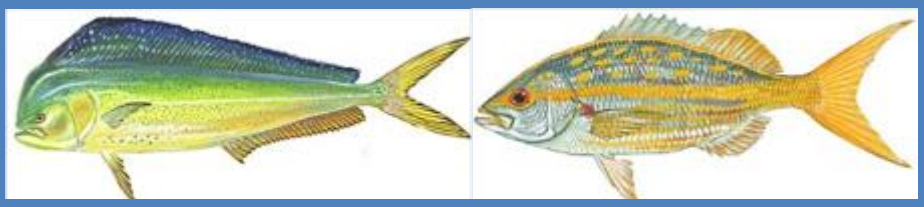
Amendment 10 to the Fishery Management Plan for the Dolphin Wahoo Fishery of the Atlantic and Amendment 44 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region



Modify sector allocations and accountability measures for dolphin and yellowtail snapper, revise the definition of optimum yield in the dolphin fishery, and revise authorized gear types for the possession of dolphin or wahoo.

DRAFT Public Hearing Document

December 2016

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<u>Note:</u> Landings data for 2015 and 2016 will be updated and included in the Public Hearing Document in January 2017.

Definitions, Abbreviations, and Acronyms Used in the Document

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

Amendment 10 to the Fishery Management Plan for the Dolphin and Wahoo Fishery of the Atlantic and Amendment 44 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region

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

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Table of Contents

List of Appendices

List of Figures

List of Table

SUMMARY

Amendment 10 to the Fishery Management Plan for the Dolphin and Wahoo Fishery of the Atlantic and Amendment 44 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region

Why is the South Atlantic Council Taking Action?

In 2015, the commercial sectors for dolphin in the Atlantic and yellowtail snapper sector in the South Atlantic met their sector annual catch limits (ACL) and were closed before the end of the fishing year. The commercial dolphin sector closed on June 30, 2015, and the commercial yellowtail snapper sector closed on October 31, 2015. In 2015, the recreational sector harvested a little over half of the recreational ACL for each species respectively. As a result, approximately 6.7 million pounds whole weight (lbs ww) of the total ACL for dolphin and 626,000 lbs ww of the total ACL for yellowtail snapper was unharvested.

Because there were commercial closures for these species but the total ACL was not met, the South Atlantic Fishery Management Council (South Atlantic Council) is considering options to temporarily or permanently reallocate a portion of the total ACL. This action is intended to prevent or delay closures of the commercial sectors for dolphin and yellowtail snapper. The South Atlantic Council is also considering changes to the definition of optimum yield for dolphin portion of the dolphin wahoo fishery to better address the needs of the commercial and recreational sectors. In addition, the South Atlantic Council is examining options for changes to the allowable gear types for the possession of dolphin or wahoo in response to a request from commercial fishermen in New England who would like to harvest dolphin by hook and line gear while in the possession of lobster pots.

Landings of dolphin (lbs ww) during 2005-2015. Data includes North, Mid- and South Atlantic Regions. The current total ACL for dolphin is 15,344,846 lbs ww, commercial ACL is 1,534,485 lbs ww, and the recreational ACL is 13,810,361 lbs ww (as of February 22, 2016).

Year	Commercial (lbs ww)	Recreational (lbs ww)	Total (lbs ww)
2005	577,655	8,629,313	9,206,968
2006	650,121	8,898,207	9,548,328
2007	998,023	9,598,841	10,596,864
2008	835,177	7,833,547	8,668,724
2009	1,296,014	7,570,195	8,866,209
2010	715,334	6,243,399	6,958,733
2011	792,293	6,522,301	7,314,594
2012	709,131	6,099,788	6,808,919
2013	616,953	4,444,755	5,061,708
2014	1,291,092	5,240,659	6,531,751
2015	1,098,135	7,586,553	8,684,688
Average	870,903	7,151,596	8,022,499

Note: Commercial data from ACL_FILES_09142016.xlsx.
Recreational data comes from MRIPACLspec_rec81_16wv2_15Aug16_w14and15LACreel.xlsx

Landings (lbs ww) of yellowtail snapper during 2005-2015 in the South Atlantic Region. The current total ACL for yellowtail snapper is 3,037,500 lbs ww, commercial ACL is 1,596,510 lbs ww, and the recreational ACL is 1,440,990 lbs ww.

Year	Commercial (lbs ww)	Recreational (lbs ww)	Total (lbs ww)
2005	814,899	576,247	1,391,146
2006	694,958	560,320	1,255,278
2007	628,608	786,399	1,415,007
2008	910,323	746,313	1,656,636
2009	1,085,281	348,536	1,433,817
2010	1,126,231	434,259	1,560,490
2011	1,125,220	390,998	1,516,218
2012	1,439,586	493,409	1,932,995
2013	1,328,931	666,026	1,994,957
2014	1,209,945	933,759	2,143,704
2015	1,620,885	791,157	2,412,042
Average	1,089,533	611,584	1,701,117

Notes: Commercial data from ACL_FILES_09142016.xlsx.
Recreational data comes from MRFSSassess_rec81_16wv2_15Aug16_w14and15LACreel.
Data were post-stratifiedstratified so Monroe County landings werewere given to the South Atlantic.

Chapter 1. Introduction

1.1 What Actions Are Being Proposed in Dolphin Wahoo Amendment 10/Snapper Grouper Amendment 44?

The South Atlantic Fishery Management Council (South Atlantic Council) is considering allocation options that would minimize the risk of harvest closures and allow flexibility in management of the annual catch limit (ACL) for dolphin and yellowtail snapper. Additionally, the South Altantic Council is considering redefining optimal yield (OY) and allowing new gear in the dolphin fishery.

1.2 Who is Proposing the Management Measures?

South Atlantic Fishery Management Council

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

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

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

1.3 Where is the Project Located?

The federal snapper grouper and dolphin wahoo fisheries are located off the eastern United States (Atlantic) in the 3-200 nautical miles U.S. EEZ (**Figure 1-1**).

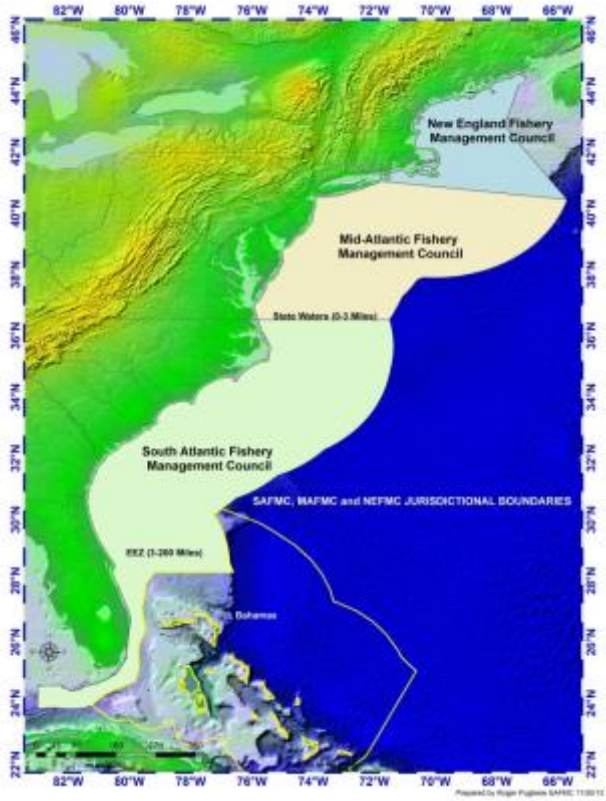


Figure 1-1. Jurisdictional boundaries of the Dolphin and Wahoo Fishery Management Plan for the Atlantic as managed by the South Atlantic Fishery Management Council.

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

In 2015, the commercial sectors for dolphin in the Atlantic and yellowtail snapper fishery in the South Atlantic met their sector ACLs and were closed before the end of the fishing year. The commercial dolphin sector closed on June 30, 2015, and the commercial sector for yellowtail snapper closed on October 31, 2015. In 2015, the recreational sector harvested a little over half of the recreational ACL for each species respectively. As a result, approximately 6.8 million pounds of the total ACL for dolphin and 650,000 pounds whole weight of the total ACL for yellowtail snapper were not harvested.

Because there were closures for these species due to meeting the commercial ACL but the total ACL was not met, the South Atlantic Fishery Management Council (South Atlantic Council) is considering options to reallocate a portion of the total ACL between sectors. This action is intended to prevent or delay closures in the commercial sectors for dolphin and yellowtail snapper. The South Atlantic Council is also considering changes to the definition of OY in the dolphin portion of the dolphin wahoo fishery to better address the needs of the commercial and recreational sectors. In addition, the South Atlantic is considering changes to the allowable gear types for the possession of dolphin or wahoo in response to a request from commercial fishermen in New England that would like to harvest dolphin by hook and line gear while in the possession of lobster pot gear.

Purpose for Action

The *purpose* of this amendment is to modify sector allocations, update the sector annual catch limits and accountability measures, and minimize the risk of in-season closures for dolphin and yellowtail snapper.

Need for Action

The *need* for the amendment is to better achieve optimum yield for dolphin and yellowtail snapper while minimizing, to the extent possible, adverse social and economic effects due to closures.

1.5 What is the history of management and the Federal regulations for dolphin, wahoo, and yellowtail snapper?

Regulations affecting the snapper grouper fishery in the South Atlantic were first implemented in 1983. **Table 1.5.1** provides a summary of regulations affecting yellowtail snapper since 1983. Refer to **Appendix D** for the management history of the snapper grouper fishery.

Table 1.5.1. Summary of regulations affecting the yellowtail snapper fishery since 1983.

Management Action	Amendment	Effective date
-Minimum size limit of 12 inches total length (TL) for yellowtail snapper	FMP	August 1983
-Prohibited longlines south of St. Lucie Inlet, FL	Amendment 7	January 1995
-Limited entry program for snapper grouper fishery	Amendment 8	August 1998
-MSY proxy for yellowtail snapper = 30% static spawning potential ratio; OY proxy is 40% static spawning potential ratio; MSST = $1\text{-}M*B_{MSY}$	Amendment 11	December 1999
-Prohibited the sale of snapper grouper harvested or possessed in the EEZ under the bag limits and prohibited the sale of snapper-grouper harvested or possessed under the bag limits by vessels with a Federal charter vessel/headboat permit for South Atlantic snapper-	Amendment 15B	February 2010

grouper were harvested.		
Reorganized FMUs to 6 complexes (deepwater, jacks, snappers, grunts, shallow-water groupers, porgies); -Established acceptable biological catch (ABC) control rule and established ABCs, ACLs, and AMs for species not undergoing overfishing, including yellowtail snapper; -Established jurisdictional allocation for yellowtail ABC between the SA and Gulf; Specified allocations between the commercial and recreational sectors for species not undergoing overfishing;	Comprehensive ACL Amendment	April 2012
-Modified ACLs and OY for yellowtail snapper; -Modified the commercial and recreational yellowtail snapper fishing years and commercial spawning season closure	Regulatory Amendment 15	September 2013
-Modified the definition of the overfished threshold (MSST) for red snapper, blueline tilefish, gag, black grouper, yellowtail snapper, vermilion snapper, red porgy, and greater amberjack.	Regulatory Amendment 21	November 2014
Modified accountability measures for snapper grouper species (including yellowtail snapper) to make them consistent	Amendment 34	February 2016
-Revised the commercial and recreational fishing year for yellowtail snapper.	Regulatory Amendment 25	August 2016

Dolphin and wahoo were originally a part of the Fishery Management Plan for Coastal Pelagic Resources in the Gulf of Mexico and South Atlantic Region. Under that plan, a control date of May 21, 1999, for possible future limited entry was established for the commercial dolphin and wahoo fishery in the South Atlantic.

Dolphin and wahoo regulations were first implemented in 2003 through a separate Fishery Management Plan for the Dolphin and Wahoo Fishery of the Atlantic (SAFMC 2003). That plan established:

1. A separate management unit for dolphin and wahoo in the U.S. Atlantic.
2. A dealer permit.
3. For-hire and commercial vessel permits.
4. For-hire and commercial operator permits.
5. Reporting requirements.
6. Maximum Sustainable Yield and Optimal Yield (OY).
7. Defined overfishing.
8. A management framework.
9. Prohibit recreational sale of dolphin or wahoo except by for-hire vessels with a commercial permit.
10. A 1.5 million lb or 13% of the total catch soft cap for the commercial sector.
11. A recreational bag limit of 10 dolphin per person, 60 dolphin per vessel maximum.
12. A minimum size limit of 20 inches fork length off Georgia and Florida.
13. A commercial trip limit of 500 lb of wahoo with no at-sea transfer.
14. A recreational bag limit of 2 wahoo per person, per day.
15. Allowable gear for dolphin and wahoo in the Atlantic EEZ as longline; hook and line gear including manual, electric, or hydraulic rod and reels; bandit gear; handline; and spearfishing gear (including powerheads).
16. A prohibition on 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.
17. The fishing year of January 1 to December 31 for the dolphin and wahoo fishery.
18. Essential Fish Habitat (EFH) for dolphin and wahoo as the Gulf Stream, Charleston Gyre, and Florida Current.
19. Essential Fish Habitat-Habitat Areas of Particular Concern (EFH-HAPC) for dolphin and wahoo in the Atlantic to 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; and The "Wall" off of the Florida Keys.

The Fishery Management Plan for Pelagic *Sargassum* Habitat in the South Atlantic Region (SAFMC 2002) and the Comprehensive Ecosystem-Based Amendment 1 (SAFMC 2009a) designated additional EFH and EFH-HAPCs for dolphin and wahoo.

The Comprehensive Annual Catch Limit (ACL) Amendment (SAFMC 2011) established the acceptable biological catch (ABC) control rule, ABC, annual catch limits, OY, and accountability measures in the dolphin and wahoo fishery. The Comprehensive ACL Amendment also set an annual catch target for the recreational sector dolphin and wahoo.

1.6 What are the recreational regulations for dolphin, wahoo, and yellowtail snapper in Florida State Waters?

In Florida, dolphin, wahoo, and snapper grouper species are required to be landed whole in State waters. Current regulations in the State of Florida (Atlantic side) for dolphin are a bag limit of 10 fish per person or 60 per vessel (whichever is less), a size limit of 20 inch fork length, and no seasonal closure. For more information, see: https://www.flrules.org/gateway/ChapterHome.asp?Chapter=68B-41

Wahoo has a 2 fish per person bag limit, no minimum size limit, and no seasonal closure. For more information, see: https://www.flrules.org/gateway/ChapterHome.asp?Chapter=68B-57

For Florida snapper grouper regulations, see: https://www.flrules.org/gateway/ChapterHome.asp?Chapter=68B-14

1.7 What are annual catch limits and accountability measures and why are they required?

A reauthorization of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) in 2007 required implementation of new tools to end and prevent overfishing to achieve the optimum yield (OY) from a fishery. The tools are annual catch limits (ACLs) and accountability measures (AMs). An ACL is the level of annual catch of a stock that, if met or exceeded, triggers some corrective action. The AMs are the corrective action, and they are management controls to prevent ACLs from being exceeded and to correct overages of ACLs if they occur. Two examples of AMs include an in-season closure if catch is projected to reach the ACL and reducing the ACL by an overage that occurred the previous fishing year. The South Atlantic Council took action in Amendment 34 to the Snapper Grouper FMP (SAFMC 2015) to enhance the effectiveness of the AMs for yellowtail snapper.

Definitions

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

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

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

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

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

Optimum Yield (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.

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

How does the South Atlantic Council determine the annual catch limits?

ACLs are derived from the overfishing limit (OFL) and the acceptable biological catch (ABC) **(Figure 1.7.1)**. The South Atlantic Council's Scientific and Statistical Committee (SSC) determines the OFL from the stock assessment and the ABC (based on the South Atlantic Council/SSC's ABC control rule), and recommends those to the South Atlantic Council. The OFL is an estimate of the catch level above which overfishing is occurring. The ABC is defined as the level of a stock or stock complex's annual catch that accounts for the scientific uncertainty in the estimate of OFL and any other scientific uncertainty.

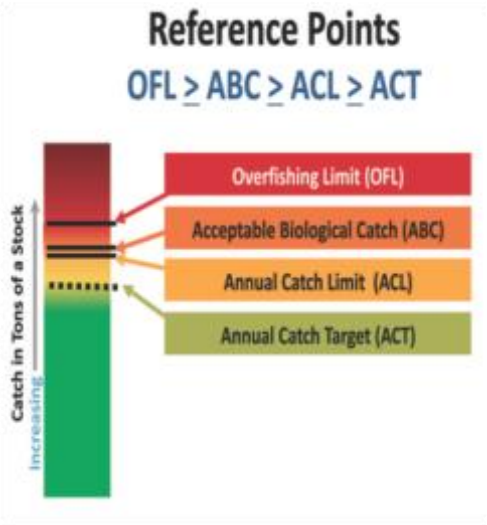


Figure 1.7.1. The relationship of the reference points to each other.

The Magnuson-Stevens Act National Standard 1 (NS 1) guidelines establish the relationship between conservation and management measures, preventing overfishing, and achieving OY from each stock, stock complex, or fishery. The NS 1 guidelines discuss the relationship of the OFL to the maximum sustainable yield (MSY) and ACL to OY. The OFL is an annual amount of catch that corresponds to the estimate of maximum fishing mortality threshold applied to a stock; MSY is the long-term average of such catches. The ACL is the limit that triggers AMs and is the management target for the species. Management measures for a fishery should, on an annual basis, prevent the ACL from being exceeded. The long-term objective is to achieve OY through annual achievement of an ACL. The NS 1 guidelines state that if OY is set close to MSY, the conservation and management measures in the fishery must have very good control of the amount of catch to achieve the OY without overfishing.

The updated framework procedure included in Amendment 17B to the Snapper Grouper FMP (SAFMC 2010b) allows for the timely establishment and adjustment of ACLs if the South Atlantic Council and the National Marine Fisheries Service determine they are necessary.

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

> *…if catch exceeds the ACL for a given stock or stock complex more than once in the last four years, the system of ACLs and AMs should be*

re-evaluated, and modified if necessary, to improve its performance and effectiveness (74 FR 3178).

If an evaluation concludes that the ACL is chronically exceeded for any one species or species group, and post-season AMs are repeatedly needed to correct for ACL overages, adjustments to management measures would be made. As stated previously, the updated framework procedure implemented through Amendment 17B (SAFMC 2010b) could be utilized to modify management measures such as bag limits, trip limits, seasonal closures, and gear prohibitions in a timely manner. Using the regulatory amendment process to implement such changes, if needed, is the timeliest method of addressing issues associated with repeated ACL overages through permanent regulations..

With vastly improved commercial monitoring mechanisms now in place in the South Atlantic Region, it is unlikely that repeated commercial ACL overages would occur. The National Marine Fisheries Service Commercial Landings Monitoring (CLM) system came online in June 2012 and is now being used to track commercial landings of federally managed fish species. The CLM system can track dealer reporting compliance with a direct link to the permits database at the NMFS Southeast Regional Office. Additionally, the Joint Seafood Dealer Reporting Amendment (GMFMC & SAFMC 2013b), which became effective on August 7, 2014, requires electronic reporting, increases required reporting frequency for dealers to once per week, and requires a single dealer permit for all finfish dealers in the Southeast Region. The CLM system and actions in the Joint Generic Dealer Reporting amendment are expected to provide more timely and accurate data reporting and would thus reduce the incidence of quota overages.

Harvest monitoring efforts in the recreational sector are also improving in the South Atlantic Region. On January 27, 2014, regulations became effective requiring headboats to report their landings electronically once per week (Generic Headboat Amendment, GMFMC & SAFMC 2013a). The Southeast Fisheries Science Center is also developing an electronic reporting system for charter boats operating in the Southeast Region and the Gulf of Mexico and South Atlantic Councils are developing amendments that would require electronic reporting for charterboats with a set reporting frequency.

Chapter 2. Proposed Action

2.1 Action 1. Revise definition of optimum yield (OY) for dolphin.

Alternative 1 (No Action). Optimal yield (OY) is equal to the total ACL (15,344,846 lbs ww). (Note: Total ACL=ABC=OY)

Alternative 2. Optimal yield (OY) is equal to the Commercial ACL (1,534,485 lbs ww) + Recreational ACT (ACT equals [sector ACL *(1-PSE)] or [ACL*0.5], whichever is greater).

Alternative 3. Optimal yield (OY) is equal to 75% MSY

Alternative 4. Optimal yield (OY) is the long-term average catch, which is not designed to exceed the total ACL, and will fall between the total ACL (15,344,846 lbs ww) and ACT (ACT equals [sector ACL *(1-PSE)] or [ACL*0.5], whichever is greater).

2.1.1 Comparison of Alternatives

2.2 Action 2. Revise authorized gear types for the harvest of dolphin or wahoo

Alternative 1 (No Action). The following are the only authorized gear types in the fisheries for dolphin and wahoo in the Atlantic EEZ: Automatic reel, bandit gear, handline, pelagic longline, rod and reel, and spearfishing gear (including powerheads). A person aboard a vessel in the Atlantic EEZ that has on board gear types other than authorized gear types may not possess a dolphin or wahoo.

Alternative 2. Add lobster pot to list of authorized gear types for the harvest of dolphin or wahoo.

Alternative 3. Remove gear limitations for the harvest of dolphin or wahoo.

2.2.1 Comparison of Alternatives

2.3 Action 3: Revise sector allocations and accountability measures for dolphin.

Alternative 1 (No Action). The current allocation for the recreational sector for dolphin is 90% (13,810,361 lbs ww) of the total ACL. The current allocation for the commercial sector for dolphin is 10% (1,534,485 lbs ww) of the total ACL.

The current commercial AM includes an in-season closure to take place if the commercial ACL is met or projected to be met. If the commercial ACL is exceeded, it will be reduced by the amount of the commercial overage in the following fishing year only if the species is overfished and the total ACL is exceeded.

The current recreational AM includes a shortening of the recreational season that may be triggered if the recreational ACL is exceeded, but only after recreational landings have be monitored for persistence in increased landings. The length of the recreational season will not be reduced if the RA determines the best available science shows that it is not necessary. If a reduction is necessary, the recreational season may be reduced and the ACL in the following fishing year will be reduced by the amount of the recreational overage only if the species is overfished and the total ACL is exceeded.

Alternative 2. Maintain the current sector ACLs, but revise the AM to prohibit harvest for both sectors once a portion of the total ACL is landed. Note: Total ACL=ABC=OY.

Sub-alternative 2a: Sectors will not close until 60% (9,206,908 lbs ww) of the total ACL is landed.
Sub-alternative 2b: Sectors will not close until 70% (10,741,392 lbs ww) of the total ACL is landed.
Sub-alternative 2c: Sectors will not close until 80% (12,275,877 lbs ww) of the total ACL is landed.
Sub-alternative 2d: Sectors will not close until 90% (13,810,361 lbs ww) of the total ACL is landed.
Sub-alternative 2e: Sector will not close until 100% (15,344,846 lbs ww) of the total ACL is landed.

Table 2.3.1. Percentage of the total ACL and ACL value (lbs ww) resulting in a closure of both the commercial and recreational sectors for dolphin.

Sub-alternative	Percentage of Total ACL (%)	ACL (lbs ww)
Sub-alternative 2a	60	9,206,908
Sub-alternative 2b	70	10,741,392
Sub-alternative 2c	80	12,275,877
Sub-alternative 2d	90	13,810,361
Sub-alternative 2e	100	15,344,846

Alternative 3. Set aside a portion of the total ACL that can be used by either sector as a common pool allocation. Note: Total ACL=ABC=OY.

Sub-alternative 3a: 1% (153,448 lbs ww) of the total ACL becomes a common pool category. The remaining total ACL (15,191,398 lbs ww) is split between the recreational sector (13,672,258 lbs ww) and the commercial sector (1,518,140 lbs ww) according to the current allocation.

Sub-alternative 3b: 2.5% (383,621 lbs ww) of the total ACL becomes a common pool category. The remaining total ACL (14,961,225 lbs ww) is split between the recreational sector (13,465,103 lbs ww) and the commercial sector (1,496,123 lbs ww) according to the current allocation.

Sub-alternative 3c: 5% (767,242 lbs ww) of the total ACL becomes a common pool category. The remaining total ACL (14,577,604 lbs ww) is split between the recreational sector (13,119,844 lbs ww) and the commercial sector (1,457,760 lbs ww) according to the current allocation.

Sub-alternative 3d: 10% (1,534,485 lbs ww) of the total ACL becomes a common pool category. The remaining total ACL (13,810,361 lbs ww) is split between the recreational sector (12,429,325 lbs ww) and the commercial sector (1,381,036 lbs ww) according to the current allocation.

Table 2.3.2. Commercial and Recreational ACLs (lbs ww) under Sub-alternatives 3a-3d.

Sub-alternative	Common pool ACL (lbs ww) / Percentage (%) of Total ACL	Remaining Total ACL (lbs ww)	Commercial ACL (lbs ww)	Recreational ACL (lbs ww)	*Commercial ACL (lbs ww) + common pool ACL	*Recreational ACL (lbs ww) + common pool ACL
Sub-alternative 3a	153,448/ 1%	15,191,398	1,518,140	13,672,258	1,671,588	13,825,706
Sub-alternative 3b	383,621/ 2.5%	14,961,225	1,496,123	13,465,103	1,879,744	13,848,724
Sub-alternative 3c	767,242/ 5%	14,577,604	1,457,760	13,119,844	2,225,002	13,887,086
Sub-alternative 3d	1,534,485/ 10%	13,810,361	1,381,036	12,429,325	2,915,521	13,963,810

* Only one sector would be allowed to utilize the common pool at a given time to avoid exceeding the total ACL.

Alternative 4: If the sector ACL is not met in a fishing year, establish a sector ACL "credit" derived from the difference between the total pounds of dolphin landed in the sector and the sector ACL for that same fishing year. In the following fishing year, the credit would transfer to the sector's ACL and could be used if the sector ACL is met or exceeded. The sector ACL credit would only apply if a minimum percentage of the total ACL was not harvested in a given fishing year (Draft Sub-alternatives 4a-4c), and only a certain percentage of the unharvested sector ACL from the previous fishing year would make up the carry-over credit (Draft Sub alternatives 4d-4f). The carry-over credit would remain until used, but could not exceed a certain percentage of

the sector ACL (Draft Sub-alternatives 4g-4j) and the total harvest when the carryover is used could not exceed the total ACL. Note: Total ACL=ABC=OY.

Remaining Total ACL Threshold (MUST CHOOSE ONE):
Sub-alternative 4a: At least 15% (2,301,727 lbs) of the total ACL remains unharvested.
Sub-alternative 4b: At least 20% (3,068,969 lbs) of the total ACL remains unharvested.
Sub-alternative 4c: At least 25% (3,836,212 lbs) of the total ACL remains unharvested.

Percentage of Remaining sector ACL to Transfer (MUST CHOOSE ONE):
Sub-alternative 4d: The carry-over credit will be equal to 10% of the unharvested sector ACL.
Sub-alternative 4e: The carry-over credit will be equal to 15% of the unharvested sector ACL.
Sub-alternative 4f: The carry-over credit will be equal to 20% of the unharvested sector ACL.

Percentage cap for carry-over credit in relation to sector ACL (MUST CHOOSE ONE):
Sub-alternative 4g: The carry-over credit could not exceed 10% of the sector ACL.
Sub-alternative 4h: The carry-over credit could not exceed 20% of the sector ACL.
Sub-alternative 4i: The carry-over credit could not exceed 30% of the sector ACL.
Sub-alternative 4j: The carry-over credit could not exceed 100% of the sector ACL.

Alternative 5: At the beginning of the fishing year, conditionally transfer a certain percentage (Sub-alternatives 5a-5d) of the ACL from a sector that is not landing its ACL to the other sector that is landing all or almost all of its ACL in the next fishing year, if the minimum landings threshold is not met for the donating sector (Sub-alternatives 5e-5g). If the receiving sector does not land at least 90% of its unadjusted ACL, this transfer will not occur. The highest landings from the donating sector based on available finalized data from the five years prior will be used as criteria to determine if allocation transfers will occur. Note: Total ACL=ABC=OY.

Conditional Quota Transfer (MUST CHOOSE ONE):
Sub-alternative 5a: Conditionally transfer 1% of the unadjusted ACL of one sector to the other sector.
Sub-alternative 5b: Conditionally transfer 2.5% of the unadjusted ACL of one sector to the other sector.
Sub-alternative 5c: Conditionally transfer 5% of the unadjusted ACL of one sector to the other sector.
Sub-alternative 5d: Conditionally transfer 10% of the unadjusted ACL of one sector to the other sector.

Donating sector's ACL Minimum Threshold (MUST CHOOSE ONE), if the donating sector's landings are:
Sub-alternative 5e: less than 50% of its unadjusted ACL.
Sub-alternative 5f: less than 65% of its unadjusted ACL.
Sub-alternative 5g: less than 75% of its unadjusted ACL.

2.3.1 Comparison of Alternatives

2.4 Action 4. Revise sector allocations and accountability measures for South Atlantic yellowtail snapper.

Alternative 1 (No Action). The current recreational sector allocation for yellowtail snapper is 47.44% (1,440,990 lbs ww) of the total ACL. The current commercial sector allocation for yellowtail snapper is 52.56% (1,596,510 lbs ww) of the total ACL.

The current commercial AM includes an in-season closure to take place if the commercial ACL is met or projected to be met. If the commercial ACL is exceeded, it will be reduced by the amount of the commercial overage in the following fishing year only if the species is overfished and the total ACL is exceeded.

The current recreational AM includes an in-season closure to take place if the recreational ACL is met or projected to be met. It also includes a shortening of the recreational season that may be triggered if the recreational ACL is exceeded, but only after recreational landings have be monitored for persistence in increased landings. The length of the recreational season will not be reduced if the RA determines the best available science shows it is not necessary. If a reduction is necessary, the recreational season may be reduced and the ACL in the following fishing year will be reduced by the amount of the recreational overage only if the species is overfished and the total ACL is exceeded.

Alternative 2. Maintain current sector ACLs, but revise AM to not close either sector until total ACL is met. Note: Total ACL=ABC=OY

Alternative 3. Modify sector ACLs.

> **Sub-alternative 3a.** Allocate 42% (1,275,750 lbs ww) of the total ACL to the recreational sector. Allocate 58% (1,761,750 lbs ww) of the total ACL to the commercial sector. (Based on average landings from 2005-2014)
> **Sub-alternative 3b**. Allocate 40% (1,215,000 lbs ww) of the total ACL to the recreational sector. Allocate 60% (1,822,500 lbs ww) of the total ACL to the commercial sector. (Based on 2013 landings).
> **Sub-alternative 3c**. Allocate 30% (911,250 lbs ww) of the total ACL to the recreational sector. Allocate 70% (2,126,250 lbs ww) of the total ACL to the commercial sector. (Based on 2012 landings)
> **Sub-alternative 3d**. Allocate 28% (850,500 lbs ww) of the total ACL to the recreational sector. Allocate 72% (2,187,000 lbs ww) of the total ACL to the commercial sector. (Based on 2011 landings)

Table 2.4.1. Commercial and recreational ACLs under **Sub-alternatives 3a-3d** and the difference from current sector ACLs for yellowtail snapper. The current total ACL for yellowtail snapper is 3,037,500 lbs ww, commercial ACL is 1,596,510 lbs ww(52.56% of total ACL) , and the recreational ACL is 1,440,990 lbs ww (47.44% of total ACL).

Sub-alternative (Average landings based on these years)	Commercial ACL (lbs ww) / Percentage (%) of Total ACL	Recreational ACL (lbs ww) / Percentage (%) of Total ACL	Difference in commercial ACL (lbs ww)	Difference in recreational ACL (lbs ww)
Sub-alternative 3a (2005-2014)	1,761,750/ 58%	1,275,750 / 42%	+ 165,240	- 165,240
Sub-alternative 3b (2013)	1,822,500/ 60%	1,215,000/ 40%	+ 225,990	- 225,990
Sub-alternative 3c (2012)	2,126,250/ 70%	911,250/ 30%	+ 529,740	- 529,740
Sub-alternative 3d (2011)	2,187,000/ 72%	850,500/ 28%	+ 590,490	- 590,490

Alternative 4. Set aside a portion of the total ACL that can be used by either sector as a common pool allocation. Note: Total ACL=ABC=OY

Sub-alternative 4a: 1% (30,375 lbs ww) of the total ACL becomes a common pool category. The remaining ACL (3,007,125 lbs ww) is split between the recreational sector (1,426,580 lbs ww) and the commercial sector (1,580,545 lbs ww) according to the current allocation.

Sub-alternative 4b: 2.5% (75,938 lbs ww) of the total ACL becomes a common pool category. The remaining ACL (2,961,562 lbs ww) is split between the recreational sector (1,404,965 lbs ww) and the commercial sector (1,556,597 lbs ww) according to the current allocation.

Sub-alternative 4c: 5% (151,875 lbs ww) of the total ACL becomes a common pool category. The remaining ACL (2,885,625 lbs ww) is split between the recreational sector (1,368,941 lbs ww) and the commercial sector (1,516,685 lbs ww) according to the current allocation.

Sub-alternative 4d: 10% (303,750 lbs ww) of the total ACL becomes a common pool category. The remaining ACL (2,733,750 lbs ww) is split between the recreational sector (1,296,891 lbs ww) and the commercial sector (1,436,859 lbs ww) according to the current allocation.

Table 2.4.1. Commercial and Recreational ACLs (lbs ww) under Sub-alternatives 4a-4d. The current total ACL for yellowtail snapper is 3,037,500 lbs ww, commercial ACL is 1,596,510 lbs ww, and the recreational ACL is 1,440,990 lbs ww.

Sub-alternative	Common pool ACL (lbs ww) / Percentage (%) of Total ACL	Remaining Total ACL (lbs ww)	Commercial ACL (lbs ww)	Recreational ACL (lbs ww)	*Commercial ACL + common pool ACL (lbs ww)	*Recreational ACL + common pool ACL (lbs ww)
Sub-alternative 4a	30,375/ 1%	3,007,125	1,580,545	1,426,580	1,610,920	1,456,955
Sub-alternative 4b	75,938/ 2.5%	2,961,562	1,556,597	1,404,965	1,632,535	1,480,903
Sub-alternative 4c	151,875/ 5%	2,885,625	1,516,685	1,368,941	1,668,560	1,520,816
Sub-alternative 4d	303,750/ 10%	2,733,750	1,436,859	1,296,891	1,740,609	1,600,641

* Only one sector would be allowed to utilize the common pool at a given time to avoid exceeding the total ACL.

Alternative 5: If the sector ACL is not met in a fishing year, establish a sector ACL "credit" derived from the difference between the total pounds of yellowtail snapper landed in the sector and the sector ACL for that same fishing year. In the following fishing year, the credit would transfer to the sector's ACL if the sector ACL is met or exceeded. The sector ACL credit would only apply if a minimum percentage of the total ACL was not harvested in a given fishing year (Draft Sub-alternatives 5a-5c), and only a certain percentage of the unharvested sector ACL from the previous fishing year would make up the carry-over credit (Draft Sub alternatives 5d-5f). The carry-over credit would remain until used, but could not exceed a certain percentage of the sector ACL (Draft Sub-alternatives 5g-5j) and the total harvest when the carryover is used could not exceed the total ACL. Note: Total ACL=ABC=OY

Remaining Total ACL Threshold (MUST CHOOSE ONE):

Sub-alternative 5a: At least 15% (455,625 lbs ww) of the total ACL remains unharvested.

Sub-alternative 5b: At least 20% (607,500 lbs ww) of the total ACL remains unharvested.

Sub-alternative 5c: At least 25% (759,375 lbs ww) of the total ACL remains unharvested.

Percentage of Remaining Stock ACL to Transfer (MUST CHOOSE ONE):

Sub-alternative 5d: The carry-over credit will be equal to 10% of the unharvested sector ACL.

Sub-alternative 5e: The carry-over credit will be equal to 15% of the unharvested sector ACL.

Sub-alternative 5f: The carry-over credit will be equal to 20% of the unharvested sector ACL.

Percentage cap for carry-over credit in relation to sector ACL (MUST CHOOSE ONE):
Sub-alternative 5g: The carry-over credit could not exceed 10% of the sector ACL.
Sub-alternative 5h: The carry-over credit could not exceed 20% of the sector ACL.
Sub-alternative 5i: The carry-over credit could not exceed 30% of the sector ACL.
Sub-alternative 5j: The carry-over credit could not exceed 100% of the sector ACL.

Alternative 6: At the beginning of the fishing year, conditionally transfer a certain percentage (Sub-alternatives 6a-6d) of the ACL from a sector that is not landing its ACL to the other sector that is landing all or almost all of its ACL in the next fishing year, if the minimum landings threshold is not met for the donating sector (Sub-alternatives 6e-6g). If the receiving sector does not land at least 90% of its unadjusted ACL, this transfer will not occur. The highest landings from the donating sector based on available finalized data from the five years prior will be used as criteria to determine if allocation transfers will occur. Note: Total ACL=ABC=OY

Conditional ACL Transfer (MUST CHOOSE ONE):
Sub-alternative 6a: Conditionally transfer 5% of the unadjusted ACL of one sector to the other sector.
Sub-alternative 6b: Conditionally transfer 10% of the unadjusted ACL of one sector to the other sector.
Sub-alternative 6c: Conditionally transfer 15% of the unadjusted ACL of one sector to the other sector.
Sub-alternative 6d: Conditionally transfer 20% of the unadjusted ACL of one sector to the other sector.

Donating sector's ACL Minimum Threshold (MUST CHOOSE ONE), if the donating sector's landings are:
Sub-alternative 6e: less than 50% of its unadjusted ACL.
Sub-alternative 6f: less than 65% of its unadjusted ACL.
Sub-alternative 6g: less than 75% of its unadjusted ACL.

2.4.1 Comparison of Alternatives

Chapter 3 Affected Environment

Dolphin Wahoo Amendment 10 and Snapper Grouper Amendment 4 addresses allocations of dolphin and yellowtail snapper as well as the definition of OY for dolphin and allowable gear for the possession of dolphin or wahoo. The reader is referred to Dolphin Wahoo Amendment 5 (SAFMC 2013) and Regulatory Amendment 14 to the Snapper Grouper FMP (SAFMC 2014b) for details on the affected environment for these species in the Atlantic EEZ; and summarized below.

3.1 Habitat Environment

Information on the habitat utilized by dolphin and wahoo in the Atlantic, and snapper grouper species in the South Atlantic Region is included in Volume II of the Fishery Ecosystem Plan (SAFMC 2009b) and incorporated here by reference. The Fishery Ecosystem Plan can be found at: http://www.safmc.net/ecosystem-management/fishery-ecosystem-plan-1. Dolphin and wahoo are migratory pelagic species occurring in tropical and subtropical waters worldwide. They are found near the surface around natural and artificial floating objects, including *Sargassum* (in the Atlantic).

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.

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

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

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

EFH utilized by snapper grouper species in this region includes coral reefs, live/hard bottom, submerged aquatic vegetation, artificial reefs, and medium to high profile outcroppings on and around the shelf break zone from shore to at least 183 meters [600 ft (but to at least 2,000 ft for wreckfish)] where the annual water temperature range is sufficiently warm to maintain adult populations of members of this largely tropical fish complex. EFH includes the spawning area in the water column above the adult habitat and the additional pelagic environment, including *Sargassum*, required for survival of larvae and growth up to and including settlement. In addition, the Gulf Stream is also EFH because it provides a mechanism to disperse snapper grouper larvae.

For specific life stages of estuarine-dependent and near shore snapper grouper species, EFH includes areas inshore of the 30 meter (100-ft) contour, such as attached macroalgae; submerged rooted vascular plants (seagrasses); estuarine emergent vegetated wetlands (saltmarshes, brackish marsh); tidal creeks; estuarine scrub/shrub (mangrove fringe); oyster reefs and shell banks; unconsolidated bottom (soft sediments); artificial reefs; and coral reefs and live/hard bottom habitats.

3.1.2 Habitat Areas of Particular Concern

EFH-habitat of particular concern (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*.

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

EFH-HAPC for species in the Snapper Grouper Fishery Management Unit (FMU) includes 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.

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

3.2 Biological and Ecological Environment

The marine environment in the Atlantic management area affected by actions in this environmental assessment is defined by two components (**Figure 3-1**). Each component is described in detail in Chapter 3 of Dolphin Wahoo Amendment 5 (SAFMC 2013).

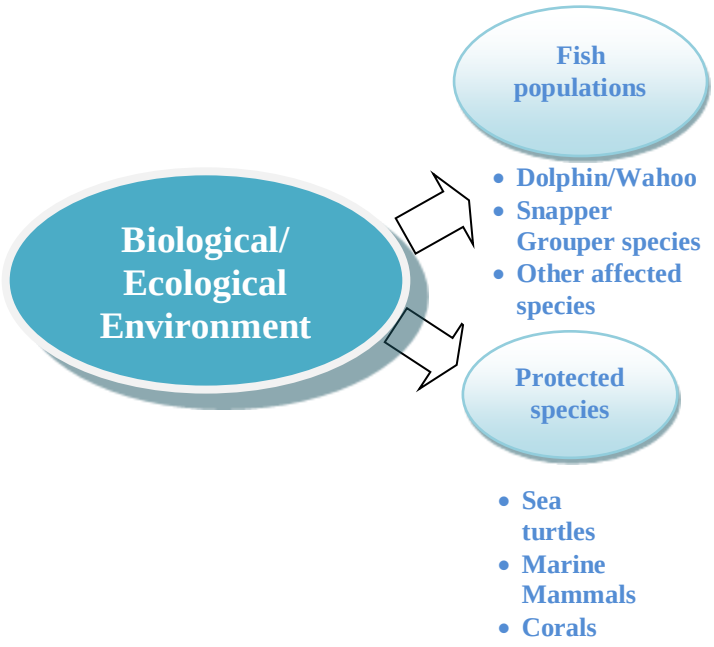


Figure 3-1. Two components of the biological environment described in this document. egion, and the Gulf of Mexico. They are found near the surface around natural and artificial floating objects, including *Sargassum* (in the Atlantic).

Dolphin eat a wide variety of species, including small pelagic fish, juvenile tuna, billfish, jacks, and pompano, and pelagic larvae of nearshore, bottom-living species. They also eat invertebrates such as cephalopods, mysids, and jellyfish. Large tuna, rough-toothed dolphin, marlin, sailfish, swordfish, and sharks feed on dolphin, particularly juveniles. Wahoo mainly feed on squid and fish, including frigate mackerel, butterfish, porcupine fish, and round herring. They generally compete with tuna for the same kind of food, but can feed on larger prey. A number of predators such as sharks and large tuna that share their habitat feed on young wahoo. Additional background information regarding the fish populations for dolphin and wahoo can be found in the Dolphin Wahoo FMP (SAFMC 2003) at: safmc.net/Library/pdf/DolphinWahooFMP.pdf.

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. Additional background information regarding the snapper grouper fish populations can be found in the Snapper Grouper FMP (SAFMC 1983) at: http://www.safmc.net/resource-library/snapper-grouper

3.2.1 Fish Populations

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 nearshore, bottom-living species. They also eat invertebrates such as cephalopods, mysids, and jellyfish. Large tuna, rough-toothed dolphin, marlin, sailfish, swordfish, and sharks feed on dolphin, particularly juveniles. Wahoo mainly feed on squid and fish, including frigate mackerel, butterfish, porcupine fish, and round herring. They

Dolphin Life History
An Overview

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

generally compete with tuna for the same kind of food, but can feed on larger prey. A number of predators such as sharks and large tuna that share their habitat feed on young wahoo. Additional background information regarding the fish populations for dolphin and wahoo can be found in the Dolphin Wahoo FMP (SAFMC 2003) at: safmc.net/Library/pdf/DolphinWahooFMP.pdf.

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. Additional background information regarding the snapper grouper fish populations can be found in the Snapper Grouper FMP (SAFMC 1983) at: http://www.safmc.net/resource-library/snapper-grouper

3.2.2 Dolphin, *Coryphaena hippurus*

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

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

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

3.2.4 Yellowtail Snapper

Snapper grouper species that may be affected by the proposed action include 59 species in the Snapper Grouper FMU. The life history, biological characteristics, and stock status of

each assessed species may be found in their respective Southeast Data, Assessment, and Review (SEDAR) reports listed on the SEDAR web site http://www.sefsc.noaa.gov/sedar/.

Life History

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

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

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

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

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

3.2.5 Stock Status of Dolphin

The Report to Congress on the Status of U.S. Stocks indicates dolphin is not overfished, and is not undergoing overfishing (http://www.nmfs.noaa.gov/sfa/statusoffisheries/SOSmain.htm). Prager (2000) conducted an exploratory assessment of dolphin, but the results were not conclusive. A Southeast Data, Assessment, and Review (SEDAR) stock assessment for dolphin is not expected within the next 5 years. The SEDAR process, initiated in 2002, is a cooperative Fishery Management Council process intended to improve the quality, timeliness, and reliability of fishery stock assessments in the South Atlantic, Gulf of Mexico, and U.S. Caribbean. SEDAR is managed by the Caribbean, Gulf of Mexico, and South Atlantic Fishery Management Councils in coordination with NMFS and the Atlantic and Gulf States Marine Fisheries Commissions.
Oxenford and Hunte (1986) suggested that there were at least two separate unit stocks of dolphin in the northeast and southeast Caribbean Sea. Oxenford (1999) suggested that it was very likely that additional stocks of dolphin existed in the Gulf of Mexico and central/western Caribbean. Theisen et al. (2008) indicated that a worldwide stock for wahoo consisted of a single globally distributed population. However, Zischke et al. (2012) concluded that despite genetic homogeneity in wahoo, multiple discrete phenotypic stocks existed in the Pacific and eastern Indian oceans.

Life-history characteristics of dolphin such as rapid growth rates, early maturity, batch spawning over an extended season, a short life span, and a varied diet could help sustain fishing pressures on these species (Schwenke and Buckel 2008; McBride et al. 2008; Prager 2000; and Oxenford 1999). 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. See **Section 1.8** for a history of recent management of dolphin.

3.2.6 Stock Status of Yellowtail Snapper

Stock assessments are not available for all 59 species within the Snapper Grouper FMU. Available stock assessments for snapper grouper species may be found in their respective SEDAR reports listed on the SEDAR web site http://www.sefsc.noaa.gov/sedar/.

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

The 2012 assessment showed that yellowtail snapper are **not overfished** and **overfishing is not occurring**. The spawning stock biomass (SSB) was over three times higher than the SSB that would produce the maximum sustainable yield, or SSB_{MSY} (335.7% of SSB_{MSY}, **Table**

3.2.6.1). Fishing mortality (F) at the time of the assessment was well below F_{MSY} (18.9% of F_{MSY}, **Table 3.2.6.1**). Stock biomass showed a period of stability until the mid-1990s followed by an increasing trend that continued into recent years (**Figure 3.2.6.1**). Also, there was no trend in the level of recruitment entering the stock, but there was a large amount of year-to-year variation (**Figure 3.2.6.2**). The fact that the population continued to grow despite large fluctuations in recruitment, coupled with the fact that F was only 19% of F_{MSY} and SSB was over three times higher than SSB_{MSY}, suggests that recruitment was not being affected by stock size or fishing pressure during the assessment period, but by variations in environmental factors. These diagnostics suggest that the stock, as of the date of the assessment, was being sustainably harvested and that the rate of exploitation and total take could increase without detriment to the stock.

Table 3.2.6.1. Management parameters from the 2012 benchmark assessment for yellowtail snapper. Values are given for maximum sustainable yield (MSY), the fishing mortality at MSY (F_{MSY}), the fishing mortality from the terminal year of the assessment (F_{2010}), spawning stock biomass at MSY (SSB_{MSY}), the minimum stock size threshold (MSST), and the spawning stock biomass from the terminal year of the assessment (SSB_{2010}).

Parameter	Value
FMSY	0.24
F2010	0.0454
SSBMSY (mt)*	3,072
MSST (mt)	2,488
SSB2010 (mt)	10,311
MSY (mt)	2,088

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

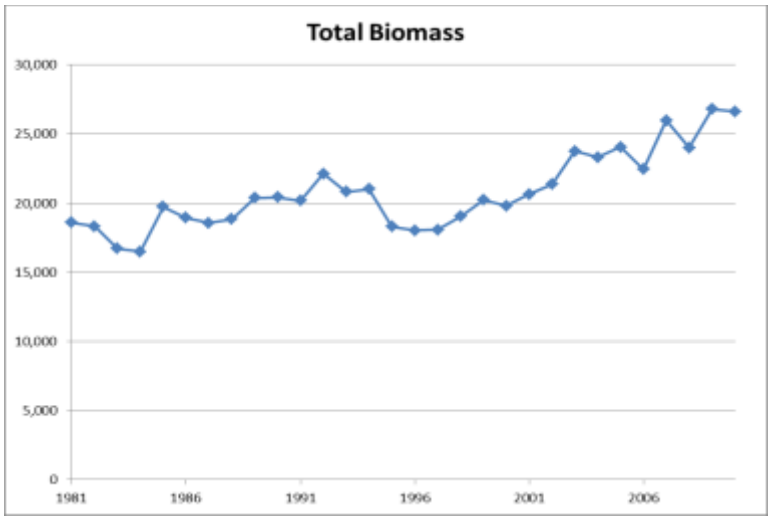


Figure 3.2.6.1. Total biomass of yellowtail snapper in metric tons.

Data are from the 2012 assessment report for yellowtail snapper, Florida Fish and Wildlife Conservation Commission.

Figure 3.2.6.2. Annual recruitment of yellowtail snapper expressed as biomass of age 1 fish in metric tons.
Data are from the 2012 assessment report for yellowtail snapper, Florida Fish and Wildlife Conservation Commission.

3.2.7 Protected Species

There are 40 listed species protected by federal law that may occur in the exclusive economic zone (EEZ) of the South Atlantic Region and are under the purview of NMFS. Thirty-one of these species are marine mammals protected under the Marine Mammal Protection Act (MMPA). Six of these marine mammal species (sperm, sei, fin, blue, humpback, and North Atlantic right whales) are also listed as endangered under the Endangered Species Act (ESA). In addition to those six marine mammals, five species of sea turtles (green, hawksbill, Kemp's ridley, leatherback, and loggerhead); the smalltooth sawfish; five distinct population segments (DPSs) of Atlantic sturgeon; and two *Acropora* coral species (elkhorn [*Acropora palmata*] and staghorn [*A. cervicornis*]) are also protected under the ESA. Portions of designated critical habitat for North Atlantic right whales and *Acropora* corals occur within the South Atlantic Council's jurisdiction. Additionally, on September 10, 2014, NMFS listed 20 new coral species under the ESA, five of those species occur in the Caribbean (including Florida) and all of these are listed as threatened. The 2 previously listed *Acropora* coral species remain protected as threatened. The potential impacts from the continued authorization of the Atlantic dolphin wahoo fishery and the South Atlantic Snapper Grouper Fishery on currently listed protected species have been considered in previous ESA Section 7 consultations or subsequent memoranda. Those consultations indicate that of the species listed above, sea turtles and smalltooth sawfish are the most likely to interact with these fisheries and are therefore discussed further below.

Turtles

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

Green sea turtle hatchlings are thought to occupy pelagic areas of the open ocean and are often associated with *Sargassum* rafts (Carr 1987, Walker 1994). Pelagic stage green sea turtles are thought to be carnivorous. Stomach samples of these animals found ctenophores and pelagic snails (Frick 1976, Hughes 1974). At approximately 20 to 25 cm carapace length, juveniles migrate from pelagic habitats to benthic foraging areas (Bjorndal 1997). As juveniles move into benthic foraging areas a diet shift towards herbivory occurs. They consume primarily seagrasses and algae, but are also know to consume jellyfish, salps, and sponges (Bjorndal 1980, 1997; Paredes 1969; Mortimer 1981, 1982). The diving abilities of all sea turtles species vary by their life stages. The maximum diving range of green sea turtles is estimated at 110 m (360 ft) (Frick 1976), but they are most frequently making dives of less than 20 m (65 ft.) (Walker 1994). The time of these dives also varies by life stage. The maximum dive length is estimated at 66 minutes with most dives lasting from 9 to 23 minutes (Walker 1994).

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

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

Kemp's ridleys may also spend as much as 96% of their time underwater (Soma 1985, Byles 1988).

Leatherbacks are the most pelagic of all ESA-listed sea turtles and spend most of their time in the open ocean. Although they will enter coastal waters and are seen over the continental shelf on a seasonal basis to feed in areas where jellyfish are concentrated. Leatherbacks feed primarily on cnidarians (medusae, siphonophores) and tunicates. Unlike other sea turtles, leatherbacks' diets does not shift during their life cycle. Because leatherbacks' ability to capture and eat jellyfish is not constrained by size or age, they continue to feed on these species regardless of life stage (Bjorndal 1997). Leatherbacks are the deepest diving of all sea turtles. It is estimated that these species can dive in excess of 1,000 m (Eckert et al. 1989) but more frequently dive to depths of 50 m to 84 m (Eckert et al. 1986). Dive times range from a maximum of 37 minutes to more routines dives of 4 to 14.5 minutes (Standora et al. 1984, Eckert et al. 1986, Eckert et al. 1989, Keinath and Musick 1993). Leatherbacks may spend 74% to 91% of their time submerged (Standora et al. 1984).

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

Fish

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

3.3 Human Environment

3.3.1 Economic Environment

3.3.1.1 Dolphin

A description of the dolphin stock is provided in Section 3.2. Additional details on the South Atlantic Dolphin Wahoo Fishery are contained in SAFMC (2011a) and is incorporated herein by reference.

3.3.1.1.1 Commercial Sector

The major sources of data summarized in this description are from the NMFS SERO Permits Information Management System (PIMS) and the 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 (BLS). Inflation adjusted revenues, prices, and economic impacts are reported in 2015 dollars.

Permits

Any fishing vessel that harvests and sells dolphin from the Atlantic EEZ must have a valid dolphin wahoo commercial permit, which is an open access permit. After a permit expires, it can be renewed or transferred for up to one year after the date of expiration. The number of valid or renewable dolphin wahoo commercial permits have been fairly steady from 2010 through 2015, with an average of 2,187 permits annually (**Table 3.3.1.1**). The permit numbers presented represent valid or renewable permits as of December 31st of each year.

Table 3.3.1.1. Number of valid or renewable Atlantic commercial dolphin wahoo permits (2011 through 2015).

Year	Permits
2011	2,177
2012	2,251
2013	2,154
2014	2,167
2015	2,184
Average	2,187

Source: NMFS SERO Permits Dataset.

Landings, Revenue, and Effort

Landings of dolphin from 2011 to 2015 along with the respective commercial ACL and percentage of the commercial ACL landed are presented in **Table 3.3.1.2**. Due to an increase in commercial landings in 2014 and 2015, the commercial dolphin ACL was almost met or exceeded in these years. As a result of Dolphin Wahoo Amendment 8, the commercial allocation of the total dolphin ACL increased to 10%, which subsequently increased the commercial ACL for dolphin to 1,534,485. The ACL and allocation increase was implemented in 2016.

Table 3.3.1.2. Total commercial landings (lbs ww) and ACL (lbs ww) for dolphin harvested from the Atlantic Ocean, 2011-2015.

Year	Landings	Sector ACL	Percentage ACL Landed
2011*	792,293	-	-
2012	709,131	1,065,524	67%
2013	616,953	1,157,001	53%
2014	1,291,092	1,157,001	112%
2015	1,109,333	1,157,001	96%
Average	903,760	-	-

Source: NMFS SERO ACL Files
*ACL did not go into place until 2012

The breakdown of landings by state or region is made available in **Table 3.3.1.3**. In the New England Region (NE) commercial dolphin landings occurred in the states of Massachusetts, Connecticut, and Rhode Island. In the Mid-Atlantic Region (MA) commercial dolphin landings occurred in the states of New York, New Jersey, Maryland, and Virginia. The majority of commercial dolphin landings occurred in the South Atlantic region (on average 92%), with most of the landings in the region occurring in North Carolina (NC) and the Florida East Coast (FL-E). Some years a notable portion of the landings occurred in South Carolina (SC), however no commercial dolphin landings were attributed to Georgia (GA). The ex-vessel value of commercial dolphin landings is distributed in a similar manner (**Table 3.3.1.4**)

Table 3.3.1.3. Percentage of total commercial landings by region/state for dolphin harvested from the Atlantic Ocean, 2011-2015.

Year	NE	MA	NC	SC	GA	FL-E
2011	4%	3%	16%	30%	0%	48%
2012	7%	6%	40%	9%	0%	39%
2013	3%	4%	37%	9%	0%	46%
2014	4%	4%	38%	19%	0%	35%
2015	3%	3%	35%	27%	0%	32%
Average	4%	4%	33%	19%	0%	40%

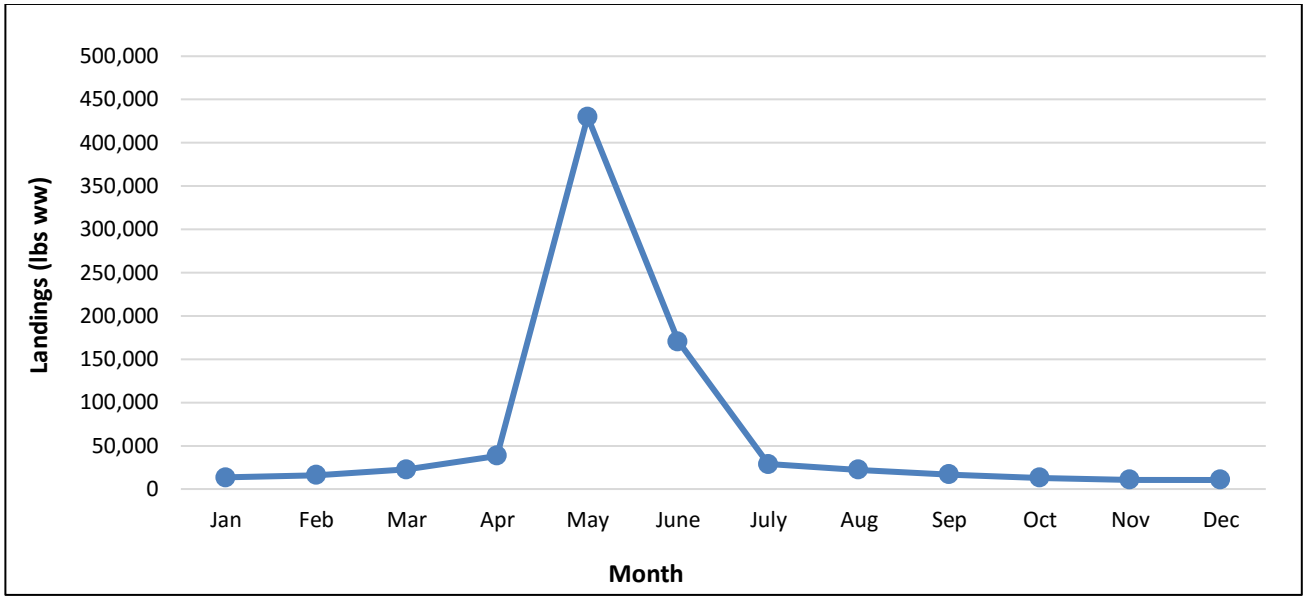
Source: NMFS Commercial Landings Query

Table 3.3.1.4. Ex-vessel value (2015 $) of commercial landings by region/state for dolphin harvested from the Atlantic Ocean, 2011-2015.

Year	NE	MA	NC	SC	GA	E-FL	Total
2011	$70,295	$59,040	$257,898	$394,395	$0	$689,484	$1,321,187
2012	$124,124	$122,113	$780,798	$142,025	$0	$652,611	$1,707,616
2013	$42,648	$70,468	$539,150	$119,067	$0	$557,914	$1,283,725
2014	$120,563	$158,626	$1,272,957	$688,535	$0	$911,735	$3,144,995
2015	$60,549	$87,777	$972,919	$698,575	$0	$757,796	$2,577,616
Average	$83,636	$99,605	$764,745	$408,519	$0	$713,908	$2,007,028

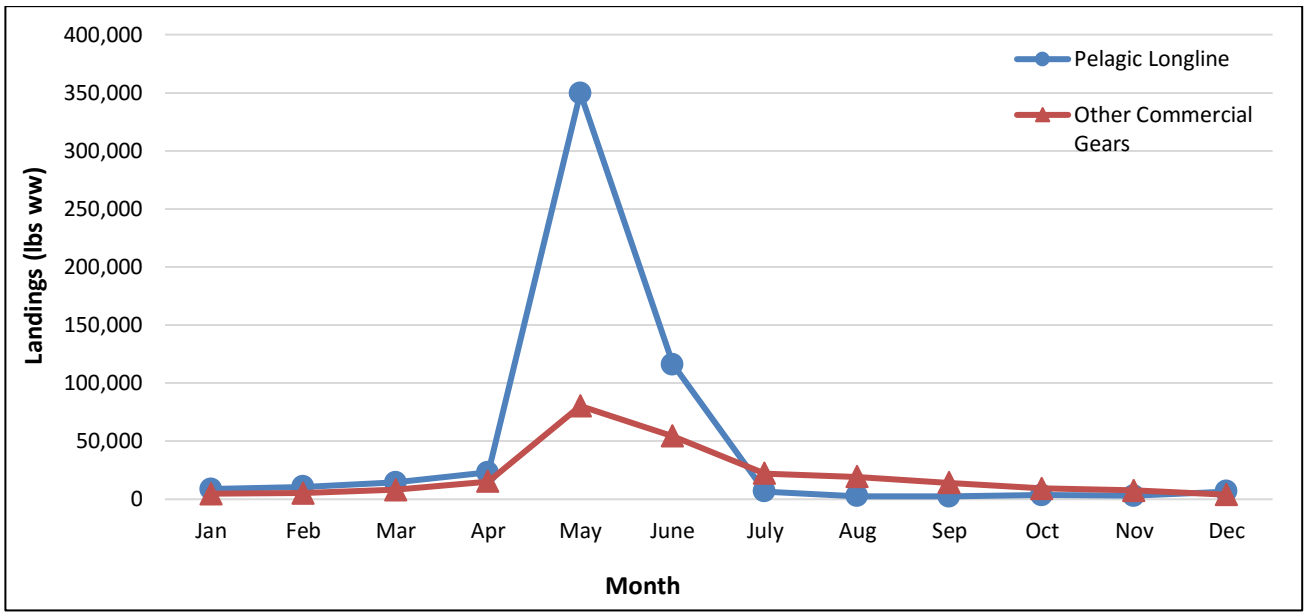
Source: NMFS Commercial Landings Query

Average monthly commercial landings from 2011-2015 are displayed in **Figure 3.3.1.1**. The landings tend to remain at a fairly low level until increasing drastically in May and June when dolphin are highly abundant in the South Atlantic region and when the species is often landed with pelagic longline gear (**Figure 3.3.1.2**). After June, the amount of dolphin landed with pelagic longline gear declines and the other commercial gears, primarily comprised of rod and reel or handline, becomes the dominant gear in the fishery.



Source: NMFS SEFSC SAFE Dataset

Figure 3.3.1.1. Average monthly commercial landings (lbs ww) of dolphin harvested from the Atlantic Ocean, 2011-2015.



Source: NMFS SEFSC SAFE Dataset

Figure 3.3.1.2. Average monthly commercial landings (lbs ww) of dolphin harvested from the Atlantic Ocean by general gear categories, 2011-2015.

The following discussion focuses on trip characteristics of commercial vessels landing at least one pound of dolphin. Only vessels reporting logbooks to the FLS via the Southeast Coastal Fisheries Trip Report Form are included in the analysis. Depending on the gear and area that is fished, commercial trips landing dolphin may also be separately reported via the Atlantic Highly Migratory Species (HMS) Logbook Trip Summary Form for trips occurring on HMS permitted vessels or the Fishing Vessel Trip Report Form for trips occurring in the Greater Atlantic Region. Efforts are currently underway to better incorporate data from these two commercial logbook programs into a similar analysis to provide a more comprehensive description of the commercial dolphin fishery. On average (2011 through 2015), for the vessels that landed dolphin each year, dolphin accounted for 2.7% of all species landed by weight and 3.1% of the revenue received from all species landed (**Table 3.3.1.5** and **Table 3.3.1.6**). On commercial trips where dolphin were landed, dolphin represented 15% of both total landings and total revenue. Vessels with reported commercial landings of dolphin took approximately 6 times as many non-dolphin trips as dolphin trips. The average annual price per pound (ww) of dolphin during the 2011 through 2015 timeframe was $3.04 per pound (2015 dollars) and average prices were somewhat variable, with the lowest price observed in 2011 at $2.71 and 2015 seeing the highest average price per pound of $3.44 per pound.

Table 3.3.1.5 Number of vessels, number of trips and landings by year (2015 dollars).

Year	Number of vessels that caught dolphin (> 0 lbs ww)	Number of trips that caught dolphin	Dolphin landings (lbs ww)	Other species' landings jointly caught with dolphin (lbs ww)	Number of SATL trips that only caught other species	Other species' landings on SATL trips without dolphin (lbs ww)
2011	524	2,280	205,102	1,275,811	13,679	6,949,295
2012	538	2,235	176,329	1,354,130	12,754	6,074,003
2013	491	2,027	181,056	1,309,072	11,275	5,345,398
2014	561	2,722	252,556	1,362,747	15,143	6,953,563
2015	461	1,545	175,786	722,091	11,964	5,157,975
Average	515	2,162	198,166	1,204,770	12,963	6,096,047

Source: Personal communication, Office of Science and Technology, November 5th, 2016

Table 3.3.1.6 Number of vessels and gross ex-vessel revenues by year (2015 dollars).

Year	Number of vessels that caught dolphin	Gross Ex-vessel revenue from dolphin	Gross-Ex-vessel revenue from other species jointly caught with dolphin	Gross Ex-vessel revenue from 'other species' caught on SATL trips without dolphin	Total gross ex-vessel revenue	Average total gross ex-vessel revenue per vessel
2011	524	$555,143	$3,409,834	$13,582,059	$17,547,036	$33,487
2012	538	$549,144	$3,727,599	$13,747,480	$18,024,223	$33,502

2013	491	$545,909	$3,927,109	$13,047,714	$17,520,732	$35,684
2014	561	$752,500	$4,148,272	$20,603,906	$25,504,678	$45,463
2015	461	$604,488	$2,098,192	$16,105,120	$18,807,800	$40,798
Average	515	$601,437	$3,462,201	$15,417,256	$19,480,894	$37,787

Source: Personal communication, Office of Science and Technology, November 5th, 2016

Imports

Imports of seafood products compete in the domestic seafood market and have dominated many segments of the seafood market. Imports influence the price for domestic seafood products and tend to set the price in the market segments in which they dominate. Seafood imports have downstream effects on the local fish market and retailer. At the harvest level for dolphin, imports affect the returns to fishermen through the ex-vessel prices they receive for their landings. As substitutes to domestic production of dolphin, imports tend to cushion the adverse economic effects on consumers resulting from a reduction in domestic landings or when domestic production cannot meet the demand for a seafood product. The following describes the imports of fish products which directly compete with domestic harvest of dolphin.

Imports[1] of fresh dolphin were 10.1 million lbs product weight (pw) in 2011. They increased to 14.6 million lbs pw in 2012 and remained fairly steady, with 15.1 million lbs pw reported in 2015. Total revenue from fresh dolphin imports increased from $28.4 million (2015 dollars) in 2011 to a five-year high of $44.9 million in 2015. Imports of fresh dolphin primarily originated in Central America or South America, and entered the U.S. through the port of Miami. Imports of fresh dolphin were the highest during the winter months.

Imports of frozen dolphin were substantially higher than imports of fresh dolphin. Frozen dolphin imports were 35.4 million lbs in 2011. Imports of frozen dolphin generally increased over time, with 42.5 million lbs of frozen dolphin imported in 2015. The annual value of frozen dolphin imports ranged from $133.7 million to $186.6 million (2015 dollars) during the time period, with a peak in 2012. Imports of frozen dolphin primarily originated in Eastern Asia and South America. Much like fresh imports, the majority of frozen dolphin imports entered the U.S. through the port of Miami and tended to be the highest from January through March.

Business Activity

The commercial harvest and subsequent sales and consumption of fish generates business activity as fishermen expend funds to harvest the fish and consumers spend money on goods and services, such as dolphin purchased at a local fish market and served during restaurant visits. These expenditures spur additional business activity in the region(s) where the harvest and purchases are made, such as jobs in local fish markets, grocers, restaurants, and fishing supply establishments. In the absence of the availability of a given species for purchase, consumers would likely spend their money on substitute goods and services. As a result, the analysis presented below represents a distributional analysis only; that is, it only shows how economic

1 NOAA Fisheries Service purchases fisheries trade data from the Foreign Trade Division of the U.S. Census Bureau. Data are available for download at http://www.st.nmfs.noaa.gov/st1/trade/index.html. (downloaded November 5th, 2016)

effects may be distributed through regional markets and should not be interpreted to represent the impacts if these species are not available for harvest or purchase.

Estimates of the average annual business activity associated with the commercial harvest of dolphin are derived using the model developed for and applied in NMFS (2011b) and are provided in **Table 3.3.1.7**. This business activity is characterized as full-time equivalent jobs, income impacts (wages, salaries, and self-employed income), value-added impacts (difference between the value of goods and the cost of materials or supplies), and output (sales) impacts (gross business sales). Income impacts, value added impacts, and output (sales) impacts should not be added because this would result in double counting. It should be noted that the results provided should be interpreted with caution and demonstrate the limitations of these types of assessments. These results are based on average relationships developed through the analysis of many fishing operations that harvest many different species. Separate models to address individual species are not available. For example, the results provided here apply to a general highly migratory species category rather than just dolphin and a harvester job is "generated" for approximately every $31,800 in ex-vessel revenue. These results contrast with the information provided in **Table 3.3.1.5**, which shows an average of 515 harvesters (vessels) with recorded landings of dolphin from 2011 through 2015.

Table 3.3.1.7. Average annual business activity (2011 through 2015) associated with the commercial harvest of dolphin. All monetary estimates are in 2015 dollars.

Species	Average Gross Ex-vessel Value ($ thousands)	Total Jobs	Harvester Jobs	Income Impacts ($ thousands)	Value-Added Impacts ($ thousands)	Output (Sales) Impacts ($ thousands)
Dolphin	$2,070	279	65	$7,505	$10,643	$20,589

Source: Calculated using the model developed for NMFS (2016).

3.3.1.1.2 Recreational Sector

The recreational sector of the dolphin fishery is comprised of a private and for-hire component. The private component includes anglers fishing from private or rental boats. The for-hire component is composed of charter boats and headboats (also called party boats). 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.

The major sources of data summarized in this description are from the NMFS SERO Permits Information Management System (PIMS) and Marine Recreational Information Program (MRIP), supplemented by price indices taken from the Bureau of Labor Statistics (BLS) to adjust for inflation. Inflation adjusted revenues, values, and economic impacts are reported in 2015 dollars.

Permits

For-hire vessels are required to have a for-hire dolphin wahoo permit to fish for or possess dolphin in the Atlantic EEZ. This sector operates as an open access fishery and not all permitted vessels are necessarily active in the fishery. The number of for-hire vessel permits issued for the Atlantic dolphin wahoo fishery decreased over most of the time period, but an

increase in the number of permits was seen in 2015 (**Table 3.3.1.8**). The majority of the dolphin wahoo for-hire permitted vessels were home-ported in Florida; a relatively high proportion of these permitted vessels were also home-ported in North Carolina. Additionally, many vessels with Atlantic for-hire dolphin wahoo permits were home-ported in states outside of the South Atlantic region. On average (2011 through 2015), these vessels accounted for 20% of the total number of for-hire dolphin wahoo permits issued.

Table 3.3.1.8. Number of Atlantic for-hire dolphin wahoo permits, by homeport state, 2011-2015.

Year	North Carolina	South Carolina	Georgia	Florida	Other States	Total
2011	323	111	20	873	358	1,685
2012	297	107	21	895	330	1,650
2013	281	117	22	844	313	1,577
2014	281	121	25	843	303	1,573
2015	292	142	23	858	286	1,601
Average	295	120	22	863	318	1,617

Source: NMFS SERO Permits Dataset.

Although the for-hire permit application collects information on the primary method of operation, the permit itself does not identify the permitted vessel as either a headboat or a charter vessel and vessels may operate in both capacities. However, only federally permitted headboats are required to submit harvest and effort information to the NMFS Southeast Region Headboat Survey (SRHS). Participation in the SRHS is based on a determination by the Southeast Fisheries Science Center (SEFSC) that the vessel primarily operates as a headboat. The number of registered headboats operating in the South Atlantic remained relatively steady from 2011 through 2015, with an average of 76 South Atlantic for-hire vessels operating in the SRHS annually (**Table 3.3.1.9**).

Table 3.3.1.9 Number of headboats in the South Atlantic 2011-2015.

Year	Number of Vessels
2011	77
2012	78
2013	76
2014	76
2015	74
Average	76

Source: NMFS SRHS Program.

There are no specific permitting requirements for recreational anglers to harvest dolphin. 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. As a result, it is not possible to identify with available data how many individual anglers would be expected to be affected by this proposed amendment.

Landings

Landings of dolphin from 2011 to 2015 along with the respective recreational ACL and percentage of the recreational ACL landed are presented in **Table 3.3.1.10**. As a result of Dolphin Wahoo Amendment 8, the recreational allocation of the total dolphin ACL decreased to 90%, which subsequently set the recreational ACL for dolphin at 13,810,361 lbs ww. The ACL and allocation decrease was implemented in 2016. The recreational sector has not come close to landing its sector ACL since implemented in 2012.

Table 3.3.1.10. Total recreational landings (lbs ww) and ACL (lbs ww) for dolphin harvested from the Atlantic Ocean, 2011-2015.

Year	Landings	Sector ACL	Percent ACL Landed
2011*	6,522,301	-	-
2012	6,099,788	13,530,692	45%
2013	4,444,755	13,530,692	33%
2014	5,240,659	14,187,845	37%
2015	7,586,553	14,187,845	53%
Average	5,978,811	-	-

Source: NMFS SEFSC MRIP ACL datasets (October 2016)
*ACL did not go into place until 2012

The breakdown of landings by state or region is made available in **Table 3.3.1.11**. In the New England Region (NE) recreational dolphin landings occurred in the states of Massachusetts, Connecticut, and Rhode Island. In the Mid-Atlantic Region (MA) recreational dolphin landings occurred in the states of New York, New Jersey, Delaware, Maryland, and Virginia. Much like the commercial sector, the majority of recreational dolphin landings occurred in the South Atlantic region (on average 90%), with most of the landings in the region occurring in North Carolina (NC) and the Florida East Coast (FL-E). The Mid and North Atlantic regions accounted for a substantially larger portion of the total recreational dolphin landings towards the end of the time period.

Table 3.3.1.11. Percentage of total recreational landings by region/state for dolphin harvested from the Atlantic Ocean, 2011-2015.

Year	NE	MA	NC	SC	GA	FL-E
2011	0%	5%	55%	1%	0.1%	40%
2012	0.3%	2%	43%	8%	0.1%	46%
2013	3%	3%	37%	2%	0.0%	56%
2014	2%	12%	26%	3%	0.5%	56%
2015	11%	12%	39%	1%	0.0%	37%
Average	3%	7%	40%	3%	0.1%	47%

Source: NMFS MRIP Query System

Angler Effort

Recreational effort derived from the Marine Recreational Information Program (MRIP) database can be characterized in terms of the number of trips as follows:

Target effort - The number of individual angler trips, regardless of duration, where the intercepted angler indicated that the species or a species in the species group was targeted as either the first or the second primary target for the trip. The species did not have to be caught.

Catch effort - The number of individual angler trips, regardless of duration and target intent, where the individual species or a species in the species group was caught. The fish did not have to be kept.

Total recreational trips - The total estimated number of recreational trips, regardless of target intent or catch success.

Other measures of effort are possible, such as directed trips (the number of individual angler trips that either targeted or caught a particular species). **Table 3.3.1.12** and **Table 3.3.1.13** present target and catch effort estimates associated with dolphin. Target and catch trips are shown by fishing mode (charter and private/rental vessel) for New England states (NE), the Mid-Atlantic states (MA), North Carolina (NC), South Carolina (SC), Georgia (GA), and the Florida East Coast (FL-E). The majority of the estimated target and catch effort for dolphin occurred in Florida, with the private vessel mode being the most prevalent mode of fishing.

Dolphin is one of the few species where target trips generally exceed catch trips. The 2010-2015 average target trips were 35,387 for the charter mode and 600,411 for the private/rental vessel mode (**Table 3.3.1.12**). In contrast, the average catch trips were 92,46 for the charter mode and 327,499 for the private/rental vessel mode (**Table 3.3.1.13**). This is suggestive of a relatively strong interest in fishing for dolphin among recreational anglers across all fishing modes.

Table 3.3.1.12 Estimated number of angler trips that targeted dolphin, by mode and by state, 2011-2015.

Year	NE	MA	NC	SC	GA	FL-E	Total
Charter Mode							
2011	0	1,220	15,554	2,439	0	18,602	37,815
2012	0	721	17,025	2,027	0	5,240	25,013
2013	0	43,490	9,168	0	0	3,148	55,806
2014	0	457	11,529	0	401	7,442	19,829
2015	0	4,276	13,784	6,986	44	13,380	38,470
Average	0	10,033	13,412	2,290	89	9,562	35,387
Private/Rental Vessel Mode							
2011	0	11,530	54,053	3,665	3,553	582,059	654,860
2012	0	1,615	44,383	28,580	2,401	569,067	646,046
2013	5,386	2,000	52,579	1,429	0	487,509	548,903
2014	375	64,548	37,987	7,339	0	513,258	623,507

2015	4,027	32,565	71,778	2,098	0	418,270	528,738
Average	1,958	22,452	52,156	8,622	1,191	514,033	600,411
All Modes							
2011	0	12,750	69,607	6,104	3,553	600,661	692,675
2012	0	2,336	61,408	30,607	2,401	574,307	671,059
2013	5,386	45,490	61,747	1,429	0	490,657	604,709
2014	375	65,005	49,516	7,339	401	520,700	643,336
2015	4,027	36,841	85,562	9,084	44	431,650	567,208
Average	1,958	32,484	65,568	10,913	1,280	523,595	635,798

Source: NMFS MRIP Query System

Table 3.3.1.13 Estimated number of angler trips that caught dolphin, by mode and by state, 2011-2015.

Year	NE	MA	NC	SC	GA	FL-E	Total
Charter Mode							
2011	0	1,610	68,181	1,951	122	20,304	92,168
2012	0	1,047	65,227	1,718	204	17,096	85,292
2013	0	44,702	39,996	1,765	30	20,276	106,769
2014	0	3,525	28,821	12,657	401	25,124	70,528
2015	27	6,030	48,423	12,070	268	43,154	109,972
Average	5	11,383	50,130	6,032	205	25,191	92,946
Private/Rental Vessel Mode							
2011	1,774	25,446	48,850	1,281	0	260,479	337,830
2012	1,462	10,736	44,595	23,833	0	256,773	337,399
2013	13,479	8,195	48,518	1,602	0	173,485	245,279
2014	1,764	52,102	24,638	5,285	0	260,668	344,457
2015	10,482	40,988	69,590	612	0	250,859	372,531
Average	5,792	27,493	47,238	6,523	0	240,453	327,499
All Modes							
2011	1,774	27,056	117,031	3,232	122	280,783	429,998
2012	1,462	11,783	109,822	25,551	204	273,869	422,691
2013	13,479	52,897	88,514	3,367	30	193,761	352,048
2014	1,764	55,627	53,459	17,942	401	285,792	414,985
2015	10,509	47,018	118,013	12,682	268	294,013	482,503
Average	5,798	38,876	97,368	12,555	205	265,644	420,445

Source: NMFS MRIP Query System

Similar analysis of recreational effort is not possible for the headboat mode because headboat data are not collected at the angler level. Estimates of total effort by the headboat mode are provided in terms of angler days, or the total number of standardized full-day angler

trips[2]. Headboat effort, in terms of angler days, increased substantially in Florida/Georgia from 2011 through 2015, while effort remained relatively constant in North Carolina and South Carolina (**Table 3.3.1.14**). Headboat effort was the highest, on average, during the summer months of June through August (**Table 3.3.1.15**).

Table 3.3.1.14. South Atlantic headboat angler days by state, 2011-2015.

Year	NC	SC	GA/FLE	Total
2011	18,457	44,645	132,492	195,594
2012	20,766	41,003	147,699	209,468
2013	20,547	40,963	165,679	227,189
2014	22,691	42,025	195,890	260,606
2015	22,716	39,702	194,979	257,397
Average	21,035	41,668	167,348	230,051

Source: NMFS SRHS Program

Table 3.3.1.15. Headboat angler days and percent distribution by month (2011-2015).

Year	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
2011	4.3%	5.7%	7.3%	9.4%	9.6%	15.9%	17.7%	11.5%	5.9%	4.4%	3.5%	4.8%
2012	4.6%	4.8%	8.7%	9.8%	9.0%	13.7%	17.4%	12.4%	8.0%	4.3%	3.3%	4.1%
2013	4.5%	4.8%	6.4%	7.1%	9.2%	14.6%	17.4%	14.9%	7.2%	6.4%	2.9%	4.6%
2014	3.4%	5.2%	7.6%	8.7%	9.9%	15.0%	16.9%	12.6%	5.8%	5.8%	3.5%	5.6%
2015	4.9%	4.3%	8.5%	9.8%	9.8%	14.3%	16.5%	12.0%	6.1%	5.2%	3.7%	4.9%
Average	4.3%	5.0%	7.7%	9.0%	9.5%	14.7%	17.2%	12.7%	6.6%	5.2%	3.4%	4.8%

Source: NMFS SRHS Program

Economic Value

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.

Economic value can be measured in the form of CS per additional dolphin kept on a trip (the amount of money that an angler would be willing to pay for a fish in excess of the cost to harvest the fish). The available estimated values of CS per fish for a second, third, fourth, fifth, and sixth dolphin kept on a trip are approximately $15.21, $10.14, $7.47, $5.89, and $4.86, respectively (Carter and Liese 2012; values updated to 2015 dollars).

2 Headboat trip categories include half-, three-quarter-, full-, and 2-day trips. A full-day trip equals one angler day, a half-day trip equals .5 angler days, etc. Angler days are not standardized to an hourly measure of effort and actual trip durations may vary within each category.

With regards to for-hire businesses, economic value can be measured by producer surplus (PS) per passenger trip (the amount of money that a vessel owner earns in excess of the cost of providing the trip). Estimates of the PS per for-hire passenger trip are not available. Instead, net operating revenue (NOR), which is the return used to pay all labor wages, returns to capital, and owner profits, is used as a proxy for PS. The estimated NOR value is $153.63 (2015 dollars) per charter angler trip (Carter and Liese 2012). The estimated NOR value per headboat angler trip is $53.03 (2015 dollars) (SAFMC, 2016). Estimates of NOR per dolphin target trip are not available.

The foregoing estimates of economic value should not be confused with economic impacts associated with recreational fishing expenditures. Although expenditures for a specific good or service may represent a proxy or lower bound of value (a person would not logically pay more for something than it was worth to them), they do not represent the net value (benefits minus cost), nor the change in value associated with a change in the fishing experience.

Business Activity

The desire for recreational fishing generates economic activity as consumers spend their income on various goods and services needed for recreational fishing. This spurs economic activity in the region where recreational fishing occurs. It should be clearly noted that, in the absence of the opportunity to fish, the income would presumably be spent on other goods and services and these expenditures would similarly generate economic activity in the region where the expenditure occurs. As such, the analysis below represents a distributional analysis only.

Estimates of the business activity (economic impacts) associated with recreational angling for dophin were derived using average impact coefficients for recreational angling for all species, as derived from an add-on survey to the MRIP to collect economic expenditure information, as described and utilized in NMFS (2011b). Estimates of the average expenditures by recreational anglers are also provided in NMFS (2011b) and are incorporated herein by reference.

Recreational fishing generates business activity (economic impacts). Business activity for the recreational sector is characterized in the form of full-time equivalent jobs, income impacts (wages, salaries, and self-employed income), value-added impacts (difference between the value of goods and the cost of materials or supplies), and output (sales) impacts (gross business sales). Estimates of the average target effort (2011-2015) for dolphin and associated business activity (2015 dollars) are provided in **Table 3.3.1.16**. The average impact coefficients, or multipliers, used in the model are invariant to the "type" of effort and can therefore be directly used to measure the impact of other effort measures such as catch trips if desired. To calculate the multipliers from **Table 3.3.1.16**, simply divide the desired impact measure (income impact, value-added impact, output impact, or jobs) associated with a given mode by the number of target trips for that mode. It should be noted that the presented business activity focusses on trip expenditures and does not include business activity generated by expenditures on durable goods that may be used on trips targeting dolphin. While aggregate data does exist on durable goods expenditures, they cannot be specifically attributed to a species or group of species, as these goods can last multiple years and be used in a wide range of other fisheries and often times for uses other than fishing.

Estimates of the business activity associated with headboat effort are not available. Headboat vessels are not covered in the MRIP, so, in addition to the absence of estimates of target effort, estimation of the appropriate business activity coefficients for headboat effort has not been conducted.

Table 3.3.1.16. Summary of dolphin target trips (2011 through 2015 average) and associated business activity (2015 dollars).

Mode	Average Annual Target Trips	Jobs	Income Impacts ($ thousands)	Value-Added Impacts ($ thousands)	Output (Sales) Impacts ($ thousands)
Private/Rented Vessel	600,411	396	$19,023	$32,884	$59,252
Charter	35,387	212	$10,705	$15,826	$27,237
Total	635,798	608	$29,728	$48,710	$86,489

Source: Effort data from MRIP; economic impact results calculated using the model developed for NMFS (2016).

3.3.1.2 Yellowtail Snapper

A description of the yellowtail stock is provided in **Section 3.2**. The following amendments are referenced to provide economic environment information regarding the U.S. snapper grouper fishery. These amendments include Amendment 13C (SAFMC 2006), Amendment 15A (SAFMC 2008a), Amendment 15B (SAFMC 2008b), Amendment 16 (SAFMC 2009c), Amendment 27 (SAFMC 2014a), Regulatory Amendment 9 (SAFMC 2011b), and Comprehensive ACL Amendment for the South Atlantic Region (SAFMC 2011a) and are incorporated herein by reference.

3.3.1.2.1 Commercial Sector

The major sources of data summarized in this description are the NMFS SERO Permits Information Management System (PIMS) and the 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 (BLS). Inflation adjusted revenues, prices, economic impacts are reported in 2015 dollars.

Permits

Any fishing vessel that harvests and sells snapper grouper species from the Atlantic EEZ must have a valid South Atlantic commercial snapper grouper permit, which is a limited access permit. After a permit expires, it can be renewed or transferred up to one year after the date of expiration. The number of valid or renewable snapper grouper permits declined steadily from 2011 through 2015 (**Table 3.3.2.1**). The permit numbers presented are based on the valid or renewable permits occurring on December 31 of each year.

Table 3.3.2.1. Number of valid or renewable Atlantic commercial snapper grouper permits (2011 through 2015).

Year	Unlimited	225-lb Trip-limited
2011	576	128
2012	561	122
2013	557	117
2014	542	113
2015	540	108
Average	555	118

Source: NMFS SERO Permits Dataset.

Landings, Revenue, and Effort

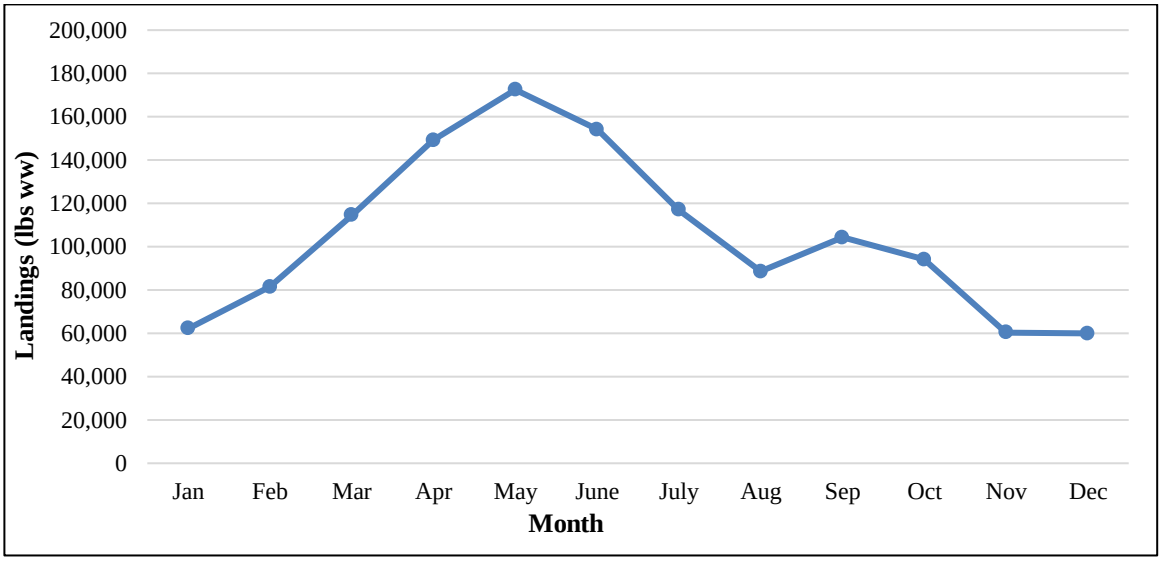
Landings of yellowtail snapper from 2011 to 2015 along with the respective commercial ACL and percentage of the commercial ACL landed are presented in **Table 3.3.2.2**. The commercial allocation has remained at 52.56% of the total yellowtail ACL, which is currently 1,596,510 lbs (ww). Commercial landings of yellowtail snapper are typically recorded each year in North Carolina, South Carolina, and Georgia, however the vast majority of the landings in the South Atlantic occur in Florida (99.8%).

Table 3.3.2.2. Total commercial landings (lbs ww) and ACL (lbs ww) for yellowtail snapper harvested from the Atlantic Ocean, 2011-2015.

Year	Landings	Sector ACL	Percentage ACL Landed
2011*	1,125,220	-	-
2012	1,439,586	1,142,589	126%
2013	1,328,931	1,596,510	83%
2014	1,209,945	1,596,510	76%
2015	1,184,859	1,596,510	74%
Average	1,257,708	-	-

Source: NMFS SERO ACL Files
*ACL did not go into place until 2012

Average monthly commercial landings of yellowtail snapper from 2011-2015 are displayed in **Figure 3.3.2.1**. The landings tend to be the highest in the late spring and early summer, followed by a lower peak in the fall. While typically lower than most other months, the average landings for November and December were decreased as a result of the closure that occurred in the commercial fishery in October 31, 2015. If 2015 landings data are excluded, the average landings for November and December are approximately 20% higher over the time series.



Source: NMFS SEFSC SAFE Dataset

Figure 3.3.2.1. Average monthly commercial landings (lbs ww) of yellowtail snapper harvested from the South Atlantic, 2011-2015.

On average (from 2011 through 2015), for the vessels that landed yellowtail each year, yellowtail snapper accounted for 30% of all species landings and 20% of all species revenue (**Table 3.3.2.3** and **Table 3.3.2.4**). Vessels with reported landings of yellowtail snapper took almost the same number of non-yellowtail snapper trips as yellowtail snapper trips. The average annual price per pound (ww) of yellowtail snapper during 2011 through 2015 was $3.10 (2015 dollars) and average prices ranged from a high of $3.41 in 2014 to a low of $2.80 in 2015.

Table 3.3.2.3 Number of vessels, number of trips and landings by year.

Year	Number of vessels that caught yellowtail snapper (> 0 lbs)	Number of trips that caught yellowtail snapper	Yellowtail snapper landings (lbs ww)	Other species' landings jointly caught with yellowtail snapper (lbs ww)	Number of SATL trips that only caught other species	Other species' landings on SATL trips without yellowtail snapper (lbs ww)
2011	267	3,917	1,033,376	366,465	4,117	2,450,864
2012	257	3,883	1,054,384	389,184	3,831	2,143,177
2013	235	3,560	1,104,671	372,172	3,218	1,617,522
2014	250	4,220	941,211	414,252	4,791	2,635,429
2015	240	3,939	1,186,699	333,085	3,745	1,950,174
Average	250	3,904	1,064,068	375,032	3,940	2,159,433

Source: Personal communication, Office of Science and Technology, November 5th, 2016

Table 3.3.2.4 Number of vessels and gross ex-vessel revenues by year (2015 dollars).

Year	Number of vessels that caught yellowtail snapper	Gross ex-vessel revenue from yellowtail snapper	Gross ex-vessel revenue from 'other species' jointly caught with yellowtail snapper	Gross ex-vessel revenue from 'other species' caught on SATL trips without yellowtail snapper	Total gross ex-vessel revenue	Average total gross ex-vessel revenue per vessel
2011	267	$3,249,262	$790,228	$5,539,396	$15,061,663	$34,153
2012	257	$3,389,862	$790,184	$5,627,325	$15,419,212	$33,740
2013	235	$3,214,832	$944,810	$5,041,011	$15,176,487	$36,134
2014	250	$3,212,559	$1,102,854	$9,109,216	$20,875,097	$44,321
2015	240	$3,327,801	$819,467	$7,090,297	$16,285,379	$41,757
Average	250	$3,278,863	$889,509	$6,481,449	$16,563,568	$38,021

Source: Personal communication, Office of Science and Technology, November 5th, 2016

Imports

Imports of seafood products compete in the domestic seafood market and have dominated many segments of the seafood market. Imports aid in determining the price for domestic seafood products and tend to set the price in the market segments in which they dominate. Seafood imports have downstream effects on the local fish market. At the harvest level for snapper species, including yellowtail snapper, imports affect the returns to fishermen through the ex-vessel prices they receive for their landings. As substitutes to domestic production of snappers, imports tend to cushion the adverse economic effects on consumers resulting from a reduction in domestic landings. The following describes the imports of fish products which directly compete with domestic harvest of snappers, including yellowtail snapper.

Imports[3] of fresh snapper were 21.7 million lbs product weight (pw) in 2011. Imports increased to 22.7 million lbs pw in 2012, then continued to increase steadily to 26.1 million lbs pw in 2015. Total revenue from fresh snapper imports increased from $64.5 million (2015 dollars[4]) in 2011 to a five-year high of $78.9 million in 2015. Imports of fresh snappers primarily originated in Central America or the Caribbean and entered the U.S. through the ports of Miami and New York City. Imports of fresh snapper were somewhat consistent, but were lowest in January and May.

Imports of frozen snapper were substantially less than imports of fresh snapper from 2011 through 2015. Frozen snapper imports were 8.5 million lbs in 2011. Imports of frozen

[3] NOAA Fisheries Service purchases fisheries trade data from the Foreign Trade Division of the U.S. Census Bureau. Data are available for download at http://www.st.nmfs.noaa.gov/st1/trade/index.html.

[4] Converted to 2014 dollars using the 2014 annual Consumer Price Index (CPI) for all US urban consumers provided by the Bureau of Labor and Statistics (BLS) (http://www.bls.gov/data/).

dolphin generally increased over time, with 12.3 million lbs of frozen snapper imported in 2015. The annual value of frozen snapper imports was $20.9 million (2015 dollars) in 2011 and had increased to $33.2 million in 2015. Imports of frozen snapper primarily originated from countries in the Southwestern Pacific Ocean and South America. Much like fresh imports, the majority of frozen snapper imports entered the U.S. through the ports of Miami and New York and tended to be the highest from July through December.

Business Activity

The commercial harvest and subsequent sales and consumption of fish generates business activity as fishermen expend funds to harvest the fish and consumers spend money on goods and services, such as yellowtail snapper purchased at a local fish market and served during restaurant visits. These expenditures spur additional business activity in the region(s) where the harvest and purchases are made, such as jobs in local fish markets, grocers, restaurants, and fishing supply establishments. In the absence of the availability of a given species for purchase, consumers would spend their money on substitute goods and services. As a result, the analysis presented below represents a distributional analysis only; that is, it only shows how economic effects may be distributed through regional markets and should not be interpreted to represent the impacts if these species are not available for harvest or purchase.

Estimates of the average annual business activity associated with the commercial harvest of yellowtail snapper, and all species harvested by the vessels that harvested yellowtail snapper, were derived using the model developed for and applied in NMFS (2011b) and are provided in **Table 3.3.2.5**. This business activity is characterized as full-time equivalent jobs, income impacts (wages, salaries, and self-employed income), value-added impacts (difference between the value of goods and the cost of materials or supplies), and output (sales) impacts (gross business sales). Income impacts or value added impacts should not be added to output (sales) impacts because this would result in double counting. It should be noted that the results provided should be interpreted with caution and demonstrate the limitations of these types of assessments. These results are based on average relationships developed through the analysis of many fishing operations that harvest many different species. Separate models to address individual species are not available. For example, the results provided here apply to a general reef fish category rather than just yellowtail snapper and a harvester job is "generated" for approximately every $31,000 in ex-vessel revenue. These results contrast with the information provided in **Table 3.3.2.4**, which shows an average of 250 harvesters (vessels) with recorded landings of yellowtail snapper from 2011 through 2015.

Table 3.3.2.5. Average annual business activity (2011 through 2015) associated with the commercial harvest of yellowtail snapper and the harvest of all species by vessels that landed yellowtail snapper. All monetary estimates are in 2015 dollars.

Species	Average Gross Ex-vessel Revenue ($ thousands)	Total Jobs	Harvester Jobs	Income Impacts ($ thousands)	Value-Added Impacts ($ thousands)	Output (Sales) Impacts ($ thousands)
Yellowtail snapper	$3,279	444	105	$11,941	$16,871	$32,516
All species on all trips made by vessels that landed greater than one pound of yellowtail snapper.	$16,564	2,245	533	$60,321	$85,227	$164,258

Source: Calculated using the model developed for NMFS (2016).

3.3.2.2 Recreational Sector

The recreational sector of the snapper grouper fishery is comprised of a private and for-hire component. The private component includes anglers fishing from shore (including all land-based structures) and private/rental boats. The for-hire component is composed of charter boats and headboats (also called party boats). 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.

The major sources of data summarized in this description are the NMFS SERO Permits Information Management System (PIMS) and Marine Recreational Information Program (MRIP), supplemented by price indices taken from the Bureau of Labor Statistics (BLS) to adjust for inflation. Inflation adjusted revenues, values, and economic impacts are reported in 2015 dollars.

Permits

For-hire vessels are required to have a for-hire snapper grouper permit to fish for or possess yellowtail snapper in the South Atlantic EEZ. This sector operates as an open access fishery and not all permitted vessels are necessarily active in the fishery. The total number of for-hire vessel permits issued for the South Atlantic snapper grouper fishery decreased over most of the time period, but an increase in the number of permits was seen in 2015 (**Table 3.3.2.6**). The majority of the snapper grouper for-hire permitted vessels were home-ported in Florida.

Table 3.3.2.6. Number of Atlantic for-hire snapper grouper permits by homeport state, 2011-2015.

Year	North Carolina	South Carolina	Georgia	Florida	Other States	Total
2011	272	105	22	927	164	1,490
2012	253	110	22	937	157	1,479
2013	246	127	24	884	151	1,432
2014	241	134	28	878	146	1,427
2015	262	157	32	886	132	1,469
Average	255	127	26	902	150	1,459

Source: NMFS SERO Permits Database.

Although the for-hire permit application collects information on the primary method of operation, the permit itself does not identify the permitted vessel as either a headboat or a charter vessel and vessels may operate in both capacities. However, only federally permitted headboats are required to submit harvest and effort information to the NMFS Southeast Region Headboat Survey (SRHS). Participation in the SRHS is based on determination by the Southeast Fisheries Science Center (SEFSC) that the vessel primarily operates as a headboat. The number of registered headboats operating in the South Atlantic remained relatively steady from 2011 through 2015, with an average of 76 South Atlantic for-hire vessels operating in the SRHS annually (**Table 3.3.2.7**).

Table 3.3.2.7 Number of headboats in the South Atlantic 2011-2015.

Year	Number of Vessels
2011	77
2012	78
2013	76
2014	76
2015	74
Average	76

Source: NMFS SRHS Program.

There are no specific permitting requirements for recreational anglers to harvest yellowtail snapper. 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. As a result, it is not possible to identify with available data how many individual anglers would be expected to be affected by this proposed amendment.

Landings

Landings of yellowtail snapper from 2011 to 2015 along with the respective recreational ACL and percentage of the recreational ACL landed are presented in **Table 3.3.2.8**. The recreational allocation is 47.44%% of the total yellowtail ACL, which is 1,440,990 lbs (ww. With the exception of a very limited amount of recreationally caught yellowtail snapper

intercepted in North Carolina in 2014, recreational landings present in the dataset have only occurred in Florida.

Table 3.3.2.8. Total recreational landings (lbs ww) and ACL (lbs ww) for yellowtail snapper harvested from the Atlantic Ocean, 2011-2015.

Year	Landings	Sector ACL	Percentage ACL Landed
2011*	390,998	-	-
2012	493,409	1,031,286	48%
2013	666,026	1,440,990	46%
2014	933,759	1,440,990	65%
2015	791,157	1,440,990	55%
Average	655,070	-	-

Source: NMFS SEFSC MRIP ACL datasets (October 2016)
*ACL did not go into place until 2012

Angler Effort

Recreational effort derived from the Marine Recreational Information Program (MRIP) database can be characterized in terms of the number of trips as follows:

Target effort - The number of individual angler trips, regardless of duration, where the intercepted angler indicated that the species or a species in the species group was targeted as either the first or the second primary target for the trip. The species did not have to be caught.

Catch effort - The number of individual angler trips, regardless of duration and target intent, where the individual species or a species in the species group was caught. The fish did not have to be kept.

Total recreational trips - The total estimated number of recreational trips, regardless of target intent or catch success.

Other measures of effort are possible, such as directed trips (the number of individual angler trips that either targeted or caught a particular species). **Table 3.3.2.9** and **Table 3.3.2.10** present target and catch effort estimates associated with yellowtail snapper. Target and catch trips are shown by fishing mode (shore, charter, and private/rental vessel). The majority of the estimated target and catch effort for yellowtail snapper occurred via the private/rental vessel mode.

Recreational target trips for yellowtail snapper generally exceed catch trips. The 2011-2015 average target trips were 4,403 for the shore mode, 25,098 for the charter mode, and 138,280 for the private/rental mode (**Table 3.3.2.9**). In contrast, the average catch trips were 36,157 for the shore mode, 39,103 for the charter mode, and 160,272 for the private/rental mode (**Table 3.3.2.10**). While there is a relatively strong interest in fishing for yellowtail snapper among recreational anglers, the species is often caught incidentally, particularly on shore-based trips.

Table 3.3.2.9 Estimated number of angler trips that targeted yellowtail snapper by mode, 2011-2015.

Year	Shore	Charter	Private/Rental Vessel	Total
2011	0	9,800	80,405	90,205
2012	20,523	31,962	57,576	110,061
2013	0	33,040	237,544	270,584
2014	1,492	33,440	233,895	268,828
2015	0	17,247	81,981	99,228
Average	4,403	25,098	138,280	167,781

Source: NMFS MRIP Data Files

Table 3.3.2.10 Estimated number of angler trips that caught yellowtail snapper by mode, 2011-2015.

Year	Shore	Charter	Private/Rental Vessel	Total
2011	29,790	18,032	73,874	121,697
2012	24,902	34,682	111,626	171,210
2013	29,306	54,852	240,184	324,342
2014	44,219	40,417	225,035	309,671
2015	52,566	47,534	150,642	250,742
Average	36,157	39,103	160,272	235,532

Source: NMFS MRIP Data Files

Similar analysis of recreational effort is not possible for the headboat mode because headboat data are not collected at the angler level. Estimates of effort by the headboat mode are provided in terms of angler days, or the total number of standardized full-day angler trips[5]. Headboat effort, in terms of angler days, increased substantially in Florida/Georgia from 2011 through 2015, while effort remained relatively constant in North Carolina and South Carolina (**Table 3.3.2.11**). Headboat effort was the highest, on average, during the summer months of June through August (**Table 3.3.2.12**).

Table 3.3.2.11. South Atlantic headboat angler days by state, 2011-2015.

Year	NC	SC	GA/FLE	Total
2011	18,457	44,645	132,492	195,594
2012	20,766	41,003	147,699	209,468
2013	20,547	40,963	165,679	227,189
2014	22,691	42,025	195,890	260,606
2015	22,716	39,702	194,979	257,397
Average	21,035	41,668	167,348	230,051

Source: NMFS SRHS Program

[5] Headboat trip categories include half-, three-quarter-, full-, and 2-day trips. A full-day trip equals one angler day, a half-day trip equals .5 angler days, etc. Angler days are not standardized to an hourly measure of effort and actual trip durations may vary within each category.

Table 3.3.2.12. Headboat angler days and percent distribution by month (2011-2015).

Year	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
2011	4.3%	5.7%	7.3%	9.4%	9.6%	15.9%	17.7%	11.5%	5.9%	4.4%	3.5%	4.8%
2012	4.6%	4.8%	8.7%	9.8%	9.0%	13.7%	17.4%	12.4%	8.0%	4.3%	3.3%	4.1%
2013	4.5%	4.8%	6.4%	7.1%	9.2%	14.6%	17.4%	14.9%	7.2%	6.4%	2.9%	4.6%
2014	3.4%	5.2%	7.6%	8.7%	9.9%	15.0%	16.9%	12.6%	5.8%	5.8%	3.5%	5.6%
2015	4.9%	4.3%	8.5%	9.8%	9.8%	14.3%	16.5%	12.0%	6.1%	5.2%	3.7%	4.9%
Average	4.3%	5.0%	7.7%	9.0%	9.5%	14.7%	17.2%	12.7%	6.6%	5.2%	3.4%	4.8%

Source: NMFS SRHS Program

Economic Value

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.

Direct estimates of the CS for yellowtail snapper are not currently available. There are, however, estimates for snapper species in general. Haab et al. (2012) estimated the CS (willingness to pay (WTP) for one additional fish caught and kept) for snappers in the southeastern U.S. using four separate econometric modeling techniques. Any CS estimates derived for yellowtail snapper using snapper as a proxy should be viewed as ballpark estimates only. The finite mixture model, which takes into account variation in the preferences of fishermen, had the best prediction rates of the four models. The WTP for an additional snapper (excluding red snapper) estimated by this model was $12.38 (2015 dollars6) with a 95% confidence interval (CI) of $8.26 to $17.89. This value may seem low and may be strongly influenced by the pooling effect inherent to the model in which it was estimated. The WTP for an additional snapper from the mixed-logit model was higher at $30.29 (2015 dollars) with a 95% CI of $20.64 to $39.92.

With regards to for-hire businesses, economic value can be measured by producer surplus (PS) per passenger trip (the amount of money that a vessel owner earns in excess of the cost of providing the trip). Estimates of the PS per for-hire passenger trip are not available. Instead, net operating revenue (NOR), which is the return used to pay all labor wages, returns to capital, and owner profits, is used as a proxy for PS. The estimated NOR value is $153.63 (2015 dollars) per charter angler trip (Carter and Liese 2012). The estimated NOR value per headboat angler trip is $53.03 (2015 dollars) (SAFMC 2016). Estimates of NOR per yellowtail snapper target trip are not available.

6 Estimates converted to 2014 dollars using the 2014 annual Consumer Price Index (CPI) for all US urban consumers provided by the Bureau of Labor and Statistics (BLS) (http://www.bls.gov/data/).

The foregoing estimates of economic value should not be confused with economic impacts associated with recreational fishing expenditures. Although expenditures for a specific good or service may represent a proxy or lower bound of value (a person would not logically pay more for something than it was worth to them), they do not represent the net value (benefits minus cost), nor the change in value associated with a change in the fishing experience.

Business Activity

The desire for recreational fishing generates economic activity as consumers spend their income on various goods and services needed for recreational fishing. This spurs economic activity in the region where recreational fishing occurs. It should be clearly noted that, in the absence of the opportunity to fish, the income would presumably be spent on other goods and services and these expenditures would similarly generate economic activity in the region where the expenditure occurs. As such, the analysis below represents a distributional analysis only.

Estimates of the business activity (economic impacts) associated with recreational angling for yellowtail snapper were derived using average impact coefficients for recreational angling for all species, as derived from an add-on survey to the MRIP to collect economic expenditure information, as described and utilized in NMFS (2011b). Estimates of the average expenditures by recreational anglers are also provided in NMFS (2011b) and are incorporated herein by reference.

Recreational fishing generates business activity (economic impacts). Business activity for the recreational sector is characterized in the form of full-time equivalent jobs, income impacts (wages, salaries, and self-employed income), value-added impacts (difference between the value of goods and the cost of materials or supplies), output (sales) impacts (gross business sales). Estimates of the average target effort (2011-2015) for yellowtail snapper and associated business activity (2015 dollars) are provided in **Table 3.3.2.13**. The average impact coefficients, or multipliers, used in the model are invariant to the "type" of effort and can therefore be directly used to measure the impact of other effort measures such as catch trips if desired. To calculate the multipliers from **Table 3.3.2.13**, simply divide the desired impact measure (income impact, value-added impact, output impact, or jobs) associated with a given mode by the number of target trips for that mode. It should be noted that the presented business activity solely focusses on trip expenditures and does not include business activity generated by expenditures on durable goods. While aggregate data does exist on durable goods expenditures, they cannot be specifically attributed to a species or group of species, as these goods can last multiple years and be used in a wide range of other fisheries and often times for uses other than fishing.

Estimates of the business activity associated with headboat effort are not available. Headboat vessels are not covered in the MRIP, so, in addition to the absence of estimates of target effort, estimation of the appropriate business activity coefficients for headboat effort has not been conducted.

Table 3.3.2.13. Summary of yellowtail snapper target trips (2011 through 2015 average) and associated business activity (2015 dollars).

Mode	Average Annual Target Trips	Jobs	Income Impacts ($ thousands)	Value-Added Impacts ($ thousands)	Output (Sales) Impacts ($ thousands)
Shore	4,403	4	$192	$324	$583
Charter	25,098	181	$9,158	$13,539	$23,301
Private/Rental Vessel	138,280	90	$4,343	$7,507	$13,526
Total	167,781	275	$13,693	$21,370	$37,410

Source: effort data from MRIP; economic impact results calculated using the model developed for NMFS (2016).

3.3.2 Social Environment

Social Importance of Fishing

Socio-cultural values are qualitative in nature making it difficult to measure social valuation of marine resources and fishing activity. The following description includes multiple approaches to examining fishing importance. These spatial approaches focus on the community level (based on the address of dealers or permit holders) and identify importance by "community," defined according to geo-political boundaries (cities). A single county may thus have several communities identified as reliant on fishing and the boundaries of these communities are not discrete in terms of residence, vessel homeport, and dealer address. For example, a fisherman may reside in one community, homeport his vessel in another, and land his catch in yet another.

One approach to identify communities with the greatest engagement utilizes measures called the Regional Quotient (RQ) to identify commercial reliance. The RQ is a way to measure the relative importance of a given species across all communities in the region and represents the proportional distribution of commercial landings of a particular species. This proportional measure does not provide the number of pounds or the value of the catch, data which might be confidential at the community level for many places. 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. For most species, the top fifteen communities are reported as they usually encompass most of the landings. At this time we do not have a comparable measure for recreational fishing but do have other measures of engagement for that sector.

These measures are an attempt to quantify the importance of the components of a particular fishery to communities along the Atlantic coast and suggest where impacts from management actions are more likely to be experienced. The descriptions of the dolphin wahoo fishery and snapper grouper fishery that follow include these quantitative measures in addition to qualitative information about the communities. It should be noted that these vessels may also participate in the coastal migratory pelagics (CMP) fishery as well, but because the actions in this amendment focus on the dolphin wahoo and snapper grouper fisheries, a description of the social environment associated with the CMP fishery will not be included in this section. A

detailed description of the CMP fishery can be found in CMP Amendment 20A (GMFMC/SAFMC 2013).

Dolphin Wahoo Fishery

A description of the social environment of the dolphin wahoo fishery is contained in Dolphin Wahoo Amendment 5 (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 (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 fisheries are primarily recreational, and effort and landings predominantly occur in south Florida and the Florida Keys.

Commercial Dolphin and Wahoo Communities in the South Atlantic

Wadmalaw Island remains the top community for total commercial dolphin landings and value RQ (**Figure 3.3.2.1**) as in Amendment 5 (SAFMC 2013). However, several North Carolina communities have gained in RQ for dolphin in recent years with Beaufort, Hatteras, and Wanchese all within the top five communities since 2011 placing North Carolina second to Florida in overall landings of dolphin (SAFMC 2013). Florida communities include Palm Beach Gardens, Margate, Mayport, Miami, Jupiter, St. Augustine, Palm Beach Shores and Titusville in addition to communities in the Florida Keys (Key Largo, and Islamorada) but only one in the top five. No Georgia communities are identified within the top fifteen dolphin communities in terms of RQ.

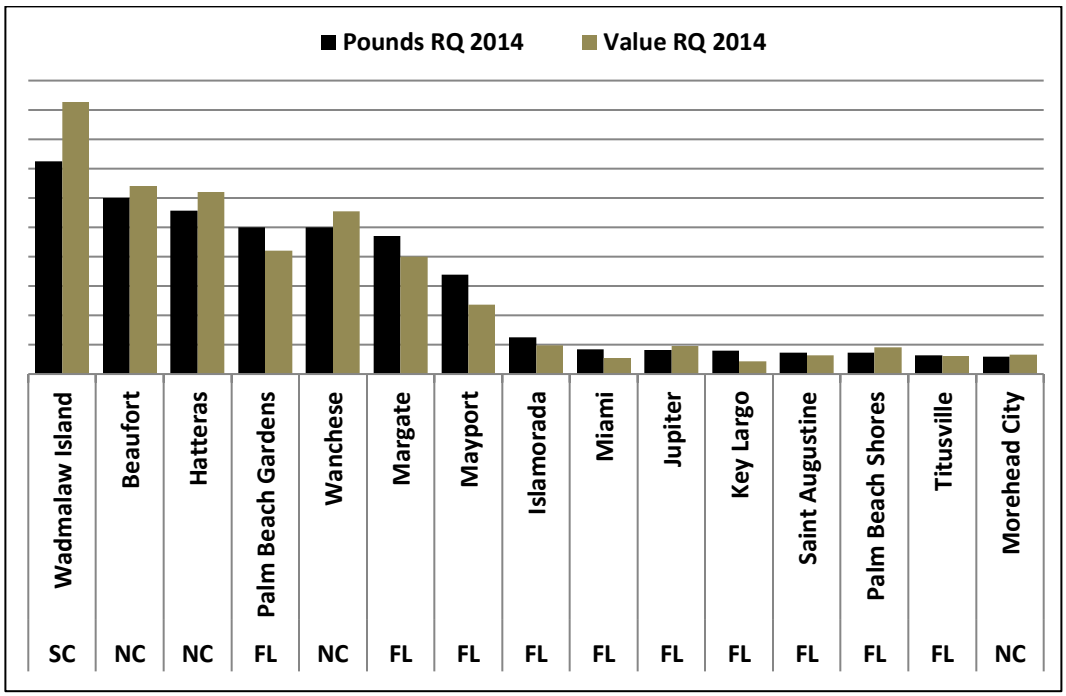


Figure 3.3.2.1. Dolphin Pounds and Value Regional Quotient for South Atlantic Fishing Communities in 2014.
(Source: SERO).

Again using the regional quotient to identify wahoo communities in **Figure 3.3.2.2**, Palm Beach Gardens remains the top community for total commercial wahoo landings and value RQ as in Amendment 5 (SAFMC 2013). As with dolphin, several North Carolina communities have gained in RQ for wahoo in recent years with Beaufort, Wilmington, Morehead City and Wanchese all within the top ten communities since 2011 (SAFMC 2013). Most wahoo commercial communities with high RQ are in Florida and include Jupiter, Fort Lauderdale, Miami, St. Augustine, and Margate in addition to two communities in the Florida Keys (Key West and Islamorada). The communities of Murrells Inlet and Little River, South Carolina also have a relatively high regional quotient for dolphin. No Georgia communities are identified as within the top fifteen Wahoo communities in terms of RQ.

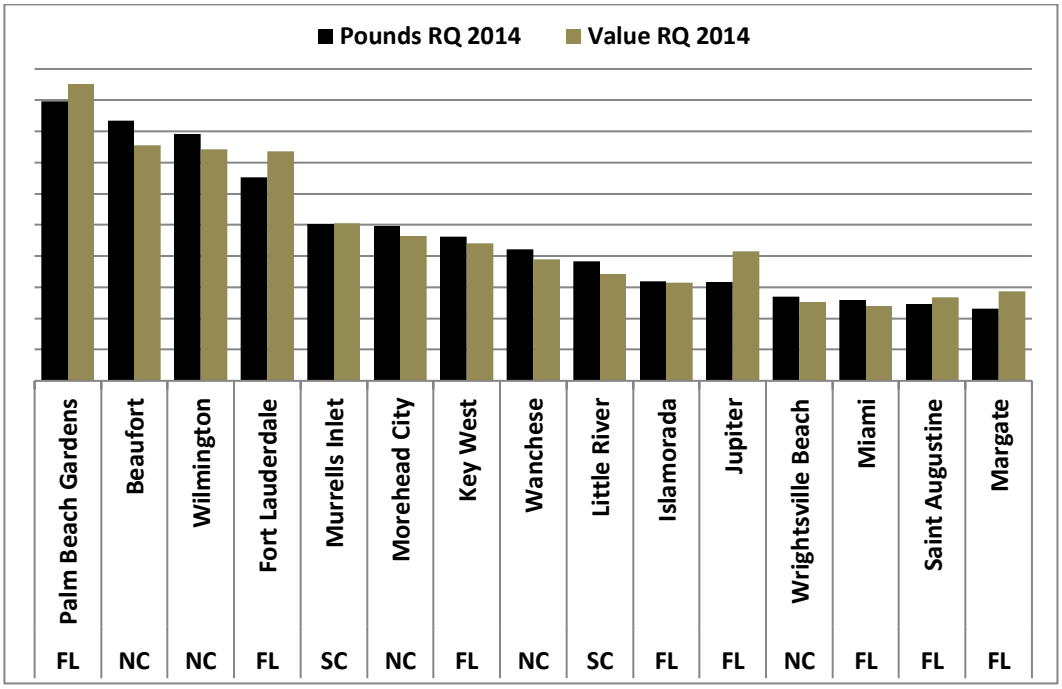


Figure 3.3.2.2. Wahoo Pounds and Value Regional Quotient for South Atlantic Fishing Communities in 2014.
(Source: SERO).

Reliance on and Engagement with Commercial and Recreational Fishing in the South Atlantic

Reliance and engagement indices identify several communities in the South Atlantic that are substantially engaged in commercial and recreational fishing are shown in **Figure 3.3.2.3 and 3.3.2.4**. The communities of Miami, Jupiter, St. Augustine, Key Largo, Islamorada, Mayport and Palm Beach Gardens Florida; Wanchese, Beaufort, Hatteras, and Morehead City, North Carolina are above the threshold for commercial engagement (**Figure 3.3.2.3**). Wanchese, Hatteras, NC and Mayport, FL all exceed both the engagement and reliance thresholds of 1 standard deviation demonstrating a higher dependence upon commercial fishing and its supporting businesses. The communities of Islamorada, St Augustine, Key Largo, Miami, Jupiter and Titusville, Florida; and Hatteras, Morehead City, Beaufort, and Wanchese, North Carolina are all highly engaged in recreational fishing as shown in **Figure 3.3.2.4**. Only the communities of Islamorada and Mayport, FL and Hatteras and Wanchese, NC demonstrate reliance upon recreational fishing with scores over 1 standard deviation. These communities would most then most likely have local economies with some dependence upon recreational fishing and its supporting businesses.

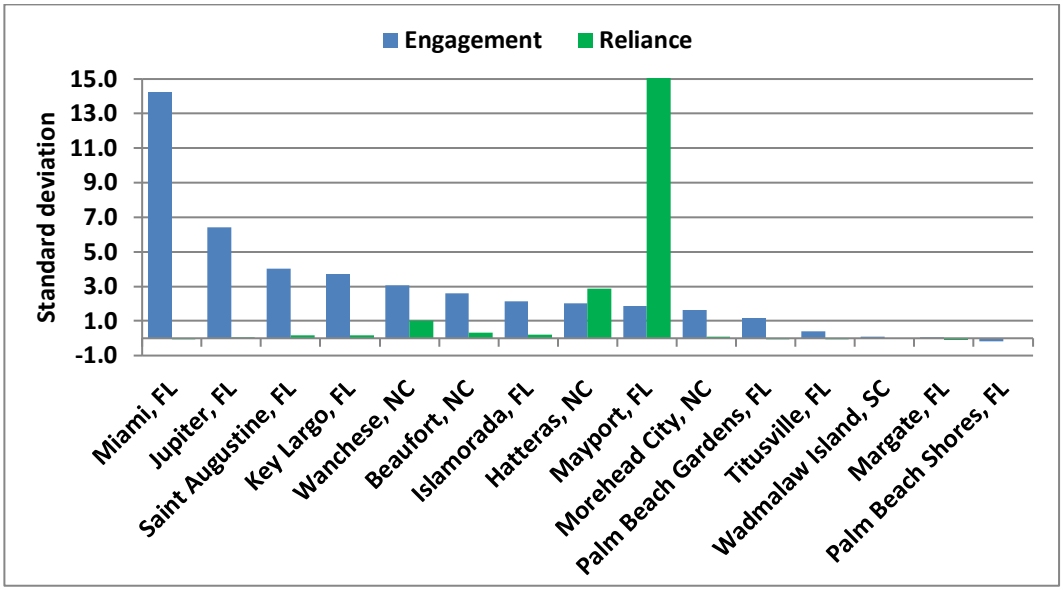


Figure 3.3.2.3. The top dolphin communities for engagement and reliance on commercial fishing. Source: SERO 2014.

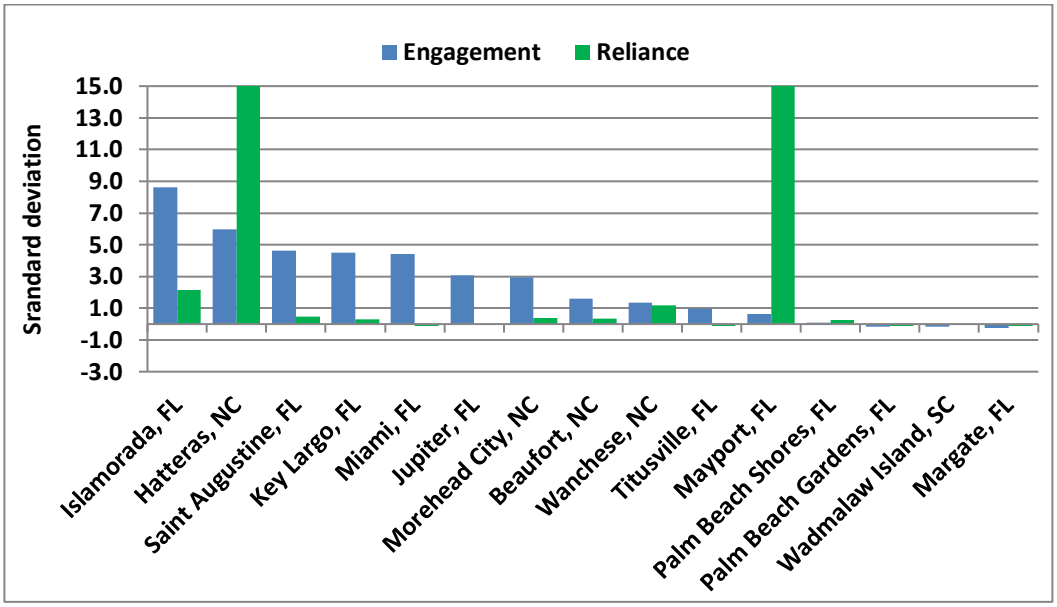


Figure 3.3.2.4. The top dolphin communities for engagement and reliance on recreational fishing. Source: SERO 2014.

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 since we do not have updated landings for those communities (SAFMC 2013).

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

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 (SAFMC 2013).

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).

Snapper Grouper Fishery

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), and positive or negative impacts from regulatory change are expected to occur in places with greater landings of snapper grouper species.

The descriptions of South Atlantic communities below include information about the top communities based upon regional quotients of commercial landings and value for all federally managed snapper grouper species. These top communities are referred to in this document as either "yellowtail snapper communities" or "snapper grouper communities" because these are the areas that would be most likely to experience the effects of proposed actions that could change the snapper grouper fishery and impact the participants and associated businesses and communities within the region. Additionally, the descriptions also include reliance and engagement indices to identify other areas in which yellowtail snapper or snapper grouper species are 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. 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.

Commercial Snapper Grouper Communities in the South Atlantic

Using the regional quotient to identify yellowtail snapper communities, **Figure 3.3.2.5** shows landings and value regional quotient for yellowtail snapper fishing communities in the South Atlantic. The vast majority of yellowtail snapper landings occur in Florida and Key West is clearly the top community in terms of landings and value of yellowtail far outdistancing the other Florida communities. Other states have landings of yellowtail but they are negligible in terms of their ranking of RQ

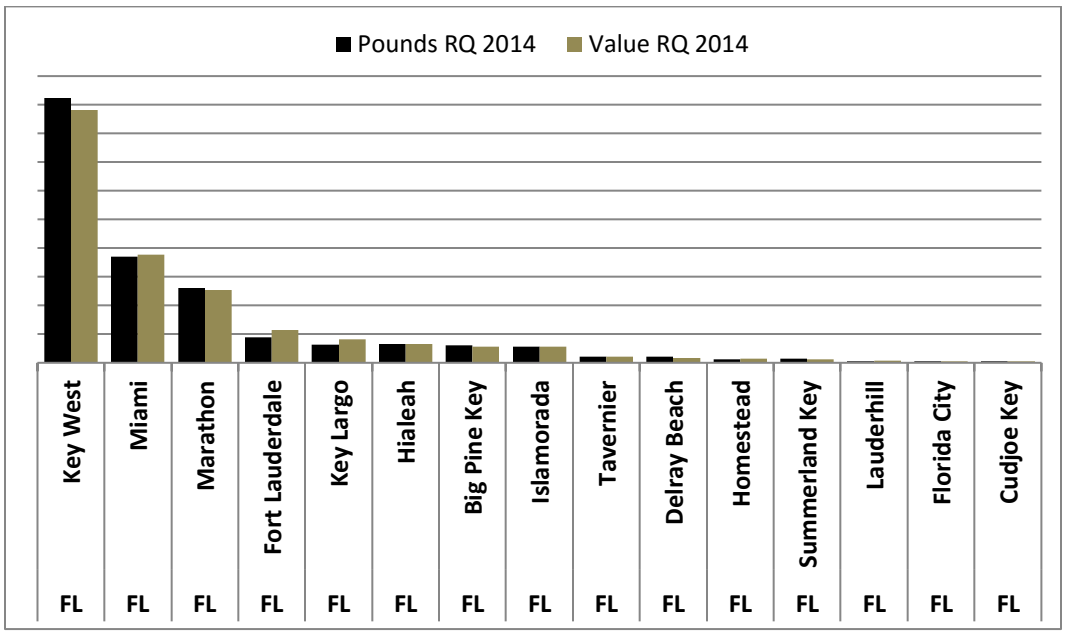


Figure 3.3.2.5. Yellowtail Snapper Value and Pounds Regional Quotient for South Atlantic Fishing Communities in 2014.
(Source: SERO).

Reliance on and Engagement with Recreational Snapper Grouper Fishing in South Florida

The reliance and engagement indices that were used in above sections to describe communities tied to recreational fishing of dolphin wahoo are also used in this section to describe snapper grouper recreational communities. Detailed information on the engagement and reliance indices and how they were developed is available in Dolphin Wahoo Amendment 5 (SAFMC 2013). **Figure 3.3.2.6** shows the top communities with substantial reliance on and engagement with recreational snapper grouper fishing in South Florida, since these are most likely the communities that could be affected by the actions proposed in this amendment. These communities would most likely have local economies with some dependence upon recreational fishing and its supporting businesses.

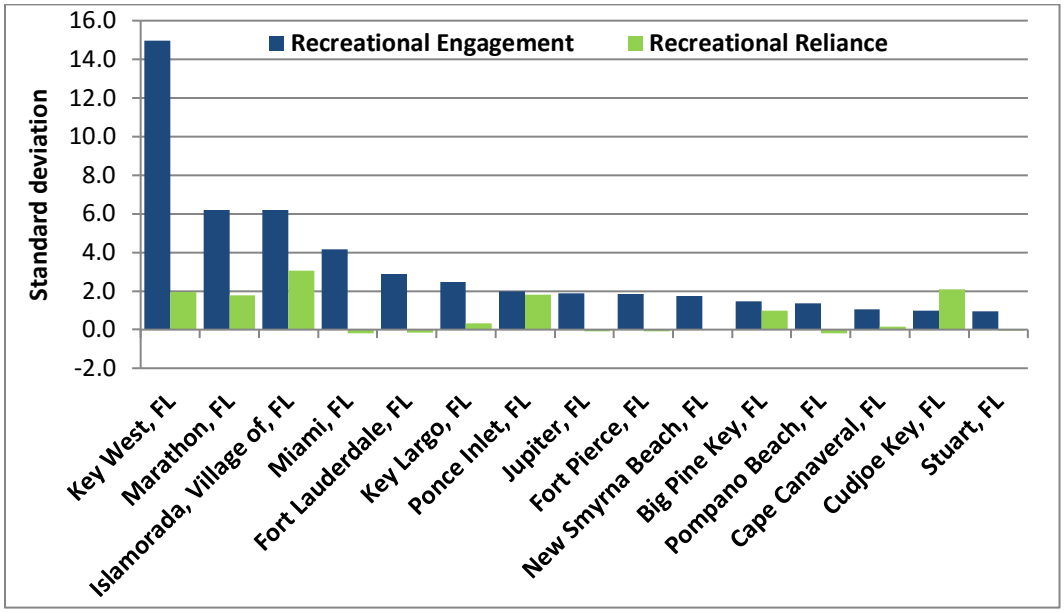


Figure 3.3.2.6. The top South Florida communities for engagement with and reliance on recreational fishing. Source: SERO 2014.

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 and coastal communities in the South Atlantic may experience some impacts by the proposed action depending upon the alternatives selected and whether they have negative or positive social effects. However, information on the race and income status for many of the individuals involved in fishing is not available. To evaluate where EJ concerns might exist, a suite of social vulnerability indices have been developed; the three indices are poverty, population composition and personal disruptions. The variables included in each of these indices have been identified through the literature as being important components that contribute to a community's vulnerability. Indicators such as increased poverty rates for different groups, more single female-headed households and households with children under the age of 5, disruptions such as higher separation rates, higher crime rates and unemployment all are signs of populations experiencing vulnerabilities. These vulnerabilities signify that it may be difficult for someone living in these communities to recover from significant social disruption that might stem from a change in their ability to work or maintain a certain income level.

Because many of the communities included in both the commercial and recreational engagement and reliance figures are the same, a select group most common from each region and sector were included in **Figures 3.3.3.1 and 3.3.3.2.**

In **Figure 3.3.3.1** there are very few selected communities in Florida that exceed the thresholds for social vulnerability. Hialeah and Miami are the only two that demonstrate substantial social vulnerabilities with all three indices over 1 standard deviation. St. Augustine and Marathon display high poverty vulnerabilities but low vulnerabilities for others.

Communities outside of Florida (**Figure 3.3.3.2**) also demonstrate little vulnerability as Beaufort, NC is the only community with personal disruption and poverty vulnerabilities over the threshold of 1 standard deviation. Morehead City and Wilmington demonstrates some vulnerability with poverty and personal disruption just above ½ standard deviation.

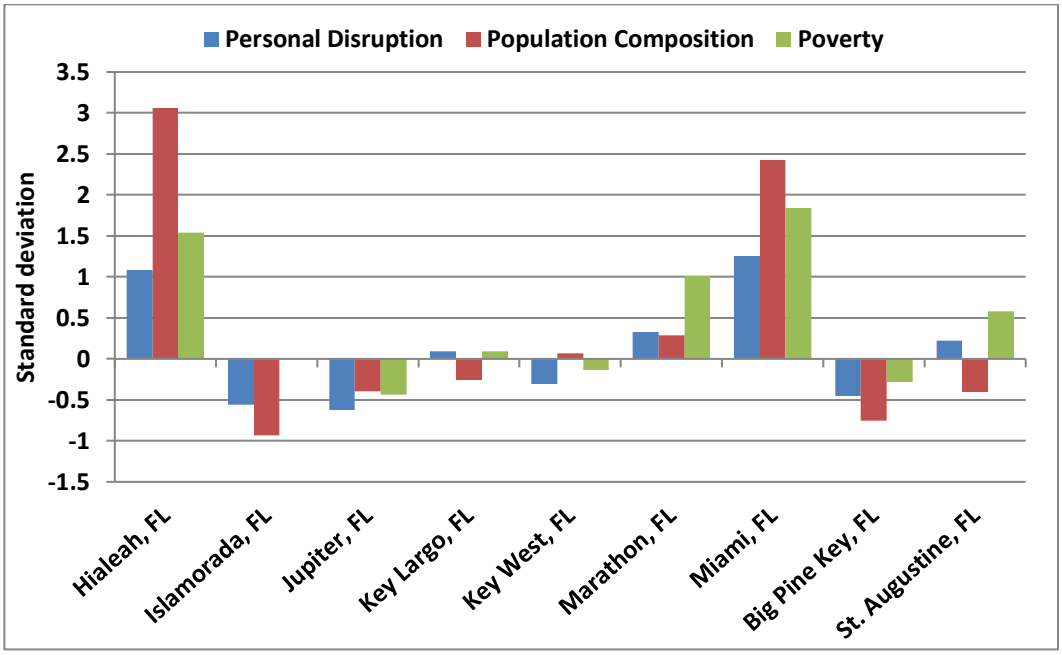


Figure 3.3.3.1 Social vulnerability measures for selected Florida communities.
Source: SERO 2014.

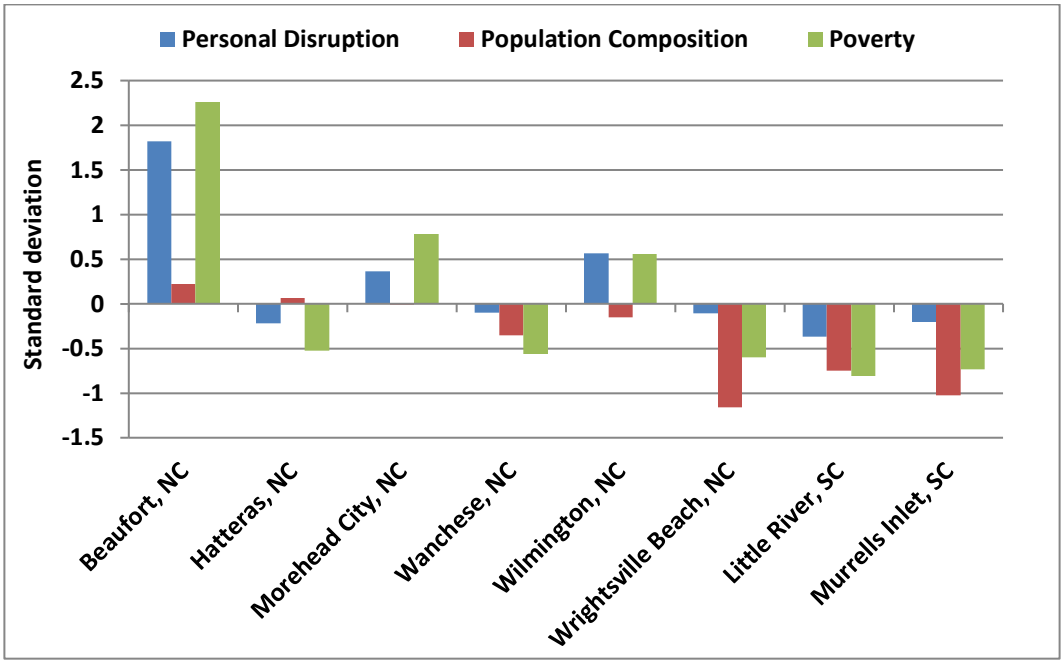


Figure 3.3.3.2 Social vulnerability measures for selected South Carolina and North Carolina communities. Source: SERO 2014

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

Public interests also are involved in the fishery management process through participation on Advisory Panels and through council meetings, which, with few exceptions for discussing personnel matters and litigation, are open to the public. The South Atlantic Council uses its Scientific and Statistical Committee (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 Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia North Carolina, South Carolina, Georgia, and Florida have the authority to manage fisheries that occur in waters extending three nautical miles from their respective shorelines. The Department of Marine Fisheries is responsible for marine fisheries in Maine's state waters. In New Hampshire, marine fisheries are managed by the Marine Fisheries Division of the New Hampshire Fish and Game Department. Massachusetts's marine fisheries are managed by the Division of Marine Fisheries of the Massachusetts Department of Fish and Game. Rhode Island's marine fisheries are managed by the Division of Fish and Wildlife of Rhode Island's Department of

Environmental Management. Connecticut manages its marine fisheries through the Department of Energy and Environmental Protection. New York's marine fisheries are managed by the Division of Fish, Wildlife and Marine Resources of the Department of Environmental Conservation. New Jersey manages its marine fisheries through the Division of Fish and Wildlife of the Department of Environmental Protection. Pennsylvania manages its fisheries through the Pennsylvania Fish and Boat Commission. Marine fisheries in Delaware are managed by the Fisheries Section of the Division of Fish and Wildlife. Maryland's Department of Natural Resources manages its marine fisheries. Marine fisheries in Virginia are managed by the Virginia Marine Resources Commission. North Carolina's marine fisheries are managed by the Marine Fisheries Division of the North Carolina Department of 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 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' 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 National Oceanic and Atmospheric Administration's (NOAA) National Marine Fisheries (NMFS) Office for Law Enforcement (NOAA/OLE) and the United States Coast Guard (USCG) have the authority and the responsibility to enforce South Atlantic Council regulations. NOAA/OLE agents, who specialize in living marine resource violations, provide fisheries expertise and investigative support for the overall fisheries mission. The USCG is a multi-mission agency, which provides at sea patrol services for the fisheries mission.

Neither NOAA/OLE nor the USCG can provide a continuous law enforcement presence in all areas due to the limited resources of NOAA/OLE and the priority tasking of the USCG. To supplement at sea and dockside inspections of fishing vessels, NOAA entered into Cooperative

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

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

Chapter 4. Environmental Consequences

4.1 Action 1: Revise definition of optimum yield (OY) for dolphin.

Alternatives[1]

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

1. **(No Action)**. Optimal yield (OY) is equal to the total ACL (15,344,846 lbs ww). (Note: Total ACL=ABC=OY)

2. Optimal yield (OY) is equal to the Commercial ACL (1,534,485 lbs ww) + Recreational ACT (ACT equals [sector ACL *(1-PSE)] or [ACL*0.5], whichever is greater).

3. Optimal yield (OY) is equal to 75% MSY

4. Optimal yield (OY) is the long-term average catch, which is not designed to exceed the total ACL, and will fall between the total ACL (15,344,846 lbs ww) and ACT (ACT equals [sector ACL *(1-PSE)] or [ACL*0.5], whichever is greater).

4.1.1 Biological Effects

The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) defines optimum yield (OY) as the amount of fish 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; that is prescribed on the basis of the maximum sustainable yield (MSY) from the fishery, as reduced by any relevant economic, social, or ecological factor; and, in the case of an overfished fishery, that provides for rebuilding to a level consistent with producing the MSY in such fishery [600.310 (i)(A)].

In the Comprehensive Annual Catch Limit (ACL) Amendment (SAFMC 2011), the South Atlantic Fishery Management Council (South Atlantic Council) specified OY for dolphin = Total ACL = acceptable biological catch (ABC) at 14,596,216 pounds whole weight (lbs ww). In the same amendment, MSY for dolphin in the Atlantic, U.S. Caribbean, and Gulf of Mexico was determined to be between 18.8 and 46.5 million lbs. The South Atlantic Council's guidance was that this MSY value would remain until a Southeast Data, Assessment, and Review (SEDAR) stock assessment is conducted for dolphin (SAFMC 2011). The commercial ACL was specified at 1,065,524 lbs ww and the recreational ACL was specified at 13,530,692 lbs ww. The Comprehensive ACL Amendment was effective April 16, 2012 (52 FR 15916).

Amendment 5 to the Fishery Management Plan (FMP) for the Dolphin Wahoo Fishery of the Atlantic (Amendment 5; SAFMC 2013) revised the OY (= ABC = total ACL) at 15,344,846 lbs ww, commercial ACL at 1,157,001 lbs ww and recreational ACL at 14,187,845 lbs ww, and

the recreational annual catch target (ACT) at 11,595,803 lbs ww. Amendment 5 was effective July 9, 2014 (79 FR 32878). Amendment 8 to the Dolphin Wahoo FMP (part of the Generic AM and Dolphin Allocation Amendment (SAFMC 2015)) adjusted the sector ACLs based on more recent years and specified the commercial ACL at 1,534,485 lbs ww, and the recreational ACL at 13,810,361 lbs ww. Regulations under Amendment 8 was effective February 22, 2016 (81 FR 3731). The recreational ACT equal to [sector ACL *(1-PSE)] or [ACL*0.5], whichever is greater) is 11,595,803 lbs ww and has not been changed since its implementation (Amendment 5; SAFMC 2013). There is no commercial ACT for dolphin.

Table 4.1.1.1 and **Figure 4.1.1.1** show annual dolphin landings during 2005-2015. Total landings for dolphin were well under the total ACL during 2005-2015 (**Table 4.1.1.1**). Commercial landings were higher in 2009, 2014, and 2015 (**Table 4.1.1.1** and **Figure 4.1.1.1**). However, ACLs were not in place in 2009 and updated commercial landings were not available in a timely manner during 2014. The commercial ACL was projected to be met in 2015, and hence, the commercial sector was closed. Updated commercial landings data revealed that 96% of the commercial ACL was met in 2015. During 2005-2015, recreational landings did not exceed the recreational ACL and harvested an average of 47 percent of the recreational ACL.

Table 4.1.1.1. Landings of dolphin (lbs ww) during 2005-2015. Data includes North, Mid- and South Atlantic Regions. The current total ACL for dolphin is 15,344,846 lbs ww, commercial ACL is 1,534,485 lbs ww, and the recreational ACL is 13,810,361 lbs ww.

Year	Commercial (lbs ww)	Recreational (lbs ww)	Total (lbs ww)
2005	577,655	8,629,313	9,206,968
2006	650,121	8,898,207	9,548,328
2007	998,023	9,598,841	10,596,864
2008	835,177	7,833,547	8,668,724
2009	1,296,014	7,570,195	8,866,209
2010	715,334	6,243,399	6,958,733
2011	792,293	6,522,301	7,314,594
2012	709,131	6,099,788	6,808,919
2013	616,953	4,444,755	5,061,708
2014	1,291,092	5,240,659	6,531,751
2015	1,109,333	7,586,553	8,695,886
Average	871,921	7,151,596	8,023,517

Note: Commercial data from ACL_FILES_09142016.xlsx.
Recreational data comes from MRIPACLspec_rec81_16wv2_15Aug16_w14and15LACreel.xlsx

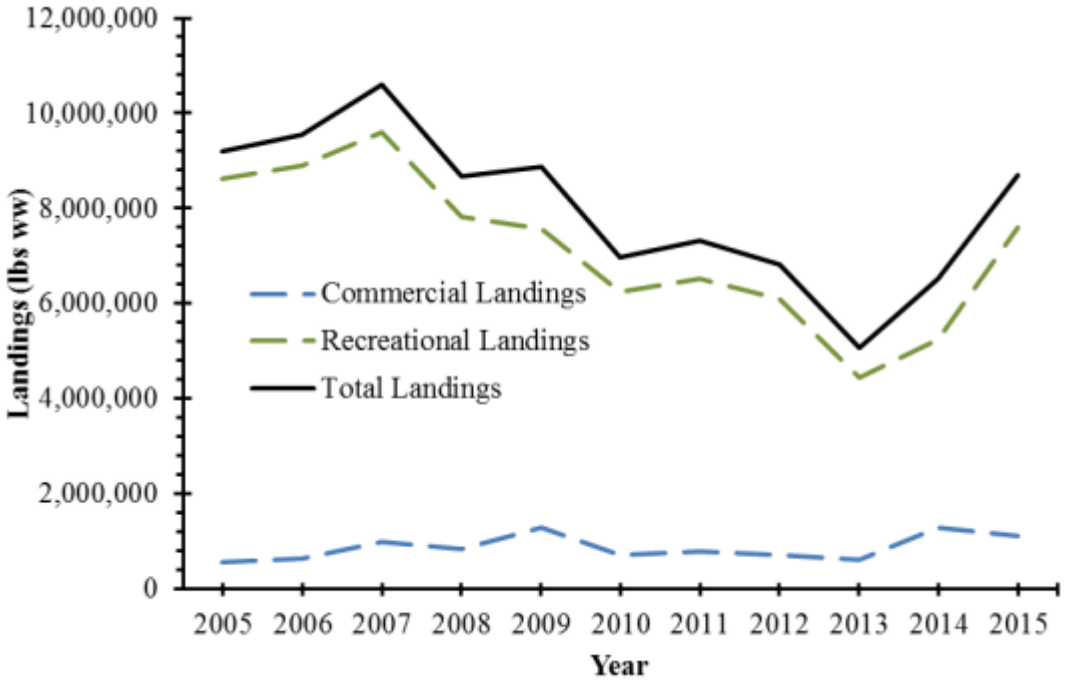


Figure 4.1.1.1. Annual landings of dolphin (lbs ww) for the North, Mid-, and South Atlantic Regions during 2005-2015.

Table 4.1.1.2. OY values (lbs ww) in **Action 1** under the different alternatives.

Alternative 1 (No Action) (OY=Total ACL=ABC) (lbs ww)	**Alternative 2** (OY=Comm. ACL + Rec. ACT) (lbs ww)	**Alternative 3** (OY=75% MSY) (lbs ww)	**Alternative 4** (OY=Value between Total ACL and ACT) (lbs ww)
15,344,846	13,130,288	Value between 14,000,000 – 35,000,000	Value between 11,595,803-15,344,846

Alternative 1 (No Action) would retain the OY=total ACL=ABC at 15,344,846 lbs ww as specified in Amendment 5 (SAFMC 2013). National Standard 1 (NS1) establishes the relationship between conservation and management measures, preventing overfishing, and achieving OY from each stock, stock complex, or fishery. The NS1 guidelines discuss the relationship of overfishing limit (OFL) to the maximum sustainable yield (MSY) and the ACL to OY. The OFL is an annual amount of catch that corresponds to the estimate of maximum fishing mortality threshold (MFMT) applied to a stock; and MSY is the long-term average of such catches. The long-term objective is to achieve OY through annual achievement of an ACL. The NS1 guidelines state that OY cannot exceed MSY, and if OY is set close to MSY, the conservation and management measures must have very good control of the amount of catch to achieve the OY without overfishing. Under **Alternative 2**, OY would be 13,130,288 lbs ww (commercial ACL + recreational ACT). Compared with **Alternative 1 (No Action)** the OY would be reduced by 2,214,558 lbs ww. **Alternative 3** would specify the OY at a value between 14 million lbs ww and 35 million lbs ww. **Alternative 4** would specify the OY between

11,595,803 and 15,344,846, a value equal to or less than the OY under **Alternative 1 (No Action)** (Table 4.1.1.2).

The biological effects would be expected to be neutral under all the alternatives considered in this action with the exception that a lower OY resulting in a lower ACL may result in a closure, which in turn would result in discards of dolphin.

4.1.2 Economic Effects

The economic effects of changing OY for a stock depend on how the level is set in comparison to current and potential yield of the species. The economic value derived from OY can include the harvest allowed under the specified amount and the potential benefits that may occur due to additional fish left in the water beyond MSY that such as improving the value of a recreational trip or potentially decreasing harvesting costs on a commercial trip. The constraining factor depends on the level where OY is set in comparison to how the fishery operates and how it may guide other management decisions that may grow or limit a fishery.

Realized economic effects would not occur unless OY is set in a manner that constrains harvest in a fishery. All of the alternatives propose levels of OY are above observed harvest in the for dolphin from 2005 through 2015, therefore, realized economic effects are not anticipated under current management and extraction levels for any of the alternatives. The potential for negative economic effects occurring from a change in OY are greatest for **Alternative 4**, as this alternative sets OY at the lowest potential harvest levels, which would presumably minimize the benefits that are received from harvest of dolphin. **Alternative 2** has the second most potential to cause negative economic effects in regards to benefits that can be derived from harvest, followed by **Alternative 3** and **Alternative 1 (No Action)**. When examining economic benefits that may accrue to dolphin through maintained abundance in the population, the ranking would be inverse, with **Alternative 1 (No Action)** providing the fewest potential benefits, followed by **Alternative 3**, **Alternative 2**, and **Alternative 4**.

4.1.3 Social Effects

The concept of OY has been used in fisheries for several decades and is still required by the Magnuson-Stevens Act. National Marine Fisheries Service guidance states that OY is based on the defined MSY for the stock and must not exceed the MSY level. However, fisheries management has adapted to the ABC and ACL system mandated by the 2006 Reauthorization of the Magnuson-Stevens Act, which may broaden the potential definition of OY by removing the need for the association with MSY. Additionally, ecosystem-based management and managing for multi-fishery participation—looking at the bigger picture—may help to construct a new approach to defining OYs and overall management goals.

The social effects of defining the OY for dolphin would be linked to how the definition affects the access of each user group at the present and in the future. **Chapter 3.3.2** includes detailed information about fishermen and communities associated with the dolphin portion of the dolphin wahoo fishery. For the commercial sector, an OY that allowed the commercial fleet to access the maximum proportion of the ACL (**Alternative 1 (No Action)**) would likely be the most beneficial by maximizing the commercial landings. The effects of **Alternatives 2-4** would depend on how much of the ACL is available to the commercial fleet.

For the recreational fleet, the effects of OY would be associated with the trade-off between allowing access and retention of dolphin to keep trip satisfaction, but also leaving enough dolphin in the water to allow continued target recreational trips. It would be expected that an OY that results in a lower proportion of the total ACL removed each year would be more beneficial for the recreational fleet.

4.1.4 Administrative Effects

If the OY is changed under **Alternatives 2, 3,** and **4**, administrative effects would be related to educating the public and enforcing the new catch levels that may result from the change in the OY.

4.2 Action 2: Revise authorized gear types for the harvest of dolphin or wahoo

Alternatives[1]

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

1. No Action. The following are the only authorized gear types in the fisheries for dolphin and wahoo in the Atlantic EEZ: Automatic reel, bandit gear, handline, pelagic longline, rod and reel, and spearfishing gear (including powerheads). A person aboard a vessel in the Atlantic EEZ that has on board gear types other than authorized gear types may not possess a dolphin or wahoo.

2. Add lobster pot to list of authorized gears for the harvest of dolphin or wahoo.

3. Remove gear limitations for the harvest of dolphin or wahoo.

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

4.2.1 Biological Effects

In the regulations, "gear" applies to the dolphin wahoo fishery itself. While the intent behind **Alternative 2** is to allow fishers to stow lobster pots on board the vessel while fishing for dolphin and wahoo, the regulations (if implemented under **Alternative 2**) would authorize fishers to utilize lobster pots to fish for dolphin and wahoo. However, dolphin and wahoo are fast swimming pelagic fish and would not be harvested using lobster pots (**Alternative 2**). **Alternative 2** would also allow other types of pots and traps to be used in the dolphin wahoo fishery. Trap gear could also have negative indirect effects to non-targeted species and protected species due the potential for entanglement with buoy lines. Direct biological effects would not be expected from **Alternative 2** compared to **Alternative 1 (No Action)**.

Removing the current gear limitations for the possession of dolphin or wahoo under **Alternative 3**, gear such as gill nets could be utilized, which could have a direct negative impact on dolphin, wahoo, and co-occurring species, and negative indirect effects on habitat and indiscriminate capture of all species that are encountered by the gill nets. Therefore, biological benefits would be expected to be highest under **Alternative 1 (No Action)**, followed by **Alternative 2**, and **Alternative 3**.

4.2.2 Economic Effects

Action 1 (No Action) would continue to prohibit the possession of dolphin or wahoo onboard vessels that also possess lobster pot gear. This excludes such vessels from the potential harvest of dolphin or wahoo and the revenue that may be received from the sale of landings for the two species. The marginal decrease in harvest opportunity that is forgone under **Alternative 1 (No Action)** is expected to be fairly small due to the limited number of vessels that would likely be impacted and the amount landings that is likely to occur of either species on such vessels.

The economic effects of **Alternative 2** that could occur if lobster pots were onboard while dolphin or wahoo are in possession would likely be positive, but overall effects would be minimal in comparison to **Alternative 1 (No Action).** It is not anticipated that harvest of dolphin or wahoo would increase appreciably by vessels fishing lobster pot gear being allowed to possess either species.

Due to its non-specific nature, **Alternative 3** has the potential for development of additional gear to target dolphin and wahoo with gear that are currently prohibited in the dolphin wahoo fishery. **Alternative 3** would benefit commercial and recreational fishermen targeting either species using the newly allowed gear types, but may impose potentially sizeable, negative economic effects on other dolphin wahoo fishery participants should the increase in landings lead to a negative impact on the dolphin and wahoo resource, either locally and/or for the entire resource. Additionally, new gear and likely new participants entering the dolphin wahoo fishery may lead to an increase in conflict among participants. In addition, **Alternative 3** could result in an increase commercial landings that could cause the commercial ACLs for dolphin and wahoo to be met more quickly, which would result an in-season closure in the commercial sectors for the species. The potential for negative economic effects is by far the greatest for **Alternative 3**, with **Alternative 2** and **Alternative 1 (No Action)** imposing likely minimal and negligible economic effects.

4.2.3 Social Effects

The social effects of modifying authorized gear for dolphin and wahoo would be associated with improved trip satisfaction (recreational), increased potential to commercial harvest dolphin and wahoo (commercial), and the outcomes of adding gear that may interact with protected species. Under **Alternative 1 (No Action)**, there would be no additional opportunities for fishermen to harvest dolphin and wahoo with trap (**Alternative 2**) or other gear not currently authorized (**Alternative 3**). However, there may be little difference for most recreational and commercial fishermen between **Alternatives 1-3** if most fishermen harvest dolphin and wahoo with hook and line gear.

However, if there are negative effects on protected species under **Alternatives 2** or **3**, this could result in required future regulation to reduce the impact of the dolphin wahoo fishery on protected species.

4.2.4 Administrative Effects

Alternatives 2 and **3** would have greater administrative effects compared to **Alternative 1 (No Action)**. Administrative burden would take the form of educating the public and enforcing the new regulations, if changed under **Alternatives 2** and **3**.

4.3 Action 3: Revise sector allocations and accountability measures for dolphin.

Alternatives[1]

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

1. No Action. The current allocation for the recreational sector for dolphin is 90% (13,810,361 lbs ww) of the total ACL. The current allocation for the commercial sector for dolphin is 10% (1,534,485 lbs ww) of the total ACL.

2. Maintain the current sector ACLs, but revise the AM to prohibit harvest for both sectors once a portion of the total ACL is landed.
   Sub-alternative 2a: Sectors will not close until 60% (9,206,908 lbs ww) of the total ACL is landed.
   Sub-alternative 2b: Sectors will not close until 70% (10,741,392 lbs ww) of the total ACL is landed.
   Sub-alternative 2c: Sectors will not close until 80% (12,275,877 lbs ww) of the total ACL is landed.
   Sub-alternative 2d: Sectors will not close until 90% (13,810,361 lbs ww) of the total ACL is landed.
   Sub-alternative 2e: Sectors will not close until 100% (15,344,846 lbs ww) of the total ACL is landed.

3. Set aside a portion of the total ACL that can be used by either sector as a common pool allocation.
   Sub-alternative 3a: 1% (153,448 lbs ww) of the total ACL becomes a common pool category. The remaining total ACL (15,191,398 lbs ww) is split between the recreational sector (13,672,258 lbs ww) and the commercial sector (1,518,140 lbs ww) according to the current allocation.
   Sub-alternative 3b: 2.5% (383,621 lbs ww) of the total ACL becomes a common pool category. The remaining total ACL (14,961,225 lbs ww) is split between the recreational sector (13,465,103 lbs ww) and the commercial sector (1,496,123 lbs ww) according to the current allocation.
   Sub-alternative 3c: 5% (767,242 lbs ww) of the total ACL becomes a common pool category. The remaining total ACL (14,577,604 lbs ww) is split between the recreational sector (13,119,844 lbs ww) and the commercial sector (1,457,760 lbs ww) according to the current allocation.
   Sub-alternative 3d: 10% (1,534,485 lbs ww) of the total ACL becomes a common pool category. The remaining total ACL (13,810,361 lbs ww) is split between the recreational sector (12,429,325 lbs ww) and the commercial sector (1,381,036 lbs ww) according to the current allocation.

4. If the sector ACL is not met in a fishing year, establish a sector ACL "credit" derived from the difference between the total pounds of dolphin landed in the sector and the sector ACL for that same fishing year. In the following fishing year, the credit would transfer to the sector's ACL and could be used if the sector ACL is met or exceeded. The sector ACL credit would only apply if a minimum percentage of the total ACL was not harvested in a given fishing year (Draft Sub-alternatives 4a-4c), and only a certain percentage of the unharvested sector ACL from the previous fishing year would make up the carry-over credit (Draft Sub alternatives 4d-4f). The carry-over credit would remain until used, but could not exceed a certain percentage of the sector ACL (Draft Sub-alternatives 4g-4j) and the total harvest when the carryover is used could not exceed the total ACL.

   Remaining Total ACL Threshold (MUST CHOOSE ONE):
   Sub-alternative 4a: At least 15% (2,301,727 lbs) of the total ACL remains unharvested.
   Sub-alternative 4b: At least 20% (3,068,969 lbs) of the total ACL remains unharvested.
   Sub-alternative 4c: At least 25% (3,836,212 lbs) of the total ACL remains unharvested.

   Percentage of Remaining sector ACL to Transfer (MUST CHOOSE ONE):
   Sub-alternative 4d: The carry-over credit will be equal to 10% of the unharvested sector ACL.
   Sub-alternative 4e: The carry-over credit will be equal to 15% of the unharvested sector ACL.
   Sub-alternative 4f: The carry-over credit will be equal to 20% of the unharvested sector ACL.

Percentage cap for carry-over credit in relation to sector ACL (MUST CHOOSE ONE):
Sub-alternative 4g: The carry-over credit could not exceed 10% of the sector ACL.
Sub-alternative 4h: The carry-over credit could not exceed 20% of the sector ACL.
Sub-alternative 4i: The carry-over credit could not exceed 30% of the sector ACL.
Sub-alternative 4j: The carry-over credit could not exceed 100% of the sector ACL.

5. At the beginning of the fishing year, conditionally transfer a certain percentage (Sub-alternatives 5a-5d) of the ACL from a sector that is not landing its ACL to the other sector that is landing all or almost all of its ACL in the next fishing year, if the minimum landings threshold is not met for the donating sector (Sub-alternatives 5e-5g). If the receiving sector does not land at least 90% of its unadjusted ACL, this transfer will not occur. The highest landings from the donating sector based on available finalized data from the five years prior will be used as criteria to determine if allocation transfers will occur.

Conditional Quota Transfer (MUST CHOOSE ONE):
Sub-alternative 5a: Conditionally transfer 1% of the unadjusted ACL of one sector to the other sector.
Sub-alternative 5b: Conditionally transfer 2.5% of the unadjusted ACL of one sector to the other sector.
Sub-alternative 5c: Conditionally transfer 5% of the unadjusted ACL of one sector to the other sector.
Sub-alternative 5d: Conditionally transfer 10% of the unadjusted ACL of one sector to the other sector.

Donating sector's ACL Minimum Threshold (MUST CHOOSE ONE), if the donating sector's landings are:
Sub-alternative 5e: less than 50% of its unadjusted ACL.
Sub-alternative 5f: less than 65% of its unadjusted ACL.
Sub-alternative 5g: less than 75% of its unadjusted ACL.

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

4.3.1 Biological Effects

Alternative 1 (No Action) would retain the commercial ACL at 1,534,485 lbs ww (10%) and the recreational ACL at 13, 810,361 lbs ww (90%). Under these ACLs, neither sector would be expected to exceed their respective ACLs (Table 4.3.1.1). In 2014, the commercial ACL of 1,157,001 lbs ww was exceeded by 12% (Table 4.3.1.1), but, updated commercial landings were not available in a timely manner during 2014 to close the commercial sector that year. The commercial ACL (1,157,001 lbs ww) was projected to be met in 2015, and hence the commercial sector was closed. Updated commercial landings data revealed that 96% of the commercial ACL was met in 2015 (Table 4.3.1.1). The current in-season and post-season AMs would also remain in place under **Alternative 1 (No Action)**.

Table 4.3.1.1. Dolphin landings (lbs ww) by sector and percentage (%) of sector ACL harvested each year, during 2005-2015. The current commercial ACL is 1,534,485 lbs ww, and the recreational ACL is 13,810,361 lbs ww (as per Amendment 8; February 22, 2016).

Year	Commercial landings (lbs ww)	Commercial ACL/Soft cap (lbs ww)	% of Commercial ACL Harvested	Recreational Landings (lbs ww)	Recreational ACL (lbs ww)	% of Recreational ACL Harvested
2005	577,655	1,500,000	39	8,629,313	N/A	N/A
2006	650,121	1,500,000	43	8,898,207	N/A	N/A
2007	998,023	1,500,000	67	9,598,841	N/A	N/A
2008	835,177	1,500,000	56	7,833,547	N/A	N/A
2009	1,296,014	1,500,000	86	7,570,195	N/A	N/A
2010	715,334	1,500,000	48	6,243,399	N/A	N/A
2011	792,293	1,500,000	53	6,522,301	N/A	N/A
2012	709,131	1,065,524	67	6,099,788	13,530,692	45
2013	616,953	1,065,524	58	4,444,755	13,530,692	33
2014	1,291,092	1,157,001	112	5,240,659	14,187,845	37
2015	1,109,333	1,157,001	96	7,586,553	14,187,845	53

Note: 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.
Commercial data is from ACL_FILES_09142016.xlsx
Recreational data is from MRIPACLspec_rec81_16wv2_15Aug16_w14and15LACreel.xlsx
Landings include north, mid, and south Atlantic regions

Alternative 2 and its **Sub-alternatives 2a-2e** would maintain the sector ACLs at 10% commercial and 90% recreational, but the AM would be revised to prohibit harvest for both sectors once a portion of the total ACL (= ABC = OY) is landed as shown in Table 4.3.1.2. With total landings averaging 8,023,517 lbs ww for both sectors during 2005-2015 (Table 4.1.1.1), it is unlikely that any of the sub-alternatives under **Alternative 2** would result in the AMs being triggered and the sectors closing. Biological effects of **Alternative 2** and **Sub-alternatives 2a-2e** would be neutral compared with each other and with **Alternative 1 (No Action)**, since ACLs and AMs are in place to prevent the stock from over-harvesting. However, **Alternative 2** and its sub-alternatives (especially **Sub-alternative 2e**) would be expected to increase the likelihood of a sector exceeding its ACL since a harvest prohibition would not occur until the total ACL is met. However, discards of dolphin would be reduced under Alternative 2 because neither sector would be closed until the total ACL is met.

Table 4.3.1.2. Percentage of the total ACL and ACL value (lbs ww) resulting in a closure of both the commercial and recreational sectors for dolphin. During 2005-2015, total landings ranged from a low of 6,958,733 lbs ww to a high of 10,596,864, with average landings of 8,023,517 lbs ww (Table 4.1.1.1).

Sub-Alternative	Percentage of Total ACL (%)	ACL (lbs ww)
Sub-alternative 2a	60	9,206,908
Sub-alternative 2b	70	10,741,392
Sub-alternative 2c	80	12,275,877
Sub-alternative 2d	90	13,810,361
Sub-alternative 2e	100	15,344,846

Alternative 3 and its **Sub-alternatives 3a-3d** would set aside a portion (1% - 10%) of the total ACL (= ABC = OY) that could be used by either sector as a common pool allocation. The current allocations (10% commercial and 90% recreational) would be applied to the remaining total ACL resulting in the sector ACLs as shown in Table 4.3.1.3.

Table 4.3.1.3. Commercial and Recreational ACLs (lbs ww) under Sub-alternatives 3a-3d. The current total ACL for dolphin is 15,344,846 lbs ww, commercial ACL is 1,534,485 lbs ww, and the recreational ACL is 13,810,361 lbs ww.

	Common pool ACL (lbs ww) / Percentage (%) of Total ACL	Remaining Total ACL (lbs ww)	Commercial ACL (lbs ww)	Recreational ACL (lbs ww)	*Commercial ACL (lbs ww) + common pool ACL	*Recreational ACL (lbs ww) + common pool ACL
Sub-alternative 3a	153,448/ 1%	15,191,398	1,518,140	13,672,258	1,671,588	13,825,706
Sub-alternative 3b	383,621/ 2.5%	14,961,225	1,496,123	13,465,103	1,879,744	13,848,724
Sub-alternative 3c	767,242/ 5%	14,577,604	1,457,760	13,119,844	2,225,002	13,887,086
Sub-alternative 3d	1,534,485/ 10%	13,810,361	1,381,036	12,429,325	2,915,521	13,963,810

* Only one sector would be allowed to utilize the common pool at a given time to avoid exceeding the total ACL.

During 2005-2015, the commercial landings were highest in 2009, at 1,296,014 lbs ww; and the recreational landings were highest in 2007, at 9,598,841 lbs ww (Table 4.1.1.1). The current commercial ACL is 1,534,485 lbs ww and the current recreational ACL is 13,810,361 lbs ww. Both sectors would have their ACLs lowered (by 1%-10%) initially to contribute to the common pool. However, as shown in Table 4.3.1.1, removing up to 10% of both sector's ACLs would still not result in the current sector ACLs being met. Furthermore, all the sector ACLs under **Sub-alternatives 3a-3d** with the inclusion of the common pool ACL, if utilized, would provide additional pounds of dolphin (1%-10%, respectively) (Table 4.3.1.3). Therefore, biological effects of **Sub-alternatives 3a-3d** would be neutral compared with each other and

with **Alternative 1 (No Action)**, since ACLs and AMs are already be in place to prevent the stock from over-harvesting.

Alternative 4 would establish a sector ACL "credit" (carry-over). The credit amount would be derived from the difference between the total pounds of dolphin landed in the sector and the sector ACL for that same fishing year. If a sector ACL is not met in a fishing year, then in the following fishing year, the credit would transfer to the sector's ACL and could be used if the sector ACL is met or exceeded. The sector ACL credit would only apply if a minimum percentage (15%-25%) of the total ACL was not harvested in a given fishing year as per **Sub-alternatives 4a-4c**. Additionally, only 10%-20% of the unharvested sector ACL from the previous year would qualify (**Sub-alternatives 4d-4f**). Furthermore, the credit would remain until used, but could not exceed 10%-100% (**Sub-alternatives 4g-4j**) and the total harvest when the credit is used could not exceed the total ACL. As shown in Tables 4.1.1.1 and 4.3.1.1, the total ACL as well as the sector ACLs would not be expected to exceed the current ACLs. Logistically, the sub-alternatives under **Alternative 4** would be very difficult to monitor and administer due to the delay in the availability of landings and time required to implement the changes. **Alternative 1 (No Action)** would be expected to have greater biological effects compared to **Alternative 4** and **Sub-alternatives 4a-4j** because it would allow for a lower harvest. However, as long as the total ACL is not exceeded, no negative effects to the stock would be expected.

Alternative 5 would conditionally transfer 1%-10% (**Sub-alternatives 5a-5d**) of the ACL from a sector that is not landing its ACL to the other sector that is landing all or almost all of its ACL in the next fishing year. The condition is that the minimum landings threshold of 50%-75% of the donating sector's ACL must not be met (**Sub-alternatives 5e-5f**). Furthermore, if the receiving sector does not land at least 90% of its unadjusted ACL, this transfer would not occur. Logistically, the sub-alternatives under **Alternative 5** would be very difficult to monitor and administer due to the delay in the availability of landings and time required to implement the changes. It could be two years before the sector that needs the extra ACL is able to utilize it. As long as the total ACL is not exceeded, transferring ACL from one sector to another would not be expected to have negative biological effects on the stock. Since the expected harvest would be reduced under **Alternative 1 (No Action),** it would be expected to have greater biological benefits than **Alternative 5** and **Sub-alternatives 5a-4f**.

Negative biological effects to dolphin would not be expected under all the alternatives and their respective sub-alternatives under **Action 3** because ACLs and AMs are already in place to prevent overfishing. Among the alternatives, the greatest biological benefits would be expected from alternatives that constrain harvest to the greatest degree. However, **Alternative 2** and its sub-alternatives, especially **Sub-alternative 2e,** would be expected to extend the fishing season the longest for both sectors without triggering the current AMs and reduce the likelihood of discards due to a closure.

4.3.2 Economic Effects

Realized and potential changes in sector allocations can alter fishing behavior and the economic benefits received from a fishery. Changes in allocation can also impact whether or not closures occur, which impose costs in a fishery. **Alternative 1 (No Action)** keeps the current

allocation in the dolphin portion of the dolphin wahoo fishery in place. Under the current total ACL, neither the commercial nor the recreational sector is expected to reach its respective sector ACL based on recent historic landings. Given the increasing trend in commercial landings, the potential does exist that the commercial sector could harvest its ACL, triggering an in-season closure in that sector. A closure in the commercial sector would impose a loss of potential revenue when dolphin incidentally caught are discarded. The recreational sector is not likely to be affected by **Alternative 1 (No Action)**, as the sector has not come close to landing the entire sector allocation in recent years.

Under **Alternative 2** the dolphin harvest would not be closed for either sector until the total ACL is met. Based upon historic landings from 2005-2015 (**Table 4.1.1.1**), a closure would not occur in most years under any of the sub-alternatives of **Alternative 2**. **Sub-alternative 2a** has the greatest potential to trigger a closure for dolphin and thus the greatest potential for negative economic effects, as the landings level that would trigger a closure are set at the lowest level. Total landings of dolphin surpassed 9,206,908 lbs ww in 2006 and 2007, demonstrating the capacity of dolphin to potentially trigger a closure under this sub-alternative. The potential for a closure for dolphin decreases as the landings amount is increased in **Sub-alternatives 2b** through **2e**. **Alternative 2** does also create the potential for increased landings in one sector to close harvest for dolphin in both sectors, leading to inequitable utilization of the resource between the recreational and commercial sectors in respect to the manner that it is currently exploited. Any such closure or large scale change in how the dolphin resource is harvested would lead to potential negative effects in one or both sectors.

Alternative 3 and its **Sub-alternatives 3a** through **3d** would reduce the sector ACLs for both the recreational and commercial sectors, but allow access to a common pool allocation when needed to help prevent a closure in the fishery from occurring. The size of the common pool ACL increases progressively from **Sub-alternative 3a** to **3d**, with the sector ACLs decreasing accordingly. Under the largest decrease in sector ACLs in **Sub-alternative 3d**, the revised commercial and recreation ACLs would still remain above observed historic landings in for dolphin from 2005-2015, therefore, there are no realized economic effects anticipated. There are potential economic benefits that may occur with the addition of the common pool ACL. Each sector has the potential to increase its landings beyond the levels specified in current sector ACLs, decreasing the possibility of a dolphin closure, as long as one sector continues to under harvest its revised sector ACL.

Since neither sector has harvested the respective current sector ACL in recent years, there are no anticipated economic effects that would be realized for **Alternative 4**, which establishes the ability of a sector to earn a roll-over credit. Creating a roll-over credit that is earned through an underage of harvest for a sector's ACL would have some potential positive economic effects by decreasing the probability of a closure occurring in either sector, provided that the total ACL is not exceeded. The likelihood of the ACL being exceeded is the lowest under **Sub-alternatives 4c, 4d,** and **4g**, as these sub-alternatives contain the highest levels of under-harvest that must occur before a credit can be issued and set the lowest growth rate and lowest cap on the total size that the roll-over credit can attain. **Sub-alternatives 4a**, **4f**, and **4j** would have the inverse effect and allow the greatest ability for a sector to over-run its sector ACL, but are also the most risk prone combination in regards to creating the potential to meet the total ACL and

trigger a closure in the fishery for both sectors. All other sub-alternatives (**4b**, **4e**, **4h**, and **4i**) fall in between the two outlined scenarios in relation to the ability of a sector to exceed its sector ACL when needed and risk aversion to meeting the total ACL which would trigger closures for both sectors.

The conditional transfer of ACL, as outlined in **Alternative 5** does allow for potential positive economic effects to occur in the dolphin portion of the dolphin wahoo fishery when one sector is consistently under-harvesting its sector ACL, while the other sector is harvesting all or almost all of its sector ACL. Based on the observed landings for dolphin over the past five years, a transfer of ACL could occur under **sub-alternatives 5f** and **5g** from the recreational sector to the commercial sector. This would lead to potential positive economic effects for the commercial sector if the additional ACL is used. The extent to which these economic effects would occur would depend on the amount of ACL transferred (**Sub-alternatives 5a** through **5d**), with **Sub-alternative 5a** providing the smallest increase in ACL for the commercial sector and **Sub-alternative 5d** providing the largest increase in commercial ACL. The realized positive economic effects for the commercial sector are expected to be minimal, as the sector has not exceeded its current ACL in recent years.

The potential economic effects of the **Alternative 2** through **Alternative 5** in comparison to **Alternative 1 (No Action)** would be very dependent on the sub-alternatives that are chosen. Based on the potential to trigger a closure for dolphin, **Alternative 2** has the greatest potential for negative economic effects, followed by **Alternative 1 (No Action)**, **Alternative 4**, **Alternative 5,** and **Alternative 3**.

4.3.3 Social Effects

Modifications in sector allocations of the dolphin ACL could result in some changes in fishing behavior and impacts to the social environment. Although sector allocations are currently in place under **Alternative 1 (No Action)**, changes could increase perceptions of scarcity and change the fishing behavior of those within a particular sector. Because there has been an initial allocation between the commercial and recreational sectors, **Alternative 1 (No Action)** may have few direct social effects. However, if one sector has not or does not reach its ACL, the resource may be underutilized and available quota would not be available to the other sector.

The simultaneous closure of sectors specified in **Alternative 2** would likely not be beneficial to the commercial or recreational sectors under **Sub-alternatives 2a-2d** because it would likely close one sector early before another sector reaches its ACL. Closing when landings reach 100% of the total ACL (**Sub-alternative 2e**) would likely be similar to **Alternative 1 (No Action)**. Overall, a greater opportunity for both sectors to reach the ACL is expected to benefit each sector. **Sub-alternative 2e** would be the most beneficial to both sectors, followed by **Sub-alternative 2d**, **Sub-alternative 2c**, **Sub-alternative 2b**, and then **Sub-alternative 2a.**

Creating a portion of the total ACL to be common pool (**Alternative 3**) could be beneficial in allowing both sectors to access additional quota when needed, but also may create derby conditions if both sectors are reaching their respective ACLs. In general, a larger

proportion of the ACL designated as common pool would be more likely to result in the benefits to the fishermen. The effects of **Sub-alternatives 3a-3d** on each sector depends on the likelihood of needing to access the common pool quota and at what time of year. If landings for each sector continue as in recent years (**Table 4.3.1.1**), the commercial sector would benefit more from access to a common pool quota than the recreational sector. **Sub-alternative 3d** would be most beneficial to the commercial sector, followed by **Sub-alternative 3c, Sub-alternative 3b**, and then **Sub-alternative 3a**. Because recreational landings have not reached the recreational ACL in recent years (**Table 4.3.3.1**), the effects of **Sub-alternatives 3a-3d** on participants in the recraetional sector would be expected to be minimal or none. However, if recreational effort increased in the future but commercial landings stayed at the same level, the loss of the portion of the ACL designated for recreational harvest could reduce access to the dolphin resource by recreational fishermen.

Establishing a system to allow a carry-over in **Alternative 4** could be beneficial to both sectors if the total landings were still under the total ACL, and if there were no negative effects on the stock due to an "overage" the year with a carry-over. In the long term, it would likely be more beneficial that a higher threshold be in place to allow for the "credit" to occur only when there is sufficient unharvested ACL, in order to minimize the risk of negative biological effects on the dolphin resource that could later impact fishing opportunities. **Sub-alternative 4c** would have the lowest risk of negative long-term effects on the resource and future fishing opportunities, followed by **Sub-alternative 2b**, and then **Sub-alternative 4a**.

In the short term, access to a higher ACL may be beneficial to fishermen targeting dolphin, particularly for the commercial sector because commercial landings in recent years have met or exceeded the commercial ACL (**Table 4.3.1.1**). **Sub-alternative 4f** would allow these short-term benefits, followed by **Sub-alternative 4e**, and then **Sub-alternative 4d**. A lower cap on the percentage that could be transferred may help to mitigate risks to the dolphin resource if there is a "credit" applied, but too low of a cap could reduce any benefits to fishermen of having access to a higher ACL and more fishing opportunities. **Sub-alternative 4g**, **Sub-alternative 4h**, and **Sub-alternative 4i** would likely be effective in minimizing negative long-term effects on the dolphin resource and fishing opportunities, but may be too low to allow for benefits to the fishermen to accrue. **Sub-alternative 4j** would allow the most fishing opportunities, but also could result in long-term negative effects on future fishing opportunities if there are negative biological effects on the dolphin stock.

Alternative 5 could provide a flexible and adaptive system to allow each sector more or less access to the total ACL each year. Although there may be some years when a transfer ends up negatively affecting the 'donating' sector, the flexible mechanisms would allow the allocations to return to the current allocations at the beginning of the next fishing year. Because it is expected that transfers will benefit the commercial sector and have little effect on the recreational sector under current fishery conditions (**Table 4.3.1.1**), **Sub-alternative 5d** would be the most beneficial to the commercial sector, followed by **Sub-alternative 5c**, **Sub-alternative 5b**, and then **Sub-alternative 5a.** If recreational landings are similar to landings in recent years, the effects of **Sub-alternatives 5a-5d** are expected to be minimal or none for participants in the recreational sector.

4.3.4 Administrative Effects

On July 27, 2016, NMFS released a fisheries allocation review policy (http://www.fisheries.noaa.gov/op/pds/documents/01/01-119.pdf; NMFSSPD 01-119; Appendix X), outlining the fisheries allocation review process (**Figure 4.3.1**). The policy includes the Council Coordination Committee's guidance on when sector allocation decisions for a species need to be made, and what triggers are applicable for each of the Council's fishery management plans (FMP; Procedural Directive 01-119-01, Appendix X). The policy also includes NMFS's guidance on what factors need to be considered when making sector allocation decisions (Procedural Directive 01-119-02, Appendix X). NMFS and the South Atlantic Council have three years (July 2019), or as soon as practicable, to determine whether or not trigger mechanisms have been established for FMPs that contain a species sector allocation.

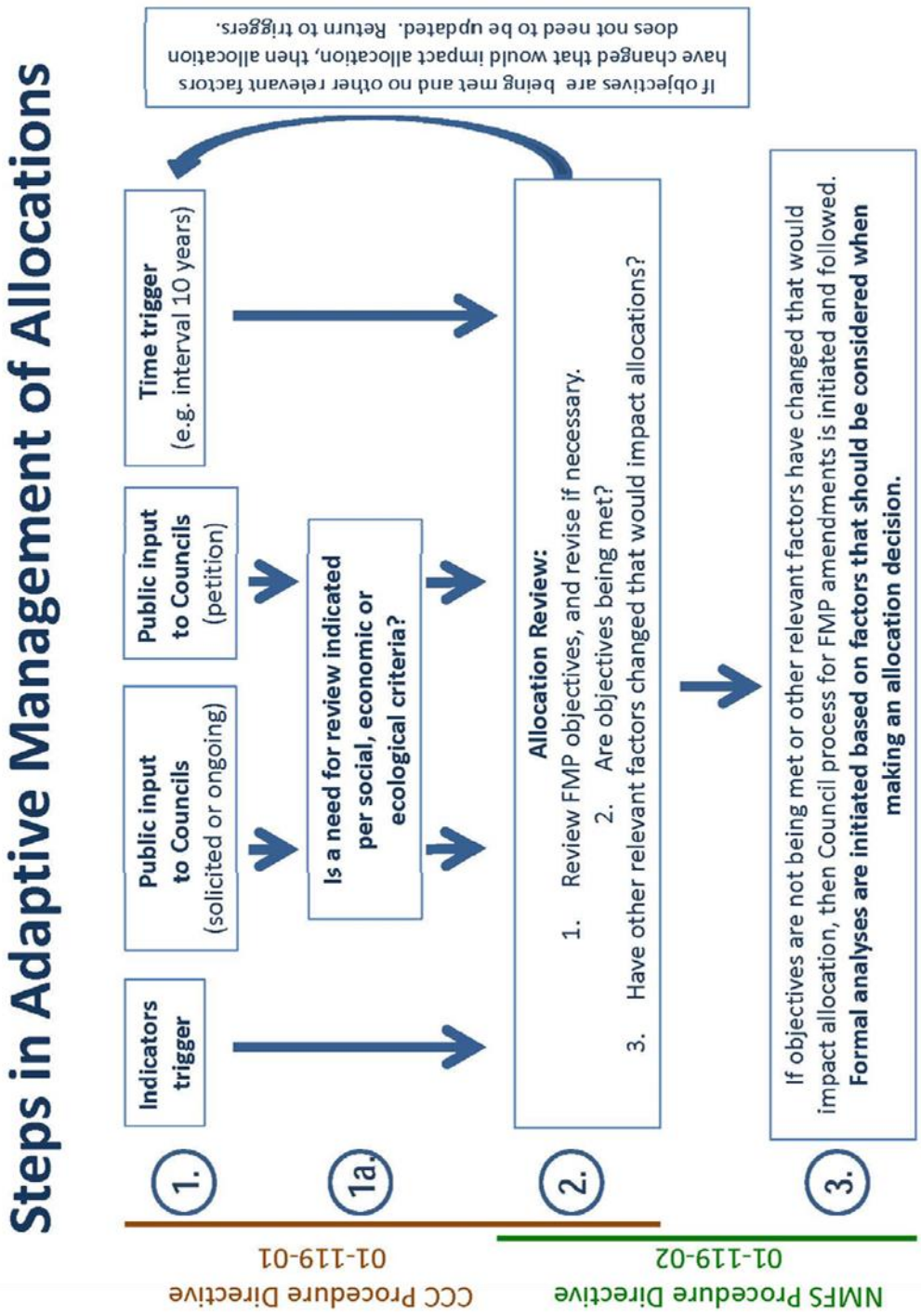


Figure 4.3.1. Fisheries allocation review process as outlined in the NMFS allocation policy published July 27, 2016.

NMFS and the South Atlantic Council received ample input from the public when the commercial sector for dolphin closed in 2015. This input, combined with the recreational sector landing less than 50% (on average) of its ACL in recent years (**Table 4.3.1.1**), is the rationale for revisiting the sector allocations for dolphin.

Sector ACLs and AMs are already in place, and therefore, **Alternative 1 (No Action)** and **Alternative 2** (including **Sub-alternatives 2a-2e**) would have the least negative administrative effects followed by **Alternatives 3**, **5**, and **4** (and their respective sub-alternatives). **Alternative 3** and **Sub-alternatives 3a-3d** would add to the administrative burden in terms of monitoring the ACLs, educating the public, and enforcing the new ACLs. **Alternative 4** and **Sub-alternatives 4a-4j** would be the most difficult logistically and a tremendous burden to administer, compounded by the lack of timely recreational data to make the adjustments necessary to implement carry-over credit. **Alternative 5** and **Sub-alternatives 5a-5g** would also add to the administrative burden, and could have up to a two-year delay before a sector transfer of ACLs could be made.

4.4 Action 4: Revise sector allocations and accountability measures for South Atlantic yellowtail snapper.

Alternatives[1]

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

1. No Action. The current recreational sector allocation for yellowtail snapper is 47.44% (1,440,990 lbs ww) of the total ACL. The current commercial sector allocation for yellowtail snapper is 52.56% (1,596,510 lbs ww) of the total ACL.

   The current commercial AM includes an in-season closure to take place if the commercial ACL is met or projected to be met. If the commercial ACL is exceeded, it will be reduced by the amount of the commercial overage in the following fishing year only if the species is overfished and the total ACL is exceeded.

   The current recreational AM includes an in-season closure to take place if the recreational ACL is met or projected to be met. It also includes a shortening of the recreational season that may be triggered if the recreational ACL is exceeded, but only after recreational landings have be monitored for persistence in increased landings. The length of the recreational season will not be reduced if the RA determines the best available science shows it is not necessary. If a reduction is necessary, the recreational season may be reduced and the ACL in the following fishing year will be reduced by the amount of the recreational overage only if the species is overfished and the total ACL is exceeded.

2. Maintain current sector ACLs, but revise AM to not close either sector until total ACL is met.

3. Change sector ACLs.
   - **Sub-alternative 3a.** Allocate 42% (1,275,750 lbs ww) of the total ACL to the recreational sector. Allocate 58% (1,761,750 lbs ww) of the total ACL to the commercial sector. (Based on average landings from 2005-2014)
   - **Sub-alternative 3b**. Allocate 40% (1,215,000 lbs ww) of the total ACL to the recreational sector. Allocate 60% (1,822,500 lbs ww) of the total ACL to the commercial sector. (Based on 2013 landings).
   - **Sub-alternative 3c**. Allocate 30% (911,250 lbs ww) of the total ACL to the recreational sector. Allocate 70% (2,126,250 lbs ww) of the total ACL to the commercial sector. (Based on 2012 landings)
   - **Sub-alternative 3d**. Allocate 28% (850,500 lbs ww) of the total ACL to the recreational sector. Allocate 72% (2,187,000 lbs ww) of the total ACL to the commercial sector. (Based on 2011 landings)

4. Set aside a portion of the total ACL that can be used by either sector as a common pool allocation.
   - **Sub-alternative 4a:** 1% (30,375 lbs ww) of the total ACL becomes a common pool category. The remaining ACL (3,007,125 lbs ww) is split between the recreational sector (1,426,580 lbs ww) and the commercial sector (1,580,545 lbs ww) according to the current allocation.
   - **Sub-alternative 4b:** 2.5% (75,938 lbs ww) of the total ACL becomes a common pool category. The remaining ACL (2,961,562 lbs ww) is split between the recreational sector (1,404,965 lbs ww) and the commercial sector (1,556,597 lbs ww) according to the current allocation.
   - **Sub-alternative 4c:** 5% (151,875 lbs ww) of the total ACL becomes a common pool category. The remaining ACL (2,885,625 lbs ww) is split between the recreational sector (1,368,941 lbs ww) and the commercial sector (1,516,685 lbs ww) according to the current allocation.
   - **Sub-alternative 4d:** 10% (303,750 lbs ww) of the total ACL becomes a common pool category. The remaining ACL (2,733,750 lbs ww) is split between the recreational sector (1,296,891 lbs ww) and the commercial sector (1,436,859 lbs ww) according to the current allocation.

5. If the sector ACL is not met in a fishing year, establish a sector ACL "credit" derived from the difference between the total pounds of yellowtail snapper landed in the sector and the sector ACL for that same fishing year. In the following fishing year, the credit would transfer to the sector's ACL if the sector ACL is met or exceeded. The sector ACL credit would only apply if a minimum percentage of the total ACL was not harvested in a given fishing year (Draft Sub-alternatives 5a-5c), and only a certain percentage of the unharvested sector ACL from the previous fishing year would make up the carry-over credit (Draft Sub alternatives 5d-5f). The carry-over credit would remain until used, but could not exceed a certain percentage of the sector ACL (Draft Sub-alternatives 5g-5j) and the total harvest when the carryover is used could not exceed the total ACL.

Remaining Total ACL Threshold (MUST CHOOSE ONE):
Sub-alternative 5a: At least 15% (455,625 lbs ww) of the total ACL remains unharvested.
Sub-alternative 5b: At least 20% (607,500 lbs ww) of the total ACL remains unharvested.
Sub-alternative 5c: At least 25% (759,375 lbs ww) of the total ACL remains unharvested.

Percentage of Remaining Stock ACL to Transfer (MUST CHOOSE ONE):
Sub-alternative 5d: The carry-over credit will be equal to 10% of the unharvested sector ACL.
Sub-alternative 5e: The carry-over credit will be equal to 15% of the unharvested sector ACL.
Sub-alternative 5f: The carry-over credit will be equal to 20% of the unharvested sector ACL.

Percentage cap for carry-over credit in relation to sector ACL (MUST CHOOSE ONE):
Sub-alternative 5g: The carry-over credit could not exceed 10% of the sector ACL.
Sub-alternative 5h: The carry-over credit could not exceed 20% of the sector ACL.
Sub-alternative 5i: The carry-over credit could not exceed 30% of the sector ACL.
Sub-alternative 5j: The carry-over credit could not exceed 100% of the sector ACL.

6. At the beginning of the fishing year, conditionally transfer a certain percentage (Sub-alternatives 6a-6d) of the ACL from a sector that is not landing its ACL to the other sector that is landing all or almost all of its ACL in the next fishing year, if the minimum landings threshold is not met for the donating sector (Sub-alternatives 6e-6g). If the receiving sector does not land at least 90% of its unadjusted ACL, this transfer will not occur. The highest landings from the donating sector based on available finalized data from the five years prior will be used as criteria to determine if allocation transfers will occur. Note: Total ACL=ABC=OY

Conditional ACL Transfer (MUST CHOOSE ONE):
Sub-alternative 6a: Conditionally transfer 5% of the unadjusted ACL of one sector to the other sector.
Sub-alternative 6b: Conditionally transfer 10% of the unadjusted ACL of one sector to the other sector.
Sub-alternative 6c: Conditionally transfer 15% of the unadjusted ACL of one sector to the other sector.
Sub-alternative 6d: Conditionally transfer 20% of the unadjusted ACL of one sector to the other sector.

Donating sector's ACL Minimum Threshold (MUST CHOOSE ONE), if the donating sector's landings are:
Sub-alternative 6e: less than 50% of its unadjusted ACL.
Sub-alternative 6f: less than 65% of its unadjusted ACL.
Sub-alternative 6g: less than 75% of its unadjusted ACL.

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

NOTE: Due to updated landings information for 2015, all analyses are expected to change for Action 4.

4.4.1 Biological Effects

Sector ACLs for yellowtail snapper were first established by the final rule for the Comprehensive ACL Amendment (SAFMC 2011) on April 16, 2012 (52 FR 15916), at 52.56% (1,142,589 lbs ww) for the commercial sector, and 47.44% (1,031,286 lbs ww) for the recreational sector. The final rule for Regulatory Amendment 15 to the FMP for the Snapper-Grouper Fishery of the South Atlantic Region (Regulatory Amendment 15; SAFMC 2013) maintained the percentage of the sector allocations, but increased the sector ACLs for yellowtail snapper on September 12, 2013 (78 FR 49183), to the current commercial ACL at 1,596,510 lbs ww, and the recreational ACL at 1,440,990 lbs ww. The current AMs for yellowtail snapper were implemented by Amendment 34 to the Snapper Grouper FMP (part of the Generic Allocation and Dolphin Allocation Amendment; SAFMC 2015).

Average landings for the commercial and recreational sectors during 2005-2015 were 1,049,895 lbs ww and 611,584 lbs ww, respectively (**Table 4.4.1.1; Figure 4.4.1.1**).

Table 4.4.1.1. Landings (lbs ww) of yellowtail snapper during 2005-2015 in the South Atlantic Region. The current total ACL for yellowtail snapper is 3,037,500 lbs ww, commercial ACL is 1,596,510 lbs ww, and the recreational ACL is 1,440,990 lbs ww.

Year	Commercial Landings (lbs ww)	Recreational Landings (lbs ww)	Total Landings (lbs ww)
2005	814,899	576,247	1,391,146
2006	694,958	560,320	1,255,278
2007	628,608	786,399	1,415,007
2008	910,323	746,313	1,656,636
2009	1,085,281	348,536	1,433,817
2010	1,126,231	434,259	1,560,490
2011	1,125,220	390,998	1,516,218
2012	1,439,586	493,409	1,932,995
2013	1,328,931	666,026	1,994,957
2014	1,209,945	933,759	2,143,704
2015	1,184,859	791,157	1,976,016
Average	1,049,895	611,584	1,661,479

Notes: Commercial data from ACL_FILES_09142016.xlsx.
Recreational data comes from MRFSSassess_rec81_16wv2_15Aug16_w14and15LACreel.
Data were post-stratifiedstratified so Monroe County landings werewere assigned to the South Atlantic.

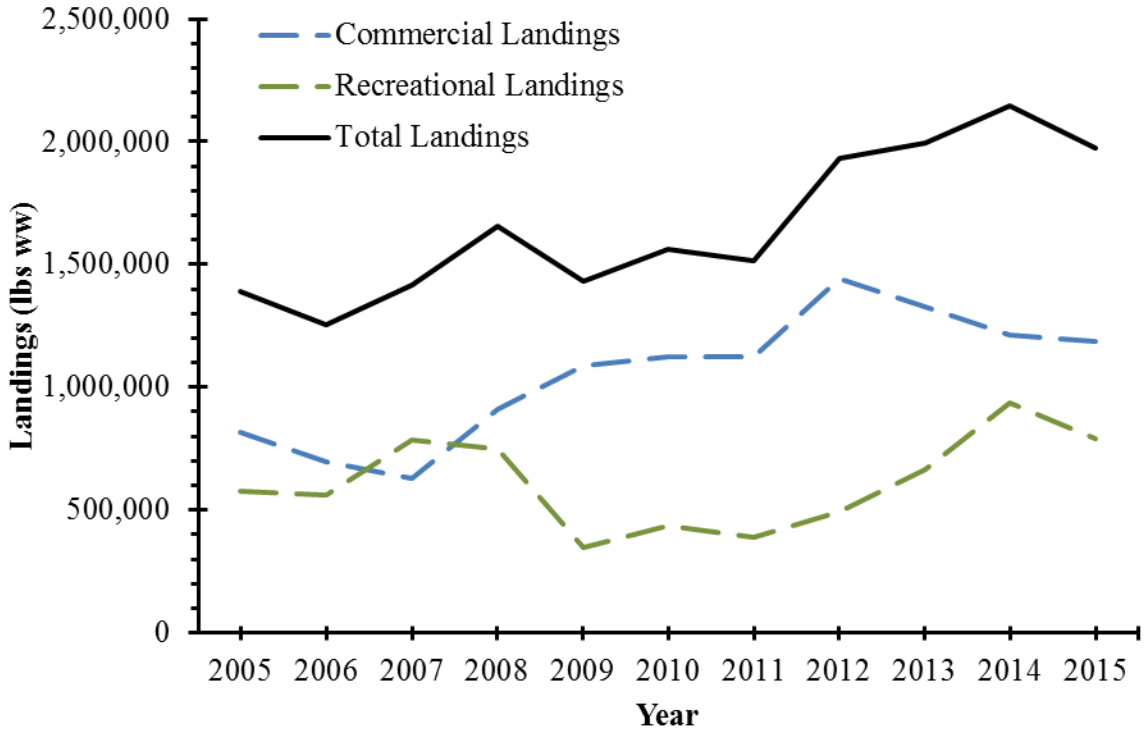


Figure 4.4.1.1. Annual landings of yellowtail snapper (lbs ww) for the South Atlantic Region during 2005-2015.

During 2012-2015, the commercial sector harvested an average of 90% of the commercial ACL (Table 4.4.1.2). The commercial ACL was exceeded in 2012 by 26%, but landings data were not available in time to close the commercial sector that year (Table 4.4.1.2). In 2015, commercial landings were projected to be 1,620,510 lbs ww, and the commercial sector was shut down on October 31, 2015. The recreational sector harvested an average of 53% of the recreational ACL during 2012-2015 (Table 4.4.1.2).

Alternative 1 (No Action) would retain the current sector allocations and AMs for yellowtail snapper. Effective August 12, 2016, the final rule for Regulatory Amendment 25 to the Snapper Grouper FMP changed the start of the fishing year for both sectors of yellowtail snapper from January 1 to August 1, each year (81 FR 45245). Therefore, if the commercial sector were to meet the current commercial ACL in 2017, it would close during the spawning season for yellowtail snapper, which would yield biological benefits to the stock. Furthermore, commercial fishers have commented that yellowtail snapper are smaller during the summer and they would prefer the species to stay open during the winter months.

Table 4.4.1.2. Yellowtail snapper landings (lbs ww) by sector and percentage (%) of sector ACL harvested each year, during 2012-2015. The current total ACL for yellowtail snapper is 3,037,500 lbs ww, commercial ACL is 1,596,510 lbs ww, and the recreational ACL is 1,440,990 lbs ww.

Year	Commercial landings (lbs ww)	Commercial ACL (lbs ww)	% of Commercial ACL Harvested	Recreational Landings (lbs ww)	Recreational ACL (lbs ww)	% of Recreational ACL Harvested
2012	1,439,586	1,142,589	126	493,409	1,031,286	48
2013	1,328,931	1,596,510	83	666,026	1,440,990	46
2014	1,209,945	1,596,510	76	933,759	1,440,990	65
2015	1,184,859	1,596,510	74	791,157	1,440,990	55
Average	1,290,830	1,483,030	90	721,088	1,338,564	53

Note: There were no ACLs or TAC for yellowtail snapper prior to 2012.
Commercial data is from ACL_FILES_09142016.xlsx
Recreational data is from MRFSSassess_rec81_16wv2_15Aug16_w14and15LACreel
Data were post-stratified so Monroe County landings assigned to the South Atlantic

None of the action alternatives would be expected to have negative biological effects for yellowtail snapper because ACLs and AMs are in effect to prevent overfishing. However, the biological effects of **Alternative 1 (No Action)** would be expected to greater than the action alternatives because the action alternatives could result in a greater amount of harvest of yellowtail snapper than **Alternative 1 (No Action)**.

Alternative 2 would maintain the current sector ACLs (**Alternative 1, No Action**), but revise the AMs to not close either sector until the total ACL of is 3,037,500 lbs ww is met. As shown in Tables 4.4.1.1 and 4.4.1.2, neither sector would be expected to meet their respective ACLs under **Alternative 2**. Positive biological benefits could be expected because discards would be expected to decrease due to a lengthening of the fishing season this alternative. However, the increase in harvest would be expected to decrease biological benefits relative to **Alternative 1 (No Action)**.

Alternative 3 and its **Sub-alternatives 3a-3d** would create a permanent change in the sector allocations for yellowtail snapper based on average landings using certain years as shown in Table 4.4.1.3. The current commercial sector allocation of 52.56% would increase to a range of 58%-72%, and the current recreational sector allocation of 47.44% would decrease to range of 42%-28% (**Sub-alternatives 3a-3d**) (Table 4.4.1.3). During 2005-2015, the highest commercial landings were 1,439,586 lbs ww (in 2012), and the highest recreational landings were 933,759 lbs ww (in 2014) (Table 4.4.1.1). Therefore, the commercial sector would not be expected to exceed the highest commercial landings as specified in **Sub-alternative 3a-3d** and would also be under the current commercial ACL of 1,596,510 lbs ww. The recreational sector would exceed the highest recreational landings under **Sub-alternatives 3c** and **3d**, but not under **Sub-alternatives 3a** and **3b**. Furthermore, all the recreational ACLs under **Sub-alternatives 3a-3d** would still be under the current recreational ACL of 1,440,990 lbs ww. Biological effects under

Alternative 3 and its **Sub-alternatives 3a-3d** would be similar since the current sector ACLs under **Alternative 1 (No Action)** have not been exceeded.

Table 4.4.1.3. Commercial and recreational ACLs under **Sub-alternatives 3a-3d** and the difference from current sector ACLs for yellowtail snapper. The current total ACL for yellowtail snapper is 3,037,500 lbs ww, commercial ACL is 1,596,510 lbs ww, and the recreational ACL is 1,440,990 lbs ww.

Sub-alternative (Average landings based on these years)	Commercial ACL (lbs ww) / Percentage (%) of Total ACL	Recreational ACL (lbs ww) / Percentage (%) of Total ACL	Difference in commercial ACL (lbs ww)	Difference in recreational ACL (lbs ww)
Sub-alternative 3a (2005-2014)	1,761,750 lbs ww/ 58%	1,275,750 lbs ww/ 42%	+ 165,240 lbs ww	- 165,240 lbs ww
Sub-alternative 3b (2013)	1,822,500 lbs ww/ 60%	1,215,000 lbs ww/ 40%	+ 225,990 lbs ww	- 225,990 lbs ww
Sub-alternative 3c (2012)	2,126,250 lbs ww/ 70%	911,250 lbs ww/ 30%	+ 529,740 lbs ww	- 529,740 lbs ww
Sub-alternative 3d (2011)	2,187,000 lbs ww/ 72%	850,500 lbs ww/ 28%	+ 590,490 lbs ww	- 590,490 lbs ww

Alternative 4 and its **Sub-alternatives 4a-4d** would set aside a portion (1% - 10%) of the total ACL (= ABC = OY) that could be used by either sector as a common pool allocation. The current allocations (52.56% commercial and 47.44% recreational) would be applied to the remaining total ACL resulting in the sector ACLs as shown in Table 4.4.1.4.

Table 4.4.1.4. Commercial and Recreational ACLs (lbs ww) under Sub-alternatives 4a-4d. The current total ACL for yellowtail snapper is 3,037,500 lbs ww, commercial ACL is 1,596,510 lbs ww, and the recreational ACL is 1,440,990 lbs ww.

Sub-alternative	Common pool ACL (lbs ww) / Percentage (%) of Total ACL	Remaining Total ACL (lbs ww)	Commercial ACL (lbs ww)	Recreational ACL (lbs ww)	*Commercial ACL + common pool ACL (lbs ww)	*Recreational ACL + common pool ACL (lbs ww)
Sub-alternative 4a	30,375/ 1%	3,007,125	1,580,545	1,426,580	1,610,920	1,456,955
Sub-alternative 4b	75,938 / 2.5%	2,961,562 l	1,556,597	1,404,965	1,632,535	1,480,903
Sub-alternative 4c	151,875/ 5%	2,885,625	1,516,685	1,368,941	1,668,560	1,520,816
Sub-alternative 4d	303,750/ 10%	2,733,750	1,436,859	1,296,891	1,740,609	1,600,641

* Only one sector would be allowed to utilize the common pool at a given time to avoid exceeding the total ACL.

During 2005-2015, the highest commercial landings was 1,439,586 lbs ww (in 2012), and the highest recreational landings was 933,759 lbs ww (in 2014) (Table 4.4.1.1). The current commercial ACL is 1,596,510 lbs ww, and the recreational ACL is 1,440,990 lbs ww. Both sectors would have their ACLs lowered (by 1%-10%) initially to contribute to the common pool. However, as shown in Table 4.4.1.4, removing up to 10% of both sector's ACLs would still not result in the current sector ACLs being met. Furthermore, all the sector ACLs under **Sub-alternatives 4a-4d** with the inclusion of the common pool ACL, if utilized, would provide additional pounds of yellowtail snapper (1%-10%, respectively) (Table 4.4.1.4). Therefore, biological effects of **Sub-alternatives 4a-4d** would be neutral compared with each other and with **Alternative 1 (No Action)**..

Alternative 5 would establish a sector ACL "credit" (carry-over). The credit amount would be derived from the difference between the total pounds of yellowtail snapper landed in the sector and the sector ACL for that same fishing year. If a sector ACL is not met in a fishing year, then, in the following fishing year, the credit would transfer to the sector's ACL and could be used if the sector ACL is met or exceeded. The sector ACL credit would only apply if a minimum percentage (15%-25%) of the total ACL was not harvested in a given fishing year as per **Sub-alternatives 5a-5c**. Additionally, only 10%-20% of the unharvested sector ACL from the previous year would qualify (**Sub-alternatives 5d-5f**). Furthermore, the credit would remain until used, but could not exceed 10%-100% (**Sub-alternatives 5g-5j**) and the total harvest when the credit is used could not exceed the total ACL. As shown in Tables 4.4.1.1 and 4.4.1.2, the total ACL as well as the sector ACLs would not be expected to exceed the current ACLs. Logistically, the sub-alternatives under **Alternative 5** would be very difficult to monitor and administer due to the delay in the availability of landings and time required to implement the changes. Therefore, there is an inherent risk of exceeding the sector ACLs, which could result in negative biological effects (will current AMs still be in place?). Therefore, **Alternative 1 (No Action)** would be expected to have greater biological benefits **Alternative 5** and **Sub-alternatives 5a-5j**.

Alternative 6 would conditionally transfer 1%-10% (**Sub-alternatives 6a-6d**) of the ACL from a sector that is not landing its ACL to the other sector that is landing all or almost all of its ACL in the next fishing year. The condition is that the minimum landings threshold of 50%-75% of the donating sector's ACL must not be met (**Sub-alternatives 6e-6f**). Furthermore, if the receiving sector does not land at least 90% of its unadjusted ACL, this transfer would not occur. Logistically, the sub-alternatives under **Alternative 6** would be very difficult to monitor and administer due to the delay in the availability of landings and time required to implement the changes. It could be two years before the sector that needs the extra ACL is able to utilize it. Therefore, there is an inherent risk of exceeding the sector ACLs, which could result in negative biological effects (will current AMs still be in place?). Therefore, **Alternative 1 (No Action)** would be expected to have greater biological effects than **Alternative 6** and **Sub-alternatives 6a-6f**.

4.4.2 Economic Effects

The economic effects of **Action 4** for yellowtail snapper are similar to those of **Action 3** for dolphin in many circumstances. Realized and potential changes in allocations can alter

fishing behavior and the economic benefits received in a fishery. Changes in allocation can also determine whether or not closures occur, which impose costs in a fishery. **Alternative 1 (No Action)** keeps in place the current sector allocations for yellowtail snapper. Under the current total ACL, neither the commercial nor the recreational sector is expected to reach its respective sector ACL based on recent historic landings. Since the commercial sector has landed a large portion of its ACL in recent years, the potential does exist that the commercial sector could harvest its entire ACL, triggering an in season closure. A closure in the commercial sector would impose loss of potential revenue when yellowtail snapper incidentally caught are discarded. The recreational sector is not likely to be affected by **Alternative 1 (No Action)**, as the sector has not come close to landing the entire sector allocation.

Under **Alternative 2** neither sector would be closed until the total ACL is met. Based upon historic landings form 2005-2015 (**Table 4.4.1.1**), a closure would not occur under the current ACL. **Alternative 2** does create the potential for increased landings in one sector to trigger the closure of the entire species for both sectors, leading to inequitable utilization of the resource between the recreational and commercial sectors with respect to the manner that yellowtail snapper is currently exploited. Any such closure or large scale change in how the yellowtail snapper resource is harvested would lead to potential negative effects in one or both sectors.

Alternative 3 modifies the sector ACLs to allocate more of the total yellowtail snapper ACL to the commercial sector and less to the recreational sector. The commercial sector is not anticipated to realize any economic effects at the current ACL level, as the sector has not landed its current ACL from 2005 through 2015 (**Table 4.4.2.1**). There are potential positive economic effects for the commercial sector should the total ACL decrease or landings in the commercial sector increase appreciably. The extent to which the potential positive economic effects would be accrued would depend on the additional amount allocated to the commercial sector (**Sub-alternatives 3a** through **3d**), with **Sub-alternative 3d** having the largest potential positive economic effect for the commercial sector followed by **Sub-alternative 3c**, **3b**, and **3a**. The same ranking would apply for negative economic effects for the recreational sector, as the potential consumer surplus in the recreational yellowtail snapper portion of the snapper grouper fishery would decrease with a smaller portion of the ACL. Realized negative economic effects for the recreational sector are not likely to occur under any of the sub-alternatives based on average landings observed in recent years (**Table 4.4.2.2**), however, it is noted that 2014 recreational landings were above the recreational ACLs specified in **Sub-alternative 3c** and **3d**. Should landings reach this level again under either of these two scenarios, an in-season closure would occur in the recreational sector, creating notable negative economic effects.

Alternative 4 and its **Sub-alternatives 4a** through **4d** would reduce the sector ACLs for both the recreational and commercial sectors, but allow access to a common pool allocation when needed to help prevent a yellowtail snapper closure from occurring. The size of the common pool ACL increases progressively from **Sub-alternative 4a** to **4d**, with the sector ACLs decreasing accordingly. Under the largest decrease in sector ACLs seen in **Sub-alternative 4d**, the revised commercial and recreation sector ACLs would still remain above observed historic yellowtail snapper landings from 2005-2015, with the exception of the commercial sector in 2012, therefore, there are no realized economic effects anticipated to occur (**Table 4.4.2.1**).

There are potential economic benefits that may occur with the addition of the common pool ACL. Each sector has the potential to increase its landings beyond the levels specified in current sector ACLs, presumably increasing benefits for that sector and decreasing the possibility of a yellowtail snapper closure to occur, as long as one sector continues to under harvest its revised sector ACL.

Since neither sector has harvested the respective current sector ACL in recent years, there are no anticipated economic effects that would be realized for **Alternative 5**, which establishes the ability of a sector to earn a roll-over credit. Creating a roll-over credit that is earned through an underage in a sector's ACL would have some potential positive economic effects by decreasing the probability of a closure in either sector, provided that the ACL is not exceeded. The likelihood of the ACL being exceeded is the lowest under **Sub-alternatives 5c, 5d,** and **5g**, as these sub-alternatives contain the highest levels of under-harvest that must occur before a credit can be issued and set the lowest growth rate and lowest cap on the total size that the roll-over credit can attain. **Sub-alternatives 5a**, **5f**, and **5j** would have the inverse effect and allow the greatest ability for a sector to over-run its sector ACL, but are also the most risk prone combination of sub-alternatives in regards to allowing yellowtail snapper to harvest the total ACL and trigger a closure for both sectors. All other sub-alternatives (**5b**, **5e**, **5h**, and **5i**) fall in between the two outlined scenarios in relation to the ability of a sector to exceed its sector ACL when needed and risk aversion to meeting the total ACL that would trigger a closure for both sectors.

The conditional transfer of ACL, as outlined in **Alternative 6** does allow for potential positive economic effects to occur for yellowtail snapper when one sector is consistently under harvesting its sector ACL, while the other sector is harvesting all or almost all of its sector ACL. Based on the observed landings for yellowtail snapper in recent years, a transfer of ACL would not occur since neither sector has landed 90% or more of its respective ACL (**Table 4.4.2.2**).

The potential economic effects of **Alternative 2** through **Alternative 6** in comparison to **Alternative 1 (No Action)** would be very dependent on the sub-alternatives that are chosen. Based on the potential to trigger a yellowtail snapper closure, **Alternative 3** has the greatest potential for negative economic effects, followed by **Alternative 2**, **Alternative 1 (No Action)**, **Alternative 5**, **Alternative 6,** and **Alternative 4**.

4.4.3 Social Effects

The social effects of defining the OY for the yellowtail snapper would be linked to how the definition affects the access of each user group at the present and in the future. **Chapter 3.3.2** includes detailed information about fishermen and communities associated with yellowtail snapper harvest, which primarily is in south Florida and the Florida Keys. Modifications in sector allocations of the yellowtail snapper ACL could result in some changes in fishing behavior and impacts to the social environment. Although sector allocations are currently in place under **Alternative 1 (No Action)**, changes in allocations could increase perceptions of scarcity and change the fishing behavior of those within a particular sector. Because there has been an initial sector allocation between the commercial and recreational sectors, **Alternative 1 (No Action)** may have few direct social effects. However, if one sector has not or does not reach its ACL, the resource may be underutilized and available quota would not be available to the other sector.

The simultaneous closure of the commercial and recreational sectors in **Alternative 2** would likely benefit the commercial sector because it creates a system similar to a common pool quota, and commercial landings have reached the commercial ACL in recent years (**Table 4.4.1.2**). **Alternative 2** would not be as beneficial to participants in the recreational sector, because it is likely that recreational fishing opportunities could be limited due to commercial landings.

Changing the allocations permanently (**Alternative 3**) may help to reach the total ACL and increase access to the yellowtail snapper resource for a sector, but also may limit the access and potential growth in the other sector. The benefits to the commercial sector through increased access to the yellowtail resource would be greatest under **Sub-alternative 3d**, followed by **Sub-alternative 3c**, **Sub-alternative 3b**¸and then **Sub-alternative 3a.** If recreational landings continue as they have in recent years (Table 4.4.1.2), the effects on participants in the recreational sector under **Sub-alternatives 3a-3c** would likely be minimal or none. It is possible that if there is a year with high landings, **Sub-alternative 3d** could result in the recreational AM being triggered and negative effects on recreational fishing opportunities.

Creating a portion of the total ACL to be common pool (**Alternative 4**) could be beneficial in allowing both sectors to access additional quota when needed, but also may create derby conditions if both sectors are reaching their respective ACLs.
The effects of **Sub-alternatives 4a-4d** on each sector depends on the likelihood of needing to access the common pool quota and at what time of year. If landings for each sector continue as in recent years (**Table 4.4.1.2**), the commercial sector would benefit more from access to a common pool quota than the recreational sector. **Sub-alternative 4d** would be most beneficial to the commercial sector, followed by **Sub-alternative 4c, Sub-alternative 4b**, and then **Sub-alternative 4a**. Because recreational landings have not reached the recreational ACL in recent years (**Table 4.4.1.2**), the effects of **Sub-alternatives 4a-4d** on participants in the recraetional sector would be expected to be minimal or none. However, if recreational effort increased in the future but commercial landings stayed at the same level, the loss of the portion of the ACL designated for recreational harvest could reduce access to the yellowtail resource by recreational fishermen.

Establishing a system to allow a carry-over in **Alternative 5** could be beneficial to both sectors if the total landings were still under the total ACL, and if there were no negative effects on the stock due to an "overage" the year with a carry-over. In the long term, it would likely be more beneficial that a higher threshold be in place to allow for the "credit" to occur only when there is sufficient unharvested ACL, in order to minimize the risk of negative biological effects on the yellowtail resource that could later impact fishing opportunities. **Sub-alternative 5c** would have the lowest risk of negative long-term effects on the resource and future fishing opportunities, followed by **Sub-alternative 5b**, and then **Sub-alternative 5a**.

In the short term, access to a higher ACL may be beneficial to fishermen targeting yellowtail, particularly for the commercial sector because commercial landings in recent years have met or exceeded the commercial ACL (**Table 4.4.1.2**). **Sub-alternative 5f** would allow these short-term benefits, followed by **Sub-alternative 5e**, and then **Sub-alternative 5d**. A

lower cap on the percentage that could be transferred may help to mitigate risks to the yellowtail resource if there is a "credit" applied, but too low of a cap could reduce any benefits to fishermen of having access to a higher ACL and more fishing opportunities. **Sub-alternative 5g**, **Sub-alternative 5h**, and **Sub-alternative 5i** would likely be effective in minimizing negative long-term effects on the yellowtail resource and fishing opportunities, but may be too low to allow for benefits to the fishermen to accrue. **Sub-alternative 5j** would allow the most fishing opportunities, but also could result in long-term negative effects on future fishing opportunities if there are negative biological effects on the yellowtail stock.

Alternative 6 could provide a flexible and adaptive system to allow each sector more or less access to the total ACL each year. Although there may be some years when a transfer ends up negatively affecting the 'donating' sector, the flexible mechanisms would allow the allocations to return to the previous allocations at the beginning of the next year. Because it is expected that transfers will benefit the commercial sector and have little effect on the recreational sector under current fishery conditions (**Table 4.4.1.2**), **Sub-alternative 6d** would be the most beneficial to the commercial sector, followed by **Sub-alternative 6c**, **Sub-alternative 6b**, and then **Sub-alternative 6a.** If recreational landings are similar to landings in recent years, the effects of **Sub-alternatives 6a-6d** are expected to be minimal or none for participants in the recreational sector.

4.4.4 Administrative Effects

Sector ACLs and AMs are already in place, and therefore, **Alternatives 1 (No Action), 2,** and **3** would have the least negative administrative effects followed by **Alternatives 4**, **5**, and **6** (and their respective sub-alternatives). **Alternative 4** and **Sub-alternatives 4a-4d** would add to the administrative burden in terms of monitoring the ACLs, educating the public, and enforcing the new ACLs. **Alternative 5** and **Sub-alternatives 5a-5j** would be the most difficult logistically and a tremendous burden to administer, compounded by the lack of timely recreational data to make adjustments necessary to implement carry-over credit. **Alternative 6** and **Sub-alternatives 6a-6g** would also add to the administrative burden, and could have up to a two-year delay before a sector needing a transfer of ACLs could actually receive the reli

Chapter 5. Council's Choice for the Preferred Alternative

Chapter 6. Cumulative Effects

Chapter 7. List of Preparers

Table 7-1. List of preparers of the document.

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

Table 7-2. List of interdisciplinary plan team members for the document.

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

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

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Appendix A. Alternatives Considered, but Eliminated from Detailed Analysis

Appendix B. Glossary

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Discards: Fish captured, but released at sea.

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

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

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

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

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

F: **Fishing mortality.**

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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 fisheries data.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Appendix C. Other Applicable Law

Appendix D. History of Management

History of Management of the Atlantic Dolphin and Wahoo Fisheries

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

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

Time period/dates	Cause	Observed and/or Expected Effects
2004		charter vessels and headboats that are required to have a federal vessel permit for dolphin and wahoo must display operator permits.
Effective Date July 22, 2010	Amendment 1 to the Dolphin Wahoo FMP (Comprehensive Ecosystem Based Amendment (CE-BA) 1)	Updated spatial information of Council-designated EFH and EFH-HAPCS.
Effective Date April 16, 2012	Amendment 2 to the Dolphin Wahoo FMP (Comprehensive ACL Amendment SAFMC 2011C)	Set ABC, ACL, ACT and AMs
Target 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.

History of Management of the South Atlantic Snapper Grouper Fishery

The snapper grouper fishery is highly regulated; some of the species included in this amendment have been regulated since 1983. The following table summarizes actions in each of the amendments to the original fishery management plan (FMP), as well as some events not covered in amendment actions.

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).

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 #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 -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.

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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

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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

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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

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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

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			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

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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.

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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	TBD	PR: 79 FR 22936	-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 grouper species' ABC, ACLs, and ACTs are needed as a

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			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
Emergency Rule	4/17/14	79 FR 21636	-Remove the blueline tilefish portion from the deep-water complex -Establish separate commercial and recreational ACLs and AMs for blueline tilefish.
Amendment #32	TBD	TBD	-Modify composition of the deep-water complex -MSY, ACLs, OY, recreational ACT, AMs, for blueline tilefish -Commercial management measures for blueline tilefish -Recreational management measures -Rebuilding plan for blueline tilefish
Amendment #29	TBD	PR: 79 FR 72567	-Update the ABC Control Rule -Establish ACLs for select un-assessed snapper-grouper species -Modify the minimum size limit for gray triggerfish -Establish a commercial split season for gray triggerfish -Establish a commercial trip limit for gray triggerfish
Amendment #36	TBD	TBD	-Special management zones to protect spawning snapper grouper species.
Amendment #22	TBD	TBD	-Establish a recreational tagging program for snapper grouper species with small ACLs

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Amendment #35	TBD	TBD	-Remove black snapper, dog snapper, mahogany snapper, & school master from the Snapper Grouper FMU
Amendment #36	TBD	TBD	-Spawning SMZs off NC, SC, GA, and FL
Regulatory Amendment 22	TBD	TBD	-Revise ACL and OY for gag -Revise ACL and OY for wreckfish
Amendment #33	TBD	TBD	-Require all snapper-grouper fillets being brought into the U.S. EEZ from the Bahamas to have skin on the entire fillets -Two fillets of snapper-grouper count as one fish, and a maximum of 40 fillets are allowed to be brought into the U.S. EEZ from the Bahamas

Appendix E. Bycatch Practicability Analysis

Appendix F. Regulatory Impact Review

Appendix G. Regulatory Flexibility Act Analysis

Appendix H. Fishery Impact Statement

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