1.3 Law Enforcement Advisory Panel Comments and Recommendations

The Law Enforcement AP met in March 2014; however, they did not discuss this amendment. The South Atlantic Fishery Management Council's (South Atlantic Council) preferred alternatives for this action would have no new impact on law enforcement due to changes in AMs.

5.1.4 Scientific and Statistical Committee (SSC) Comments and Recommendations

The SSC met in April 2014. The full SSC had no comments on this amendment. Additionally, the Socio-Economic Panel (SEP) of the SSC met and had no comment on the issue of AMs, other than to agree that AMs are important for species addressed in the amendment.

5.1.5 Public Comments and Recommendations

The South Atlantic Council accepted written public comments from July 28, 2014 through August 18, 2014, for Amendment 8 to the Dolphin Wahoo FMP/ Amendment 34 to the Snapper Grouper FMP/Amendment 9 to the Golden Crab FMP. The public was given an opportunity to comment in person on August 6, 2014, in North Myrtle Beach, South Carolina; August 7, 2014, in Morehead City, North Carolina; August 11, 2014, in Key West, Florida; August 12, 2014, in Cocoa Beach, Florida; August 13, 2014, in Jacksonville, Florida; August 14, 2014, in Pooler, Georgia; and at the South Atlantic Council's quarterly meeting on September 18, 2014, in Charleston, South Carolina. One written comment was received and supported the South Atlantic Council's preferred alternatives.

5.1.6 South Atlantic Council Choice for Preferred Alternative

The South Atlantic Council chose **Preferred Alternative 2**, **Preferred Sub-alternative 2c**; **Preferred Alternative 3**, **Preferred Sub-alternative 3c;** and **Preferred Alternative 4, Preferred Alternative 4b** as their preferred alternatives/sub-alternatives. The South Atlantic 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 or an in-season closure if the recreational ACL is met or projected to be met. The South Atlantic Council determined the preferred alternatives/sub-alternatives were the best management strategies based on the biology and the recent catch levels of the affected species.

The South Atlantic Council concluded **Preferred Alternative 2**, **Preferred Sub-alternative 2c**; **Preferred Alternative 3**, **Preferred Sub-alternative 3c**; and **Preferred Alternative 4, Preferred Alternative 4b** best meet the purpose and need, the objectives of the Snapper Grouper FMP and Golden Crab 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 Revise Sector Allocations for Dolphin

5.2.1 Dolphin Wahoo AP Comments and Recommendations

The Dolphin Wahoo AP discussed this action at their March 2014 meeting. This action had originally been part of Amendment 5 to the Dolphin Wahoo FMP, but was removed from that amendment and placed in Amendment 8 to the Dolphin Wahoo FMP. When it was a part of Amendment 5 to the Dolphin Wahoo FMP, the Dolphin Wahoo AP selected the South Atlantic Council's **Preferred Alternative 4** as their preferred alternative. At their March 2014 meeting, the Dolphin Wahoo AP reaffirmed its selection of **Preferred Alternative 4** as their preferred alternative. From 2008 through 2013, the recreational sector landed approximately 50% of their ACL each year; whereas, the current commercial ACL would have been met in 2009. The AP

felt that **Preferred Alternative 4** would help to ensure the commercial ACL was not met, and a commercial closure occurred.

5.2.2 Law Enforcement AP Comments and Recommendations

The Law Enforcement AP met in March 2014; however, they did not discuss this amendment. The South Atlantic Council's preferred alternative for this action would have no new impact on law enforcement due to changes in sector allocations.

5.2.3 SSC Comments and Recommendations

The SSC met in April 2014. The full SSC had no comments on this amendment. Additionally, the SEP of the SSC met and had no additional comments on the issue of dolphin allocation, except to note that the SEP has commented on allocation formulas when they previously discussed the allocation action, and they continue to support those earlier comments. Without additional information on the economic value of commercial and recreational sectors, there is little to differentiate between alternative ad-hoc formulas for sector allocations.

5.2.4 Public Comments and Recommendations

The South Atlantic Council accepted written public comments from July 28, 2014 through August 18, 2014, for Amendment 8 to the Dolphin Wahoo FMP/ Amendment 34 to the Snapper Grouper FMP/ Amendment 9 to the Golden Crab FMP. The public was given an opportunity to comment in person on August 6, 2014 in North Myrtle Beach, South Carolina; August 7, 2014 in Morehead City, North Carolina; August 11, 2014 in Key West, Florida; August 12, 2014 in Cocoa Beach, Florida; August 13, 2014 in Jacksonville, Florida; August 14, 2014 in Pooler, Georgia; and at the South Atlantic Council's quarterly meeting on September 18, 2014 in Charleston, South Carolina. One written comment was received and supported the South Atlantic Council's preferred alternative. One comment was given in person at a public hearing and that individual supported the South Atlantic Council's **Preferred Alternative 4**.

5.2.5 South Atlantic Council Choice for Preferred Alternative

The South Atlantic Council chose **Preferred Alternative 4** as its preferred alternative. The South Atlantic Council determined that **Alternative 1 (No Action)** would not be the best alternative because it does not change the sector allocation. The South Atlantic Council determined the preferred alternative was the best management strategy based on the higher rate of variability in the commercial sector landings and the overall recent catch levels by sector.

The South Atlantic Council concluded **Preferred Alternative 4** best meet the purpose and need, the objectives of the Dolphin Wahoo FMP, as amended, while complying with the requirements of the Magnuson-Stevens Act and other applicable law.

Chapter 6. Cumulative Effects

6.1 Affected Area

The immediate impact area would be the federal 200-mile limit of the Atlantic off the coasts of North Carolina, South Carolina, Georgia, and east Florida to Key West, which is also the South Atlantic Fishery Management Council's (South Atlantic Council) area of jurisdiction. In light of the available information, the extent of the boundaries would depend upon the degree of fish immigration/emigration and larval transport, whichever has the greatest geographical range. 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. For this action, the cumulative effects analysis (CEA) includes an analysis of actions and events dating back to 2009 and through what is expected to take place approximately before or within 2015-2017.

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

Past Actions

The reader is referred to **Appendix B** for a list of all past regulatory activity for species in the Snapper Grouper FMP. Past regulatory activity affecting the Dolphin Wahoo FMP and Golden Crab FMP are listed below.

Present Actions

Actions Affecting the Snapper Grouper Fishery

Currently, there are several actions under development affecting the snapper grouper fishery. Regulatory Amendment 21 to the Snapper Grouper FMP modified the current overfished definition (minimum stock size threshold) for red snapper, blueline tilefish, gag, black grouper, yellowtail snapper, vermilion snapper, red porgy, and greater amberjack. These species have low natural mortality rates, and the current minimum stock size threshold definition may cause them to fluctuate between an overfished and rebuild condition frequently due to natural fluctuations in biomass not caused by fishing pressure. Regulatory Amendment 21 would help prevent these stocks from fluctuating between and overfished and rebuilt conditions due to natural variations in biomass. 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.

Amendment 29 to the Snapper Grouper FMP updates the South Atlantic Council's acceptable biological catch (ABC) control rule to incorporate methodology for determining the ABC of "Only Reliable Catch Species"; (2) adjust ABCs for the affected unassessed species not in the deepwater complex; and (3) establish management measures for gray triggerfish in federal waters of the South Atlantic region. The proposed rule published in the *Federal Register* on December 8, 2014 (79 FR 72567) and the comment period ended on January 7, 2015.

Regulatory Amendment 14 (1) modifies the commercial and recreational fishing years for greater amberjack; (2) modifies the recreational fishing year for black sea bass; (3) modify the recreational accountability measure (AM) for black sea bass; (4) modifies the commercial fishing year for black sea bass; (5) changes the commercial fishing seasons for vermilion snapper; (6) modify the trip limit for gag; and (7) modifies the recreational AM for vermilion snapper. The final rule for Regulatory Amendment 14 published on November 7, 2014 (79 FR 66316), and regulations were effective on December 8, 2014.

Actions Affecting the Dolphin Wahoo Fishery

Amendment 5 to the Dolphin Wahoo FMP, would revise the ABCs, annual catch limits (ACLs), recreational annual catch targets (ACTs), and AMs implemented through the Comprehensive ACL Amendment (SAFMC 2011c). The amendment would also establish a payback provisions for sector ACL overages, revise the framework procedure in the Dolphin Wahoo FMP, and establish a commercial trip limit for dolphin. The final rule for Amendment 5 to the Dolphin Wahoo FMP published on June 9, 2014, (79 FR 32878), and regulations were effective on July 9, 2014.

Actions Affecting the Golden Crab Fishery

There are currently no actions affecting the golden crab fishery under development.

Generic Dealer Reporting Amendment

The Generic Dealer Reporting Amendment, which became effective on August 7, 2014, established one dealer permit for the Gulf and South Atlantic Regions and increased the reporting frequency requirements for species managed by the Gulf of Mexico Fishery Management Council and the South Atlantic Council. This amendment is expected to improve fisheries data collection through more timely and accurate dealer reporting and streamlines the dealer permit system.

Reasonably Foreseeable Future Actions

Future Actions Affecting Snapper Grouper

Regulatory Amendment 20 to the Snapper Grouper FMP would update the current ABC and sector ACLs for snowy grouper based on the outcome of a recent stock assessment. Regulatory Amendment 20 was approved by the South Atlantic Council at their September 2014 meeting.

Regulatory Amendment 22 to the Snapper Grouper FMP would update harvest limits for gag and wreckfish based on the outcome a recent Southeast Data, Assessment, and Review (SEDAR) stock assessment. Regulatory Amendment 22 was approved by the South Atlantic Council at their December 2014 meeting.

Amendment 36 to the Snapper Grouper FMP would establish new special management zones to protect spawning areas for snapper grouper species.

The proposed System Management Plan (SMP) would establish a management regime for the eight marine protected areas (MPAs) established through the final rule for Amendment 14 to the Snapper Grouper FMP and would provide a foundation for potential future South Atlantic MPA management plans in the southeast U.S. The final SMP would contain proposed management action items and background details for the eight MPAs established by Amendment 14 in January of 2009.

Comprehensive Ecosystem-Based Amendment 3 contains an action to improve bycatch reporting for the snapper grouper fishery.

Future Actions Affecting Dolphin Wahoo

Amendment 7 to the Dolphin Wahoo FMP and Amendment 33 to the Snapper Grouper FMP addresses the issue of recreational anglers not being allowed to bring dolphin fillets into the U.S. through the U.S. exclusive economic zone (EEZ) after catching them in Bahamian waters. The amendment addresses modification to the existing regulations concerning snapper grouper fillets. The amendment was approved by the South Atlantic Council at their December 2014 meeting.

Future Actions Affecting Golden Crab

There are no upcoming actions affecting the Golden Crab FMP.

Future Data Collection Actions Affecting Numerous FMPs

The Joint Commercial Logbook Reporting Amendment would require electronic reporting of landings information by federally-permitted 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.

Expected Impacts from Past, Present, and Future Actions

The above listed past, present, and future actions are expected to result in cumulative impacts on the human environment. However, those impacts, in combination with the intended effects of the actions in this amendment are not expected to result in significant adverse biological, social, or economic impacts.

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

Climate Change

The Environmental Protection Agency's climate change webpage (http://www.epa.gov/climatechange/) provides basic background information on measured or anticipated effects from global climate change. A compilation of scientific information on climate change can be found in the United Nations Intergovernmental Panel on Climate Change's Fourth Assessment Report (Solomon et al. 2007). Those findings are incorporated here by reference and are summarized. Global climate change can affect marine ecosystems through ocean warming by increased thermal stratification, reduced upwelling, sea level rise, and through increases in wave height and frequency, loss of sea ice, and increased risk of diseases in marine biota. Decreases in surface ocean pH due to absorption of anthropogenic carbon dioxide emissions may affect a wide range of organisms and ecosystems. These influences could negatively affect biological factors such as migration, range, larval and juvenile survival, prey availability, and susceptibility to predators.

In the southeast, general impacts of climate change have been predicted through modeling, with few studies on specific effects to species. Warming sea temperature trends in the southeast have been documented, and animals must migrate to cooler waters, if possible, if water temperatures exceed survivable ranges (Needham et al. 2012). Higher water temperatures may also allow invasive species to establish communities in areas they may not have been able to survive previously. Other potential impacts of climate change to the southeast include increases in hurricanes, decreases in salinity, altered circulation patterns, and sea level rise. The combination of warmer water and expansion of salt marshes inland with sea-level rise may increase productivity of estuarine-dependent species in the short term. However, in the long term, this increased productivity may be temporary because of loss of fishery habitats due to wetland loss (Kennedy et al. 2002). Actions from this amendment are not expected to significantly contribute to climate change through the increase or decrease in the carbon footprint from fishing.

Weather Variables

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

Deepwater-Horizon Oil Spill

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

cumulative effects from the oil spill and response may not be known for several years. Indirect and inter-related effects on the biological and ecological environment of the snapper grouper, dolphin and wahoo, and golden crab fisheries, in concert with the Deepwater Horizon MC252 oil spill are not well understood at this time. Direct and indirect impacts on the food web from phytoplankton, to zooplankton, to mollusks, to top predators in the South Atlantic have not been significant and are not likely to be significant in the future.

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

The proposed management actions are summarized in **Section 2** of this document. Detailed discussions of the magnitude and significance of the impacts of the preferred alternatives on the human environment appear in **Section 4** of this document. None of the impacts of the action in this amendment, in combination with past, present, and future actions have been determined to be significant. Though several other management actions, in addition to this amendment, are expected to affect snapper grouper, dolphin, wahoo, and golden crab, the additive effects, beneficial and adverse, are not expected to result in a significant level of cumulative impacts.

The proposed action would not adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places as these are not in the U.S. Exclusive Economic Zone (EEZ). This action is not likely to result in direct, indirect, or cumulative effects to unique areas, such as significant scientific, cultural, or historical resources, park land, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas as the proposed action is not expected to substantially increase fishing effort or the spatial and/or temporal distribution of current fishing effort within the South Atlantic region. The U.S. Monitor, Gray's Reef, and Florida Keys National Marine Sanctuaries are within the boundaries of the South Atlantic EEZ. The proposed actions are not likely to cause loss or destruction of these national marine sanctuaries because the actions are not expected to result in appreciable changes to current fishing practices. Additionally, the proposed action is not likely to change the way in which the snapper grouper, dolphin and wahoo, or golden crab fisheries are prosecuted; therefore, the actions are not expected to result in adverse impacts on health or human safety beyond the status quo.

6.5 Monitoring and Mitigation

The effects of the proposed action are, and will continue to be, monitored through collection of landings data by NMFS, stock assessments and stock assessment updates, life history studies, economic and social analyses, and other scientific observations. The proposed action relates to the harvest of an indigenous species in the Atlantic, and the activity being altered does not itself introduce non-indigenous species, and is not reasonably expected to facilitate the spread of such species through depressing the populations of native species. Additionally, it does not propose any activity, such as increased ballast water discharge from foreign vessels, which is associated with the introduction or spread on non-indigenous species.

Chapter 7. List of Interdisciplinary Plan Team (IPT) Members

Name	Agency/Division	Title
Brian Cheuvront	SAFMC	Interdisciplinary plan team (IPT) Lead/Fishery Economist
Kate Michie	SERO/SF	IPT Lead/Fishery Biologist
Jennifer Lee	SERO/PR	Fishery Biologist
Erik Williams	SEFSC	Research Fishery Biologist
David Dale	SERO/HC	EFH Specialist
Adam Bailey	SERO	Technical Writer
Nick Farmer	SERO	Fishery Biologist
Tony Lamberte	SERO/SF	Economist
Mike Jepson	SERO/SF	Social Scientist
David Keys	NMFS/SER	Regional NEPA Coordinator
Monica Smit-Brunello	NOAA GC	General Counsel
Scott Crosson	SEFSC	Economist
Jack McGovern	SERO/SF	Fishery Biologist
Kari McLaughlin	SAFMC	Social Scientist
Gregg Waugh	SAFMC	Deputy Director

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

Chapter 8. Agencies and Persons Consulted

Responsible Agency

South Atlantic
South Atlantic Fishery Management Council
4055 Faber Place Drive, Suite 201
Charleston, South Carolina 29405
(843) 571-4366 (TEL)
Toll Free: 866-SAFMC-10
(843) 769-4520 (FAX)
safmc@safmc.net

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

Environmental Assessment:

List of Agencies, Organizations, and Persons Consulted

SAFMC Law Enforcement Advisory Panel
SAFMC Snapper Grouper Advisory Panel
SAFMC Dolphin Wahoo Advisory Panel
SAFMC Scientific and Statistical Committee
SAFMC Golden Crab Advisory Panel
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

Chapter 9. References

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

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

Bjorndal, K.A. 1997. Foraging ecology and nutrition of sea turtles. *In*: Lutz, P.L. and J.A. Musick (eds.), The Biology of Sea Turtles. CRC Press, Boca Raton, Florida.

Bolten, A.B., and G.H., Balazs. 1995. Biology of the early pelagic stage – the "lost year." *In*: Bjorndal, K.A. (ed.), Biology and Conservation of Sea Turtles, Revised edition. Smithsonian Institute Press, Washington, D.C., 579.

Brongersma, L.D. 1972. European Atlantic Turtles. Zool. Verhand. Leiden, 121:318

Burke, V.J., E.A. Standora, and S.J. Morreale. 1993. Diet of juvenile Kemp's ridley and loggerhead sea turtles from Long Island, New York. Copeia, 1993, 1176.

Byles, R.A. 1988. Behavior and Ecology of Sea Turtles from Chesapeake Bay, Virginia. Ph.D. dissertation, College of William and Mary, Williamsburg, VA.

Carr, A. 1986. Rips, FADS, and little loggerheads. BioScience 36:92.

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

Carter, D. and C. Liese. 2012. The Economic Value of Catching and Keeping or Releasing Saltwater Sport Fish in the Southeast USA. North American Journal of Fisheries Management, 32:613-625.

Cheuvront, B., and M. Neal. 2004. A Social and Economic Analysis of Snapper Grouper Complex Fisheries in North Carolina South of Cape Hatteras. A report for the NC Technical Assistance to the SAFMC, Task 5: NEPA Related Activities, Contract No. SA-03-03-NC. Morehead City, NC. 50 pages.

Colburn, L.L. and M. Jepson. 2012 Social Indicators of Gentrification Pressure in Fishing Communities: A Context for Social Impact Assessment. Coastal Management 40(3): 289-300.

Dumas, C.F., J.C. Whitehead, C.E. Landry, and J.H. Herstine. 2009. Economic Impacts and Recreation Value of the North Carolina For-Hire Fishing Fleet. North Carolina Sea Grant FRG Grant Report 07-FEG-05.

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

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

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

FWRI (Fish and Wildlife Research Institute). 2012. The 2012 Stock Assessment Report for Yellowtail Snapper in the South Atlantic and Gulf of Mexico. Fish and Wildlife Conservation Commission, Fish and Wildlife Research Institute, 100 Eighth Ave Southeast, St. Petersburg, Florida 33701.

Garrity-Blake, B. & B. Nash. 2012. An Inventory of North Carolina Fish Houses: Five-Year Update. A North Carolina Sea Grant Report. UNC-SG-12-06. 42 pp.

Griffith, D. 2011. Lowcountry Livelihoods: An Ethnographic Analysis of Fishing in Mt. Pleasant and Little River, South Carolina. Final Report for the project: Comparative Ethnography in the Development of Impact Assessment Methodologies: Profiling Two South Carolina Fishing Communities. Funded by the Gulf and South Atlantic Fisheries Foundation, Tampa FL. 98 pp.

Haab, T.C., R. Hicks, K. Schnier, and J.C. Whitehead. 2009. Angler Heterogeneity and the Species-Specific Demand for Recreational Fishing in the Southeastern United States. Draft Final Report Submitted for MARFIN Grant #NA06NMF4330055.

Holland, S. M., A. J. Fedler, and J. W. Milon. 1999. The Operation and Economics of the Charter and Headboat Fleets of the Eastern Gulf of Mexico and South Atlantic Coasts. University of Florida Office of research, Technology, and Graduate Education. Report prepared for the National Marine Fisheries Service. Grant Number NA77FF0553.

Hughes, G.R. 1974. The sea turtles of southeast Africa. II. The biology of the Tongaland loggerhead turtle *Caretta caretta* L. with comments on the leatherback turtle *Dermochelys coriacea* L. and green turtle *Chelonia mydas* L. in the study region. Oceanographic Research Institute (Durban) Investigative Report. No. 36.

Jacob, S., P. Weeks, B. Blount, and M. Jepson. 2012 Development and Evaluation of Social Indicators of Vulnerability and Resiliency for Fishing Communities in the Gulf of Mexico. Marine Policy 26(10): 16-22.

Jepson, M. and L.L. Colburn. 2013. Development of Social Indicators of Fishing Community Vulnerability and Resilience in the U.S. Southeast and Northeast Regions. U.S. Dept. of Commerce., NOAA Technical Memorandum NMFS-F/SPO-129, 64 p.

Jepson, M., K. Kitner, A. Pitchon, W.W. Perry, and B. Stoffle. 2005. Potential fishing communities in the Carolinas, Georgia, and Florida: An effort in baseline profiling and mapping. NOAA Technical Report No. (TBD).

Keinath, J.A., and J.A., Musick. 1993. Movements and diving behavior of a leatherback sea turtle, *Dermochelys coriacea*. Copeia 1993:1010.

Kendall, D. 1990. An Assessment of the Georgia golden crab fishery. Pages 18-19 In: Lindberg, W. J. and E. L. Wenner (eds.). 1990. Geryonid Crabs and Associated Continental Slope Fauna: A Research Workshop Report. S.C. Sea Grant Consortium and FL Sea Grant College Program. FL SG Technical Paper 58:61 pp.

Kennedy, V. S., R. R. Twilley, J. A. Kleypas, J. H. Cowan, Jr., S. R. Hare. 2002. Coastal and Marine Ecosystems & Global Climate Change: Potential Effects on U.S. Resources. Pew Center on Global Climate Change. 52 p.

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

Liese, C., D.W. Carter, and R. Curtis. 2009. Surveying the For-Hire Sector: Economic Heterogeneity in the Southeast Charter Boat Industry. Submitted to the Proceedings of the 5th World Recreational Fishing Conference.

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

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

Lindberg, W. J., N. J. Blake, H. M. Perry, R. S. Waller, F. D. Lockhart, and R. B. Erdman. 1989. Fisheries development of the deep-sea golden crab, Geryon fenneri: Geographic and seasonal production potential in the Gulf of Mexico. Final Project Report. Marine Fisheries Initiation Program, National Marine Fisheries Service, 98pp.

Luckhurst, B. 1986. Discovery of deep-water crabs (*Geryon* spp.) at Bermuda - a new potential fishery resources. Proceedings of the 37th Annual Gulf Caribbean Fish Inst.

Lutz, P.L., and J.A., Musick (eds.). 1997. The Biology of Sea Turtles. CRC Press, Boca Raton, Florida.

Lutz, P.L., J.A., Musick, and J. Wyneken. 2002. The Biology of Sea Turtles, Volume II. CRC Press, Boca Raton, Florida.

Macintyre, I.G., and Milliman, J.D. 1970. Physiographic features on the outer shelf and upper slope, Atlantic Continental Margin, southeastern United States. Geological Society of America Bulletin.

Manning, R.B. and Holthuis, L.B. 1984. *Geryon femeri*, a new deepwater crab from Florida (crustacea:decapoda:geryoniae). Proc. Biol. Soc. Wash. 97(3):666-673.

Márquez -M, R. 1994. Synopsis of biological data on the Kemp's ridley turtles, *Lepidochelys kempii* (Garman, 1880). NOAA Technical Memo, NMFS-SEFSC-343. Miami, FL.

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

Meylan, A. 1984. Feeding Ecology of the Hawksbill turtle (*Eretmochelys imbricata)*: Spongivory as a Feeding Niche in the Coral Reef Community. Dissertation, University of Florida, Gainesville, FL.

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

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

Miller, G.C., and Richards, W.J. 1979. Reef fish habitat, faunal assemblages, and factors determining distributions in the South Atlantic Bight. Proc. Gulf Caribb. Fish Inst. 32:114-130.

Needham, H., D. Brown, and L. Carter. 2012. Impacts and adaptation options in the Gulf coast. Report prepared for the Center for Climate and Energy Solutions. 38 pp. http://www.c2es.org/docUploads/gulf-coast-impacts-adaptation.pdf

Newton, J.G., Pilkey, O.H., and Blanton, F.O. 1971. An oceanographic atlas of the Carolina continental margin. North Carolina Department of Conservation. Division of Mineral Resources. Raleigh, North Carolina. 57p.

NMFS (National Marine Fisheries Service). 2006. Endangered Species Act section 7 consultation on the Continued Authorization of Snapper-Grouper Fishing under the South Atlantic Snapper-Grouper Fishery Management Plan (RFFMP) and Proposed Amendment 13C. Biological Opinion. June 7.

NOAA SEFSC (Southeast Fisheries Science Center) 2009. Fisheries Economics of the U.S. – 2009. Economics and Sociocultural Analysis Division, Office of Science and Technology, 1315 East-West Highway, 12th floor, Silver Spring, MD 20910-3282.

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

Ogren, L.H. 1989. Distribution of juvenile and subadult Kemp's ridley turtles: Preliminary results from the 1984-1987 surveys. *In*: C.W. Caillouet Jr. and A.M. Landry Jr. (eds.) Proceedings from the 1st Symposium on Kemp's ridley Sea Turtle Biology, Conservation, and Management. Sea Grant College Program, Galveston, TX. 116.

Otwell, W.S., Bellairs, J., and Sweat, D. 1984. Initial development of a deep-sea crab fishery in the Gulf of Mexico. Fla. Sea Grant Coll. Rep. No 61, 29p.

Parker, R.O., Colby, D.R., and Willis, T.D. 1983. Estimated amount of reef habitat on a portion of the U.S. South Atlantic and Gulf of Mexico Continental Shelf. Bulletin of Marine Science. 33:935-940.

SAFMC (South Atlantic Fishery Management Council). 2000c. Amendment Number 12, Regulatory Impact Review, Social Impact Assessment, Initial Regulatory Flexibility Analysis and Supplemental Environmental Impact Statement for the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 1 Southpark Cir., Ste 306, Charleston, S.C. 29407-4699.

SAFMC (South Atlantic Fishery Management Council). 2006. Amendment 13C, Final Environmental Assessment, Initial Regulatory Flexibility Analysis/Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement for the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 1 Southpark Cir., Ste 306, Charleston, S.C. 29407-4699. 631 pp.

SAFMC (South Atlantic Fishery Management Council). 2008a. Amendment 15A, Final Environmental Impact Statement, Initial Regulatory Flexibility Analysis/Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement for the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 4055 Faber Place, Ste 201, North Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2008b. Amendment 15B, Final Environmental Impact Statement, Initial Regulatory Flexibility Analysis/Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement for the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 4055 Faber Place, Ste 201, North Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2009a. Amendment 16, Final Environmental Impact Statement, Initial Regulatory Flexibility Analysis/Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement for the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 4055 Faber Place, Ste 201, North Charleston, S.C. 29405.

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

SAFMC (South Atlantic Fishery Management Council). 2010a. Amendment 17A, Final Environmental Impact Statement, Initial Regulatory Flexibility Analysis/Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement for the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2010b. Amendment 17B, Final Environmental Impact Statement, Initial Regulatory Flexibility Analysis/Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement for the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 4055 Faber Place, Ste 201, North Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2011a. Regulatory Amendment 9, Final Environmental Assessment, Regulatory Flexibility Analysis/Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement for the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 4055 Faber Place, Ste 201, North Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2011b. Amendment 20A to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region with Final Environmental Assessment, Initial Regulatory Flexibility Analysis, Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405.

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

SAFMC (South Atlantic Fishery Management Council). 2011d. Amendment 24 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 4055 Faber Place, Ste 201, North Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2011e. Comprehensive Ecosystem-Based Amendment 2. South Atlantic Fishery Management Council, 4055 Faber Place, Ste 201, North Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2012. Amendment 18B to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region with Final Environmental Assessment, Initial Regulatory Flexibility Analysis, Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2013. Amendment 5 to the Fishery Management Plan for the Dolphin and Wahoo Fishery for the Atlantic. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2013c. Regulatory Amendment 18 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region with Final Environmental Assessment, Regulatory Flexibility Analysis, Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2014. Amendment 29 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region with Final Environmental Assessment, Initial Regulatory Flexibility Analysis, Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405.

Schroeder, W.C. 1959. The lobster, *Hoarus americanas*, and the red crab *Geryon quinquedens*, in the offshore water of the western North Atlantic. Deep-Sea Res. 5:266-282.

SEDAR 17. 2008. Stock Assessment Report. South Atlantic Vermilion Snapper. Available from the SEDAR website: www.sefsc.noaa.gov/sedar/

SEDAR 10. 2006. South Atlantic and Gulf of Mexico Gag Grouper. Southeast Data, Assessment and Review, 4055 Faber Place, Ste 201, North Charleston, S.C. 29405. Available at: http://www.sefsc.noaa.gov/sedar/

SEDAR 32. 2013. Data Workshop Report. South Atlantic Gray Triggerfish. Available from the SEDAR website: www.sefsc.noaa.gov/sedar/

SEDAR15. 2008. Stock Assessment Report 1 (revised March, 2009). South Atlantic Red Snapper and Greater Amberjack. Southeast Data, Assessment and Review, 4055 Faber Place, Ste 201, North Charleston, S.C. 29405. Available from the SEDAR website: www.sefsc.noaa.gov/sedar/

SEDAR 1 Update. 2012. Stock Assessment Update: South Atlantic Red Porgy. Southeast Data, Assessment and Review, 4055 Faber Place, Ste 201, North Charleston, S.C. 29405. Available at: http://www.sefsc.noaa.gov/sedar/

SEDAR 36. 2014. Stock Assessment Report. South Atlantic Snowy Grouper. Available from the SEDAR website: www.sefsc.noaa.gov/sedar/

SEDAR 25. 2011. Stock Assessment Report. South Atlantic Black Sea Bass and Golden Tilefish. Available from the SEDAR website: www.sefsc.noaa.gov/sedar/

SEDAR 23. 2011. Stock Assessment Report. South Atlantic and Gulf of Mexico Goliath Grouper. Available from the SEDAR website: www.sefsc.noaa.gov/sedar/

Shaver. D.J. 1991. Feeding ecology of wild and head-started Kemp's ridley sea turtles in south Texas waters. Journal of Herpetology 25:327.

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

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

Solomon, S.D. Quin., Manning, M., Chen, Z., Marquis, M., Averyt, K.B., Tignor, M., and Miller H.L. 2007. Climate change 2007: The physical science basis. Contribution of working group I to the fourth assessment report on the Intergovernmental Panel on Climate Change. Cambridge University Press. 996p.
http://www.ipcc.ch/publications_and_data/publications_ipcc_fourth_assessment_report_wg1_report_the_physical_science_basis.htm

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

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

Sutton, S. G., R. B. Ditton, J. R. Stoll, and J. W. Milon. 1999. A cross-sectional study and longitudinal perspective on the social and economic characteristics of the charter and party boat fishing industry of Alabama, Mississippi, Louisiana, and Texas. Report by the Human Dimensions of Recreational Fisheries Research Laboratory, Texas A&M University, MARFIN program grant number NA77FF0551.

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

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

Walker, T.A. 1994. Post-hatchling dispersal of sea turtles. p. 79. *In*: Proceedings of the Australian Marine Turtle Conservation Workshop, Queensland Australia.

Waring, G.T., E. Josephson, K. Maze-Foley, and P.E. Rosel, (eds). 2013. U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments – 2012. U.S. Department of Commerce, Woods Hole, MA.

Waters, J.R., R.J. Rhodes, W. Waltz, and R. Wiggers. 1997. Executive Summary: An economic survey of commercial reef-fish boats along the U.S. South Atlantic Coast. USDC/NOAANMFS and SCDNR. November 1997. Unpublished.

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

Wenzel, F.W., D.K. Mattila, and P.J. Clapham. 1988. *Balaenoptera musculus* in the Gulf of Maine. Marine Mammal Science. 4:172-175.

Wynne, K. and M. Schwartz. 1999. Guide to marine mammals and turtles of the U.S. Atlantic and Gulf of Mexico. Rhode Island Sea Grant, Narragansett. 115pp.

Appendix A. Glossary

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

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

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

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

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

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

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

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

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

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

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

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

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

Discards: Fish captured, but released at sea.

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

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

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

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

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

F: Fishing mortality.

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

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

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

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

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

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

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

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

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

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

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

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

Framework: An established procedure within a fishery management plan that has been approved and implemented by NMFS, which allows specific management measures to be modified via regulatory amendment.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Overfishing: Overfishing occurs when a stock or stock complex is subjected to a rate of fishing mortality that exceeds the maximum fishing mortality threshold (e.g., current fishing mortality rate > MFMT = overfishing).
Quota: % or annual amount of fish that can be harvested.

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

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

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

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

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

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

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

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

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

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

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

Appendix B. History of Management

Table C.1 Snapper Grouper History of Management

Document	All Actions Effective By:	Proposed Rule Final Rule	Major Actions. Note that not all details are provided here. Please refer to Proposed and Final Rules for all impacts of listed documents.
FMP (1983)	08/31/83	PR: 48 FR 26843 FR: 48 FR 39463	-12" total length (TL) limit – red snapper, yellowtail snapper, red grouper, Nassau grouper -8" limit – black sea bass -4" trawl mesh size -Gear limitations – poisons, explosives, fish traps, trawls -Designated modified habitats or artificial reefs as Special Management Zones (SMZs)
Regulatory Amendment #1 (1987)	03/27/87	PR: 51 FR 43937 FR: 52 FR 9864	-Prohibited fishing in SMZs except with hand-held hook-and-line and spearfishing gear. -Prohibited harvest of goliath grouper in SMZs.
Amendment #1 (1988a)	01/12/89	PR: 53 FR 42985 FR: 54 FR 1720	-Prohibited trawl gear to harvest fish south of Cape Hatteras, NC and north of Cape Canaveral, FL. -Directed fishery defined as vessel with trawl gear and ≥200 lb s-g on board. -Established rebuttable assumption that vessel with s-g on board had harvested such fish in the exclusive economic zone (EEZ).
Regulatory Amendment #2 (1988b)	03/30/89	PR: 53 FR 32412 FR: 54 FR 8342	-Established 2 artificial reefs off Ft. Pierce, FL as SMZs.
Notice of Control Date	09/24/90	55 FR 39039	-Anyone entering federal wreckfish fishery in the EEZ off S. Atlantic states after 09/24/90 was not assured of future access if limited entry program developed.
Regulatory Amendment #3 (1989)	11/02/90	PR: 55 FR 28066 FR: 55 FR 40394	-Established artificial reef at Key Biscayne, FL as SMZ. Fish trapping, bottom longlining, spear fishing, and harvesting of Goliath grouper prohibited in SMZ.
Amendment #2 (1990a)	10/30/90	PR: 55 FR 31406 FR: 55 FR 46213	-Prohibited harvest/possession of goliath grouper in or from the EEZ -Defined overfishing for goliath grouper and other species
Emergency Rule	8/3/90	55 FR 32257	-Added wreckfish to the fishery management unit (FMU) -Fishing year beginning 4/16/90 -Commercial quota of 2 million pounds -Commercial trip limit of 10,000 pounds per trip
Fishery Closure Notice	8/8/90	55 FR 32635	- Fishery closed because the commercial quota of 2 million pounds was reached
Emergency Rule Extension	11/1/90	55 FR 40181	-extended the measures implemented via emergency rule on 8/3/90
Amendment #3 (1990b)	01/31/91	PR: 55 FR 39023 FR: 56 FR 2443	-Added wreckfish to the FMU -Defined optimum yield and overfishing -Required permit to fish for, land or sell wreckfish -Required catch and effort reports from selected, permitted vessel; -Established control date of 03/28/90 -Established a fishing year for wreckfish starting April 16

Document	All Actions Effective By:	Proposed Rule Final Rule	Major Actions. Note that not all details are provided here. Please refer to Proposed and Final Rules for all impacts of listed documents.
			-Established a process to set annual quota, with initial quota of 2 million pounds; provisions for closure -Established 10,000 pound trip limit -Established a spawning season closure for wreckfish from January 15 to April 15 -Provided for annual adjustments of wreckfish management measures
Notice of Control Date	07/30/91	56 FR 36052	-Anyone entering federal snapper grouper fishery (other than for wreckfish) in the EEZ off S. Atlantic states after 07/30/91 was not assured of future access if limited entry program developed.

Document	All Actions Effective By:	Proposed Rule Final Rule	Major Actions. Note that not all details are provided here. Please refer to Proposed and Final Rules for all impacts of listed documents.
Amendment #4 (1991)	01/01/92	PR: 56 FR 29922 FR: 56 FR 56016	-Prohibited gear: fish traps except black sea bass traps north of Cape Canaveral, FL; entanglement nets; longline gear inside 50 fathoms; bottom longlines to harvest wreckfish; powerheads and bangsticks in designated SMZs off S. Carolina -defined overfishing/overfished and established rebuilding timeframe: red snapper and groupers ≤ 15 years (year 1 = 1991); other snappers, greater amberjack, black sea bass, red porgy ≤ 10 years (year 1 = 1991) -Required permits (commercial & for-hire) and specified data collection regulations -Established an assessment group and annual adjustment procedure (framework) -Permit, gear, and vessel id requirements specified for black sea bass traps -No retention of snapper grouper spp. caught in other fisheries with gear prohibited in snapper grouper fishery if captured snapper grouper had no bag limit or harvest was prohibited. If had a bag limit, could retain only the bag limit -8” TL limit – lane snapper -10” TL limit – vermilion snapper (recreational only) -12” TL limit – red porgy, vermilion snapper (commercial only), gray, yellowtail, mutton, schoolmaster, queen, blackfin, cubera, dog, mahogany, and silk snappers -20” TL limit – red snapper, gag, and red, black, scamp, yellowfin, and yellowmouth groupers. -28” fork length (FL) limit – greater amberjack (recreational only) -36” FL or 28” core length – greater amberjack (commercial only) -bag limits – 10 vermilion snapper, 3 greater amberjack -aggregate snapper bag limit – 10/person/day, excluding vermilion snapper and allowing no more than 2 red snappers -aggregate grouper bag limit – 5/person/day, excluding Nassau and goliath grouper, for which no retention (recreational & commercial) is allowed -spawning season closure – commercial harvest greater amberjack > 3 fish bag prohibited in April south of Cape Canaveral, FL -spawning season closure – commercial harvest mutton snapper >snapper aggregate prohibited during May and June -charter/headboats and excursion boat possession limits extended

Document	All Actions Effective By:	Proposed Rule Final Rule	Major Actions. Note that not all details are provided here. Please refer to Proposed and Final Rules for all impacts of listed documents.
Amendment #5 (1992a)	04/06/92	PR: 56 FR 57302 FR: 57 FR 7886	-Wreckfish: established limited entry system with individual transferable quotas (ITQs); required dealer to have permit; rescinded 10,000 lb. trip limit; required off-loading between 8 am and 5 pm; reduced occasions when 24-hour advance notice of offloading required for off-loading; established procedure for initial distribution of percentage shares of total allowable catch (TAC)
Emergency Rule	8/31/92	57 FR 39365	-Black Sea Bass (bsb): modified definition of bsb pot; allowed multi-gear trips for bsb; allowed retention of incidentally-caught fish on bsb trips
Emergency Rule Extension	11/30/92	57 FR 56522	-Black Sea Bass: modified definition of bsb pot; allowed multi-gear trips for bsb; allowed retention of incidentally-caught fish on bsb trips
Regulatory Amendment #4 (1992b)	07/06/93	FR: 58 FR 36155	-Black Sea Bass: modified definition of bsb pot; allowed multi-gear trips for bsb; allowed retention of incidentally-caught fish on bsb trips
Regulatory Amendment #5 (1992c)	07/31/93	PR: 58 FR 13732 FR: 58 FR 35895	-Established 8 SMZs off S. Carolina, where only hand-held, hook-and-line gear and spearfishing (excluding powerheads) was allowed
Amendment #6 (1993)	07/27/94	PR: 59 FR 9721 FR: 59 FR 27242	-Set up separate commercial TAC levels for golden tilefish and snowy grouper -Established commercial trip limits for snowy grouper, golden tilefish, speckled hind, and warsaw grouper -Included golden tilefish in grouper recreational aggregate bag limits -Prohibited sale of warsaw grouper and speckled hind -100% logbook coverage upon renewal of permit -Creation of the *Oculina* Experimental Closed Area -Data collection needs specified for evaluation of possible future individual fishing quota system
Amendment #7 (1994a)	01/23/95	PR: 59 FR 47833 FR: 59 FR 66270	-12” FL – hogfish -16” TL – mutton snapper -Required dealer, charter and headboat federal permits -Allowed sale under specified conditions -Specified allowable gear and made allowance for experimental gear -Allowed multi-gear trips in NC -Added localized overfishing to list of problems and objectives -Adjusted bag limit and crew specs. for charter and head boats -Modified management unit for scup to apply south of Cape Hatteras, NC -Modified framework procedure
Regulatory Amendment #6 (1994b)	05/22/95	PR: 60 FR 8620 FR: 60 FR 19683	-Established actions which applied only to EEZ off Atlantic coast of FL: Bag limits – 5 hogfish/person/day (recreational only), 2 cubera snapper/person/day > 30” TL; 12” TL – gray triggerfish
Notice of Control Date	04/23/97	62 FR 22995	-Anyone entering federal bsb pot fishery off S. Atlantic states after 04/23/97 was not assured of future access if limited entry program developed

Document	All Actions Effective By:	Proposed Rule Final Rule	Major Actions. Note that not all details are provided here. Please refer to Proposed and Final Rules for all impacts of listed documents.
Amendment #8 (1997)	12/14/98	PR: 63 FR 1813 FR: 63 FR 38298	-Established program to limit initial eligibility for snapper grouper fishery: Must demonstrate landings of any species in the snapper grouper (SG) FMU in 1993, 1994, 1995 or 1996; and have held valid SG permit between 02/11/96 and 02/11/97 -Granted transferable permit with unlimited landings if vessel landed ≥ 1,000 pounds (lb) of snapper grouper species in any of the years -Granted non-transferable permit with 225 lb trip limit to all other vessels -Modified problems, objectives, optimum yield (OY), and overfishing definitions -Expanded Council's habitat responsibility -Allowed retention of snapper grouper species in excess of bag limit on permitted vessel with a single bait net or cast nets on board -Allowed permitted vessels to possess filleted fish harvested in the Bahamas under certain conditions.
Regulatory Amendment #7 (1998a)	01/29/99	PR: 63 FR 43656 FR: 63 FR 71793	-Established 10 SMZs at artificial reefs off South Carolina.
Interim Rule Request	1/16/98		-Council requested all Amendment 9 measures except black sea bass pot construction changes be implemented as an interim request under the Magnuson-Stevens Act
Action Suspended	5/14/98		-NMFS informed the Council that action on the interim rule request was suspended
Emergency Rule Request	9/24/98		-Council requested Amendment 9 be implemented via emergency rule
Request not Implemented	1/22/99		-NMFS informed the Council that the final rule for Amendment 9 would be effective 2/24/99; therefore they did not implement the emergency rule

Document	All Actions Effective By:	Proposed Rule Final Rule	Major Actions. Note that not all details are provided here. Please refer to Proposed and Final Rules for all impacts of listed documents.
Amendment #9 (1998b)	2/24/99	PR: 63 FR 63276 FR: 64 FR 3624	-Red porgy: 14" TL (recreational and commercial); 5 fish rec. bag limit; no harvest or possession > bag limit, and no purchase or sale, in March and April -Black sea bass: 10" TL (recreational and commercial); 20 fish rec. bag limit; required escape vents and escape panels with degradable fasteners in bsb pots -Greater amberjack: 1 fish rec. bag limit; no harvest or possession > bag limit, and no purchase or sale, during April; quota = 1,169,931 lb; began fishing year May 1; prohibited coring -Specified size limits for several snapper grouper species (indicated in parentheses in inches TL): including yellowtail snapper (12), mutton snapper (16), red snapper (20); red grouper, yellowfin grouper, yellowmouth grouper, and scamp (20) -Vermilion snapper: 11" TL (recreational), 12" TL commercial -Gag: 24" TL (recreational); no commercial harvest or possession > bag limit, and no purchase or sale, during March and April -Black grouper: 24" TL (recreational and commercial); no harvest or possession > bag limit, and no purchase or sale, during March and April -Gag and Black grouper: within 5 fish aggregate grouper bag limit, no more than 2 fish may be gag or black grouper (individually or in combination) -All snapper grouper without a bag limit: aggregate recreational bag limit 20 fish/person/day, excluding tomtate and blue runner -Vessels with longline gear aboard may only possess snowy, warsaw, yellowedge, and misty grouper, and golden, blueline and sand tilefish
Amendment #9 (1998b) resubmitted	10/13/00	PR: 63 FR 63276 FR: 65 FR 55203	-Commercial trip limit for greater amberjack
Emergency Interim Rule	09/08/99, expired 08/28/00	64 FR 48324 and 65 FR 10040	-Prohibited harvest or possession of red porgy
Emergency Action	9/3/99	64 FR 48326	-Reopened the Amendment 8 permit application process
Amendment #10 (1998c)	07/14/00	PR: 64 FR 37082 and 64 FR 59152 FR: 65 FR 37292	-Identified essential fish habitat (EFH) and established habitat areas of particular concern (HAPC) for species in the snapper grouper FMU

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Amendment #11 (1998d)	12/02/99	PR: 64 FR 27952 FR: 64 FR 59126	-Maximum sustainable yield (MSY) proxy: goliath and Nassau grouper = 40% static spawning potential ratio (SPR); all other species = 30% static SPR -OY: hermaphroditic groupers = 45% static SPR; goliath and Nassau grouper = 50% static SPR; all other species = 40% static SPR -Overfished/overfishing evaluations: BSB: overfished (minimum stock size threshold (MSST)=3.72 mp, 1995 biomass=1.33 mp); undergoing overfishing (maximum fishing mortality threshold (MFMT)=0.72, F1991-1995=0.95) Vermilion snapper: overfished (static SPR = 21-27%). Red porgy: overfished (static SPR = 14-19%). Red snapper: overfished (static SPR = 24-32%) Gag: overfished (static SPR = 27%) Scamp: no longer overfished (static SPR = 35%) Speckled hind: overfished (static SPR = 8-13%) Warsaw grouper: overfished (static SPR = 6-14%) Snowy grouper: overfished (static SPR = 5-15%) White grunt: no longer overfished (static SPR = 29-39%) Golden tilefish: overfished (couldn't estimate static SPR) Nassau grouper: overfished (couldn't estimate static SPR) Goliath grouper: overfished (couldn't estimate static SPR) -overfishing level: goliath and Nassau grouper = F>F40% static SPR; all other species: = F>F30% static SPR Approved definitions for overfished and overfishing. MSST = [(1-M) or 0.5 whichever is greater]*B_{MSY}. MFMT = F_{MSY}
Regulatory Amendment #8 (2000a)	11/15/00	PR: 65 FR 41041 FR: 65 FR 61114	-Established 12 SMZs at artificial reefs off Georgia; revised boundaries of 7 existing SMZs off Georgia to meet CG permit specs; restricted fishing in new and revised SMZs
Amendment #12 (2000b)	09/22/00	PR: 65 FR 35877 FR: 65 FR 51248	-Red porgy: MSY=4.38 mp; OY=45% static SPR; MFMT=0.43; MSST=7.34 mp; rebuilding timeframe=18 years (1999=year 1); no sale of red porgy during Jan-April; 1 fish bag limit; 50 lb. bycatch comm. trip limit May-December; modified management options and list of possible framework actions
Amendment #13A (2003)	04/26/04	PR: 68 FR 66069 FR: 69 FR 15731	-Extended for an indefinite period the regulation prohibiting fishing for and possessing snapper grouper spp. within the *Oculina* Experimental Closed Area
Notice of Control Date	10/14/05	70 FR 60058	-The Council is considering management measures to further limit participation or effort in the commercial fishery for snapper grouper species (excluding wreckfish)
Amendment #13C (2006)	10/23/06	PR: 71 FR 28841 FR: 71 FR 55096	- End overfishing of snowy grouper, vermilion snapper, black sea bass, and golden tilefish. Increase allowable catch of red porgy. Year 1 = 2006. 1. Snowy Grouper Commercial: Quota = 151,000 lb gutted

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			weight (gw) in year 1, 118,000 lb gw in year 2, and 84,000 lb gw in year 3 onwards. Trip limit = 275 lb gw in year 1, 175 lb gw in year 2, and 100 lb gw in year 3 onwards Recreational: Limit possession to one snowy grouper in 5 grouper per person/day aggregate bag limit. 2. Golden Tilefish Commercial: Quota of 295,000 lb gw, 4,000 lb gw trip limit until 75% of the quota is taken when the trip limit is reduced to 300 lb gw. Do not adjust the trip limit downwards unless 75% is captured on or before September 1. Recreational: Limit possession to 1 golden tilefish in 5 grouper per person/day aggregate bag limit. 3. Vermilion Snapper Commercial: Quota of 1,100,000 lb gw. Recreational: 12" TL size limit. 4. Black Sea Bass Commercial: Commercial quota of 477,000 lb gw in year 1, 423,000 lb gw in year 2, and 309,000 lb gw in year 3 onwards. Require use of at least 2" mesh for the entire back panel of black sea bass pots effective 6 months after publication of the final rule. Require black sea bass pots be removed from the water when the quota is met. Change fishing year from calendar year to June 1 – May 31. Recreational: Recreational allocation of 633,000 lb gw in year 1, 560,000 lb gw in year 2, and 409,000 lb gw in year 3 onwards. Increase minimum size limit from 10" to 11" in year 1 and to 12" in year 2. Reduce recreational bag limit from 20 to 15 per person per day. Change fishing year from the calendar year to June 1 through May 31. 5. Red Porgy Commercial and recreational: 1. Retain 14" TL size limit and seasonal closure (retention limited to the bag limit); 2. Specify a commercial quota of 127,000 lb gw and prohibit sale/purchase and prohibit harvest and/or possession beyond the bag limit when quota is taken and/or during January through April; 3. Increase commercial trip limit from 50 lb ww to 120 red porgy (210 lb gw) during May through December; 4. Increase recreational bag limit from one to three red porgy per person per day.
Notice of Control Date	3/8/07	72 FR 60794	-The Council may consider measures to limit participation in the snapper grouper for-hire sector
Amendment #14 (2007)	2/12/09	PR: 73 FR 32281 FR: 74 FR 1621	-Establish eight deepwater Type II marine protected areas (MPAs) to protect a portion of the population and habitat of long-lived deepwater snapper grouper species
Amendment #15A (2008a)	3/14/08	73 FR 14942	- Establish rebuilding plans and status determination criteria for snowy grouper, black sea bass, and red porgy
Amendment #15B (2008b)	2/15/10	PR: 74 FR 30569 FR: 74 FR 58902	-Prohibit the sale of bag-limit caught snapper grouper species -Reduce the effects of incidental hooking on sea turtles and smalltooth sawfish -Adjust commercial renewal periods and transferability

Document	All Actions Effective By:	Proposed Rule Final Rule	Major Actions. Note that not all details are provided here. Please refer to Proposed and Final Rules for all impacts of listed documents.
			requirements -Implement plan to monitor and assess bycatch -Establish reference points for golden tilefish -Establish allocations for snowy grouper (95% com & 5% rec) and red porgy (50% com & 50% rec)
Amendment #16 (SAFMC 2009a)	7/29/09	PR: 74 FR 6297 FR: 74 FR 30964	-Specify status determination criteria for gag and vermilion snapper -For gag: Specify interim allocations 51% com & 49% rec; rec & com shallow water grouper spawning closure January through April; directed com quota= 352,940 lb gw; -reduce 5-fish aggregate grouper bag limit, including tilefish species, to a 3-fish aggregate -Captain and crew on for-hire trips cannot retain the bag limit of vermilion snapper and species within the 3-fish grouper aggregate -For vermilion snapper: Specify interim allocations 68% com & 32% rec; directed com quota split Jan-June=315,523 lb gw and 302,523 lb gw July-Dec; reduce bag limit from 10 to 5 and a rec closed season November through March -Require dehooking tools
Amendment #19 (Comprehensive Ecosystem-Based Amendment 1; SAFMC 2009b)	7/22/10	PR: 75 FR 14548 FR: 75 FR 35330	-Provide presentation of spatial information for EFH and EFH-HAPC designations under the Snapper Grouper FMP - Designation of deepwater coral HAPCs
Amendment #17A (SAFMC 2010a)	12/3/10 red snapper closure; circle hooks March 3, 2011	PR: 75 FR 49447 FR: 75 FR 76874	-Required use of non-stainless steel circle hooks when fishing for snapper grouper species with hook-and-line gear north of 28 deg. N latitude in the South Atlantic EEZ -Specify an ACL and an AM for red snapper with management measures to reduce the probability that catches will exceed the stocks' ACL -Specify a rebuilding plan for red snapper -Specify status determination criteria for red snapper -Specify a monitoring program for red snapper
Emergency Rule	12/3/10	75 FR 76890	- Delay the effective date of the area closure for snapper grouper species implemented through Amendment 17A
Amendment #17B (SAFMC 2010b)	January 31, 2011	PR: 75 FR 62488 FR: 75 FR 82280	-Specify ACLs, ACTs, and AMs, where necessary, for 9 species undergoing overfishing -Modify management measures as needed to limit harvest to the ACL or ACT -Update the framework procedure for specification of total allowable catch -Prohibited harvest of 6 deepwater species seaward of 240 feet to curb bycatch of speckled hind and warsaw grouper
Notice of Control Date	12/4/08	74 FR 7849	-Establishes a control date for the golden tilefish portion of the snapper grouper fishery in the South Atlantic

Document	All Actions Effective By:	Proposed Rule Final Rule	Major Actions. Note that not all details are provided here. Please refer to Proposed and Final Rules for all impacts of listed documents.
Notice of Control Date	12/4/08	74 FR 7849	-Establishes control date for black sea bass pot sector in the South Atlantic
Regulatory Amendment #10 (SAFMC 2010c)	5/31/11	PR: 76 FR 9530 FR: 76 FR 23728	-Eliminate closed area for snapper grouper species approved in Amendment 17A
Regulatory Amendment #9 (SAFMC 2011a)	Bag limit: 6/22/11 Trip limits: 7/15/11	PR: 76 FR 23930 FR: 76 FR 34892	- Establish trip limits for vermilion snapper and gag, increase trip limit for greater amberjack, and reduce bag limit for black sea bass
Regulatory Amendment #11 (2011b)	5/10/12	PR: 76 FR 78879 FR: 77 FR 27374	- Eliminate 240 ft harvest prohibition for six deepwater species
Amendment # 25 (Comprehensive ACL Amendment) (SAFMC 2011c)	4/16/12	PR: 76 FR 74757 Amended PR: 76 FR 82264 FR: 77 FR 15916	-Establish acceptable biological catch (ABC) control rules, establish ABCs, annual catch limits (ACLs), and accountability measures (AMs) for species not undergoing overfishing -Remove some species from South Atlantic FMU and designate others as ecosystem component species -Specify allocations between the commercial and, recreational sectors for species not undergoing overfishing -Limit the total mortality for federally managed species in the South Atlantic to the ACLs
Amendment #24 (SAFMC 2011d)	7/11/12	PR: 77 FR 19169 FR: 77 FR 34254	-Specify MSY, rebuilding plan (including ACLs, AMs, and OY), and allocations for red grouper
Amendment #23 (Comprehensive Ecosystem-based Amendment 2; SAFMC 2011e)	1/30/12	PR: 76 FR 69230 FR: 76 FR 82183	- Designate the Deepwater MPAs as EFH-HAPCs - Limit harvest of snapper grouper species in SC SMZs to the bag limit - Modify sea turtle release gear
Amendment #20B	TBD	TBD	-Update wreckfish ITQ according to reauthorized Magnuson-Stevens Act
Amendment #18A (SAFMC 2012a)	7/1/12	PR: 77 FR 16991 FR: 77FR3 2408	- Limit participation and effort in the black sea bass sector - Modifications to management of the black sea bass pot sector - Improve the accuracy, timing, and quantity of fisheries statistics
Amendment #20A (SAFMC 2012b)	10/26/12	PR: 77 FR 19165 FR: 77 FR 59129	-Redistribute latent shares for the wreckfish ITQ program.

Document	All Actions Effective By:	Proposed Rule Final Rule	Major Actions. Note that not all details are provided here. Please refer to Proposed and Final Rules for all impacts of listed documents.
Regulatory Amendment #12 (SAFMC 2012c)	10/9/12	FR: 77 FR 61295	-Adjust the ACL and OY for golden tilefish -Consider specifying a commercial Annual Catch Target (ACT) -Revise recreational AMs for golden tilefish
Amendment #18B (SAFMC 2013a)	5/23/13	PR: 77 FR 75093 FR: 77 FR 23858	-Limit participation and effort in the golden tilefish commercial sector through establishment of a longline endorsement -Modify trip limits -Specify allocations for gear groups (longline and hook and line)
Amendment # 26 (Comprehensive Ecosystem-Based Amendment 3)	TBD	TBD	-Modify bycatch and discard reporting for commercial and for-hire vessels
Regulatory Amendment #13 (SAFMC 2013b)	7/17/13	PR: 78 FR 17336 FR: 78 FR 36113	-Revise the ABCs, ACLs (including sector ACLs), and ACTs implemented by the Comprehensive ACL Amendment (SAFMC 2011c). The revisions may prevent a disjunction between the established ACLs and the landings used to determine if AMs are triggered.
Regulatory Amendment #14	12/8/14	PR: 79 FR 22936 FR: 79 FR 66316	-Modify the fishing year for greater amberjack -Modify the fishing year for black sea bass -Revise the AMs for vermilion snapper and black sea bass -Modify the trip limit for gag
Regulatory Amendment #15 (SAFMC 2013c)	9/12/13	PR: 78 FR 31511 FR: 78 FR 49183	-Modify the existing specification of OY and ACL for yellowtail snapper in the South Atlantic -Modify the existing gag commercial ACL and AM for gag that requires a closure of all other shallow water groupers (black grouper, red grouper, scamp, red hind, rock hind, graysby, coney, yellowmouth grouper, and yellowfin grouper) in the South Atlantic when the gag commercial ACL is met or projected to be met
Regulatory Amendment #16	TBD	TBD	-Consider removal of the November-April prohibition on the use of black sea bass pots
Amendment #27	1/27/14	PR: 78 FR 78770 FR: 78 FR 57337	-Establish the South Atlantic Council as the responsible entity for managing Nassau grouper throughout its range including federal waters of the Gulf of Mexico -Modify the crew member limit on dual-permitted snapper grouper vessels -Modify the restriction on retention of bag limit quantities of some snapper grouper species by captain and crew of for-hire vessels -Minimize regulatory delay when adjustments to snapper

Document	All Actions Effective By:	Proposed Rule Final Rule	Major Actions. Note that not all details are provided here. Please refer to Proposed and Final Rules for all impacts of listed documents.
			grouper species' ABC, ACLs, and ACTs are needed as a result of new stock assessments -Address harvest of blue runner by commercial fishermen who do not possess a South Atlantic Snapper Grouper Permit
Amendment #28 (SAFMC 2013d)	8/23/13	PR: 78 FR 25047 FR: 78 FR 44461	-Establish regulations to allow harvest of red snapper in the South Atlantic
Regulatory Amendment #18 (SAFMC 2013e)	9/5/13	PR: 78 FR 26740 FR: 78 FR 47574	-Adjust ACLs for vermilion snapper and red porgy, and remove the 4-month recreational closure for vermilion snapper
Regulatory Amendment #19 (SAFMC 2013f)	ACL: 9/23/13 Pot closure: 10/23/13	PR: 78 FR 39700 FR: 78 FR 58249	-Adjust the ACL for black sea bass and implement an annual closure on the use of black sea bass pots from November 1 to April 30
Amendment #36	TBD	TBD	-Adjust or establish new MPAs to enhance protection of snapper grouper species
Amendment #22	TBD	TBD	-Establish a recreational tagging program for snapper grouper species with small ACLs
Amendment 29	TBC	PR: 79 FR 69819	- Update ACLs for some unassessed species and adjust management measures for gray triggerfish
Amendment #32	TBD	TBD	-Adjust management measures and ACLs for blueline tilefish
Regulatory Amendment #20	TBD	TBD	-Adjust management measures and ACLs for snowy grouper
Regulatory Amendment #22	TBD	TBD	-Adjust management measures and ACLs for gag and wreckfish

Table C.2 Dolphin Wahoo History of Management

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

Time period/dates	Cause	Observed and/or Expected Effects
Effective Date July 22, 2010	Amendment 1 to the Dolphin Wahoo FMP (Comprehensive Ecosystem Based Amendment (CE-BA) 1)	Updated spatial information of Council-designated EFH and EFH-HAPCS.
Effective Date April 16, 2012	Amendment 2 to the Dolphin Wahoo FMP (Comprehensive ACL Amendment SAFMC 2011C)	Set ABC, ACL, ACT and AMs
Effective Date July 9, 2014	Amendment 5 to the Dolphin Wahoo FMP	Revisions to acceptable biological catch estimates (ABCs), annual catch limits (ACLs) (including sector ACLs), recreational annual catch targets (ACTs), and accountability measures (AMs) implemented through the Comprehensive ACL Amendment; modifications to the sector allocations for dolphin; and revisions to the framework procedure in the Dolphin Wahoo FMP.

Table C.3 Golden Crab History of Management.

Time Period/Dates	Cause	Observed and/or expected Effects
April 7, 1995	Control date	Date used to establish limited access.
August 27, September 26, and October 28, 1996 and September 7, 1997.	FMP became effective	Provide biological protection to the resource (escape gaps in traps and no retention of female crabs); gear regulation (define allowable gear, degradable panel, tending requirements, gear identification, and maximum trap size by zone); provide for law enforcement (depth limitations and prohibit possession of whole fish or fillets of snapper grouper species); determine the number of participants (vessel and dealer/processor permits); collect the necessary data (vessel/fishermen and dealer/processor reporting); and a framework procedure to adjust the management program (framework adjustments and adjustments to activities authorized by the Secretary of Commerce).
1998	Framework Seasonal Adjustment #1	Revised the vessel size limitations applicable when a vessel permit is

		transferred to another vessel and extended through December 31, 2000, the authorization to use wire cable for a mainline attached to a golden crab trap.
1999	Amendment 2 (partially approved)	Addressed Sustainable Fishery Act definitions and other required provisions in FMPs of the South Atlantic Region.
2000	Amendment 1	Addressed Essential Fish Habitat in FMPs of the South Atlantic Region. Essential fish habitat for golden crab includes the U.S. Continental Shelf from Chesapeake Bay south through the Florida Straits (and into the Gulf of Mexico). In addition, the Gulf Stream, which occurs within the EEZ, is an essential fish habitat because it provides a mechanism to disperse golden crab larvae.
2000	Amendment 3	extended the authorization to use wire cable for mainlines attached to golden crab traps to December, 31, 2002; modified escape panel sizes for traps; addressed permit renewal requirements including removal of the 5,000-pound harvest requirement for renewing biannual permits and addressed the minimum harvest requirement for permit holders in the Southern Zone; allowed up to a 20% increase in vessel size from the vessel size of the original permit; created a sub-zone within the Southern Zone with specified conditions; allowed two new vessels to be permitted to fish only in the Northern Zone using an earlier list of those wanting to enter the fishery; specified status determination criteria; and modified the FMP framework to allow modifications to the sub-zone.
2010	Amendment 4	The amendment created Allowable Golden Crab Fishing Areas within the proposed Coral Habitat Areas of Particular Concern (CHAPCs); considered vessel monitoring for the golden crab fishery; and provide presentation of spatial information

		for Essential Fish Habitat (EFH) and EFH-Habitat Areas of Particular Concern (EFH-HAPC) designations under the Golden Crab FMPs.
2011	Amendment 5	Established ABC, ACL and AMs for the golden crab fishery.

Appendix C. Bycatch Practicability Analysis

1 Population Effects for the Bycatch Species

1.1 Background

Amendment 34 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region (Snapper Grouper FMP), Amendment 9 to the Fishery Management Plan for the Golden Crab of the South Atlantic Region (Golden Crab FMP), and Amendment 8 to the Fishery Management Plan for the Dolphin and Wahoo Fishery of the Atlantic (Dolphin Wahoo FMP) (Comprehensive AM and Dolphin Allocation Amendment) would modify the accountability measures (AMs) for snapper grouper species and golden crab, and adjust sector allocations for dolphin. Currently, many species in the Snapper Grouper FMP have different AMs, which has created a complex regulatory environment that can be difficult for fishery participants and fisheries managers to interpret. Therefore, this amendment would simplify the system of AMs to create consistency among AMs for all snapper grouper species and for golden crab. AMs for vermilion snapper, black sea bass, blueline tilefish, and the deepwater complex are being addressed in separate amendments. The dolphin allocation action in this amendment is intended to ensure that dolphin sector allocations are based upon the most appropriate time series of landings data available, and using the most appropriate allocation method for the species.

1.2 Bycatch Mortality

Snapper Grouper

Most of the species in the Snapper Grouper FMP are taken with hook and line gear (see **Chapter 3**) by both the commercial and recreational sectors. Regulations (50 C.F.R. § 622.176) require commercial fishermen in the South Atlantic snapper grouper fishery who are selected by the Science and Research Director (SRD) to maintain and submit a fishing record on forms provided by the SRD. Commercial fishermen in the snapper grouper fishery are also required to submit logbooks with trip and effort information. Currently, discard data are collected using a supplemental form that is sent to a 20% stratified random sample of the active permit holders in the snapper grouper fishery. Biases associated with logbooks primarily result from inaccuracy in reporting of species that are caught in large numbers or are of little economic interest (particularly of bycatch species), and from low compliance rates. Actions that could help resolve some of these issues are currently being considered in an amendment being developed by the South Atlantic Fishery Management Council (South Atlantic Council) and the Gulf of Mexico Fishery Management Council (Gulf of Mexico Council), which would allow for commercial logbook data (including discard information) to be entered electronically.

For the recreational sector estimates of the number of recreational discards are available from Marine Recreational Information Program (MRIP) and the National Marine Fisheries Service

(NMFS) Southeast Headboat Survey. Beginning in 2013, samples were drawn from a known universe of fishermen rather than randomly dialing coastal households. Other improvements have been and will be made that should result in better estimating recreational catches and the variances around those catch estimates. MRIP methods have been used to recalculate previous Marine Recreational Fisheries Statistical Survey (MRFSS) estimates dating back to 1986.

During 2008-2012, information for charter trips came from two sources. Charter vessels for the snapper grouper fishery were selected to report by the SRD to maintain a fishing record for each trip, or a portion of such trips as specified by the SRD, and on forms provided by the SRD. Harvest and bycatch information was monitored by MRFSS/MRIP. Since 2000, a 10% sample of charter vessel captains were called weekly to obtain trip level information, such as date, fishing location, target species, etc. In addition, the standard dockside intercept data were collected from charter vessels and charter vessel clients were sampled through the standard random digital dialing of coastal households.

Harvest from headboats is monitored by NMFS-Southeast Fisheries Science Center (SEFSC) Beaufort Laboratory. Collection of discard data began in 2004. Daily catch records (trip records) were filled out by the headboat operators, or in some cases by NMFS approved headboat samplers based on personal communication with the captain or crew. Beginning in 2014, new regulations require headboat vessels to submit fishing records to the SEFSC on a weekly basis, or at intervals shorter than a week if notified by the SRD. Headboat trips are subsampled for data on species lengths and weights. Biological samples (scales, otoliths, spines, reproductive tissues, and stomachs) are obtained as time allowed. Lengths of discarded fish are occasionally obtained but these data were not part of the headboat database.

Table 1 shows commercial and recreational landings and discards of snapper grouper species for the commercial and recreational sectors.

Commercial wreckfish landings are confidential, and are not included in **Table 1**. The commercial portion of the snapper grouper fishery for wreckfish occurs at water depths of 450-600 m. Thus, snapper grouper species listed in **Table 1** are not caught with wreckfish. Vertical hook-and-line gear consisting of 1/8 inch cable and a terminal rig (around 23 kg of weight), with 8-12 hooks baited with squid, is deployed from hydraulic reels to target wreckfish. Barrelfish (*Hyperoglyphe perciformes*) and red bream (*Beryx decadactylus*) are caught incidental to wreckfish and are likely sold or used for personal consumption. Goldman and Sedberry (2010) reports other species caught by commercial wreckfish fishermen on vertical lines with baited hooks from 400 to 800 m depth, on and around Charleston Bump include splendid alfonsino (*Beryx splendens*), conger eel (*Conger oceanicus*), gulper shark (*Centrophorus granulosus*), roughskin dogfish (*Cirrhigaleus asper*), and shortspine dogfish (*Squalus mitsukurii*). It is unknown if all these species are retained by commercial wreckfish fishermen.

Table 1. Mean headboat, MRIP (charter and private), and commercial estimates of landings and discards of snapper grouper species in the South Atlantic (2008-2012). Headboat, MRIP (charter and private) landings are in numbers of fish (N); commercial landings are in pounds whole weight (lbs ww). Discards represent numbers of fish that were caught and released alive.

Species	HEADBOAT			MRIP CHARTER			MRIP PRIVATE			COMMERCIAL	
	Catch (N)	Landings (N)	Discards (N)	Catch (N)	Landings (N)	Discards (N)	Catch (N)	Landings (N)	Discards (N)	Landings (lbs ww)	Discards (N)
Almaco jack	3,576	3,337	240	3,858	2,592	1,266	9,416	3,688	5,728	204,422	869
Atlantic spadefish	158	128	30	236	188	48	267,887	110,718	157,169	26,936	0
Banded rudderfish	19,008	16,651	2,357	5,634	3,159	2,475	13,703	6,847	6,855	60,615	142
Bank sea bass	5,788	5,788	0	2,913	691	2,222	10,413	2,393	8,020	387	4
Bar jack	290	230	59	261	76	186	11,222	2,805	8,417	4,111	17
Black grouper	1,622	315	1,307	9,755	1,422	8,334	31,487	7,760	23,727	50,001	2,006
Black sea bass	629,922	166,255	463,667	250,778	63,803	186,974	2,873,854	275,845	2,598,008	486,316	29,772
Black snapper	0	0	0	0	0	0	0	0	0	213	7
Blackfin snapper	119	51	68	101	101	0	1,843	1,843	0	1,616	1
Blue runner	22,821	17,484	5,337	25,885	11,601	14,284	1,325,020	610,399	714,621	227,946	854
Blueline tilefish	3,085	3,013	73	18,503	18,055	448	8,569	8,324	245	370,077	244
Coney	121	70	51	37	33	4	1,314	1,100	214	34	0
Cottonwick	17	17	0	0	0	0	148	148	0	0	0
Cubera snapper	377	359	17	4	4	0	2,907	2,631	275	5,060	0
Dog snapper	92	64	28	57	57	0	954	822	133	395	0
Gag	15,489	10,214	5,276	19,365	2,983	16,382	131,170	21,430	109,740	495,064	9,490
Golden tilefish	0	0	0	493	493	0	3,123	3,123	0	421,923	26
Gray snapper	46,371	40,624	5,747	5,220	5,024	196	1,434,333	229,482	1,204,852	113,992	40,381

Species	HEADBOAT			MRIP CHARTER			MRIP PRIVATE			COMMERCIAL	
	Catch (N)	Landings (N)	Discards (N)	Catch (N)	Landings (N)	Discards (N)	Catch (N)	Landings (N)	Discards (N)	Landings (lbs ww)	Discards (N)
Gray triggerfish*	67,258	55,192	12,066	39,155	32,706	6,449	226,603	110,045	116,558	400,273	2,097
Graysby	3,001	2,041	960	1,049	919	131	10,074	3,049	7,025	192	29
Greater amberjack	6,614	4,710	1,904	25,898	20,209	5,689	58,129	22,383	35,746	859,929	3,353
Hogfish	260	169	91	32	29	3	30,321	27,550	2,770	45,169	55
Jolthead porgy	7,050	6,913	137	2,232	2,232	0	12,594	11,869	725	3,853	11
Knobbed porgy	5,584	5,439	145	832	832	0	6,838	6,398	441	23,726	1
Lane snapper	23,340	20,227	3,112	11,993	8,882	3,111	166,037	42,246	123,791	3,526	210
Lesser amberjack	22	17	6	12	12	0	393	393	0	17,044	34
Longspine porgy	3	3	0	0	0	0	460	290	170	0	0
Mahogany snapper	32	30	2	0	0	0	35	35	0	30	0
Margate	856	662	195	265	206	59	9,512	3,559	5,952	3,725	30
Misty grouper	0	0	0	0	0	0	0	0	0	971	1
Mutton snapper	17,683	13,996	3,687	31,630	18,609	13,021	294,792	111,060	183,732	74,212	1,636
Ocean triggerfish	473	473	0	363	285	77	7,366	3,454	3,912	0	0
Queen snapper	0	0	0	1	1	0	0	0	0	3,734	107
Red grouper	11,559	1,629	9,930	9,138	3,647	5,491	81,675	31,172	50,503	367,462	3,610
Red hind	383	313	70	86	86	0	2,588	928	1,660	9,865	88
Red porgy	41,064	23,659	17,405	20,579	12,733	7,845	38,282	24,793	13,489	169,468	27,818
Rock hind	2,150	1,509	642	132	92	40	4,087	908	3,179	15,839	14
Rock sea bass	0	0	0	415	177	238	11,477	4,287	7,190	453	49

Species	HEADBOAT			MRIP CHARTER			MRIP PRIVATE			COMMERCIAL	
	Catch (N)	Landings (N)	Discards (N)	Catch (N)	Landings (N)	Discards (N)	Catch (N)	Landings (N)	Discards (N)	Landings (lbs ww)	Discards (N)
Sailors choice	123	123	0	732	23	709	32,818	14,324	18,494	0	0
Sand tilefish	1,712	895	817	4,053	484	3,568	23,983	6,091	17,891	0	238
Saucereye porgy	228	228	1	0	0	0	1,034	1,034	0	0	0
Scamp	5,602	3,195	2,407	4,631	2,771	1,860	8,852	5,108	3,745	221,922	2,204
Schoolmaster	344	344	0	2	2	0	7,251	4,427	2,824	181	0
Scup	11,364	9,531	1,833	246	219	28	1,086	596	490	0	0
Silk Snapper	1,371	1,249	122	1,379	1,209	171	1,141	153	988	11,379	8
Snowy grouper	123	72	50	1,684	1,388	295	969	550	419	85,047	273
Tomtate	119,474	49,453	70,021	19,269	11,868	7,401	331,321	84,819	246,502	212	2,441
Vermilion snapper	282,092	176,802	105,290	63,968	41,150	22,818	169,085	70,051	99,034	1,010,587	38,174
White grunt*	179,271	144,826	34,445	42,015	34,665	7,349	419,442	193,338	226,104	126,477	348
Whitebone porgy	4,836	4,577	258	1,833	1,784	49	11,919	10,710	1,209	14	31
Yellowedge grouper	7	4	3	27	27	0	44	44	0	16,080	13
Yellowfin grouper	20	14	5	0	0	0	97	97	0	3,780	6
Yellowmouth grouper	22	17	5	15	15	0	0	0	0	290	0
Yellowtail snapper	134,179	100,724	33,454	199,283	134,871	64,412	967,208	362,141	605,067	1,123,532	90,695

Sources: MRIP data from SEFSC Recreational ACL Dataset (May 2013), Headboat data from SEFSC Headboat Logbook CRNF files (expanded; May 2013), Commercial landings data from SEFSC Commercial ACL Dataset (July 10, 2013) with discard estimates from expanded SEFSC Commercial Discard Logbook (Jun 2013).
Note: Estimates of commercial discards are highly uncertain and are for vertical line gear only.
*Commercial gray triggerfish includes "triggerfishes, unclassified" category; commercial white grunt includes "grunts, unclassified" category.
Goliath grouper, Nassau grouper, Warsaw grouper, Speckled hind, and Red snapper are excluded from Table 1 since they are prohibited species, and landings records are not available for all the years 2007-2011. Wreckfish landings are confidential.

Release mortality rates are unknown for most snapper grouper species. Recent Southeast Data, Assessment, and Review (SEDAR) assessments include estimates of release mortality rates based on published studies. Stock assessment reports can be found at http://www.sefsc.noaa.gov/sedar/. The recent stock assessment for yellowtail snapper chose a rate of 10% release mortality as an approximation for the lower bound on release mortality for yellowtail snapper (FWRI 2012). SEDAR 10 (2006) estimated release mortality rates of 40% and 25% for gag taken by commercial and recreational fishermen, respectively. Commercial and recreational release mortality rates were estimated as 20% for black grouper and red grouper in SEDAR 19 (2010). SEDAR 15 (2008) estimated a 20% release mortality rate for greater amberjack. Snowy grouper are primarily caught in water deeper than 300 feet and golden tilefish are taken at depths greater than 540 feet; therefore, release mortality of the species are probably near 100% (SEDAR 4 2004, SEDAR 25 2011). Commercial sector discard mortality for red porgy is 35%, and 8% for the recreational sector (2012 SEDAR 1 Update). Other release mortality rates are estimated as 12.5% for gray triggerfish (SEDAR-32, under development); 1% commercial and 7% recreational for black sea bass (SEDAR-25, 2011); and 41% commercial and 38% recreational for vermilion snapper (SEDAR-17, 2008b; SEDAR-17 Update, 2012b).

According to SEDAR 23 (2011), several data workshop participants observed that goliath grouper in the southeastern U.S. (i.e., South Atlantic and Gulf of Mexico waters) are subject to unknown but significant levels of release mortality, especially adult specimens brought up from depth. Fishing mortality due to release mortality also occurs when goliath grouper are caught as incidental catch (i.e., when other species are targeted) and when fishers target (some repeatedly) goliath grouper for catch-and release fishing. The mortality rate of any released wreckfish is likely to be 100%, because the fish are typically harvested in waters deeper than 300 m (Machias et al. 2003; SAFMC 1991).

Dolphin

Regulations (50 C.F.R. § 622.271) require commercial dolphin fishermen who are selected by the SRD to maintain and submit a fishing record on forms provided by the SRD. Commercial dolphin fishermen are also required to submit logbooks with trip and effort information. Currently, discard data are collected using a supplemental form that is sent to a 20% stratified random sample of the active permit holders in the dolphin wahoo fishery. For the recreational sector estimates of the number of recreational discards are available from MRIP and the NMFS Southeast Headboat Survey. Commercial discards for dolphin are very low, but discards were disproportionately higher in the recreational sector (**Table 2**). During 2008-2012, mean private recreational landings and discards for dolphin were higher than the headboat and charterboat category (**Table 2**).

Table 2. Mean headboat, MRIP charter, MRIP private, and commercial landings of dolphin and estimates of discards in the U.S. Atlantic Ocean (2008-2012). Headboat, and MRIP (charter and private) landings are in numbers of fish (N); commercial landings are in pounds whole weight (lbs ww). Discards represent numbers of fish that were caught and released alive.

	HEADBOAT			MRIP CHARTER			MRIP PRIVATE			COMMERCIAL		ALL SECTORS
Species	Catch (N)	Landings (N)	Discards (N)	Catch (N)	Landings (N)	Discards (N)	Catch (N)	Landings (N)	Discards (N)	Landings (lbs ww)	Discards (N)	Discards (N)
Dolphin	3,635	3,269	366	299,392	290,800	8,592	780,125	598,363	181,762	835,392	1,750	192,470

Sources: MRIP data from SEFSC Recreational ACL Dataset (May 2013), Headboat data from SEFSC Headboat Logbook CRNF files (expanded; May 2013), Commercial landings data from SEFSC Commercial ACL Dataset (July 10, 2013) with discard estimates from expanded SEFSC Commercial Discard Logbook (Jun 2013).

Note: Dolphin and wahoo landings include all east coast (NY-FL), but discard estimates for headboat and commercial are highly uncertain and only include NC-FL. Estimates of commercial discards are for vertical line gear only.

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

Prager (2000) conducted an assessment of dolphin and indicated the species can withstand a high level of exploitation. Prager (2000) stated the biomass of the U.S. stock of dolphin appeared to be higher than needed to produce the maximum sustainable yield, but the results were not conclusive. The 2013 Report to Congress (NMFS 2013) indicates dolphin are neither overfished nor undergoing overfishing. Furthermore, dolphin are listed as species of "least concern" under the International Union for Conservation of Nature Red List, i.e. species that have a low risk of extinction (IUCN 2013). A Southeast Data, Assessment, and Review (SEDAR) stock assessment for dolphin is scheduled within the next 5 years.

Golden Crab

The golden crab fishery employs baited traps attached with gangions to a 5/8" polypropylene line up to 5 miles long. There are 50 traps per line, or "trawl," set 400 feet apart. Fishermen may fish 4 trawls in a two-week period pulling 100 traps one week and 100 the next (Howard Rau, Golden crab AP). Twenty to 30 lbs of crabs per trap is a desirable catch. On a good season, fishermen may catch 70 to 100 lbs per trap. All females and individuals weighing less than 1 ¼ pounds are released back into the water. Only male crabs are harvested because, since the beginning of this fishery, fishermen felt that an integral factor in the sustainable harvest of this resource was not to harvest the females. In addition, females are smaller than males and therefore less marketable.

On an observed trip, three trawls were retrieved (about 100 traps) out of which only 20-25 crabs were discarded. Such a low number of crabs are released upon trap retrieval because the majority of the culling is being accomplished through the escape panels while the traps are still submerged. Thus, escape gaps are very effective in culling out undersized individuals.

Degradable wire is used to lock the traps. To open the trap, the wire is simply cut. Since the main trap door is shut using degradable wire, ghost fishing is not a concern if the trap becomes lost. In addition, traps are required to have two escape gaps on either side of the trap to allow females and small individuals to escape. Release mortality of golden crab is presumed to be very low. Regulations do not allow for the retention of females, and it is assumed they survive the trauma of capture.

Regulations (50 C.F.R. § 622.242) require commercial dolphin fishermen who are selected by the SRD to maintain and submit a fishing record on forms provided by the SRD. Discards are a component of logbooks that all golden crab fishermen complete. There is likely not a great deal

of bycatch in this fishery. Species recorded as bycatch include isopods, crabs (including female golden crabs), hagfish, shark, and hake.

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

Expected Impacts on Bycatch for the Subject Amendment Actions

None of the alternatives under either action in the Comprehensive AM and Dolphin Allocation Amendment are likely to change the current level of bycatch of target or non-target species in the Atlantic. Creating consistent AMs for most snapper grouper species and golden crab would help streamline the system of harvest controls that are intended to prevent overfishing from occurring. Making AMs the same for snapper grouper species as well as golden crab would make implementation of AMs easier when they are triggered, and fishery participants would be more likely to understand when they may or may not fish a particular species. The effects of this action on bycatch of target and non-target species are difficult to determine. For species that are not currently subject to in-season sector closures when an annual catch limit (ACL) is met or projected to be met, bycatch of target species may increase if fishermen continue to fish for other co-occurring species once their target stock is closed for the season. However, for many species in the Snapper Grouper FMP, in-season closures are already part of the system of AMs; therefore, compared to the status quo, changes in bycatch of target and non-target fish species are likely to be negligible. Survival of released species would depend on the magnitude of discard mortality. The reduction in harvest for a species during a closure would be expected to reduce the overall mortality.

The action to modify the current sector allocations for dolphin is also not expected to substantially change the level of bycatch of target and non-target species.

Table 3. Selected average characteristics for trips landing at least one lb (ww) of dolphin and wahoo by gear type in the South Atlantic, 2007-2011.

Dolphin	Hook & Line	Longline	Trolling	Other
Trips	1,591	91	673	24
Vessels	177	11	112	11
Days Away	2.74	2.79	1.13	2.03
lb (ww) Dolphin	99,810	16,870	39,855	901

Source: NMFS SEFSC Coastal Fisheries Logbook and Accumulated Landings Data Base Systems, (2013).

Actions have been taken to reduce bycatch and incidental catch of overfished and protected species by pelagic longline fishermen who target highly migratory pelagic species (HMS). Appendix C of the Dolphin Wahoo FMP contains data, which indicate that pelagic longlines targeting dolphin do result in a bycatch of HMS species. If the commercial sector ACL is increased, as would be the case under all alternatives except **Alternative 1 (No Action)**, there is a chance the small portion of the fishery that uses longlines may grow or those that already use that gear type may increase their fishing effort. Increasing the amount of longline gear in the

water is likely to increase the risk of protected resources and HMS interactions. However, considering the very low proportion of the fishery that utilizes longline gear (See **Table 3**), it is unlikely longlining effort for dolphin would substantially increase. Longlines are not a readily used gear type for harvesting dolphin, and unless fishermen's behavior changes significantly in the near future, no increased risks to species listed under the Endangered Species Act or HMS species beyond the status quo are anticipated as a result of this action.

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

Discards of dolphin and wahoo are small in comparison to snapper grouper species and bycatch is believed to be minimal in the recreational, charter, and headboat sectors (**Tables 1** and **2**). Action was taken in the Dolphin Wahoo FMP to reduce bycatch by prohibiting the use of surface and pelagic longline gear for dolphin and wahoo within any "time or area closure" in the South Atlantic Council's area of jurisdiction (Atlantic Coast) which is closed to the use of pelagic gear for highly migratory pelagic species.

Other actions have been taken in implemented amendments that could reduce bycatch of and bycatch mortality of federally managed species in the South Atlantic. Amendment 13C to the Snapper Grouper FMP (SAFMC 2006) required the use of 2-inch mesh in the back panel of black sea bass pots, which has likely reduced the magnitude of regulatory discards. Amendment 16 to the Snapper Grouper FMP (SAFMC 2009) required the use of dehooking devices, which could help reduce bycatch mortality of vermilion snapper, black sea bass, gag, red grouper, and black grouper. Dehooking devices can allow fishermen to remove hooks with greater ease and more quickly from snapper grouper species without removing the fish from the water. If a fish does need to be removed from the water, dehookers could still reduce handling time in removing hooks, thus increasing survival (Cooke et al. 2001). Furthermore, Amendment 17A to the Snapper Grouper FMP (SAFMC 2010a) required circle hooks for snapper grouper species north of 28 degrees latitude, which is expected to reduce bycatch mortality of snapper grouper species. Amendment 17B to the Snapper Grouper FMP (SAFMC 2010b) established ACLs and AMs and addressed overfishing for the following species in the snapper grouper management complex that were listed as undergoing overfishing: golden tilefish, snowy grouper, speckled hind, warsaw grouper, black sea bass, gag, red grouper, black grouper, and vermilion snapper. Golden tilefish, black sea bass, red grouper, black grouper, and vermilion snapper are no longer experiencing overfishing.

The Comprehensive ACL Amendment (SAFMC 2011a) implemented ACLs and AMs for species not undergoing overfishing in the FMPs for snapper grouper, dolphin and wahoo, golden crab, and *Sargassum*, in addition to other actions such as allocations and establishing annual catch targets for the recreational sector. The Comprehensive ACL Amendment (SAFMC 2011a) also established additional measures to reduce bycatch in the snapper grouper fishery with the establishment of species complexes based on biological, geographic, economic, taxonomic, technical, social, and ecological factors. ACLs were assigned to these species complexes, and when the ACL for the complex is met or projected to be met, fishing for species included in the entire species complex is prohibited for the fishing year. ACLs and AMs likely has reduced bycatch of target species and species complexes as well as incidentally caught species.

Amendment 18A to the Snapper grouper FMP (SAFMC 2012a), included actions that could reduce bycatch of black sea bass and the potential for interactions with protected species. Actions in Amendment 18A limits the number of participants in the black sea bass pot sector, requires fishermen bring pots back to port at the completion of a trip, and limits the number of pots a fishermen can deploy. Amendment 24 to the Snapper Grouper FMP (SAFMC 2011d) established a rebuilding plan for red grouper, which was overfished and undergoing overfishing. Red grouper is no longer overfished or undergoing overfishing. Amendment 24 (SAFMC 2011d) also established ACLs and AMs for red grouper, which could help to reduce bycatch of red grouper and co-occurring species.

The final rule (78 FR 23858; April 23, 2013) for Amendment 18B to the Snapper Grouper FMP (SAFMC 2013a), established an endorsement program for the commercial golden tilefish longline sector, which could have positive effects for habitat and protected species. Regulatory Amendment 14 to the Snapper Grouper FMP (SAFMC 2014) includes actions that could adjust management measures for a number of snapper grouper species, some of which could reduce the magnitude of discards. The final rule (78 FR 49183; September 12, 2013) for Regulatory Amendment 15 to the Snapper Grouper FMP (SAFMC 2013b) included actions for yellowtail snapper and gag that are expected to reduce bycatch of snapper grouper species. Regulatory Amendment 17 to the Snapper Grouper FMP includes actions that affect marine protected areas, and could reduce bycatch of many snapper grouper species, especially speckled hind and warsaw grouper.

The South Atlantic Council's For-Hire Reporting Amendment has changed the reporting frequency by headboats from monthly to weekly, and requires that reports be submitted electronically. The action is expected to provide more timely information on landings and discards. Improved information on landings would help ensure ACLs are not exceeded. Furthermore, more timely and accurate information would be expected to provide a better understanding of the composition and magnitude of catch and bycatch, enhance the quality of data provided for stock assessments, increase the quality of assessment output, and lead to better decisions regarding additional measures to reduce bycatch. Management measures that affect gear and effort for a target species can influence fishing mortality in other species. Therefore, enhanced catch and bycatch monitoring would provide better data that could be used in multi-species assessments.

The South Atlantic Council developed a joint amendment with the Gulf of Mexico Council that requires that all federally permitted charter vessels report landings information weekly to the SEFSC electronically. Additionally, the Gulf of Mexico and South Atlantic Councils will also begin development of a joint amendment to require that all federally permitted commercial fishing vessels in the southeast also report their logbook landings information electronically. These future actions will help to improve estimates on the composition and magnitude of catch and bycatch of species affected by this amendment, as well as all other federally managed species in the southeast region.

Additional information on fishery related actions from the past, present, and future considerations can be found in Chapter 6 (Cumulative effects) of the Comprehensive AM and Dolphin Allocation Amendment.

1.5 Ecological Effects Due to Changes in the Bycatch

The ecological effects of bycatch mortality are the same as fishing mortality from directed fishing efforts. If not properly managed and accounted for, either form of mortality could potentially reduce stock biomass to an unsustainable level. As mentioned in the above section, the South Atlantic For-Hire Reporting Amendment included an action which required weekly electronic reporting to enhance landings data reporting in the headboat sector. Better bycatch and discard data will provide a better understanding of the composition and magnitude of catch and bycatch, enhance the quality of data provided for stock assessments, increase the quality of assessment output, and lead to better decisions regarding additional measures to reduce bycatch. Management measures that affect gear and effort for a target species can influence fishing mortality in other species. Therefore, enhanced catch and bycatch monitoring is expected to provide better data that could be used in multi-species assessments. These improvements in harvest monitoring efforts in the headboat sector, will also be extended to the charter and commercial sectors of all fisheries in the southeast region.

Modifying the system of AMs to be consistent for all species in the snapper grouper fishery and for golden crab is unlikely to result in significant ecological effects, positive or negative, due to changes in bycatch. If fishermen continue to fish for species that co-occur with a stock that has been closed to harvest due to implementation of a modified AM under this amendment, bycatch of the prohibited species may increase during the in-season closure. However, overall, bycatch of target or non-target species is not expected to significantly increase as a result of the actions in this amendment.

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

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

The Comprehensive AM and Dolphin Allocation Amendment is not expected to result in major changes in bycatch of other fish species. The discard mortality rates of the assessed snapper grouper species addressed in this amendment are discussed in **Section 1.2** of this bycatch practicability analysis. Modifying the AMs to be consistent across all species in the Snapper Grouper and Golden Crab FMPs may increase bycatch and bycatch mortality of snapper

grouper species closed to harvest due to an in-season closure. However, for many species in the Snapper Grouper FMP, in-season closures are already part of the system of AMs; therefore, compared to the status quo, changes in bycatch of target and non-target fish species are likely to be negligible. As stated earlier in this BPA, longline gear used to harvest dolphin in the Atlantic are associated with bycatch of protected and HMS species. However, the longline component of the dolphin segment of the dolphin and wahoo fishery is very small (See **Appendix D. Table 2**), and any increase in the commercial ACL is not expected to result in an significant increase in the use of longline gear in the dolphin wahoo fishery, or associated incidental takes of protected and HMS species.

Effects on Marine Mammals and Birds

Under Section 118 of the Marine Mammal Protection Act (MMPA), the National Marine Fisheries Service (NMFS) must publish, at least annually, a List of Fisheries (LOF) that places all U.S. commercial fisheries into one of three categories based on the level of incidental serious injury and mortality of marine mammals that occurs in each fishery. Of the gear utilized within the snapper grouper, dolphin and wahoo, and golden crab fisheries, only the black sea bass pot is considered to pose an entanglement risk to marine mammals. The southeast U.S. Atlantic black sea bass pot sector is included in the grouping of the Atlantic mixed species trap/pot fisheries, which the proposed 2015 Final LOF classifies as a Category II (79 FR 50589, August 25, 2014). Gear types used in these fisheries are determined to have occasional incidental mortality and serious injury of marine mammals. For the South Atlantic snapper grouper fishery, the best available data on protected species interactions are from the Southeast Fisheries Science Center (SEFSC) Supplementary Discard Data Program (SDDP) initiated in July of 2000. The SDDP sub-samples 20% of the vessels with an active permit. Since August 2001, only three interactions with marine mammals have been documented; each was taken by handline gear and each released alive (McCarthy SEFSC database). The longline and hook-and-line gear components of the snapper grouper, and dolphin and wahoo fisheries in the South Atlantic are classified in the proposed 2015 LOF as Category III fisheries, and the golden crab fishery is also classified as a Category III.

Although the black sea bass pot sector can pose an entanglement risk to large whales due to their distribution and occurrence, sperm, fin, sei, and blue whales are unlikely to overlap with the black sea bass pot sector operated within the snapper grouper fishery since it is executed primarily off North Carolina and South Carolina in waters ranging from 70-120 feet deep (21.3-36.6 meters). There are no known interactions between the black sea bass pot sector and large whales. NMFS' biological opinion on the continued operation of the South Atlantic snapper grouper fishery determined the possible adverse effects resulting from the fishery are extremely unlikely. Thus, the continued operation of the snapper grouper fishery in the southeast U.S. Atlantic exclusive economic zone is not likely to adversely affect sperm, fin, sei, and blue whales (NMFS 2006).

North Atlantic right and humpback whales may overlap both spatially and temporally with the black sea bass pot sector. The 2007 revisions to the Atlantic Large Whale Take Reduction Plan folded the Atlantic mixed species trap/pot fisheries into the plan (72 FR 193; October 5, 2007). The new requirements (78 FR 58249; September 23, 2013) to prohibit the use of black sea bass

pots during November through April each year will help further reduce the likelihood of North Atlantic right and humpback whale entanglement in black sea bass pot gear.

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

Fishing effort reductions have the potential to reduce the amount of interactions between the fishery and marine mammals and birds. Although, the Bermuda petrel and roseate tern occur within the action area, these species are not commonly found and neither has been described as associating with vessels or having had interactions with the snapper grouper fishery. Thus, it is believed that the snapper grouper, the dolphin and wahoo, and the golden crab fisheries are not likely to negatively affect the Bermuda petrel and the roseate tern.

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

Modifying the AMs for snapper grouper species and golden crab to create a uniform regulatory environment and updating sector allocations for the dolphin segment of the dolphin and wahoo fishery are not expected to significantly alter fishing practices, processing, disposal, or marketing costs in the near or short term. In the long term, it is more likely that current fishing, processing, disposal, and marketing costs would be maintained at or near their status quo levels. Consistent AMs may help avoid ACL overages and overfishing events in the future, which would benefit the socioeconomic environment by avoiding restrictive harvest controls that would otherwise be needed to maintain harvest at sustainable levels. Using the most appropriate time series of landings data and allocation method to determine sector allocations for dolphin, are also not expected to benefit the socioeconomic environment. Because the allocation alternatives would not change the current sector allocations by a significant degree, any impacts that may occur are likely to be minimal.

Changes in Fishing Practices and Behavior of Fishermen

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

1.8 Social effects of the action proposed in Regulatory Amendment 21 are addressed in Chapter 4 of the amendment.

Social effects of the actions proposed in the Comprehensive AM and Dolphin Allocation Amendment are addressed in **Chapter 4** of the amendment.

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

The actions in the Comprehensive AM and Dolphin Allocation Amendment are not likely to change the current level of bycatch of target or non-target species in the Atlantic. Research and monitoring is ongoing to understand the effectiveness of implemented management measures from other snapper grouper, dolphin wahoo, and golden crab amendments and their effect on bycatch. In 1990, the SEFSC initiated a logbook program for vessels with federal permits in the snapper grouper fishery from the Gulf of Mexico and South Atlantic Approximately 20% of commercial fishermen from snapper grouper, dolphin wahoo, and Coastal Migratory Pelagics (CMP) fisheries are asked to fill out discard information in logbooks; however, a greater percentage of fishermen could be selected with emphasis on individuals that dominate landings. Recreational discards are obtained from the Marine Recreational Information Program and logbooks from the NMFS headboat program. Golden crab fishermen are also required to fill out logbooks and discards are a component of the form. The actions in the Comprehensive AM and Dolphin Allocation Amendment would not change any ongoing or require any new research, administrative, or enforcement costs.

Additional data collection activities for the recreational sector of the snapper grouper, dolphin wahoo, and CMP fisheries are being considered by the South Atlantic Council that could allow for a better monitoring of bycatch in the future. The South Atlantic Council is also developing an amendment to improve commercial logbook reporting for these fisheries. Some observer information for the snapper grouper fishery has been provided by the SEFSC, Marine Fisheries Initiative, and Cooperative Research Programs (CRP), but more is desired for the snapper grouper, dolphin wahoo, and CMP fisheries. Currently, snapper grouper fishermen (commercial and recreational) are required to carry observers, if selected. There is a very small amount of bycatch coverage of the commercial snapper-grouper fishery in the South Atlantic (<1%). An observer program was implemented from February 2014 to December 2014 that funded by MARFIN to observe 62 sea days in the bottom and vertical longline fishery. For headboats, which includes fisheries for snapper grouper and dolphin wahoo, observers are placed on 9.5% of trips out of North Carolina, 1.4% of trips out of South Carolina, 3.5% of trips out of Georgia, and 1.5% out of east Florida during 2013.

Cooperative research projects between science and industry are being used to a limited extent to collect bycatch information on the snapper grouper fishery in the South Atlantic. For example, Harris and Stephen (2005) characterized the entire (retained and discarded) catch of reef fishes from a selected commercial fisherman in the South Atlantic including total catch composition and disposition of fishes that were released. The Gulf and South Atlantic Fisheries Foundation, Inc. (Foundation) conducted a fishery observer program within the snapper grouper vertical hook-and-line (bandit rig) fishery of the South Atlantic United States. Through contractors they randomly placed observers on cooperating vessels to collect a variety of data quantifying the participation, gear, effort, catch, and discards within the fishery.

In the spring 2010, Archipelago Marine Research Ltd. worked with North Carolina Sea Grant and several South Atlantic Unlimited Snapper grouper Permit holders to test the effectiveness of electronic video monitoring to measure catch and bycatch. A total of 93 trips were monitored with video monitoring, 34 by self-reported fishing logbooks, and 5 by observers. Comparisons between electronic video monitoring data and observer data showed that video monitoring was a reliable source of catch and bycatch data.

Research funds for observer programs, as well as gear testing and testing of electronic devices are also available each year in the form of grants from the Foundation, Marine Fisheries Initiative, Saltonstall-Kennedy program, and the CRP. Efforts are made to emphasize the need for observer and logbook data in requests for proposals issued by granting agencies. A condition of funding for these projects is that data are made available to the Councils and NMFS upon completion of a study.

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

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

NMFS established the South East Fishery-Independent Survey in 2010 to strengthen fishery-independent sampling efforts in southeast U.S. waters, addressing both immediate and long-term fishery-independent data needs, with an overarching goal of improving fishery-independent data utility for stock assessments. Meeting these data needs is critical to improving scientific advice to the management process, ensuring overfishing does not occur, and successfully rebuilding overfished stocks on schedule.

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

Any changes in economic, social, or cultural values are discussed in Chapter 4 of the Comprehensive AM and Dolphin Allocation Amendment.

Changes in the Distribution of Benefits and Costs

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

1.11 Social Effects

The baseline social environment and social effects of the proposed actions are described in **Chapter 4** of the Comprehensive AM and Dolphin Allocation Amendment.

1.12 Conclusion

This section evaluates the practicability of taking additional action to minimize bycatch and bycatch mortality using the ten factors provided at 50 CFR section 600.350(d)(3)(i). In summary, the actions in the Comprehensive AM and Dolphin Allocation Amendment are not likely to significantly contribute or detract from the current level of bycatch in the snapper grouper fishery. The South Atlantic Council, NMFS, and the SEFSC have implemented and plan to implement numerous management measures and reporting requirements that have improved, or are likely to improve monitoring efforts of discards and discard mortality.

1.13 References

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

Collins, M.R., J.C. McGovern, G. R. Sedberry, H.S. Meister, and R. Pardieck. 1999. Swim bladder deflation in black sea bass and vermilion snapper: potential for increasing post-release survival. North American Journal of Fisheries Management. 19:828-832.

Cooke, S.J., D.P. Philipp, K.M. Dunmall, and J.F. Schreer. 2001. The influence of terminal tackle on injury, handling time, and cardiac disturbance of rock bass. North American Journal of Fisheries Management. Vol. 21, no. 2, pp. 333-342.

FWRI (Fish and Wildlife Conservation Commission Fish and Wildlife Research Institute). 2012. J. O'Hop, M. Murphy, and D. Chargaris. The 2012 stock assessment report for yellowtail snapper in the South Atlantic and Gulf of Mexico. 100 Eight Avenue Southeast, St. Petersburg, Florida 33701-5020.

Harris, P. J. and J. Stephen. 2005. Characterization of commercial reef fish catch and bycatch off the southeast coast of the United States. Final Report. Cooperative Research Program Grant No. NA03NMF4540416. SEDAR 15-RD07. July 2005.

Machias, A., S. Somarkis, N. Papadroulakis, M.T. Spedicato, M. Suquet, G. Lembo, and P. Divanach. 2003. Settlement of the wreckfish (*Polyprion americanus*). Marine Biology 142:45-52.

NMFS (NOAA Fisheries Service). 2006. Endangered Species Act Section 7 Consultation on the Continued Authorization of Snapper-Grouper Fishing under the South Atlantic Snapper-Grouper Fishery Management Plan (RFFMP) and Proposed Amendment 13C. Biological Opinion. June 7.

SAFMC (South Atlantic Fishery Management Council). 1991. Amendment Number 4, Regulatory Impact Review, Initial Regulatory Flexibility Analysis and Environmental Assessment for the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 1 Southpark Cir., Suite 306, Charleston, S.C. 29407-4699. 200 pp.

SAFMC (South Atlantic Fishery Management Council). 2006. Amendment 13C to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region with Final Environmental Impact Statement, Biological Assessment, Initial Regulatory Flexibility Analysis, Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405. 631 pp. with appendices.

SAFMC (South Atlantic Fishery Management Council). 2008. Amendment 15B to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region with Final Environmental Impact Statement, Biological Assessment, Initial Regulatory Flexibility Analysis, Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405. 324 pp. plus appendices.

SAFMC (South Atlantic Fishery Management Council). 2009. Amendment 16 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region with Final Environmental Impact Statement, Initial Regulatory Flexibility Analysis, Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405. 608 pp. plus appendices.

SAFMC (South Atlantic Fishery Management Council). 2010a. Amendment 17A to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region with Final Environmental Assessment, Initial Regulatory Flexibility Analysis, Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405. 385 pp. with appendices.

SAFMC (South Atlantic Fishery Management Council). 2010b. Amendment 17B to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region with Final Environmental Assessment, Initial Regulatory Flexibility Analysis, Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405. 406 pp. plus appendices.

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

SAFMC (South Atlantic Fishery Management Council). 2011b. Amendment 24 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region with Final Environmental Assessment, Initial Regulatory Flexibility Analysis, Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405. 256 pp. plus appendices.

SAFMC (South Atlantic Fishery Management Council). 2011c. Comprehensive Ecosystem Based Amendment 2, Final Environmental Assessment, Regulatory Flexibility Analysis/Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement for the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. (Amendment 23 to the Snapper Grouper FMP). South Atlantic Fishery Management Council, 4055 Faber Place, Ste 201, North Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2012a. Amendment 18A to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 4055 Faber Place, Ste 201, North Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2012b. Amendment 20A to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 4055 Faber Place, Ste 201, North Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2013a. Amendment 18B to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region with Final Environmental Impact Statement, Initial Regulatory Flexibility Analysis, Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2013b. Regulatory Amendment 15 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2014. Regulatory Amendment 14 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405.

SEDAR (Southeast Data, Assessment and Review). 2004. SEDAR 4: Deepwater Snapper Grouper Complex. Available at: http://www.sefsc.noaa.gov/sedar

SEDAR (Southeast Data, Assessment, and Review) 10. 2006. South Atlantic and Gulf of Mexico Gag Grouper. Southeast Data, Assessment and Review, 4055 Faber Place, Ste 201, North Charleston, S.C. 29405. Available at: http://www.sefsc.noaa.gov/sedar/

SEDAR 15. 2008. Stock Assessment Report 2. South Atlantic Greater Amberjack. Available from the SEDAR website: www.sefsc.noaa.gov/sedar/

SEDAR 17. 2008. Stock Assessment Report. South Atlantic Vermilion Snapper. Available from the SEDAR website: www.sefsc.noaa.gov/sedar/

SEDAR (Southeast Data, Assessment, and Review) 24. 2010. Stock Assessment Report: South Atlantic Red Snapper. Available from the SEDAR website: www.sefsc.noaa.gov/sedar/

SEDAR (Southeast Data, Assessment, and Review) 19. 2010. Stock Assessment Report: South Atlantic and Gulf of Mexico Black Grouper and South Atlantic Red Grouper. Available from the SEDAR website: www.sefsc.noaa.gov/sedar/

SEDAR (Southeast Data, Assessment and Review). 2011. SEDAR 23: Goliath Grouper. Available at: http://www.sefsc.noaa.gov/sedar/Sedar

SEDAR (Southeast Data, Assessment and Review). 2011. SEDAR 25: Blueline tilefish. Available at: http://www.sefsc.noaa.gov/sedar

SEDAR (Southeast Data, Assessment, and Review) 1 Update. 2012. Stock Assessment Update: South Atlantic Red Porgy. Southeast Data, Assessment and Review, 4055 Faber Place, Ste 201, North Charleston, S.C. 29405. Available at: http://www.sefsc.noaa.gov/sedar/

SEDAR (Southeast Data, Assessment and Review). 2012. SEDAR 17: Vermilion Snapper Update. Available at: http://www.sefsc.noaa.gov/sedar

SEDAR (Southeast Data, Assessment, and Review) 17 Update. 2012. Stock Assessment Update: South Atlantic Vermilion Snapper. Southeast Data, Assessment and Review, 4055 Faber Place, Ste 201, North Charleston, S.C. 29405. Available at: http://www.sefsc.noaa.gov/sedar/

SEDAR 32. Under Development. Data Workshop Report. South Atlantic Gray Triggerfish. Available from the SEDAR website: www.sefsc.noaa.gov/sedar/

Wilde, G. R. 2009. Does venting promote survival of released fish? Fisheries 34(1):20-28.

Appendix D. Regulatory Impact Review

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

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

1.1 Problems and Objectives

The purpose and need, issues, problems, and objectives of this action are presented in **Chapter 1** of Amendment 8 to the Dolphin Wahoo Fishery of the Atlantic Region/Snapper Grouper Amendment 34/Golden Crab Amendment 9, and are incorporated herein by reference.

1.2 Methodology and Framework for Analysis

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

1.3 Description of the Fishery

A description of the South Atlantic dolphin wahoo fishery is contained in **Chapter 3** of this amendment and is incorporated herein by reference.

1.4 Effects of the Management Measures

Action 1, Preferred Alternative 2, Sub-alternative 2c (Preferred) and **Preferred Alternative 3, Sub-alternative 3c (Preferred)** specify in clear terms when Accountability Measures (AMs) for golden crab and some snapper grouper species will be triggered. In each case, simply exceeding a sector ACL will not require paybacks of overages. The preferred alternatives will only require paybacks for the commercial sector if dolphin or wahoo are overfished and if the total ACL (commercial and recreational ACLs combined) are exceeded. The same conditions apply for the recreational sector but do not required the AM to be put in place unless the Regional Administrator believes after examining the best available science that recreational AMs are necessary. Since paybacks or shortened seasons have not occurred in the dolphin or wahoo fisheries there are no expected economic effects. **Preferred Alternative 4b** will allow the Regional Administrator to close the recreational sector fishery should it become clear that the fishery is going to meet or exceed its ACL prior to the end of the fishing season. This alternative will reduce the likelihood of an overage, or should an overage occur, reduce the amount of the overage. While ending a season early may have some minor, short-term, negative economic effects for the recreational sector, in the long run not exceeding ACLs is expected to have greater long-term positive effects.

Action 2, Alternative 4 (Preferred) was chosen as the preferred method to allocate dolphin between the commercial and recreational sectors. This change of allocation to 90% allocated to the recreational sector and 10% to the commercial sector, which given the current ABC and sector ACLs, more closely mirrors the soft-cap that was in place prior to the institution of ABCs and ACLs. There is more annual volatility in the commercial dolphin landings from year to year than there is in the recreational landings. This shift in allocations will help to keep the commercial sector from exceeding its ACL. Had ACLs and the **Alternative 1 (No Action)** allocations been in place in past years, there was a higher likelihood that the commercial sector would have exceeded its ACL. Neither sector has exceeded its ACL since they were instituted in 2012, nor is either sector likely to exceed its ACL under **Preferred Alternative 4**, if past fishing trends continue. Therefore, this action is not likely to have any economic effects, except that it will decrease the likelihood the commercial sector would have its season closed prematurely should it reach its sector ACL.

1.5 Public and Private Costs of Regulations

The preparation, implementation, enforcement, and monitoring of this or any Federal action involves the expenditure of public and private resources, which can be expressed as costs associated with the regulations. Costs associated with this action include, but are not limited to Council costs of document preparation, meeting, and other costs; NMFS administration costs of document preparation, meetings and review, and annual law enforcement costs. A preliminary estimate is up to $150,000 before annual law enforcement costs.

1.6 Determination of Significant Regulatory Action

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

Appendix E. Regulatory Flexibility Analysis

Introduction

The purpose of the Regulatory Flexibility Act (RFA) is to establish a principle of regulatory issuance that agencies shall endeavor, consistent with the objectives of the rule and of applicable statutes, to fit regulatory and informational requirements to the scale of businesses, organizations, and governmental jurisdictions subject to regulation. To achieve this principle, agencies are required to solicit and consider flexible regulatory proposals and to explain the rationale for their actions to assure that such proposals are given serious consideration. The RFA does not contain any decision criteria; instead, the purpose of the RFA is to inform the agency, as well as the public, of the expected economic impacts of various alternatives contained in the FMP or amendment (including framework management measures and other regulatory actions). The RFA is also intended to ensure that the agency considers alternatives that minimize the expected impacts while meeting the goals and objectives of the FMP and applicable statutes.

With certain exceptions, the RFA requires agencies to conduct a regulatory flexibility analysis for each proposed rule. The regulatory flexibility analysis is designed to assess the impacts various regulatory alternatives would have on small entities, including small businesses, and to determine ways to minimize those impacts. In addition to analyses conducted for the RIR, the regulatory flexibility analysis provides: 1) A statement of the reasons why action by the agency is being considered; 2) a succinct statement of the objectives of, and legal basis for the proposed rule; 3) a description and, where feasible, an estimate of the number of small entities to which the proposed rule will apply; 4) a description of the projected reporting, record-keeping, and other compliance requirements of the proposed rule, including an estimate of the classes of small entities which will be subject to the requirements of the report or record; 5) an identification, to the extent practical, of all relevant Federal rules which may duplicate, overlap, or conflict with the proposed rule; and, 6) a description of any significant alternatives to the proposed rule which accomplish the stated objectives of applicable statutes and which minimize any significant economic impact of the proposed rule on small entities.

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

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

The purpose and need of the proposed rule are presented in **Chapter 1**. The purpose of this proposed rule is to modify the accountability measures (AM) for several snapper grouper species (black grouper, mutton snapper, yellowtail snapper, unassessed snapper grouper species not in the deepwater complex, greater amberjack, red porgy, gag, golden tilefish, red grouper, snowy

grouper, and wreckfish) and golden crab, and adjust sector allocations for dolphin. Unassessed species not in the deepwater complex include three jacks (almaco jack, banded rudderfish, and lesser amberjack), five snappers (gray snapper, lane snapper, cubera snapper, dog snapper, and mahogany snapper), four grunts (white grunt, sailors choice, tomtate, and margate), six shallow water groupers (red hind, rock hind, yellowmouth grouper, yellowfin grouper, coney, and graysby), five porgies (jolthead porgy, knobbed porgy, saucereye porgy, scup, whitebone porgy), five other individual species (Atlantic spadefish, bar jack, scamp, hogfish, and gray triggerfish), and four species with zero annual catch limits or ACLs (Nassau grouper, Warsaw grouper, speckled hind, and goliath grouper).

The need for this proposed rule is to create a consistent regulatory environment while preventing unnecessary negative socio-economic impacts, and ensure overfishing does not occur in accordance with the provisions set forth in the Magnuson-Stevens Fishery Conservation and Management Act. In addition, this proposed rule addresses the need to base sector allocations of dolphin on the best scientific information available, and use the most appropriate allocation method to determine sector allocations.

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

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

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

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

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

Charter vessels and headboats (for-hire vessels) sell fishing services, which include the harvest of any species considered in this proposed rule, to recreational anglers. These vessels provide a platform for the opportunity to fish and not a guarantee to catch or harvest any species, though expectations of successful fishing, however defined, likely factor into the decision to purchase these services. Changing the allowable harvest of a species, including the application of AMs, only defines what can be kept and does not explicitly prevent the continued offer of for-hire fishing services. In response to a change in the allowable harvest, including a zero-fish limit

or fishery closure, catch and release fishing for a target species could continue, as could fishing for other species. Because the changes in the species considered in this proposed rule would not directly alter the service sold by these vessels, this proposed rule would not directly apply to or regulate their operations. For-hire vessels would continue to be able to offer their core product, which is an attempt to "put anglers on fish," provide the opportunity for anglers to catch whatever their skills enable them to catch, and keep those fish that they desire to keep and are legal to keep. Any change in demand for these fishing services, and associated economic affects as a result of changing a quota or application of AMs, would be a consequence of behavioral change by anglers, secondary to any direct effect on anglers, and, therefore, an indirect effect of the proposed regulatory action. Because the effects on for-hire vessels would be indirect, they fall outside the scope of the RFA. Recreational anglers, who may be directly affected by the changes in this proposed rule, are not small entities under the RFA.

NMFS has not identified any other small entities that would be expected to be directly affected by this proposed rule.

The snapper grouper fishery is a multi-species fishery and vessels generally land many species on the same trips. Because of the possibility that some vessels land only species not affected by this proposed rule, the following provides a description of vessels and revenues by focusing on the key species addressed in this action. The number of vessels and revenues (2013 dollars) are annual averages for the period 2009 through 2013, unless otherwise noted. Approximately 188 vessels landing at least one pound of black grouper generated about $54,000 in revenues from black grouper and other species; 266 vessels landing at least one pound of mutton snapper had revenues of about $51,000 from mutton snapper and other species; 252 vessels landing at least one pound yellowtail snapper had revenues of about $38,000 from yellowtail snapper and other species; 295 vessels landing at least one pound of greater amberjack had revenues of about $53,000 from greater amberjack and other species; 191 vessels landing at least one pound of red porgy had revenues of about $60,000 from red porgy and other species; 273 vessels landing at least one pound of gag had revenues of about $49,000 from gag and other species; 63 vessels landing at least one pound of golden tilefish had revenues of about $68,000 from golden tilefish and other species; 278 vessels landing at least one pound of red grouper had revenues of about $50,000 from red grouper and other species; 138 vessels landing at least one pound of snowy grouper had revenues of about $78,000 from snowy grouper and other species; and, 488 vessels landing at least one pound of dolphin had revenues of about $64,000 from dolphin and other species. Revenues for vessels landing at least one pound of wreckfish or golden crab can be approximated based on total revenues from landings of those species and the number of permits. As of October 10, 2014, there were 4 wreckfish permits and 10 golden crab permits. For fishing years 2009/2010 through 2013/2014, annual revenues from wreckfish landings averaged $752,881, implying average annual revenue per wreckfish vessel of about $188,000. From 2009 through 2013, annual revenues from golden crab landings averaged $1,419,843, implying average annual revenue per golden crab vessel of about $142,000.

Some vessels may have caught and landed any combination of the 12 key species and unassessed species not in the deepwater complex, and derived revenues are included in the foregoing estimates. Vessels that caught and landed any of the species may also operate in other fisheries, the revenues of which are not known and are not reflected in these totals. Based on

revenue information, all commercial vessels affected by the proposed rule can be considered small entities.

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

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

Substantial Number of Small Entities Criterion

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

Significant Economic Impact Criterion

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

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

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

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

The proposed rule consists of the following actions:

- The commercial ACL in the following fishing year will be reduced by the amount of a commercial overage only if the species is overfished and the total ACL is exceeded.
- The recreational ACL in the following fishing year will be reduced by the amount of a recreational overage only if the species is overfished and the total ACL is exceeded.
- If recreational landings reach or are projected to reach the recreational ACL, regardless of the species' stock status, NMFS will close the recreational sector for the remainder of the fishing year, unless the RA determines that a closure is unnecessary.
- The allocation for dolphin is 90 percent for the recreational sector and 10 percent for the commercial sector.

Because designating a species to be overfished presupposes a stock assessment has been completed, the payback provision in the proposed rule would not apply to unassessed species.

Therefore, harvest of unassessed species not in the deepwater complex and attendant economic benefits would remain unaffected by the proposed rule. It is noted that gray triggerfish, an unassessed species, is scheduled for a stock assessment beginning August 2014. Of the assessed species subject to the AM action in this proposed rule, only red porgy, and snowy grouper are considered overfished. Since 2009, the commercial sector exceeded its allocation for red porgy in 2013 and 2011 by less than 3 percent each year. On the other hand, recreational landings of red porgy have been well below the sector's allocation. Recreational landings of red porgy were 48 percent in 2013 and 51 percent in 2012 of the recreational sector's ACL. It is very unlikely then that the total red porgy ACL (sum of commercial and recreational sector ACLs) would be reached in the near future, so the payback provision would not affect harvesters of red porgy in the short term. The case with snowy grouper is slightly different from the other overfished species. The commercial ACL was exceeded by less than 10 percent in 2012, 2013, and 2014 while the recreational ACL was exceeded by more than 200 percent in 2012 and 2013. For the 2014 fishing season, recreational harvest of snowy grouper was closed on June 7, 2014. It is likely then that the payback provision would apply for snowy grouper and thus adversely affect the profits of commercial vessels. The amount of payback for overages and resulting profit loss to the commercial vessels cannot be estimated. However, considering the current rule of in-season closure for the commercial sector and proposed in-season closure for the recreational sector once the respective sector's ACL is reached or projected to be reached, it is likely that the amount of overage and resulting loss in profits to commercial vessels due to the payback provision would be small.

The proposed commercial/recreational sector re-allocation of the ACL for dolphin would increase the share of the commercial sector at the expense of the recreational sector. In principle, this would tend to directly increase the revenues or profits of commercial vessels and indirectly reduce the revenues or profits of for-hire vessels. In the absence of a study on the economic efficiency of existing allocation for dolphin, it cannot be ascertained if the net economic benefit of changing the allocation would increase net economic benefits to the Nation. In practice, neither the commercial vessels nor the for-hire vessels are expected to experience any profit changes in the near term based on historical landings for either sectors from 2009 through 2013. Using the proposed allocation ratio, current total ACL, and landings from 2009 through 2013, commercial landings of dolphin ranged from 33 percent to 80 percent of the sector's ACL; recreational landings ranged from 33 percent to 45 percent of the sector's ACL. For both sectors, the highest landings occurred in 2009 and the lowest in 2013.

The other two actions would have direct effects on anglers and indirect effects on for-hire vessels. Thus, there is no need to further discuss their effects.

Description of Significant Alternatives

Four alternatives, including the preferred alternative, were considered for reducing the following year's commercial ACL by the amount of commercial overage. The first alternative, the no action alternative, would not impose a payback provision for gag, golden tilefish, snowy grouper, wreckfish, and golden crab while retaining the payback provision for the other species addressed in this action. This alternative would not address the need to create a consistent regulatory environment while preventing unnecessary negative socio-economic impacts, and

ensure overfishing does not occur in accordance with the provisions set forth in the Magnuson-Stevens Act. The second alternative would require payback for overages only if the species is overfished, and the third alternative would require paybacks only if the combined total of commercial and recreational ACLs is exceeded. These two alternatives are more restrictive than the preferred alternative, and therefore would be expected to have potentially larger adverse economic effects on commercial and for-hire entities than the preferred alternative.

Five alternatives, including the preferred alternative, were considered for the commercial/recreational sector re-allocation of the ACL for dolphin. The first alternative, the no action alternative, would retain the current allocation of 92.46 percent for the recreational sector and 7.54 percent for the commercial sector. The second alternative would set an 87/13 percent recreational/commercial allocation. The third alternative would set an 86/14 percent recreational/commercial allocation. The fourth alternative, with three sub-alternatives, would modify the time series of data by which allocations are specified for the commercial and recreational sectors. The resulting allocation would be 90 percent recreational and 10 percent commercial under the first and second sub-alternatives, and 91 percent recreational and 9 percent commercial under the third sub-alternative. All these alternatives and sub-alternatives, including the preferred alternative, would have no short-term effects on commercial or for-hire vessel revenues and profits, because both sectors are not expected to reach their respective allocation under any of the alternatives or sub-alternatives. However, increasing the commercial sector allocation as in the preferred alternative would provide some added cushion before the commercial sector reaches its allocation. The proposed re-allocation is not expected to increase the probability of the recreational sector reaching its allocation because of the historically low recreational landings relative to the sector's allocation. The South Atlantic Council determined that the preferred alternative is the best management strategy based on the higher rate of variability in the commercial sector landings and the overall recent catch levels by sector.

The other actions pertain solely to the recreational sector. While they directly affect recreational anglers, they would affect for-hire vessels only in an indirect manner. Therefore, the issue of significant alternatives for these actions is not relevant.

Appendix F. Other Applicable Law

The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) (16 U.S.C. 1801 et seq.) provides the authority for fishery management in federal waters of the Exclusive Economic Zone. However, fishery management decision-making is also affected by a number of other federal statutes designed to protect the biological and human components of U.S. fisheries, as well as the ecosystems that support those fisheries. Major laws affecting federal fishery management decision-making are summarized below.

Administrative Procedures Act

All federal rulemaking is governed under the provisions of the Administrative Procedure Act (APA) (5 U.S.C. Subchapter II), which establishes a "notice and comment" procedure to enable public participation in the rulemaking process. Under the APA, National Marine Fisheries Service (NMFS) is required to publish notification of proposed rules in the *Federal Register* and to solicit, consider, and respond to public comment on those rules before they are finalized. The APA also establishes a 30-day waiting period from the time a final rule is published until it takes effect.

Coastal Zone Management Act

Section 307(c)(1) of the Federal Coastal Zone Management Act of 1972 (CZMA), as amended, requires federal activities that affect any land or water use or natural resource of a state's coastal zone be conducted in a manner consistent, to the maximum extent practicable, with approved state coastal management programs. The requirements for such a consistency determination are set forth in NOAA regulations at 15 C.F.R. part 930, subpart C. According to these regulations and CZMA Section 307(c)(1), when taking an action that affects any land or water use or natural resource of a state's coastal zone, NMFS is required to provide a consistency determination to the relevant state agency at least 90 days before taking final action.

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

Data Quality Act

The Data Quality Act (DQA) (Public Law 106-443) effective October 1, 2002, requires the government to set standards for the quality of scientific information and statistics used and disseminated by federal agencies. Information includes any communication or representation of knowledge such as facts or data, in any medium or form, including textual, numerical, cartographic, narrative, or audiovisual forms (includes web dissemination, but not hyperlinks to information that others disseminate; does not include clearly stated opinions).

Specifically, the DQA directs the Office of Management and Budget (OMB) to issue government wide guidelines that "provide policy and procedural guidance to federal agencies for ensuring and maximizing the quality, objectivity, utility, and integrity of information

disseminated by federal agencies." Such guidelines have been issued, directing all federal agencies to create and disseminate agency-specific standards to: 1) ensure information quality and develop a pre-dissemination review process; 2) establish administrative mechanisms allowing affected persons to seek and obtain correction of information; and 3) report periodically to OMB on the number and nature of complaints received.

Scientific information and data are key components of fishery management plans (FMPs) and amendments and the use of best available information is the second national standard under the Magnuson-Stevens Act. To be consistent with the DQA, FMPs and amendments must be based on the best information available. They should also properly reference all supporting materials and data, and be reviewed by technically competent individuals. With respect to original data generated for FMPs and amendments, it is important to ensure that the data are collected according to documented procedures or in a manner that reflects standard practices accepted by the relevant scientific and technical communities. Data will also undergo quality control prior to being used by the agency and a pre-dissemination review.

Endangered Species Act

The Endangered Species Act (ESA) of 1973, as amended, (16 U.S.C. Section 1531 et seq.) requires that federal agencies use their authorities to conserve endangered and threatened species. The ESA requires NMFS, when proposing a fishery action that "may affect" critical habitat or endangered or threatened species, to consult with the appropriate administrative agency (itself for most marine species, the U.S. Fish and Wildlife Service for all remaining species) to determine the potential impacts of the proposed action. Consultations are concluded informally when proposed actions may affect but are "not likely to adversely affect" endangered or threatened species or designated critical habitat. Formal consultations, including a biological opinion, are required when proposed actions may affect and are "likely to adversely affect" endangered or threatened species or adversely modify designated critical habitat. If jeopardy or adverse modification is found, the consulting agency is required to suggest reasonable and prudent alternatives. NMFS, as part of the Secretarial review process, will make a determination regarding the potential impacts of the proposed actions.

Marine Mammal Protection Act

The Marine Mammal Protection Act (MMPA) established a moratorium, with certain exceptions, on the taking of marine mammals in U.S. waters and by U.S. citizens on the high seas. It also prohibits the importing of marine mammals and marine mammal products into the United States. Under the MMPA, the Secretary of Commerce (authority delegated to NMFS) is responsible for the conservation and management of cetaceans and pinnipeds (other than walruses). The Secretary of the Interior is responsible for walruses, sea otters, polar bears, manatees, and dugongs.

Part of the responsibility that NMFS has under the MMPA involves monitoring populations of marine mammals to make sure that they stay at optimum levels. If a population falls below its optimum level, it is designated as "depleted." A conservation plan is then developed to guide research and management actions to restore the population to healthy levels.

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

Under the MMPA, to legally fish in a Category I and/or II fishery, a fisherman must take certain steps. For example, owners of vessels or gear engaging in a Category I or II fishery, are required to obtain a marine mammal authorization by registering with the Marine Mammal Authorization Program (50 CFR 229.4). They are also required to accommodate an observer if requested (50 CFR 229.7(c)) and they must comply with any applicable take reduction plans. The 2015 proposed List of Fisheries (79 FR 50589, August 25, 2014) classifies the snapper-grouper, dolphin wahoo, and golden crab fisheries as Category III fisheries. Category III designates fisheries with a remote likelihood or no known serious injuries or mortalities.

Essential Fish Habitat

The amended Magnuson-Stevens Act included a new habitat conservation provision known as Essential Fish Habitat (EFH) that requires each existing and any new FMPs to describe and identify EFH for each federally managed species, minimize to the extent practicable impacts from fishing activities on EFH that are more than minimal and not temporary in nature, and identify other actions to encourage the conservation and enhancement of that EFH. To address these requirements the South Atlantic Fishery Management Council has, under separate action, approved an environmental impact statement (SAFMC 1998) to address the new EFH requirements contained within the Magnuson-Stevens Act. Section 305(b)(2) requires federal agencies to obtain a consultation for any action that may adversely affect EFH. An EFH consultation will be conducted for this action.

Executive Orders

E.O. 12630: Takings

The Executive Order on Government Actions and Interference with Constitutionally Protected Property Rights that became effective March 18, 1988, requires each federal agency prepare a Takings Implication Assessment for any of its administrative, regulatory, and legislative policies and actions that affect, or may affect, the use of any real or personal property. Clearance of a regulatory action must include a takings statement and, if appropriate, a Takings Implication Assessment. The NOAA Office of General Counsel will determine whether a Taking Implication Assessment is necessary for this amendment.

E.O. 12866: Regulatory Planning and Review

Executive Order 12866: Regulatory Planning and Review, signed in 1993, requires federal agencies to assess the costs and benefits of their proposed regulations, including distributional impacts, and to select alternatives that maximize net benefits to society. To comply with E.O. 12866, NMFS prepares a Regulatory Impact Review (RIR) for all fishery regulatory actions that either implement a new fishery management plan or significantly amend an existing plan. RIRs provide a comprehensive analysis of the costs and benefits to society of proposed regulatory actions, the problems and policy objectives prompting the regulatory proposals, and the major alternatives that could be used to solve the problems. The reviews also serve as the basis for the agency's determinations as to whether proposed regulations are a "significant regulatory action" under the criteria provided in E.O. 12866 and whether proposed regulations would have a significant economic impact on a substantial number of small entities in compliance with the Regulatory Flexibility Act.

On June 20, 2013, the Small Business Administration issued a final rule revising the small business size standards for several industries effective July 22, 2013 (78 FR 37398). The rule increased the size standard for Finfish Fishing from $4.0 to $19.0 million, Shellfish Fishing from $4.0 to $5.0 million, and Other Marine Fishing from $4.0 to $7.0 million. In light of these new standards, NMFS has preliminarily determined that the proposed action would not have a significant economic impact on a substantial number of small entities.

E.O. 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations

This Executive Order mandates that each federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States and its territories and possessions. Federal agency responsibilities under this Executive Order include conducting their programs, policies, and activities that substantially affect human health or the environment, in a manner that ensures that such programs, policies, and activities do not have the effect of excluding persons from participation in, denying persons the benefit of, or subjecting persons to discrimination under, such, programs policies, and activities, because of their race, color, or national origin. Furthermore, each federal agency responsibility set forth under this Executive Order shall apply equally to Native American programs. Environmental justice considerations are discussed in detail in **Section 3.3.3**.

E.O. 12962: Recreational Fisheries

This Executive Order requires federal agencies, in cooperation with states and tribes, to improve the quantity, function, sustainable productivity, and distribution of U.S. aquatic resources for increased recreational fishing opportunities through a variety of methods including, but not limited to, developing joint partnerships; promoting the restoration of recreational fishing areas that are limited by water quality and habitat degradation; fostering sound aquatic conservation and restoration endeavors; and evaluating the effects of federally-funded, permitted, or authorized actions on aquatic systems and recreational fisheries, and documenting those effects. Additionally, it establishes a seven-member National Recreational Fisheries Coordination Council (Council) responsible for, among other things, ensuring that social and

economic values of healthy aquatic systems that support recreational fisheries are considered by federal agencies in the course of their actions, sharing the latest resource information and management technologies, and reducing duplicative and cost-inefficient programs among federal agencies involved in conserving or managing recreational fisheries. The Council also is responsible for developing, in cooperation with federal agencies, states and tribes, a Recreational Fishery Resource Conservation Plan - to include a five-year agenda. Finally, the Order requires NMFS and the U.S. Fish and Wildlife Service to develop a joint agency policy for administering the ESA.

E.O. 13132: Federalism

The Executive Order on Federalism requires agencies in formulating and implementing policies, to be guided by the fundamental federalism principles. The Order serves to guarantee the division of governmental responsibilities between the national government and the states that was intended by the framers of the Constitution. Federalism is rooted in the belief that issues not national in scope or significance are most appropriately addressed by the level of government closest to the people. This Order is relevant to FMPs and amendments given the overlapping authorities of NMFS, the states, and local authorities in managing coastal resources, including fisheries, and the need for a clear definition of responsibilities. It is important to recognize those components of the ecosystem over which fishery managers have no direct control and to develop strategies to address them in conjunction with appropriate state, tribes and local entities (international too).

No federalism issues have been identified relative to the actions proposed in this amendment. Therefore, consultation with state officials under Executive Order 12612 is not necessary.

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

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

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

Moving to Ecosystem-Based Management

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

Statements associated with subsequent amendments to Council FMPs will draw from or cite by reference the FEP.

The Fishery Ecosystem Plan for the South Atlantic Region encompasses the following volume structure:

FEP Volume I - Introduction and Overview of FEP for the South Atlantic Region
FEP Volume II - South Atlantic Habitats and Species
FEP Volume III - South Atlantic Human and Institutional Environment
FEP Volume IV - Threats to South Atlantic Ecosystem and Recommendations
FEP Volume V - South Atlantic Research Programs and Data Needs
FEP Volume VI - References and Appendices

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

The Fishery Ecosystem Plan, slated to be revised every 5 years, will again be the vehicle to update and refine information supporting designation and future review of EFH and EFH-HAPCs for managed species. Planning for the update is being conducted in cooperation with the Habitat Advisory Panel during the fall and winter of 2013 with initiation during 2014.

Ecosystem Approach to Deepwater Ecosystem Management

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

CE-BA 2 established annual catch limits (ACL) for octocorals in the South Atlantic as well as modifying the Fishery Management Unit (FMU) for octocorals to remove octocorals off the coast of Florida from the FMU (SAFMC 2011). The amendment also limited the possession of

managed species in the SMZs off South Carolina to the recreational bag limit for snapper grouper and coastal migratory pelagic species; modified sea turtle release gear requirements for the snapper grouper fishery based upon freeboard height of vessels; amends Council fishery management plans (FMPs) to designate or modify EFH and EFH-HAPCs, including the FMP for Pelagic Sargassum Habitat; amended the Coral FMP to designate EFH for deepwater Coral HAPCs designated under CE-BA 1; and amended the Snapper Grouper FMP to designate EFH-HAPCs for golden and blueline tilefish and the deepwater Marine Protected Areas. The final rule was published in the federal register on December 30, 2011, and regulations became effective on January 30, 2012.

Building from a Habitat to an Ecosystem Network to Support the Evolution

Starting with our Habitat and Environmental Protection Advisory Panel, the Council expanded and
fostered a comprehensive Habitat network in our region to develop the Habitat Plan of the South Atlantic Region completed in 1998 to support the EFH rule. Building on the core regional collaborations, the Council facilitated an expansion to a Habitat and Ecosystem network to support development of the FEP and CE-BA as well as coordinate with partners on other regional efforts.

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

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

SECOORA is one of 11 Regional Associations established nationwide through the US Integrated Ocean Observing System (IOOS) whose primary source of funding is via US IOOS through a 5-year cooperative agreement titled Coordinated Monitoring, Prediction, and Assessment to Support Decision-Makers Needs for Coastal and Ocean Data and Tools, but was recently awarded funding via a NOAA Regional Ocean Partnership grant through the Governors' South Atlantic Alliance. SECOORA is the regional solution to integrating coastal and ocean observing data in the Southeast United States to inform decision makers and the general public. The SECOORA region encompasses 4 states, over 42 million people, and spans the coastal ocean from North Carolina to the west Coast of Florida and is creating customized products to address these thematic areas: Marine Operations; Coastal

Hazards; Ecosystems, Water Quality, and Living Marine Resources; and Climate Change. The Council is a voting member and Council staff was recently re-elected to serve on the Board of Directors for the Southeast Coastal Regional Ocean Observing Association (SECOORA) to guide and direct priority needs for observation and modeling to support fisheries oceanography and integration into stock assessments through SEDAR. Cooperation through SECOORA is envisioned to facilitate the following:

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

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

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

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

In addition, the Council serves on the National Habitat Board and, as a member of the Southeast Aquatic Resource Partnership (SARP), has highlighted this collaboration by including the Southeast Aquatic Habitat Plan (SAHP) and associated watershed conservation restoration targets into the FEP. Many of the habitat, water quality, and water quantity conservation needs identified in the threats and recommendations Volume of the FEP are directly addressed by on-the-ground projects supported by SARP. This cooperation results in funding fish habitat restoration and conservation intended to increase the viability of fish populations and fishing opportunity, which also meets the needs to conserve and manage
Essential Fish Habitat for Council managed species or habitat important to their prey. To date,

SARP has funded 53 projects in the region through this program. This work supports conservation objectives identified in the SAHP to improve, establish, or maintain riparian zones, water quality, watershed connectivity, sediment flows, bottoms and shorelines, and fish passage, and addresses other key factors associated with the loss and degradation of fish habitats. SARP also developed the Southern Instream Flow Network (SIFN) to address the impacts of flow alterations in the Southeastern US aquatic ecosystems which leverages policy, technical experience, and scientific resources among partners based in 15 states. Maintaining appropriate flow into South Atlantic estuarine systems to support healthy inshore habitats essential to Council managed species is a major regional concern and efforts of SARP through SIFN are envisioned to enhance state and local partners ability to maintain appropriate flow rates.

Governor's South Atlantic Alliance (GSAA)

Initially discussed as a South Atlantic Eco-regional Compact, the Council has also cooperated with South Atlantic States in the formation of a Governor's South Atlantic Alliance (GSAA). This will also provide regional guidance and resources that will address State and Council broader habitat and ecosystem conservation goals. The GSAA was initiated in 2006. An Executive Planning Team (EPT), by the end of 2007, had created a framework for the Governors South Atlantic Alliance. The formal agreement between the four states (NC, SC, GA, and FL) was executed in May 2009. The Agreement specifies that the Alliance will prepare a "Governors South Atlantic Alliance Action Plan" which will be reviewed annually for progress and updated every five years for relevance of content. The Alliance's mission and purpose is to promote collaboration among the four states, and with the support and interaction of federal agencies, academe, regional organizations, non-governmental organizations, and the private sector, to sustain and enhance the region's coastal and marine resources. The Alliance proposes to regionally implement science-based actions and policies that balance coastal and marine ecosystems capacities to support both human and natural systems. The GSAA Action Plan was released in December 2010 and describes the four Priority Issue Areas that were identified by the Governors to be of mutual importance to the sustainability of the region's resources: Healthy Ecosystems; Working Waterfronts; Clean Coastal and Ocean Waters; and Disaster-Resilient Communities. The goals, objectives, actions, and implementation steps for each of these priorities were further described in the GSAA Implementation Plan released in July 2011. The final Action Plan was released on December 1, 2010 and marked the beginning of intensive work by the Alliance Issue Area Technical Teams (IATTs) to develop implementation steps for the actions and objectives. The GSAA Implementation Plan was published July 6, 2011, and the Alliance has been working to implement the Plan through the IATTs and two NOAA-funded Projects. The Alliance also partners with other federal agencies, academia, non-profits, private industry, regional organizations, and others. The Alliance supports both national and state-level ocean and coastal policy by coordinating federal, state, and local entities to ensure the sustainability of the region's economic, cultural, and natural resources. The Alliance has organized itself around the founding principles outlined in the GSAA Terms of Reference and detailed in the GSAA Business Plan. A team of natural resource managers, scientists, and information management system experts have partnered to develop a Regional Information Management System (RIMS) and recommend decision support tools that will support regional collaboration and decision-making. In addition to regional-level stakeholders, state and local coastal managers and decision makers will also be served by this project, which will enable ready access to new and existing data and information. The

collection and synthesis of spatial data into a suite of visualization tools is a critical step for long-term collaborative planning in the South Atlantic region for a wide range of coastal uses. The Council's Atlas presents the spatial representations of Essential Fish Habitat, managed areas, regional fish and fish habitat distribution, and fishery operation information and it can be linked to or drawn on as a critical part of the collaboration with the RIMS.

South Atlantic Landscape Conservation Cooperative

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

The SALCC developed a Strategic Plan through an iterative process that began in December 2011. The plan provides a simple strategy for moving forward over the next few years. An operations plan was developed under direction from the SALCC Steering Committee to redouble efforts to develop version 1.0 of a shared conservation blueprint by spring-summer of 2014. The SALCC is developing the regional blueprint to address the rapid changes in the South Atlantic including but not limited to climate change, urban growth, and increasing human demands on resources which are reshaping the landscape. While these forces cut across political and jurisdictional boundaries, the conservation community does not have a consistent cross-boundary, cross-organization plan for how to respond. The South Atlantic Conservation Blueprint will be that plan. The blueprint is envisioned to be a spatially-explicit map depicting the places and actions need to sustain South Atlantic LCC objectives in the face of future change. The steps to creating the blueprint include development of: indicators and targets (shared metrics of success); the State of the South Atlantic (past, present, and future condition of indicators); and a Conservation Blueprint. Potential ways the blueprint could be used include: finding the best places for people and organizations to work together; raising new money to implement conservation actions; guiding infrastructure development (highways, wind, urban growth, etc.); creating incentives as an alternative to regulation; bringing a landscape perspective to local adaptation efforts; and locating places and actions to build resilience after major disasters (hurricanes, oil spills, etc.). Integration of connectivity, function, and threats to river, estuarine and marine systems supporting Council managed species is supported by the SALCC and enhanced by the Council being a voting member of its Steering Committee.

In addition, the Council's Regional Atlas presents spatial representations of Essential Fish Habitat, managed areas, regional fish and fish habitat distribution, and fishery operation information and it be linked to or drawn on as a critical part of the collaboration with the recently developed SALCC Conservation Planning Atlas.

Building Tools to support EBM in the South Atlantic Region

The Council has developed a Habitat and Ecosystem Section of the website http://www.safmc.net/ecosystem/Home/EcosystemHome/tabid/435/Default.aspx and, in cooperation with the Florida Wildlife Research Institute (FWRI), developed a Habitat and Ecosystem Internet Map Server (IMS). The IMS was developed to support Council and regional partners' efforts in the transition to EBM. Other regional partners include NMFS Habitat Conservation, South Atlantic States, local management authorities, other Federal partners, universities, conservation organizations, and recreational and commercial fishermen. As technology and spatial information needs evolved, the distribution and use of GIS demands greater capabilities. The Council has continued its collaboration with FWRI in the now evolution to Web Services provided through the regional SAFMC Habitat and Ecosystem Atlas (http://ocean.floridamarine.org/safmc_atlas/) and the SAFMC Digital Dashboard (http://ocean.floridamarine.org/safmc_dashboard/). The Atlas integrates services for the following:

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

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

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

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

Web Services System Updates:

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

Ecosystem Based Action, Future Challenges and Needs

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

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

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

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

The Council actively comments on non-fishing projects or policies that may impact fish habitat. **Appendix A** of the Comprehensive Amendment Addressing Essential Fish Habitat in

Fishery Management Plans of the South Atlantic Region (SAFMC 1998b) outlines the Council's comment and policy development process and the establishment of a four-state Habitat Advisory Panel. Members of the Habitat Advisory Panel serve as the Council's habitat contacts and professionals in the field. AP members bring projects to the Council's attention, draft comment letters, and attend public meetings. With guidance from the Advisory Panel, the Council has developed and approved policies on:

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

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

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

South Atlantic Bight Ecopath Model

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

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

Essential Fish Habitat and Essential Fish Habitat Areas of Particular Concern

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

Snapper Grouper FMP

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

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

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

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

EFH-HAPCs for the snapper grouper complex to include the following deepwater Marine Protected Areas (MPAs) as designated in Snapper Grouper Amendment 14: Snowy Grouper Wreck MPA, Northern South Carolina MPA, Edisto MPA, Charleston Deep Artificial Reef MPA, Georgia MPA, North Florida MPA, St. Lucie Hump MPA, and East Hump MPA.

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

Shrimp FMP

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

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

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

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

Coastal Migratory Pelagics FMP

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

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

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

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

Golden Crab FMP

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

Spiny Lobster FMP

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

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

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

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

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

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

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

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

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

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

Dolphin and Wahoo FMP

EFH for dolphin and wahoo is the Gulf Stream, Charleston Gyre, Florida Current, and pelagic *Sargassum*. This EFH definition for dolphin was approved by the Secretary of Commerce on June 3, 1999 as a part of the South Atlantic Council's Comprehensive Habitat Amendment

(SAFMC 1998b) (dolphin was included within the Coastal Migratory Pelagics FMP at that time).

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

Pelagic *Sargassum* Habitat FMP

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

Actions Implemented That Protect EFH and EFH-HAPCs

Snapper Grouper FMP

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

Shrimp FMP

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

Pelagic Sargassum Habitat FMP

- Prohibited all harvest and possession of *Sargassum* from the South Atlantic EEZ south of the latitude line representing the North Carolina/South Carolina border (34° North Latitude).
- Prohibited all harvest of *Sargassum* from the South Atlantic EEZ within 100 miles of shore between the 34° North Latitude line and the Latitude line representing the North Carolina/Virginia border.

- Harvest of *Sargassum* from the South Atlantic EEZ is limited to the months of November through June.
- Established an annual Total Allowable Catch (TAC) of 5,000 pounds landed wet weight.
- Required that an official observer be present on each *Sargassum* harvesting trip. Require that nets used to harvest *Sargassum* be constructed of four inch stretch mesh or larger fitted to a frame no larger than 4 feet by 6 feet.

Coastal Migratory Pelagics FMP

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

Golden Crab FMP

- In the northern zone, golden crab traps can only be deployed in waters deeper than 900 feet; in the middle and southern zones traps can only be deployed in waters deeper than 700 feet.

  Northern zone - north of the 28°N. latitude to the North Carolina/Virginia border;
  Middle zone - 28°N. latitude to 25° N. latitude; and
  Southern zone - south of 25°N. latitude to the border between the South Atlantic and Gulf of Mexico Fishery Management Councils.

Coral, Coral Reefs and Live/Hard Bottom FMP

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

bottom damaging gear are prohibited including bottom longline, trawl (bottom and mid-water), dredge, pot or trap, or the use of an anchor, anchor and chain, or grapple and chain by all fishing vessels.

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

SAFMC Habitat and Environmental Protection Policy

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

SAFMC EFH Policy Statements

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

References:

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

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

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

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

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

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

Appendix H. Fishery Impact Statement

The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) requires a Fishery Impact Statement (FIS) be prepared for all amendments to fishery management plans (FMP). The FIS contains an assessment of the likely biological and socioeconomic effects of the conservation and management measures on: 1) fishery participants and their communities; 2) participants in the fisheries conducted in adjacent areas under the authority of another Council; and 3) the safety of human life at sea.

1.1 Actions Contained in Amendment 34 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region (Snapper Grouper FMP), Amendment 9 to the Fishery Management Plan for the Golden Crab of the South Atlantic Region (Golden Crab FMP), and Amendment 8 to the Fishery Management Plan for the Dolphin and Wahoo Fishery of the Atlantic (Dolphin Wahoo FMP) (Comprehensive Accountability Measure (AM) and Dolphin Allocation Amendment).

The actions proposed in this amendment include:

Action 1. Revising AMs for black grouper, mutton snapper, yellowtail snapper, gray triggerfish, hogfish, scamp, Atlantic spadefish, bar jack, snappers complex, jacks complex, shallow-water grouper complex, porgies complex, greater amberjack, red porgy, gag, golden tilefish, red grouper, snowy grouper, wreckfish (recreational), and golden crab (commercial).

Action 2. Revising sector allocations for dolphin.

1.2 Assessment of Biological Effects

For the action to revise AMs for select snapper grouper species and golden crab, under the preferred alternative the commercial sector payback would only be required if two criteria are met, the species (or a species in species group) is overfished *and* the total annual catch limit (ACL) has been exceeded. The likelihood of both of these scenarios taking place at the same time is small. This action may implement a commercial payback under such infrequently encountered simultaneous events that it may lead to a payback provision not being triggered when it is actually biologically necessary. Therefore, the preferred alternative may be associated with the lowest level of biological benefits compared to other sub-alternatives under consideration. However, the preferred alternatives in this action would also prohibit commercial and recreational harvest in-season if the sector ACLs for the species and species complexes addressed by this amendment was met or was projected to be met. Thus, since overages of the total ACL (commercial and recreational combined) would be unlikely to occur, any negative biological effects for the preferred alternative for the commercial sector payback are likely to be minor.

The preferred recreational sector AM would trigger a recreational ACL payback (in the form of a reduced recreational ACL and season length following an ACL overage) if a species is overfished *and* the total ACL is exceeded. This AM is the least likely to be implemented, compared to other alternatives, considering the infrequently encountered scenario of a total ACL being exceeded and a species being overfished in the same fishing year; thus, biological benefits would be limited. However, the preferred alternatives in this action would also prohibit commercial and recreational harvest in-season if the sector ACLs for the species and species complexes addressed by this amendment was met or was projected to be met. Thus, since overages of the total ACL (commercial and recreational combined) would be unlikely to occur, any negative biological effects for the preferred alternative for the recreational sector payback are likely to be minor.

The second recreational AM option under this action 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, which is the biologically preferable alternative, since a recreational closure could be implemented regardless of overfished status. However, 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.

For revising dolphin sector allocations, the South Atlantic Fishery Management Council's (South Atlantic Council) preferred allocation formula would establishes a 10% commercial allocation, which is similar to the soft cap commercial allocation of 13% that was in place prior to the Comprehensive ACL Amendment. Under this option, landings by both the commercial and recreational sector from 2008 through 2013 would have not exceeded their proposed sector ACL of 1,534,485 pounds whole weight (lbs ww) for the commercial sector, and 13,810,361 lbs ww for the recreational sector. In the same time period, the recreational sector landed approximately 50% of their ACL each year, showing a much smaller percent change in landings from year to year. Recreational landings over the time series ranged from 4.32 million pounds (mp) - 15.98 mp. Commercial landings over the time series ranged from 0.46 MP - 2.14 mp. Increasing the commercial allocation for dolphin from 7.54% to 10% could help minimize the effects of the landings volatility and the potential for exceeding the commercial ACL. Had ACLs been in place in 2009, it is likely the commercial sector would have exceeded their ACL that season. Regardless what option the South Atlantic Council were to choose under this action, harvest in both sectors is limited the respective sector ACL, and AMs are in place to minimize the risk of the ACLs being exceeded.

1.3 Assessment of Economic Effects

For Action 1, the preferred AMs for the commercial and recreational sectors would reduce the ACL the following season by the amount of the overage only if the species or one of the species in a species group is overfished <u>and</u> the combined landings of the commercial and recreational sectors for that species exceeded the overall ACL. Generally speaking, the probability of a species being both overfished and the total ACL being exceeded, is lower than just one of the conditions occurring. Therefore, the preferred AMs options have the lowest probability of triggering paybacks in response to ACL overages and would be least likely to

result in short-term economic impacts. The second preferred recreational AM option would give the Regional Administrator more flexibility to close a recreational sector during a season regardless of the status of the stock. This option would be more likely to prevent long term, direct economic effects compared to the other sub-alternative considered**.** Regardless of which alternatives are chosen under Action 1, none of the potential direct or indirect economic effects are expected to be significant when compared to the status quo.

Considering that, based on historical landings, neither the commercial sector nor the recreational sector would likely reach their respective ACLs under any of the alternatives, including the preferred alternative, it may be concluded that the action to modify sector allocations for dolphin would not result in significant short-term or long-term negative economic effects on either sector.

1.4 Assessment of the Social Effects

For Action 1, the preferred post season AM options under Action 1 would provide the most flexibility for triggering a payback AM and would be expected to be socially beneficial. Additionally, the AMs would be more consistent with AMs for other species such as king mackerel and Spanish mackerel. However, the in-season closure AM for the recreational sector could have negative effects on recreational fishing opportunities and for-hire businesses for the stocks that do not have an in-season AM in place for the recreational catch.

For Action 2, the higher the allocation, the more short-term and long-term benefits would accrue for the sector by allowing continued level of harvest and possibly room for growth in the future. The method of calculating the proportion to each sector under this action could result in some concerns of fairness from each sector, but in general none of the allocation alternatives under consideration are expected to result in significant social impacts.

1.5 Assessment of Administrative Effects

Overall, the administrative impacts of Actions 1 and 2 are likely to be minor. Neither action would result in a significant increase or decrease in staff time, agency cost, industry participation, or enforcement effort.

1.6 Assessment of Effects on Safety at Sea

Overall, management modifications contained in the Generic AM and Dolphin Allocation Amendment would not present safety at sea concerns. Neither of the actions in the amendment would have safety implications. Because the actions contained in the Generic AM and Dolphin Allocation Amendment are not expected to raise any safety at sea issues, no related mitigation measures are needed to counter any safety concerns.