Amendment 10 to the Fishery Management Plan for the Dolphin Wahoo Fishery of the Atlantic

Revise annual catch limits, sector allocations, accountability measures, and management measures for dolphin and wahoo

Regulatory Impact Review | Regulatory Flexibility Analysis | Fishery Impact Statement

August 2020 DRAFT

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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

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Proposed action(s):	Modify management measures for dolphin and wahoo. Actions include revising annual catch limits, sector allocations, and accountability measures. Additionally actions include allowing possession of dolphin or wahoo when specified unauthorized gears are onboard a vessel, removal of the operator card requirement, reducing the recreational vessel limit, and allowing filleting of dolphin at sea onboard charter or headboat vessels in the waters north of the North Carolina/Virginia boarder.
Lead agency:	Amendment – South Atlantic Fishery Management Council (South Atlantic Council) Categorical Exclusion – National Marine Fisheries Service (NMFS), Southeast Regional Office
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Chapter 1. Introduction

1.1 What Actions Are Being Proposed in Dolphin Wahoo Amendment 10?

1.2 Who is Proposing the Management Measures?

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.

Management Agencies

- ***South Atlantic Fishery Management Council (South Atlantic Council)*** – Engages in a process to determine a range of actions and options and recommends action to the National Marine Fisheries Service (NMFS).
- ***NMFS*** and ***South Atlantic Council staffs*** – Develop options based on guidance from the South Atlantic Council and analyzes the environmental impacts of those options. If approved by the Secretary of Commerce, NMFS implements the action through rulemaking.

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?

Management of the federal dolphin wahoo fishery, located off the eastern United States (Atlantic) from Florida to Maine in the 3-200 nautical miles U.S. Exclusive Economic Zone (EEZ), is conducted under the Dolphin Wahoo FMP (SAFMC 2003) (**Figure 1-1**).

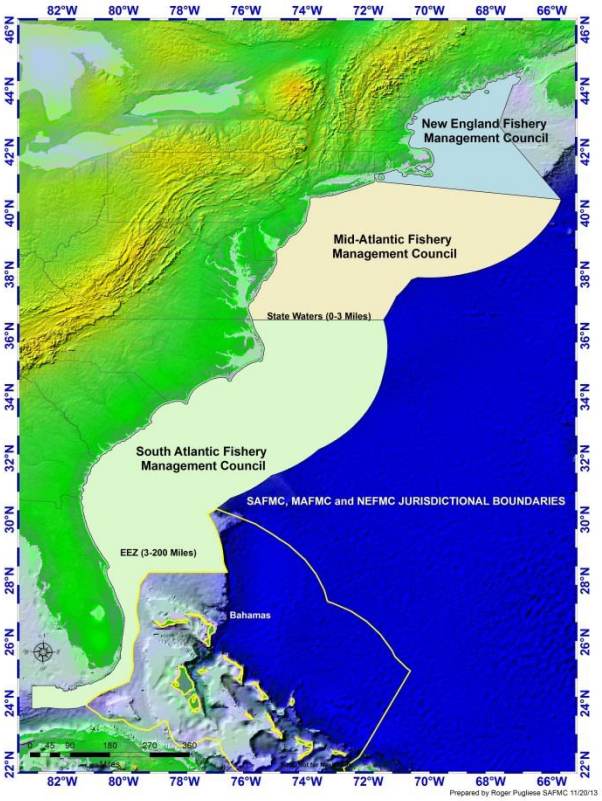


Figure 1-1. Jurisdictional boundaries of the Dolphin and Wahoo Fishery Management Plan for the Atlantic as managed by the South Atlantic Fishery Management Council.

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

The Scientific and Statistical Committee (SSC) provided new acceptable biological catch (ABC) recommendations for dolphin and wahoo at their October 2019 meeting and again at their April 2020 meeting. In doing so, recreational landings were included for Monroe County, Florida for both dolphin and wahoo. These landings were previously left out of past catch level recommendations for all unassessed species due to issues with determining whether such landings occurred from Gulf of Mexico or South Atlantic waters. The new MRIP dataset allows for better partitioning of recreational landings from Monroe County, Florida between regions and the vast majority of dolphin and wahoo landed in the county are caught from South Atlantic waters. At their April 2020 meeting, the SSC revisited the time series used to set the catch level recommendations at the request of the Council and chose the third highest landings from 1994 to 2007 for both dolphin and wahoo to set the ABC instead of a time series of 1994 to 1997 for dolphin and 1999 to 2007 for wahoo. This resulted in ABCs of 24,570,764 lbs ww for dolphin and 2,885,303 lbs ww for wahoo.

Purpose for Action

The *purpose* of Amendment 10 to the Fishery Management Plan for the Dolphin Wahoo Fishery for the Atlantic (Dolphin Wahoo Amendment 10) is to revise the catch levels [acceptable biological catch (ABC), annual catch limits (ACL)], accountability measures, sector allocations, and management measures for dolphin and wahoo. The revisions to the ABC and ACL include recreational landings from Monroe County, Florida, and incorporate recreational data as per the Marine Recreational Information Program using the Fishery Effort Survey method, as well as updates to commercial and for-hire landings. Management measures address authorized gear, operator card requirement, recreational vessel limits, and allow fillets of dolphin at sea onboard for-hire vessels.

Need for Action

The *need* for Dolphin Wahoo Amendment 10 is to base conservation and management measures upon the best scientific information available, and to prevent unnecessary negative social and economic impacts that may otherwise be realized in the dolphin wahoo fishery, in accordance with the provisions set forth in the Magnuson-Stevens Fishery Conservation and Management Act.

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

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

1.6 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 OY from a fishery. The tools ACLs and 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.

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.

Sector Annual Catch Limit
The poundage or number of fish that a sector receives (e.g. recreational and commercial) based on the sector allocation and the total ACL.

Sector Allocation
The percentage of the total ACL that a sector receives.

Common Pool Allocation
A percentage of the ACL that can be set aside for use by either sector.

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.

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

ACLs are derived from the overfishing limit (OFL) and the 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.

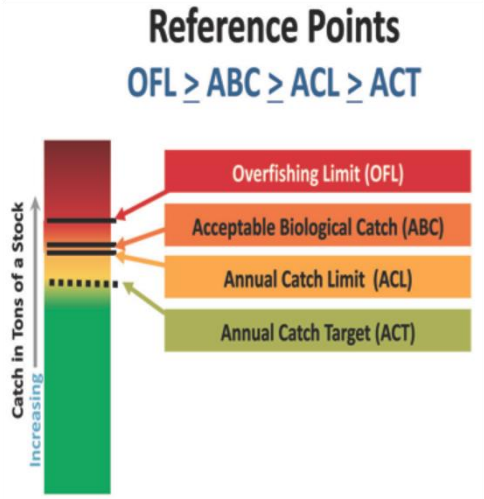


Figure 1.7.1. The relationship of the reference points to each other.

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 NMFS 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 (81 FR 71801).*

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 NMFS 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 Gulf of Mexico and South Atlantic Councils have approved amendments that would require electronic reporting for charterboats and headboats with a set reporting frequency.

1.8 How does the South Atlantic Council determine the sector allocations?

Chapter 2. Proposed Actions

2.1 Action 1. Revise the total annual catch limit for dolphin to reflect the updated acceptable biological catch level

Alternative 1 (No Action). The total annual catch limit for dolphin is set equal to the current acceptable biological catch level.

Alternative 2. The total annual catch limit for dolphin is equal to the updated acceptable biological catch level.

Alternative 3. The total annual catch limit for dolphin is equal to 95% of the updated acceptable biological catch level.

Alternative 4. The total annual catch limit for dolphin is equal to 90% of the updated acceptable biological catch level.

2.1.1 Comparison of Alternatives

2.2 Action 2. Revise the total annual catch limit for wahoo to reflect the updated acceptable biological catch level.

Alternative 1 (No Action). The total annual catch limit for wahoo is set equal to the acceptable biological catch level.

Alternative 2. The total annual catch limit for wahoo is equal to the updated acceptable biological catch level.

Alternative 3. The total annual catch limit for wahoo is equal to 95% of the updated acceptable biological catch level.

Alternative 4. The total annual catch limit for wahoo is equal to 90% of the updated acceptable biological catch level.

2.2.1 Comparison of Alternatives

2.3. Action 3. Revise sector allocations and sector annual catch limits for dolphin

Alternative 1 (No Action). Retain the current recreational sector and commercial sector allocations for dolphin as 90.00% and 10.00%, respectively, of the revised total annual catch limit as per Alternative 2 in Action 1in Amendment 10 to the Fishery Management Plan for Dolphin and Wahoo of the Atlantic. The revised total annual catch limit includes recreational landings from Monroe County, Florida, and incorporates recreational data as per the Marine Recreational Information Program using the Fishery Effort Survey method, as well as updates to commercial and for-hire landings.

Note: The revised total annual catch limit in Alternatives 2 through 6 reflects Alternative 2 in Action 1 in Amendment 10 to the Fishery Management Plan for Dolphin and Wahoo of the Atlantic. The revised total annual catch limit includes recreational landings from Monroe County, Florida, and incorporates recreational data as per the Marine Recreational Information Program using the Fishery Effort Survey method, as well as updates to commercial and for-hire landings.

Alternative 2. Allocate 94.01% of the revised total annual catch limit for dolphin to the recreational sector. Allocate 5.99% of the revised total annual catch limit for dolphin to the commercial sector. This is based on the total catch between 2008 and 2012.

Alternative 3. Allocate 94.91% of the revised total annual catch limit for dolphin to the recreational sector. Allocate 5.09% of the revised total annual catch limit for dolphin to the commercial sector. This is based on the total catch between 1994 and 2007.

Alternative 4. Allocate 93.75% of the revised total annual catch limit for dolphin to the recreational sector. Allocate 6.25% of the revised total annual catch limit for dolphin to the commercial sector. This is based on approximately maintaining the current commercial annual catch limit and allocating the remaining revised total annual catch limit to the recreational sector.

Alternative 5. Allocate 93.00% of the revised total annual catch limit for dolphin to the recreational sector. Allocate 7.00% of the revised total annual catch limit for dolphin to the commercial sector.

Alternative 6. Allocate 92.00% of the revised total annual catch limit for dolphin to the recreational sector. Allocate 8.00% of the revised total annual catch limit for dolphin to the commercial sector.

2.3.1 Comparison of Alternatives

2.4 Action 4. Revise sector allocations and sector annual catch limits for wahoo

Alternative 1 (No Action). Retain the current recreational sector and commercial sector allocations for wahoo as 96.07% and 3.93%, respectively, of the revised total annual catch limit as per Alternative 2 in Action 2 in Amendment 10 to the Fishery Management Plan for Dolphin and Wahoo of the Atlantic. The revised total annual catch limit includes recreational landings from Monroe County, Florida, and incorporates recreational data as per the Marine Recreational Information Program using the Fishery Effort Survey method, as well as updates to commercial and for-hire landings.

Note: The revised total annual catch limit in Alternatives 2 through 5 reflects Alternative 2 in Action 2 in Amendment 10 to the Fishery Management Plan for Dolphin and Wahoo of the Atlantic. The revised total annual catch limit includes recreational landings from Monroe County, Florida, and incorporates recreational data as per the Marine Recreational Information Program using the Fishery Effort Survey method, as well as updates to commercial and for-hire landings.

Alternative 2. Allocate 97.45% of the revised total annual catch limit for wahoo to the recreational sector. Allocate 2.55% of the revised total annual catch limit for wahoo to the commercial sector. This is based on the following formula for each sector:

Sector apportionment = (50% * average of long-term catch (pounds whole weight)) + (50% * average of recent catch (pounds whole weight)).

Long-term catch = 1999 through 2008; Recent catch = 2006 through 2008

Alternative 3. Allocate 96.35% of the revised total annual catch limit for wahoo to the recreational sector. Allocate 3.65% of the revised total annual catch limit for wahoo to the commercial sector. This is based on the total catch between 1994 and 2007.

Alternative 4. Allocate 97.56% of the revised total annual catch limit for wahoo to the recreational sector. Allocate 2.44% of the revised total annual catch limit for wahoo to the commercial sector. This is based on approximately maintaining the current commercial annual catch limit and allocating the remaining revised total annual catch limit to the recreational sector.

Alternative 5. Allocate 97.00% of the revised total annual catch limit for wahoo to the recreational sector. Allocate 3.00% of the revised total annual catch limit for wahoo to the commercial sector.

2.4.1 Comparison of Alternatives

2.5 Action 5. Revise the commercial accountability measures for dolphin

Alternative 1 (No Action). The current commercial accountability measure includes an in-season closure to take place if the commercial annual catch limit is met or projected to be met. If the commercial annual catch limit 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 annual catch limit is exceeded.

Alternative 2. If commercial landings for dolphin reach or are projected to reach the commercial annual catch limit, close the commercial sector for the remainder of the fishing year.

2.5.1 Comparison of Alternatives

2.6 Action 6. Revise the commercial accountability measures for wahoo

Alternative 1 (No Action). The current commercial accountability measure includes an in-season closure to take place if the commercial annual catch limit is met or projected to be met. If the commercial annual catch limit 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 annual catch limit is exceeded.

Alternative 2. If commercial landings for wahoo reach or are projected to reach the commercial annual catch limit, close the commercial sector for the remainder of the fishing year.

2.6.1 Comparison of Alternatives

2.7 Action 7. Revise the trigger for the post-season recreational accountability measures for dolphin

Alternative 1 (No action). If recreational landings exceed the recreational annual catch limit, then during the following fishing year, recreational landings will be monitored for persistence in increased landings. If the recreational annual catch limit is exceeded, it will be reduced by the amount of the recreational overage in the following fishing year and the recreational season will be reduced by the amount necessary to ensure that recreational landings do not exceed the reduced annual catch limit only if the species is overfished and the total annual catch limit is exceeded. However, the recreational annual catch limit and length of the recreational season will not be reduced if the Regional Administrator determines, using the best available science, that it is not necessary.

Alternative 2. Implement post season accountability measures in the following fishing year if the recreational annual catch limits are constant and the 3-year geometric mean of landings exceed the recreational sector annual catch limit. If in any year the recreational sector annual catch limit is changed, the moving multi-year geometric mean of landings will start over.

Alternative 3. Implement post season accountability measures in the following fishing year if the summed total of the most recent past three years of recreational landings exceeds the sum of the past three years recreational sector annual catch limits.

Alternative 4. Implement post season accountability measures in the following fishing year if recreational landings exceed the recreational sector annual catch limit in two of the previous three fishing years or exceeds the total acceptable biological catch in any one year.

Alternative 5. Implement post season accountability measures in the following fishing year if the total (commercial and recreational combined) annual catch limit is exceeded.

Alternative 6. Implement post season accountability measures in the following fishing year if the recreational annual catch limit is exceeded.

2.7.1 Comparison of Alternatives

2.8 Action 8. Revise the post season recreational accountability measures for dolphin

Alternative 1 (No action). If recreational landings exceed the recreational annual catch limit, then during the following fishing year, recreational landings will be monitored for persistence in increased landings. If the recreational annual catch limit is exceeded, it will be reduced by the amount of the recreational overage in the following fishing year and the recreational season will be reduced by the amount necessary to ensure that recreational landings do not exceed the reduced annual catch limit only if the species is overfished and the total annual catch limit is exceeded. However, the recreational annual catch limit and length of the recreational season will not be reduced if the Regional Administrator determines, using the best available science, that it is not necessary.

Alternative 2. Reduce the recreational sector annual catch limit by the amount of the overage in the following year. Also reduce the length of the following recreational fishing season by the amount necessary to prevent the revised annual catch limit from being exceeded in the following fishing year. However, the recreational annual catch limit and recreational fishing season will not be reduced if the Regional Administrator determines, using the best available science, that it is not necessary.

Alternative 3. Reduce the length of the following recreational fishing season by the amount necessary to prevent the annual catch limit from being exceeded in the following year. However, the length of the recreational season will not be reduced if the Regional Administrator determines, using the best available science, that it is not necessary.

Alternative 4. Reduce the bag limit in the following recreational fishing season by the amount necessary to prevent the annual catch limit from being exceeded in the following year. However, the bag limit will not be reduced if the Regional Administrator determines, using the best available science, that it is not necessary.

Alternative 5. Reduce the vessel limit in the following recreational fishing season by the amount necessary to prevent the annual catch limit from being exceeded in the following year. However, the vessel limit will not be reduced if the Regional Administrator determines, using the best available science, that it is not necessary.

2.8.1 Comparison of Alternatives

2.9 Action 9. Revise the trigger for the post-season recreational accountability measures for wahoo

Alternative 1 (No action). If recreational landings exceed the recreational annual catch limit, then during the following fishing year recreational landings will be monitored for persistence in increased landings. If the recreational annual catch limit is exceeded, it will be reduced by the amount of the recreational overage in the following fishing only if the species is overfished and the total annual catch limit is exceeded. However, the recreational annual catch limit will not be reduced if the Regional Administrator determines, using the best available science, that it is not necessary.

Alternative 2. Implement post season accountability measures in the following fishing year if the recreational annual catch limits are constant and the 3-year geometric mean of landings exceed the recreational sector annual catch limit. If in any year the recreational sector annual catch limit is changed, the moving multi-year geometric mean of landings will start over.

Alternative 3. Implement post season accountability measures in the following fishing year if the summed total of the most recent past three years of recreational landings exceeds the sum of the past three years recreational sector annual catch limits.

Alternative 4. Implement post season accountability measures in the following fishing year if recreational landings exceed the recreational sector annual catch limit in two of the previous three fishing years or exceeds the total acceptable biological catch in any one year.

Alternative 5. Implement post season accountability measures in the following fishing year if the total (commercial and recreational combined) annual catch limit is exceeded.

Alternative 6. Implement post season accountability measures in the following fishing year if the recreational annual catch limit is exceeded.

2.9.1 Comparison of Alternatives

2.10 Action 10. Revise the post season recreational accountability measures for wahoo

Alternative 1 (No action). If recreational landings exceed the recreational annual catch limit, then during the following fishing year recreational landings will be monitored for persistence in increased landings. If the recreational annual catch limit is exceeded, it will be reduced by the amount of the recreational overage in the following fishing only if the species is overfished and the total annual catch limit is exceeded. However, the recreational annual catch limit will not be reduced if the Regional Administrator determines, using the best available science, that it is not necessary.

Alternative 2. Reduce the recreational sector annual catch limit by the amount of the overage in the following year. Also reduce the length of the following recreational fishing season by the amount necessary to prevent the revised annual catch limit from being exceeded in the following fishing year. However, the recreational annual catch limit and recreational fishing season will not be reduced if the Regional Administrator determines, using the best available science, that it is not necessary.

Alternative 3. Reduce the length of the following recreational fishing season by the amount necessary to prevent the annual catch limit from being exceeded in the following year. However, the length of the recreational season will not be reduced if the Regional Administrator determines, using the best available science, that it is not necessary.

Alternative 4. Reduce the bag limit in the following recreational fishing season by the amount necessary to prevent the annual catch limit from being exceeded in the following year. However, the bag limit will not be reduced if the Regional Administrator determines, using the best available science, that it is not necessary.

Alternative 5. Implement a vessel limit in the following recreational fishing season that would prevent the annual catch limit from being exceeded in the following year. However, the vessel limit will not be implemented if the Regional Administrator determines, using the best available science, that it is not necessary.

2.10.1 Comparison of Alternatives

2.11 Action 11. Allow properly permitted commercial fishing vessels with trap, pot, or buoy gear on board that are not authorized for use in the dolphin wahoo fishery to possess commercial quantities of dolphin and wahoo

Alternative 1 (No Action). The following are the only authorized commercial gear types in the fisheries for dolphin and wahoo in the Atlantic Exclusive Economic Zone: automatic reel, bandit gear, handline, pelagic longline, rod and reel, and spearfishing gear (including powerheads). A vessel in the Atlantic Exclusive Economic Zone that has on board gear types (including trap, pot, or buoy gear) other than authorized gear types may not possess a dolphin or wahoo. The current commercial trip limit for wahoo is 500 pounds. The current trip limit for dolphin is 4,000 pounds once 75 percent of the commercial sector annual catch limit is reached. Prior to reaching 75 percent of the commercial sector annual catch limit, there is no commercial trip limit for dolphin.

Alternative 2. A vessel in the Atlantic Exclusive Economic Zone that possesses both a valid Atlantic Dolphin/Wahoo Commercial Permit and valid federal commercial permits required to fish trap, pot, or buoy gear is authorized to retain dolphin caught by rod and reel while in possession of such gears. Dolphin retained by such a vessel shall not exceed (*Sub-alternatives 2a through 2d*). A vessel in the Atlantic Exclusive Economic Zone that has on board other gear types that are not authorized in the fisheries for dolphin may not possess a dolphin.

Sub-alternative 2a. 250 pounds gutted weight
Sub-alternative 2b. 500 pounds gutted weight
Sub-alternative 2c. 750 pounds gutted weight
Sub-alternative 2d. 1,000 pounds gutted weight

Alternative 3. A vessel in the Atlantic Exclusive Economic Zone that possesses both a valid Atlantic Dolphin/Wahoo Commercial Permit and valid federal commercial permits required to fish trap, pot, or buoy gear are authorized to retain wahoo caught by rod and reel while in possession of such gears. The wahoo commercial trip limit will be 500 pounds. A vessel in the Atlantic Exclusive Economic Zone that has on board other gear types that are not authorized in the fisheries for wahoo may not possess a wahoo.

2.11.1 Comparison of Alternatives

2.12 Action 12. Remove the requirement of vessel operators or crew to hold an Operator Card in the Dolphin Wahoo Fishery

Alternative 1 (No Action). An Atlantic Charter/Headboat for Dolphin/Wahoo Permit or an Atlantic Dolphin/Wahoo Commercial Permit is not valid unless the vessel operator or a crewmember holds a valid Operator Card issued by either the Southeast Regional Office or by the Greater Atlantic Regional Fisheries Office.

Alternative 2. Neither a vessel operator nor any crewmember is required to have an Operator Card for an Atlantic Charter/Headboat for Dolphin/Wahoo Permit to be valid.

Alternative 3. Neither a vessel operator nor any crewmember is required to have an Operator Card for an Atlantic Dolphin/Wahoo Commercial Permit to be valid.

2.12.1 Comparison of Alternatives

2.13 Action 13. Reduce the recreational vessel limit for dolphin

Alternative 1 (No Action). The recreational daily bag limit is 10 dolphin per person, not to exceed 60 dolphin per vessel, whichever is less, except on board a headboat where the limit is 10 dolphin per paying passenger.

Alternative 2. The recreational daily bag limit is 10 dolphin per person, not to exceed:

Sub-alternative 2a. 40 dolphin per vessel, whichever is less, except on board a headboat where the limit is 10 dolphin per paying passenger.

Sub-alternative 2b. 42 dolphin per vessel, whichever is less, except on board a headboat where the limit is 10 dolphin per paying passenger.

Sub-alternative 2c. 48 dolphin per vessel, whichever is less, except on board a headboat where the limit is 10 dolphin per paying passenger.

Sub-alternative 2d. 54 dolphin per vessel, whichever is less, except on board a headboat where the limit is 10 dolphin per paying passenger.

Alternative 3. In Florida only, the recreational daily bag limit is 10 dolphin per person, not to exceed:

Sub-alternative 3a. 40 dolphin per vessel, whichever is less, except on board a headboat where the limit is 10 dolphin per paying passenger.

Sub-alternative 3b. 42 dolphin per vessel, whichever is less, except on board a headboat where the limit is 10 dolphin per paying passenger.

Sub-alternative 3c. 48 dolphin per vessel, whichever is less, except on board a headboat where the limit is 10 dolphin per paying passenger.

Sub-alternative 3d. 54 dolphin per vessel, whichever is less, except on board a headboat where the limit is 10 dolphin per paying passenger.

2.13.1 Comparison of Alternatives

2.14 Action 14. Allow filleting of dolphin at sea on board charter or headboat vessels in the Atlantic Exclusive Economic Zone north of the Virginia/North Carolina border.

Alternative 1 (No Action). Dolphin possessed in the Atlantic Exclusive Economic Zone must be maintained with head and fins intact, with specific exceptions for fish lawfully harvested in the Bahamas. Such fish harvested from the Atlantic Exclusive Economic Zone may be eviscerated, gilled, and scaled, but must otherwise be maintained in a whole condition.

Alternative 2. Exempt dolphin from regulations requiring head and fins be intact on board properly permitted charter and headboat vessels in the Atlantic Exclusive Economic Zone north of the Virginia/North Carolina border where dolphin may be filleted under the following requirement(s):

Sub-alternative 2a. Skin must remain intact on the entire fillet of any dolphin carcass.

Sub-alternative 2b. Two fillets of dolphin, regardless of the length of each fillet, is the equivalent to one dolphin.

2.14.1 Comparison of Alternatives

Chapter 3. Affected Environment

Dolphin Wahoo Amendment 10 addresses quota sharing between the commercial and recreational sectors for dolphin. The South Atlantic Council is also considering changes to the definition of optimum yield (OY) for dolphin portion of the dolphin wahoo fishery to better address the needs of the commercial and recreational sectors, establishing an annual catch target (ACT) for dolphin for the commercial sector and revising the ACT for dolphin for the recreational sector for use in defining OY, revising the ABC Control rule to allow rollover of uncaught ACL to be used in the following year, and removing the Operator Card requirement in the Dolphin Wahoo FMP. 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. The reader is referred to Dolphin Wahoo Amendment 5 (SAFMC 2013) 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 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).

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.

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).

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).

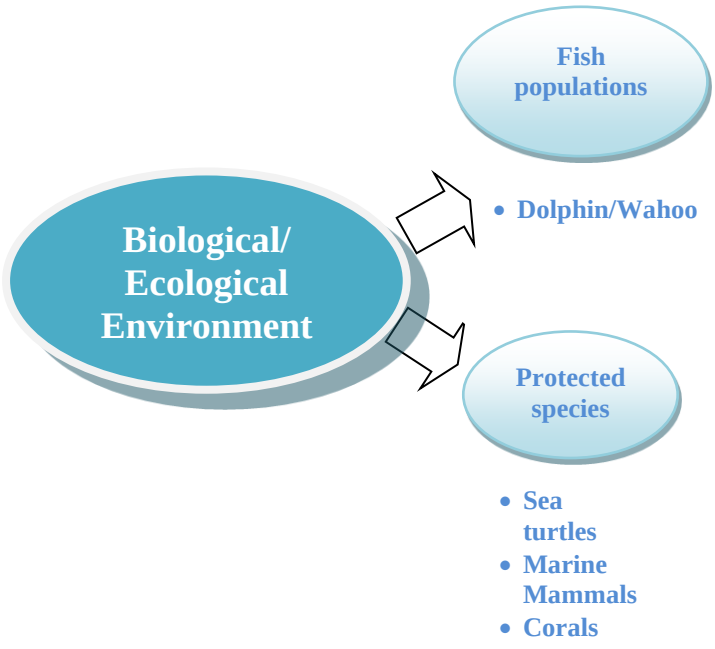
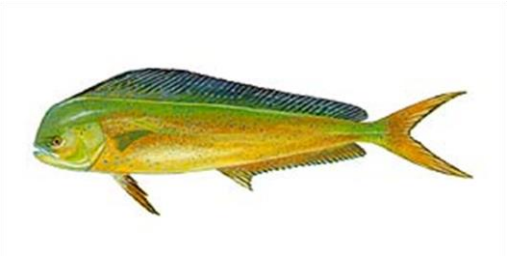


Figure 3-1. Two components of the biological environment described in this document.

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.

Dolphin Life History
An Overview



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

3.2.1 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 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.

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

3.2.3 Stock Status of Dolphin

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

3.2.4 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

To be added at a later date.

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). 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 that follow include these quantitative measures in addition to qualitative information about the communities.

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 permits, regional quotients of commercial landings and value for dolphin and wahoo and fishing engagement and reliance for both commercial and recreational sectors. 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.

Atlantic Dolphin and Wahoo Permits

Monroe County, Florida has more commercial dolphin wahoo permits than any other county depicted in **Figure 3.3.2.1**. Palm Beach County and Miami-Dade are next which makes southeast Florida the area with the most concentrated number of commercial dolphin wahoo permits by far, especially when five of the other Florida counties in the top 15 are all in that area. North Carolina is the only other state with counties ranked within the top 15.

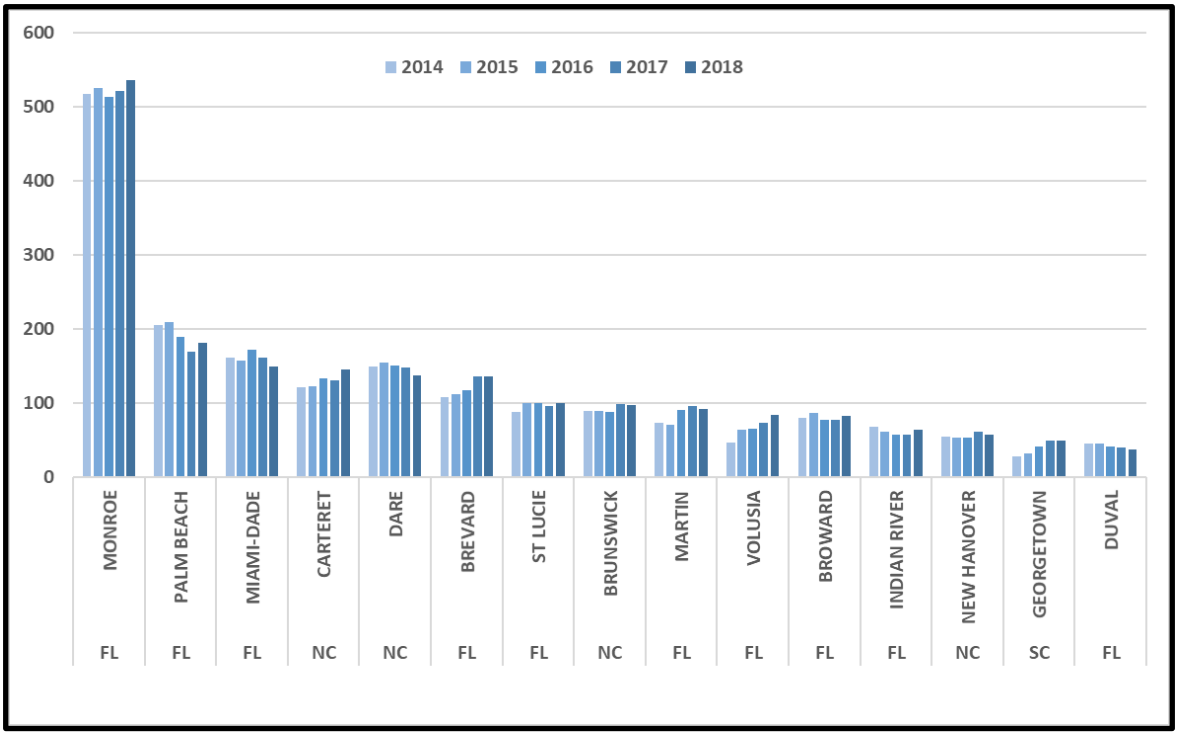


Figure 3.3.2.1. Atlantic commercial dolphin wahoo permits by South Atlantic county for 2014-2018. (Source: SERO Permits database 2020).

Commercial dolphin wahoo permits by county in the Northeast are depicted in **Figure 3.3.2.2** with Ocean County, New Jersey and Suffolk County, New York having the majority of permits. Counties in several Mid-Atlantic states are also included in the top ten, but with far fewer permits. for most the trend has been variable but several counties have seen an increase in the number of permits.

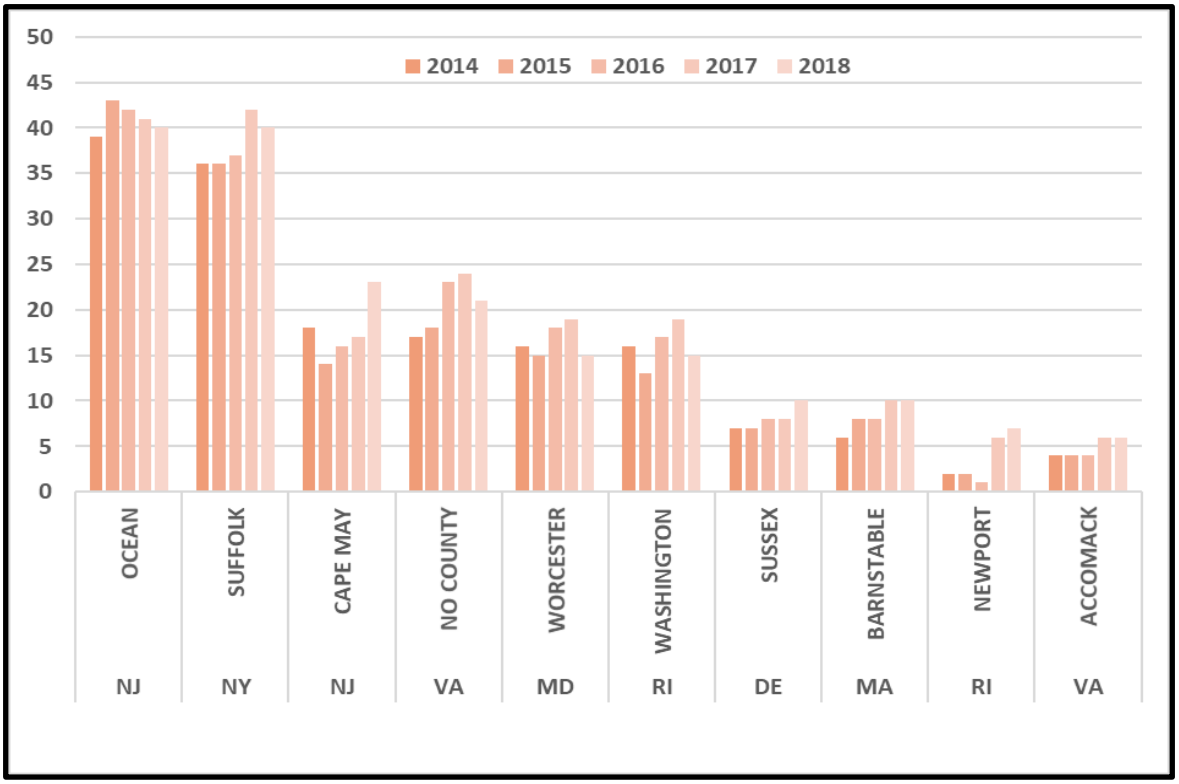


Figure 3.3.2.2. Atlantic commercial dolphin wahoo permits by Northeast county for 2014-2018. (Source: SERO Permits database 2020).

As with commercial dolphin wahoo permits, Monroe County, Florida has far more for-hire dolphin wahoo permits than other counties in **Figure 3.3.2.3** and has seen a substantial increase in recent years. Although other counties in southeast Florida are represented within the top 15, more counties from North Carolina and South Carolina are ranked in the top six than were represented in the commercial sector rankings of dolphin wahoo permits. The for-hire sector seems to have a more even spread of permits throughout the South Atlantic region states than the commercial permits concentrated in southeast Florida.

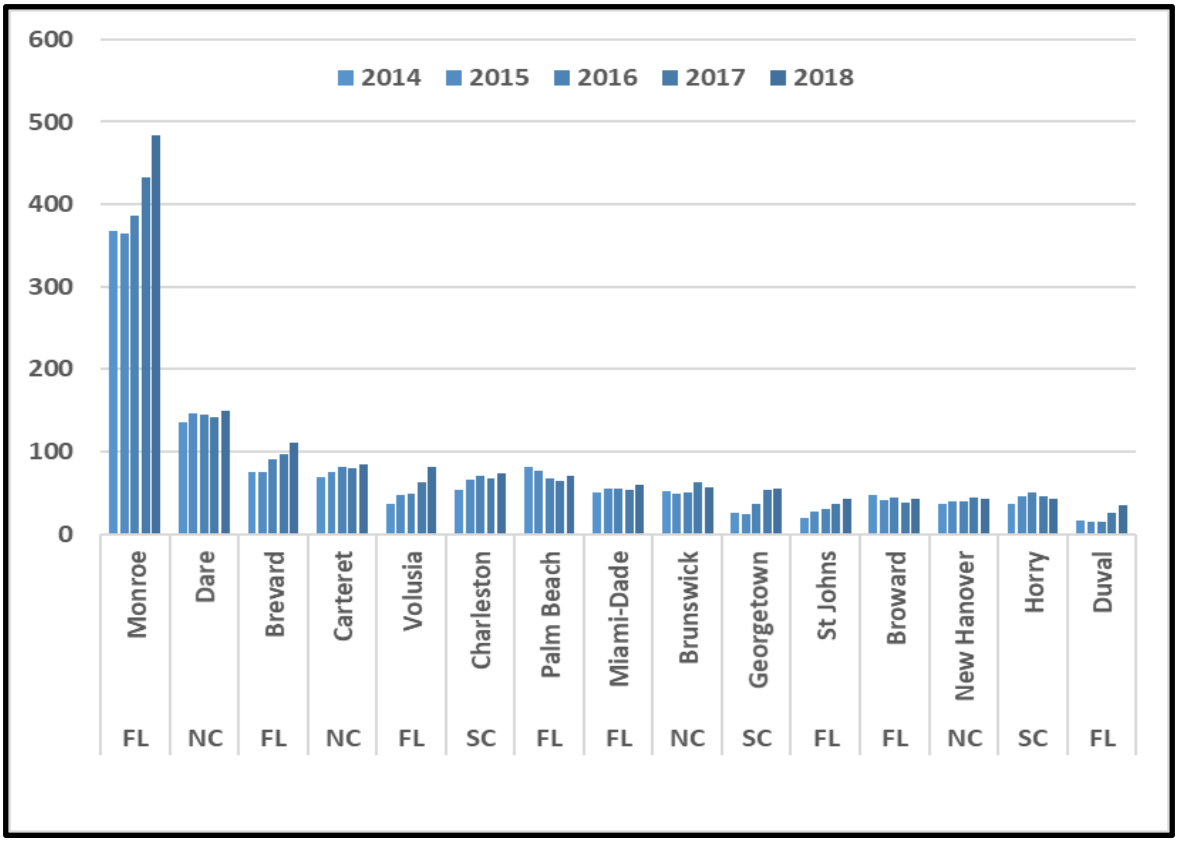


Figure 3.3.2.3. Atlantic for-hire dolphin wahoo permits by South Atlantic county in 2014-2018. (Source: SERO Permits database 2020).

For-hire dolphin wahoo permits in the Northeast are most numerous in Worcester County, Maryland, with Sussex County, Delaware second (**Figure 3.3.2.4**). Counties in New Jersey and New York follow with New Jersey having the most with four counties with permits in the top ten. Trends in the number of permits seem to vary with some counties seeing an increase while others have seen a downward trend, but numbers are fairly stable.

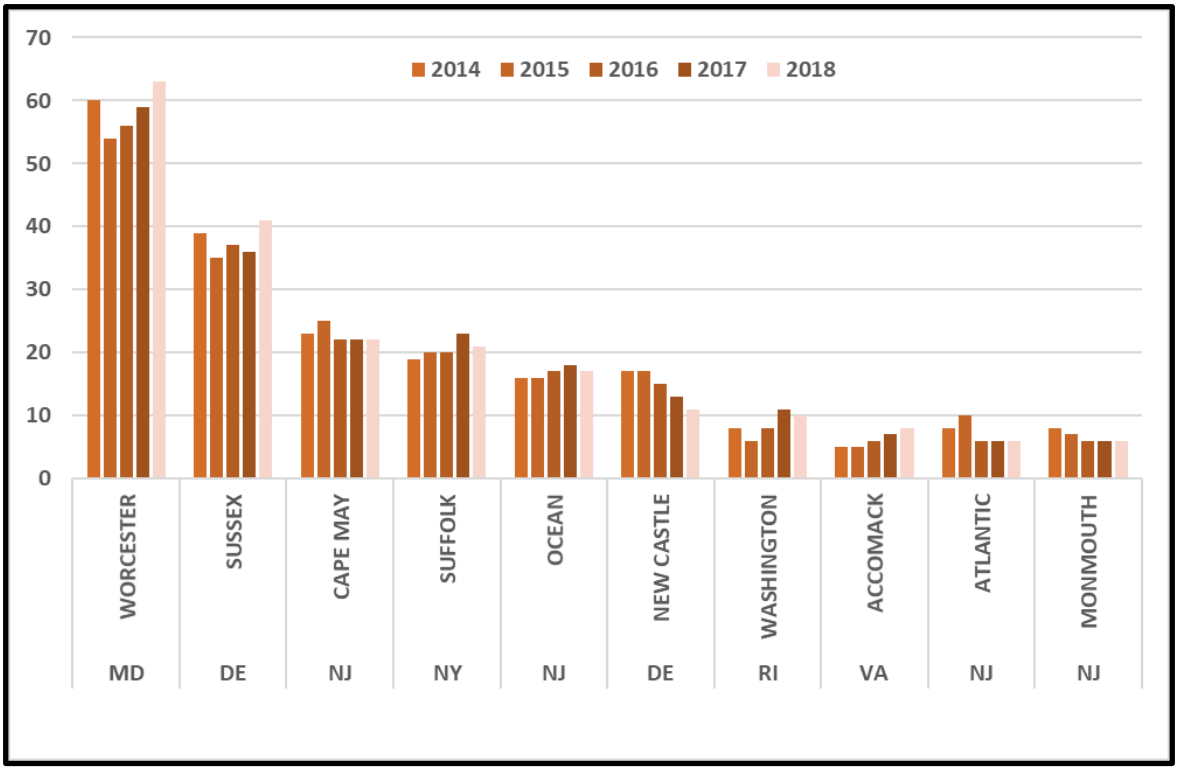


Figure 3.3.2.4. South Atlantic for-hire dolphin wahoo permits by Northeast county for 2014-2018. (Source: SERO Permits database 2020).

Commercial Dolphin and Wahoo Communities in the South Atlantic

Wanchese, North Carolina is the top community for total commercial dolphin landings and value RQ in 2018 (**Figure 3.3.2.5**); much higher than where it was ranked (7th) in Amendment 5 (SAFMC 2013). Several South Carolina communities have gained in RQ for dolphin in recent years with Megget and Murrells Inlet both within the top seven communities since 2011. North Carolina is second to Florida in overall landings of dolphin with South Carolina third. (SAFMC 2013). Florida communities include Palm Beach Gardens, Margate, Mayport, Jupiter, St. Augustine, and Homestead in addition to Key West, but only one in the top five in terms of value. However, Palm Beach Gardens does rank fourth in terms of Pounds RQ. No Georgia communities are identified within the top fifteen communities in terms of dolphin RQ.

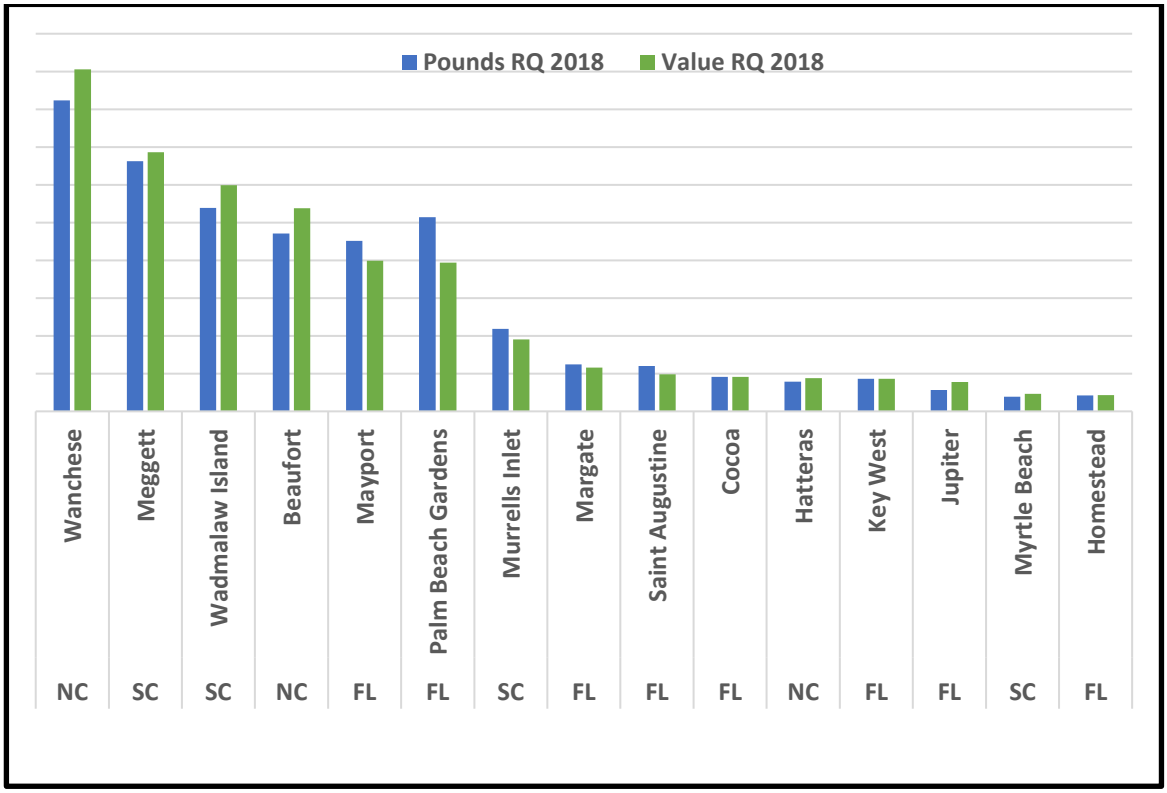


Figure 3.3.2.5. Dolphin pounds and value 2018 Regional Quotient for South Atlantic fishing communities.
(Source: SERO Community ALS database 2018).

Again using the regional quotient to identify wahoo communities in **Figure 3.3.2.6**, Wilimington, North Carolina is the top community for total commercial wahoo landings and value RQ replacing Palm Beach Gardens, Florida in Amendment 5 (SAFMC 2013). As with dolphin, several North Carolina communities have gained in RQ for wahoo in recent years with Beaufort, 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, Ormand Beach and Margate in addition to Key West in the Florida Keys. The community of Murrells Inlet, South Carolina also has a relatively high regional quotient for wahoo. No Georgia communities are identified as within the top 15 wahoo communities in terms of RQ.

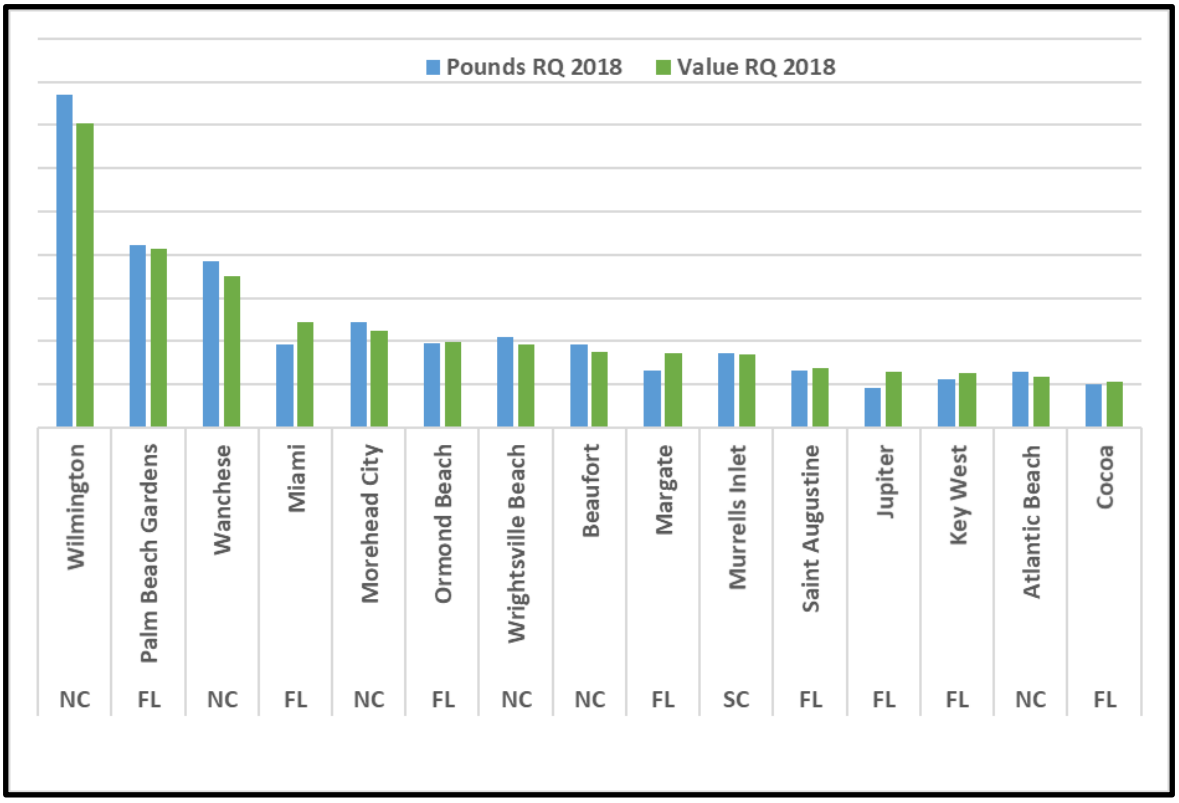


Figure 3.3.2.6. Wahoo pounds and value 2018 Regional Quotient for South Atlantic fishing communities. (Source: SERO).

Reliance on and Engagement with Commercial and Recreational Fishing in the South Atlantic ***(to be updated)***

Reliance and engagement indices identify several communities in the South Atlantic that are substantially engaged in commercial and recreational fishing are shown in **Figure 3.3.2.7 and 3.3.2.8**. 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 3.3.2.7**). 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 3.3.2.8**. 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.

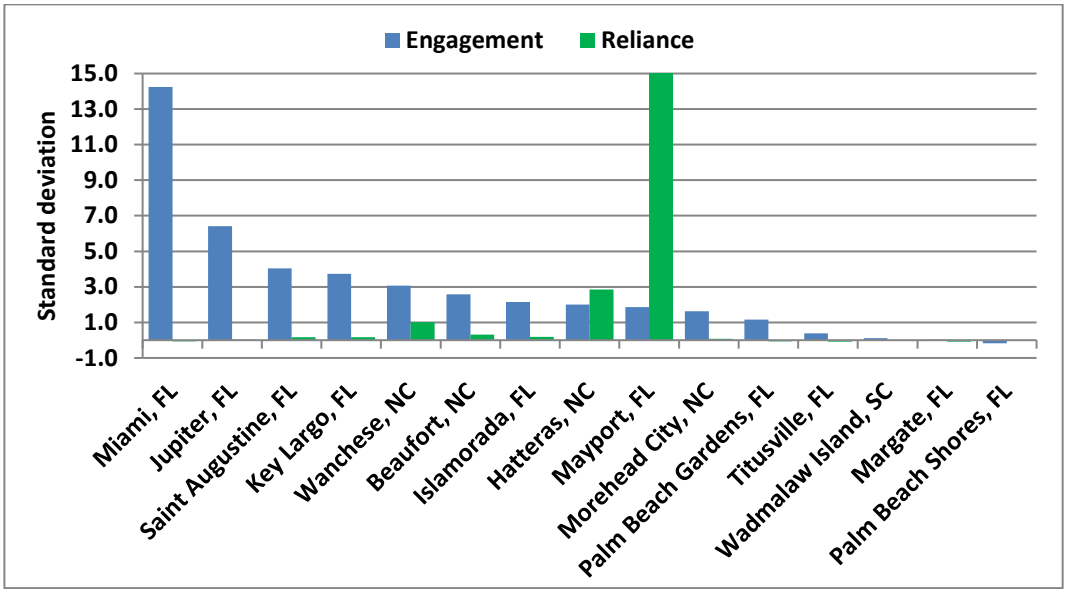


Figure 3.3.2.7. The top dolphin communities for engagement and reliance on commercial fishing. Source: SERO 2014.

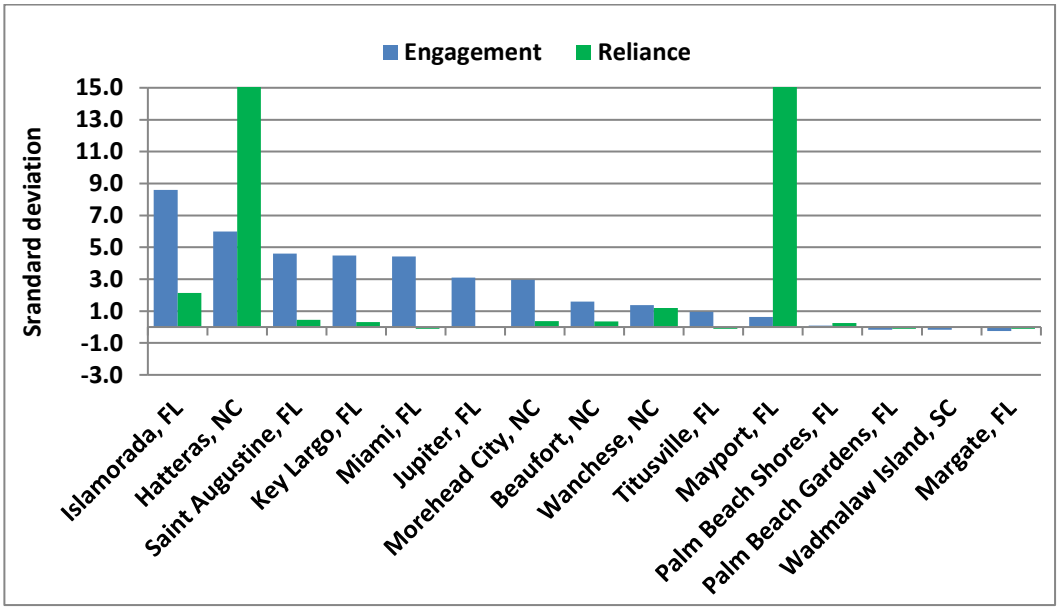


Figure 3.3.2.8. The top dolphin communities for engagement and reliance on recreational fishing. Source: SERO 2014.

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).

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, Mid-Atlantic and New England regions 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.

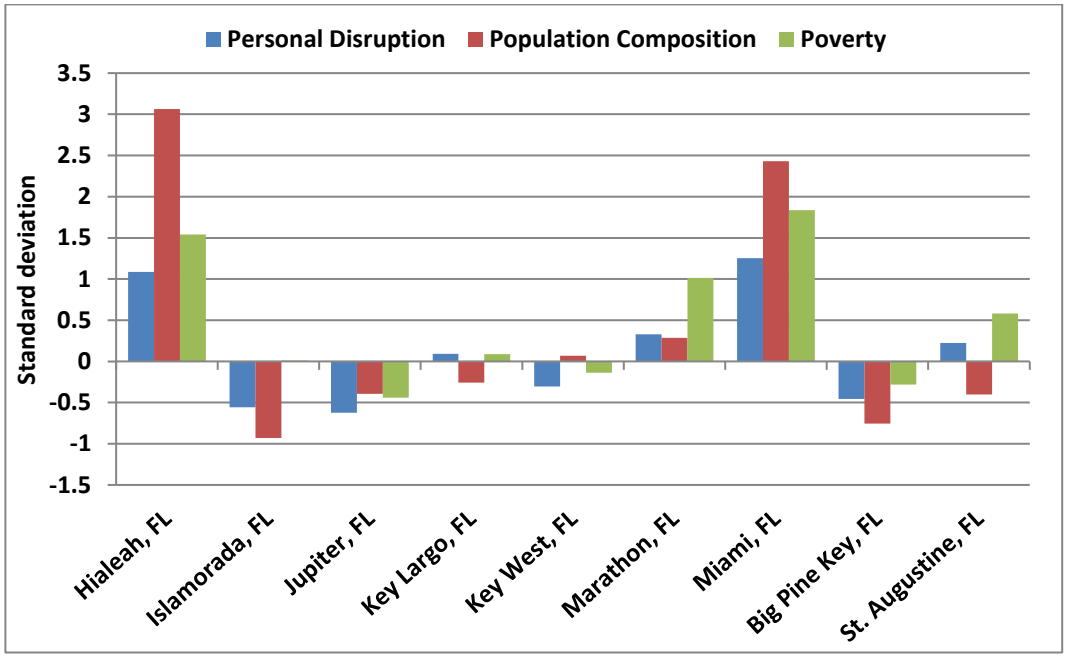


Figure 3.3.3.1 Social vulnerability measures for selected Florida communities.
Source: SERO 2014.

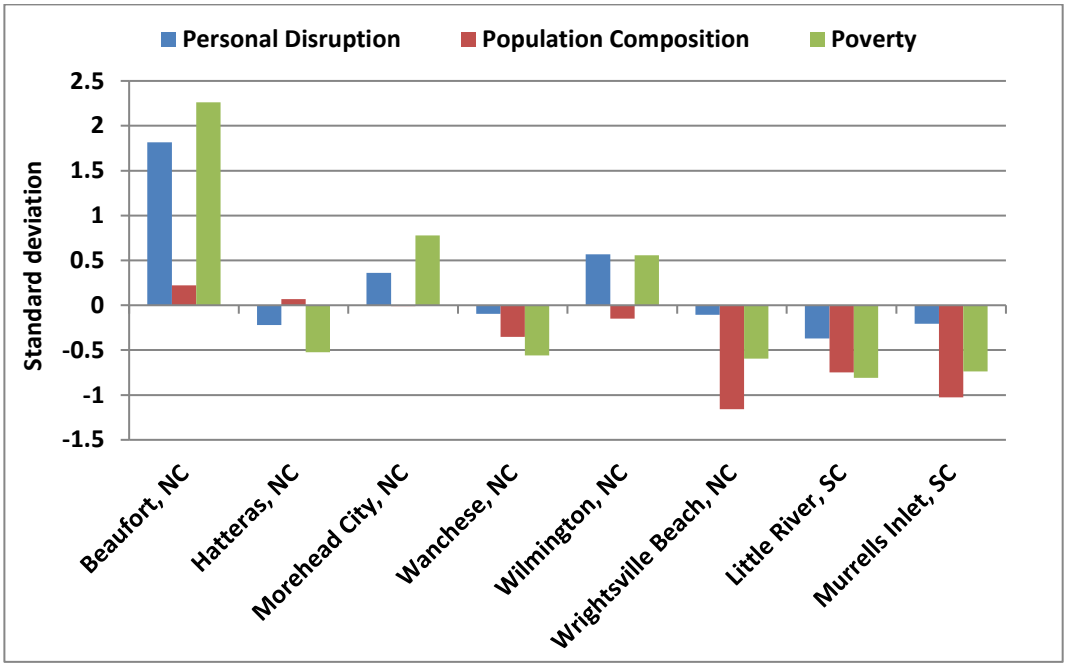


Figure 3.3.3.2 Social vulnerability measures for selected South Carolina and North Carolina communities. Source: SERO 2014

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 Effects and Comparison of Alternatives

4.1 Action 1. Revise the total annual catch limit for dolphin to reflect the updated acceptable biological catch level

Alternatives

1 (No Action). The total annual catch limit for dolphin is set equal to the current acceptable biological catch level.

2. The total annual catch limit for dolphin is equal to the updated acceptable biological catch level.

3. The total annual catch limit for dolphin is equal to 95% of the updated acceptable biological catch level.

4. The total annual catch limit for dolphin is equal to 90% of the updated acceptable biological catch level.

4.1.1 Biological Effects

Alternative 1 (No Action) is not a viable alternative because it would retain the current total annual catch limit (ACL) for dolphin (equal to the acceptable biological catch (ABC)) at 15,344,846 pounds whole weight (lbs ww) (**Table 4.1.1.1**), which is not based on the best scientific information available (BSIA). The current total ACL (=ABC) is based on the South Atlantic Fishery Management Council's (Council) Statistical and Scientific Committee's (SSC) recommendation using the third highest landings value during1999-2008. These landings did not include Monroe County, Florida, and were based on recreational data as per the older Marine Recreational Information Program's (MRIP) Coastal Household Telephone Survey (CHTS) method. The current total ACL (=ABC) was implemented by Amendment 5 to the Fishery Management Plan for the Dolphin Wahoo Fishery of the Atlantic (Dolphin Wahoo Amendment 5) in 2014 (79 FR 32878). In April 2020, the Council recommended a new ABC level for dolphin at 24,570,764 lbs ww (**Table 4.1.1.1**) using the third highest landings value during1994-2007 (https://safmc.net/download/BB%20Council%20Meeting%20June%202020/SSC_Apr2020Report_FINAL.pdf). These landings include Monroe County, Florida, and are based on recreational data as per MRIP's newer Fishery Effort Survey method (FES) method, which is considered more reliable and robust compared to the CHTS survey method. The new ABC recommendation for dolphin is also based on the new weight estimation procedure from the National Marine Fisheries Service (NMFS) Southeast Fisheries Science Center (SEFSC) that uses a 15 fish minimum sample size, and represents BSIA. Alternatives 2 through 4 explore options to revise the total ACL for dolphin based on the SSC's new ABC recommendation and are viable alternatives for further analysis (**Table 4.1.1.1**). Landings by sector for dolphin are shown in **Table 4.1.1.2** and **Figure 4.1.1.1** during 1986-2019. Percent standard error (PSE) is relatively low for recreational landings (**Table 4.1.1.3**). Total landings for dolphin have not exceeded the new ABC with the exception of 2015 in over 20 years (**Table 4.1.1.2 and Figure 4.1.1.1**).

Table 4.1.1.1. Total ACL for dolphin under **Alternatives 1 (No Action)** – **4** under **Action 1**.

Alternative	Dolphin Total ACL (lbs ww)	Percent (%) Change
Alternative 1 (No Action)	*15,344,846	0
Alternative 2	**24,570,764	60
Alternative 3	**23,342,226	52
Alternative 4	**22,113,688	44

*Current ABC=ACL and this represents CHTS estimates.
**FES estimates.

Alternatives 2, **3**, and **4** would result in a change of 60%, 52%, and 44% from **Alternative 1 (No Action)** (**Table 4.1.1.1**). **Alternative 2** would set the total ACL equal to the ABC and is the most liberal of the alternatives compared to **Alternatives 3** and **4**, which include a buffer from the ABC, and are more conservative. Therefore, biological benefits would be expected to be greater for **Alternative 4** followed by **Alternative 3**, and **Alternative 2**. However, as shown in **Table 4.1.1.4**, when compared with the most recent 3-year average landings, projections show that none of the total ACLs proposed under **Alternatives 2** through **4** would be reached.

Table 4.1.1.2. Total landings (lbs ww) of dolphin during 1986-2019.

Year	Commercial Landings (lbs ww)	Recreational Landings (lbs ww)	Total Landings (lbs ww)
1986	536,362	9,047,439	9,583,801
1987	496,478	9,927,475	10,423,953
1988	524,719	9,313,438	9,838,157
1989	1,063,399	26,607,445	27,670,844
1990	1,015,896	23,769,475	24,785,371
1991	1,602,698	30,655,419	32,258,117
1992	667,183	21,151,512	21,818,695
1993	934,393	15,910,599	16,844,992
1994	1,200,066	15,958,086	17,158,152
1995	2,136,534	23,324,772	25,461,306
1996	1,225,669	16,647,148	17,872,817
1997	1,602,801	30,576,000	32,178,801
1998	823,742	18,703,870	19,527,612
1999	1,047,161	21,133,869	22,181,030
2000	987,626	23,583,138	24,570,764
2001	765,376	22,564,554	23,329,930
2002	708,092	20,189,771	20,897,863
2003	723,508	17,214,254	17,937,762
2004	859,703	11,969,370	12,829,073
2005	577,616	12,758,251	13,335,867
2006	650,309	16,232,708	16,883,017
2007	999,163	16,140,525	17,139,688
2008	836,374	13,775,567	14,611,941

2009	1,296,014	17,091,502	18,387,516
2010	715,576	11,137,918	11,853,494
2011	794,863	15,100,020	15,894,883
2012	861,770	13,641,359	14,503,129
2013	757,786	14,801,456	15,559,242
2014	1,303,395	16,641,747	17,945,142
2015	1,111,483	25,375,982	26,487,465
2016	938,477	15,997,342	16,935,819
2017	635,952	12,649,853	13,285,805
2018	535,923	16,805,001	17,340,924
*2019	801,826	11,929,298	12,731,124

*2019 landings are preliminary estimates.

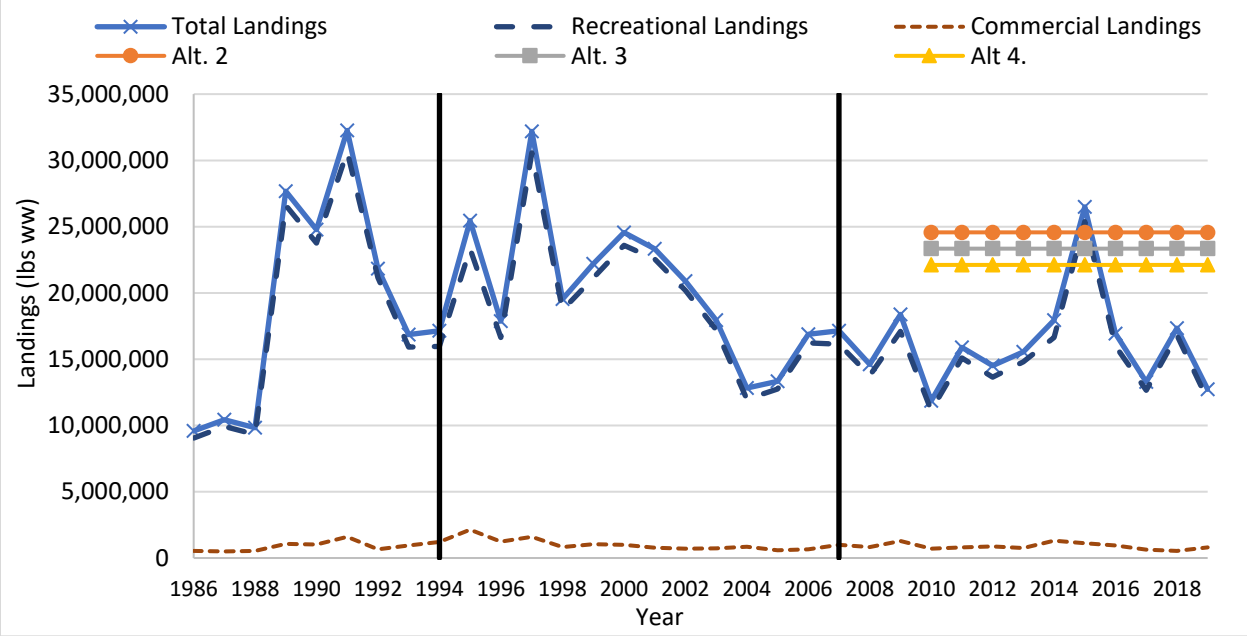


Figure 4.1.1.1. Atlantic dolphin landings (pounds whole weight) from 1986-2019 in comparison to **Alternatives 2** through **4** in **Action 1**. The solid vertical lines indicate baseline years (1994 to 2007) selected by the SSC for setting the dolphin ABC. Please note that 2019 commercial landings are preliminary.

Table 4.1.1.3. Percent standard errors (PSEs) for recreational Atlantic dolphin landings (by weight), 2010-2019.

Year	Recreational PSEs for Dolphin
2010	15.2
2011	13.5
2012	12.1
2013	18.9
2014	15.4
2015	12.4
2016	11.2

Year	Recreational PSEs for Dolphin
2017	14.5
2018	14.6
2019	14.4

Table 4.1.1.4. Projection of total ACL being reached under all the alternatives under Action 1 when compared with the average landings (lbs ww) during 2017-2019). The new ABC for dolphin = 24,570,764 lbs ww (3rd highest landings from 1994-2007). 2019 landings are preliminary.

Alternative	Total ACL (lbs ww)	Average Commercial Landings (lbs ww) 2017-2019	Average Recreational Landings (lbs ww) 2017-2019	Total Landings (lbs ww) 2017-2019	ACL Reached
*Alternative 1 (No Action)	15,344,846	N/A	N/A	N/A	N/A
Alternative 2	24,570,764	657,900	13,794,717	14,452,617	No
Alternative 3	23,342,225	657,900	13,794,717	14,452,617	No
Alternative 4	22,113,687	657,900	13,794,717	14,452,617	No

*Current ABC(=ACL).

4.1.2 Economic Effects

In general, ACLs that allow for more fish to be landed can result in increased positive economic effects if harvest increases without notable effects of the stock of a species. The ACL does not directly impact a species or species complex unless harvest increases or the ACL is exceeded, thereby triggering AMs such as closures or other restrictive measure. As such, ACLs that are set above the observed landings of a species or species complex do not have realized economic effects.

The potential revised dolphin ACLs in **Alternatives 2** through **4** are all above the observed landings in recent years except for 2015 (**Figure 4.1.1.1**, **Table 4.1.1.2**). The new ACL is likely not constraining on total harvest (**Table 4.1.1.4**) but could be potentially constraining in years of exceptionally high landings. The economic effects of **Action 1** on will be highly dependent on the preferred alternatives chosen in Actions 3, 7, and 8.

4.1.3 Social Effects

The ACL for any stock does not directly affect resource users unless the ACL is met or exceeded, in which case AMs that restrict, or close harvest could negatively impact the commercial, for-hire, and private recreational sectors. AMs can have significant direct and indirect social effects because, when triggered, can restrict harvest in the current season or subsequent seasons. While the negative effects are usually short-term, they may at times induce other indirect effects through changes in fishing behavior or business operations that could have long-term social effects, such as increased pressure on another species, or fishermen having to stop fishing all together due to regulatory closures. However, restrictions on harvest contribute to sustainable management goals, and are expected to be beneficial to fishermen and communities in the long term. Generally, the higher the ACL the greater the short-term social benefits that would be expected to accrue if harvest is sustainable.

Under **Action 1**, **Alternatives 2**-**4**, the ACL for dolphin would be based on the most recent stock assessment and updated MRIP estimates. Adjustments in an ACL based on updated information are necessary to ensure continuous social benefits over time, **Alternative 1 (No Action)** would not update the dolphin ACL based on current information and would not provide the related social benefits.

Commercial and recreational landings are estimated to vary year by year (**Figure 4.1.1.1**), and there could be some years in which recreational and/or commercial landings would exceed their respective ACLs and AMs would be triggered. Depending on the AMs implemented in Action 5 (commercial) and Action 8 (recreational), there would likely be some negative effects on recreational fishermen and for-hire and commercial businesses that target dolphin. In general, a higher ACL would lower the chance of triggering a recreational or commercial AM and result in the lowest level of negative effects on the recreational and commercial sectors. Among the action alternatives, **Alternative 2** would be the most beneficial for fishermen, followed by **Alternative 3**, and **Alternative 4**, and **Alternative 1 (No Action)**.

4.1.4 Administrative Effects

4.2 Action 2. Revise the total annual catch limit for wahoo to reflect the updated acceptable biological catch level

4.2.1 Biological Effects

Alternatives

1 (No Action). The total annual catch limit for wahoo is set equal to the acceptable biological catch level.

2.. The total annual catch limit for wahoo is equal to the updated acceptable biological catch level.

3. The total annual catch limit for wahoo is equal to 95% of the updated acceptable biological catch level.

4. The total annual catch limit for wahoo is equal to 90% of the updated acceptable biological catch level.

Alternative 1 (No Action) is not a viable alternative because it would retain the current total annual catch limit for wahoo (equal to the ABC) at 1,794,960 lbs ww (**Table 4.1.2.1**), which is not based on BSIA. The current total ACL (=ABC) is based on the Council SSC's recommendation using the third highest landings value during1999-2008. These landings did not include Monroe County, Florida, and were based on recreational data as per the older MRIP CHTS method. The current total ACL (=ABC) was implemented by Dolphin Wahoo Amendment 5 in 2014 (79 FR 32878). In April 2020, the Council recommended a new ABC level for wahoo at 2,885,303 lbs ww (**Table 4.1.2.1**) using the third highest landings value during1994-2007 (https://safmc.net/download/BB%20Council%20Meeting%20June%202020/SSC_Apr2020Report_FINAL.pdf). These landings include Monroe County, Florida, and are based on recreational data as per MRIP's newer FES method, which is considered more reliable and robust compared to the CHTS survey method. The new ABC recommendation for dolphin is also based on the new weight estimation procedure from the NMFS SEFSC that uses a 15 fish minimum sample size, and represents BSIA. **Alternatives 2** through **4** explore options to revise the total ACL for wahoo based on the SSC's new ABC recommendation and are viable alternatives for further analysis (**Table 4.1.2.1**). Landings by sector for wahoo are shown in **Table 4.1.2.2** and **Figure 4.1.2.1** during 1986-2019. PSE values are relatively low for recreational landings (**Table 4.1.2.3**). Total landings for wahoo have exceeded the new ABC a few times over the past decade, especially the recreational landings for wahoo (**Table 4.1.2.2 and Figure 4.1.2.1**).

Table 4.1.2.1. Total ACL for wahoo under **Alternatives 1 (No Action) – 4** under **Action 2**.

Alternative	Dolphin Total ACL (lbs ww)	Percent (%) Change
Alternative 1 (No Action)	*1,794,960	0
Alternative 2	**2,885,303	61
Alternative 3	**2,741,038	53
Alternative 4	**2,596,773	45

*Current ABC=ACL and this represents CHTS estimates.
**FES estimates.

Alternatives 2, **3**, and **4** would result in a change of 61%, 53%, and 45% from **Alternative 1 (No Action)** (**Table 4.1.2.1**). **Alternative 2** would set the total ACL equal to the ABC and is the most liberal of the alternatives compared to **Alternatives 3** and **4**, which include a buffer from the ABC, and are more conservative. Therefore, biological benefits would be expected to be greater for **Alternative 4** followed by **Alternative 3**, and **Alternative 2**. As

shown in **Table 4.1.2.4**, when compared with the most recent 3-year average landings, projections show that none of the total ACLs proposed under **Alternatives 2** through **4** would be reached. However, since the total landings for wahoo have exceeded the new ABC more than once in the past decade (especially the recreational landings), it would be reasonable to expect the total ACL for wahoo to be exceeded in the future (**Table 4.1.2.2 and Figure 4.1.2.1**). Therefore, a combination of in-season and post-season accountability measures (Actions 9 and 10) that would close the sector if the ACL is met is essential to preventing the total ACL for wahoo from being exceeded.

Table 4.1.1.2. Total landings (lbs ww) of wahoo during 1986-2019.

Year	Commercial Landings (lbs ww)	Recreational Landings (lbs ww)	Total Landings (lbs ww)
1986	26,713	2,891,096	2,917,809
1987	51,750	2,210,611	2,262,361
1988	53,164	1,193,702	1,246,866
1989	39,028	772,951	811,979
1990	53,829	635,875	689,704
1991	61,126	2,157,817	2,218,943
1992	66,739	1,348,370	1,415,109
1993	71,960	1,190,346	1,262,306
1994	84,966	841,994	926,960
1995	107,497	1,664,458	1,771,955
1996	83,451	1,538,442	1,621,893
1997	93,135	1,119,084	1,212,219
1998	77,964	1,348,800	1,426,764
1999	99,285	1,917,627	2,016,912
2000	65,887	1,790,662	1,856,549
2001	59,175	1,807,269	1,866,444
2002	59,288	2,830,876	2,890,164
2003	58,832	1,997,574	2,056,406
2004	65,942	3,125,371	3,191,313
2005	46,590	1,676,176	1,722,766
2006	40,177	1,061,473	1,101,650
2007	59,144	3,687,038	3,746,182
2008	42,211	1,195,582	1,237,793
2009	45,617	2,303,861	2,349,478
2010	43,806	1,252,121	1,295,927
2011	61,077	1,335,404	1,396,481
2012	66,208	2,060,316	2,126,524
2013	65,505	723,436	788,941
2014	62,458	1,709,855	1,772,313
2015	63,836	2,943,008	3,006,844
2016	66,745	5,003,444	5,070,189

2017	67,032	3,585,790	3,652,822
2018	50,486	880,959	931,445
2019	74,480	2,010,815	2,085,295

*2019 landings are preliminary estimates.

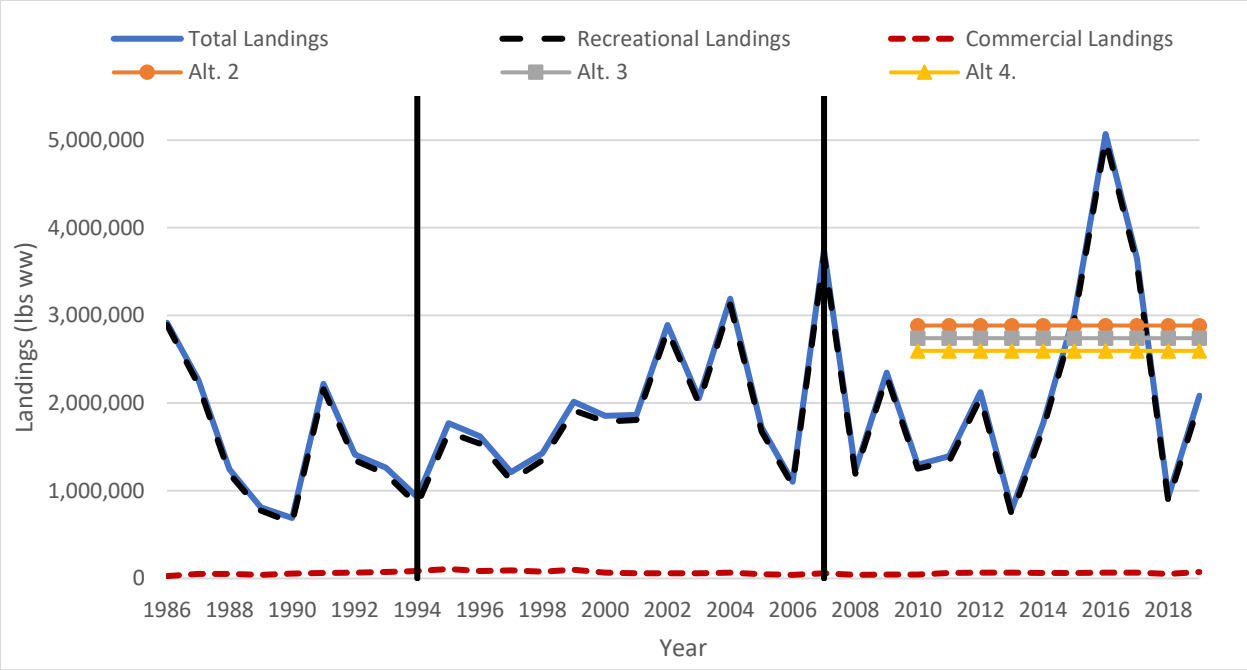


Figure 4.1.2.1. Atlantic wahoo landings (pounds whole weight) from 1986-2019 in comparison to **Alternatives 2** through **4** in **Action 2**. The solid vertical lines indicate baseline years (1994 to 2007) selected by the SSC for setting the wahoo ABC. Please note that 2019 commercial landings are preliminary.

Table 4.1.2.3. Percent standard errors (PSEs) for recreational Atlantic wahoo landings (by weight), 2010-2019.

Year	Recreational PSEs for Wahoo
2010	27.2
2011	25.1
2012	13.6
2013	21.5
2014	21.8
2015	26.7
2016	28.8
2017	40.9
2018	27
2019	28.8

Table 4.1.2.4. Projection of total ACL being reached under all the alternatives under Action 1 when compared with the average landings (lbs ww) during 2017-2019). The new ABC for wahoo = 2,885,303 lbs ww (3rd highest landings from 1994-2007). 2019 landings are preliminary.

Alternative	Total ACL (lbs ww)	Average Commercial Landings (lbs ww) 2017-2019	Average Recreational Landings (lbs ww) 2017-2019	Total Landings (lbs ww) 2017-2019	ACL Reached
*Alternative 1 (No Action)	1,794,960	N/A	N/A	N/A	N/A
Alternative 2	2,885,303	63,989	2,159,188	2,223,177	No
Alternative 3	2,741,038	63,989	2,159,188	2,223,177	No
Alternative 4	2,596,773	63,989	2,159,188	2,223,177	No

*Current ABC(=ACL).

4.2.2 Economic Effects

In general, ACLs that allow for more fish to be landed can result in increased positive economic effects if harvest increases without notable effects of the stock of a species. The ACL does not directly impact a species or species complex unless harvest increases or the ACL is exceeded, thereby triggering AMs such as closures or other restrictive measure. As such, ACLs that are set above the observed landings of a species or species complex do not have realized economic effects.

The potential revised wahoo ACLs in **Alternatives 2** through **4** are all above the observed landings in recent years except for 2015 (**Figure 4.1.2.1**, **Table 4.1.2.2**). The new ACL is likely not constraining on total harvest (**Table 4.1.2.4**) but could be potentially constraining in years of exceptionally high landings. The economic effects of **Action 2** on will be highly dependent on the preferred alternatives chosen in Actions 4, 9, and 10.

4.2.3 Social Effects

The ACL for any stock does not directly affect resource users unless the ACL is met or exceeded, in which case AMs that restrict, or close harvest could negatively impact the commercial, for-hire, and private recreational sectors. AMs can have significant direct and indirect social effects because, when triggered, can restrict harvest in the current season or subsequent seasons. While the negative effects are usually short-term, they may at times induce other indirect effects through changes in fishing behavior or business operations that could have long-term social effects, such as increased pressure on another species, or fishermen having to stop fishing all together due to regulatory closures. However, restrictions on harvest contribute to sustainable management goals, and are expected to be beneficial to fishermen and communities in the long term. Generally, the higher the ACL the greater the short-term social benefits that would be expected to accrue if harvest is sustainable.

Under **Action 2**, **Alternatives 2-4**, the ACL for wahoo would be based on the most recent stock assessment and updated MRIP estimates. Adjustments in an ACL based on updated information are necessary to ensure continuous social benefits over time, **Alternative 1 (No Action)** would not update the wahoo ACL based on current information and would not provide the related social benefits.

Commercial and recreational landings are estimated to vary year by year (**Figure 4.1.2.1**), and there could be some years in which recreational and/or commercial landings would exceed their respective ACLs and AMs would be triggered. Depending on the AMs implemented in Action 6 (commercial) and Action 9 (recreational), there would likely be some negative effects on recreational fishermen and for-hire and commercial businesses that target wahoo. In general, a higher ACL would lower the chance of triggering a recreational or commercial AM and result in the lowest level of negative effects on the recreational and commercial sectors. Among the action alternatives, **Alternative 2** would be the most beneficial for fishermen, followed by **Alternative 3**, and **Alternative 4**, and **Alternative 1 (No Action)**.

4.2.4 Administrative Effects

4.3 Action 3. Revise sector allocations and sector annual catch limits for dolphin

4.3.1 Biological Effects

4.3.2 Economic Effects

In general, ACLs that allow for more fish to be landed can result in increased positive economic effects if harvest increases without notable effects of the stock of a species. The ACL does not directly impact a species or species complex unless harvest increases or the ACL is exceeded, thereby triggering AMs such as closures or other restrictive measure. As such, ACLs that are set above the observed landings of a species or species complex do not have realized economic effects.

All alternatives of **Action 3** would lead to an increase in the ACL for the recreational sector on a pound basis, but comparison to the current ACL may not be relevant due to the relatively large shift from CHTS to FES estimates. **Alternatives 2** and **3** would be more restrictive for the commercial sector while all other alternatives (**Alternative 1 (No Action)** and **Alternatives 4** through **6**) would increase the commercial ACL on a pound basis (**Table X**). While none of the alternatives are projected to be constraining on either sector (**Table X**), it is still possible that landings could exceed some of the alternatives in years of exceptionally high landings (**Figures X** and **X**).

Alternatives

1 (No Action). Retain the current recreational sector and commercial sector allocations for dolphin as 90.00% and 10.00%, respectively, of the revised total annual catch limit as per Alternative 2 in Action 1in Amendment 10 to the Fishery Management Plan for Dolphin and Wahoo of the Atlantic. The revised total annual catch limit includes recreational landings from Monroe County, Florida, and incorporates recreational data as per the Marine Recreational Information Program using the Fishery Effort Survey method, as well as updates to commercial and for-hire landings.

Note: The revised total annual catch limit in Alternatives 2 through 6 reflects Alternative 2 in Action 1 in Amendment 10 to the Fishery Management Plan for Dolphin and Wahoo of the Atlantic. The revised total annual catch limit includes recreational landings from Monroe County, Florida, and incorporates recreational data as per the Marine Recreational Information Program using the Fishery Effort Survey method, as well as updates to commercial and for-hire landings.

2. Allocate 94.01% of the revised total annual catch limit for dolphin to the recreational sector. Allocate 5.99% of the revised total annual catch limit for dolphin to the commercial sector. This is based on the total catch between 2008 and 2012.

3. Allocate 94.91% of the revised total annual catch limit for dolphin to the recreational sector. Allocate 5.09% of the revised total annual catch limit for dolphin to the commercial sector. This is based on the total catch between 1994 and 2007.

4. Allocate 93.75% of the revised total annual catch limit for dolphin to the recreational sector. Allocate 6.25% of the revised total annual catch limit for dolphin to the commercial sector. This is based on approximately maintaining the current commercial annual catch limit and allocating the remaining revised total annual catch limit to the recreational sector.

5. Allocate 93.00% of the revised total annual catch limit for dolphin to the recreational sector. Allocate 7.00% of the revised total annual catch limit for dolphin to the commercial sector.

6. Allocate 92.00% of the revised total annual catch limit for dolphin to the recreational sector. Allocate 8.00% of the revised total annual catch limit for dolphin to the commercial sector.

4.3.3 Social Effects

Sector allocations exist for the recreational and commercial sectors already, **Alternative 1 (No Action)** would maintain the current allocation percentages and may have few social effects as both sectors would see an increase in available poundage. With **Alternative 2** and **Alternative 3** there would be a decrease

in the commercial percentage compared to **Alternative 1 (No Action)** and poundage when compared to the current commercial ACL (**Table X**), which could have some negative social effects, especially if other actions further decreased the harvest thresholds. **Alternatives 4-6** would also decrease the commercial allocation percentage compared to (**Alternative 1 (No Action)** but would increase the available poundage compared to the current commercial ACL. The increase in poundage may result in positive social benefits associated with increased harvest, however perceptions regarding the decreased percentage may result in a negative perception from the public and concerns about long-term social effects.

As mentioned, there can be many different social effects that result as further allocations are discussed, and perceptions are formed. In the past there has been some resistance to further decreasing a given sectors percentage allocation. Again, it is difficult to predict the social effects with any allocation scheme as it would depend upon other actions in conjunction with this one. A reduction in allocation for one sector may be compounded by a restrictive choice of ABC or ACL (**Action 1**) and may have further effects that could be either negative or positive depending upon the combination of effects. Therefore, the choice of an allocation will need to be assessed with other actions within this amendment to determine the overall social effects and whether short-term losses are offset by any long-term biological gains.

4.3.4 Administrative Effects

4.4 Action 4. Revise sector allocations and sector annual catch limits for wahoo

4.4.1 Biological Effects

4.4.2 Economic Effects

In general, ACLs that allow for more fish to be landed can result in increased positive economic effects if harvest increases without notable effects of the stock of a species. The ACL does not directly impact a species or species complex unless harvest increases or the ACL is exceeded, thereby triggering AMs such as closures or other restrictive measure. As such, ACLs that are set above the observed landings of a species or species complex do not have realized economic effects.

All alternatives of **Action 4** would lead to an increase in the ACL for the recreational sector on a pound basis, but comparison to the current ACL may not be relevant due to the relatively large shift from CHTS to FES estimates. **Alternative 4** would be slightly more restrictive for the commercial sector while all other alternatives (**Alternatives 1 (No Action)** through **3** and **Alternative 5**) would increase the commercial ACL on a pound basis (**Table X)**. While none of the alternatives are projected to be constraining on either sector (**Table X**), it is still possible that landings could exceed some of the alternatives in years of exceptionally high landings (**Figures X** and **X**).

Alternatives

1 (No Action). Retain the current recreational sector and commercial sector allocations for wahoo as 96.07% and 3.93%, respectively, of the revised total annual catch limit as per Alternative 2 in Action 2 in Amendment 10 to the Fishery Management Plan for Dolphin and Wahoo of the Atlantic. The revised total annual catch limit includes recreational landings from Monroe County, Florida, and incorporates recreational data as per the Marine Recreational Information Program using the Fishery Effort Survey method, as well as updates to commercial and for-hire landings.

Note: The revised total annual catch limit in Alternatives 2 through 5 reflects Alternative 2 in Action 2 in Amendment 10 to the Fishery Management Plan for Dolphin and Wahoo of the Atlantic. The revised total annual catch limit includes recreational landings from Monroe County, Florida, and incorporates recreational data as per the Marine Recreational Information Program using the Fishery Effort Survey method, as well as updates to commercial and for-hire landings.

2. Allocate 97.45% of the revised total annual catch limit for wahoo to the recreational sector. Allocate 2.55% of the revised total annual catch limit for wahoo to the commercial sector. This is based on the following formula for each sector:

Sector apportionment = (50% * average of long-term catch (pounds whole weight)) + (50% * average of recent catch (pounds whole weight)).

Long-term catch = 1999 through 2008; Recent catch = 2006 through 2008

3. Allocate 96.35% of the revised total annual catch limit for wahoo to the recreational sector. Allocate 3.65% of the revised total annual catch limit for wahoo to the commercial sector. This is based on the total catch between 1994 and 2007.

4. Allocate 97.56% of the revised total annual catch limit for wahoo to the recreational sector. Allocate 2.44% of the revised total annual catch limit for wahoo to the commercial sector. This is based on approximately maintaining the current commercial annual catch limit and allocating the remaining revised total annual catch limit to the recreational sector.

5. Allocate 97.00% of the revised total annual catch limit for wahoo to the recreational sector. Allocate 3.00% of the revised total annual catch limit for wahoo to the commercial sector.

4.4.3 Social Effects

Sector allocations exist for the recreational and commercial sectors already, **Alternative 1 (No Action)** would maintain the current allocation percentages and may have few social effects as both sectors would see an increase in available poundage. With **Alternative 4** there would be a decrease in the commercial percentage compared to **Alternative 1 (No Action)** and poundage when compared to the current commercial ACL (**Table X**), which could have some negative social effects, especially if other actions further decreased the harvest thresholds. **Alternative 2**, **Alternative 3**, and **Alternative 5** would also decrease the commercial allocation percentage compared to **Alternative 1 (No Action)** but would increase the available poundage compared to the current commercial ACL. The increase in poundage may result in positive social benefits associated with increased harvest, however perceptions regarding the decreased percentage may result in a negative perception from the public and concerns about long-term social effects.

As mentioned, there can be many different social effects that result as further allocations are discussed, and perceptions are formed. In the past there has been some resistance to further decreasing a given sectors percentage allocation. Again, it is difficult to predict the social effects with any allocation scheme as it would depend upon other actions in conjunction with this one. A reduction in allocation for one sector may be compounded by a restrictive choice of ABC or ACL (**Action 2**) and may have further effects that could be either negative or positive depending upon the combination of effects. Therefore, the choice of an allocation will need to be assessed with other actions within this amendment to determine the overall social effects and whether short-term losses are offset by any long-term biological gains.

4.4.4 Administrative Effects

4.5 Action 5. Revise the commercial accountability measures for dolphin

Alternatives

1 (No Action). The current commercial accountability measure includes an in-season closure to take place if the commercial annual catch limit is met or projected to be met. If the commercial annual catch limit 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 annual catch limit is exceeded.

2. If commercial landings for dolphin reach or are projected to reach the commercial annual catch limit, close the commercial sector for the remainder of the fishing year.

4.5.1 Biological Effects

4.5.2 Economic Effects

In general, AMs help ensure that ACLs are not exceeded, particularly on a consistent basis. Exceeding an ACL on a consistent basis presents a high likelihood of overfishing which could possibly derail a rebuilding strategy adopted for an overfished stock or even drive an otherwise healthy stock to being overfished. Once overfishing occurs, or a stock becomes overfished, and more restrictive regulations are adopted, affected fishery participants could redirect their effort to other species that could also experience overfishing or be overfished over time. This could eventually trigger untoward repercussions on the ecological environment for a stock and other associated species.

4.5.3 Social Effects

The in-season closure of the commercial fishery under **Alternative 1 (No Action)** and **Alternative 2** would have beneficial social effects as stock status would be protected. There would likely be negative social effects from the **Alternative 1 (No Action)** when compared to **Alternative 2** as there would be payback by the amount of any overage if dolphin is overfished and the total ACL is exceeded. This could impose some short-term negative impacts upon the commercial fishery in the following season resulting from lower access to the resource and decreased revenue from dolphin from the community. Removing the payback provision would prevent the commercial fishery from experiencing those negative social impacts in years the experience high recruitment and associated higher landings. However, there could be negative long-term social effects if stock status is jeopardized from frequent overages. Because dolphin are a fast growing fish, it may not be necessary to impose any payback as this species has a very short lifespan which means those fish that are not caught may not provide the additional payback to the stock.

4.5.4 Administrative Effects

4.6 Action 6. Revise the commercial accountability measures for wahoo

4.6.1 Biological Effects

Alternatives

1 (No Action). The current commercial accountability measure includes an in-season closure to take place if the commercial annual catch limit is met or projected to be met. If the commercial annual catch limit 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 annual catch limit is exceeded.

2. If commercial landings for wahoo reach or are projected to reach the commercial annual catch limit, close the commercial sector for the remainder of the fishing year.

4.6.2 Economic Effects

In general, AMs help ensure that ACLs are not exceeded, particularly on a consistent basis. Exceeding an ACL on a consistent basis presents a high likelihood of overfishing which could possibly derail a rebuilding strategy adopted for an overfished stock or even drive an otherwise healthy stock to being overfished. Once overfishing occurs, or a stock becomes overfished, and more restrictive regulations are adopted, affected fishery participants could redirect their effort to other species that could also experience overfishing or be overfished over time. This could eventually trigger untoward repercussions on the ecological environment for a stock and other associated species.

4.6.3 Social Effects

The in-season closure of the commercial fishery under **Alternative 1 (No Action)** and **Alternative 2** would have beneficial social effects as stock status would be protected. There would likely be negative social effects from the **Alternative 1 (No Action)** when compared to **Alternative 2** as there would be payback by the amount of any overage if dolphin is overfished and the total ACL is exceeded. This could impose some short-term negative impacts upon the commercial fishery in the following season resulting from lower access to the resource and decreased revenue from wahoo from the community. Removing the payback provision would prevent the commercial fishery from experiencing those negative social impacts in years the experience high recruitment and associated higher landings.

4.6.4 Administrative Effects

4.7 Action 7. Revise the trigger for the post-season recreational accountability measure for dolphin

4.7.1 Biological Effects

4.7.2 Economic Effects

4.7.3 Social Effects

The AM trigger itself should not have any negative social effects but could impose negative effects indirectly if the trigger initiates management action that is unnecessary at the time or delays management action when it is necessary. **Alternative 1 (No Action)** would not revise the trigger for post-season recreational AMs, which requires payback of any recreational overage and a reduction in the season length to ensure the ACL is not exceeded if the stock is overfished and the total ACL is exceeded. Proposed alternatives would use various methods trigger post season AMs based upon landing. **Alternative 2** uses the geometric mean over the past three years, which could be beneficial if for some reason landings in one or more years were artificially high or low due to anomalies in harvesting behavior or stock status. Similarly, **Alternative 3** and **Alternative 4** use an extended time frame for which may also be beneficial if landings are especially volatile. Alternatively, less conservative triggers may indirectly result in negative long-term social effects if they delay necessary management action.

Alternative 5 and **Alternative 6** are more conservative triggers, with **Alternative 6** being the more conservative, which could impose negative short-term social effects if AMs are triggered due to volatile landings in a single year. Alternatively, if management action is necessary, conservative triggers many ensure that harvest remains sustainable safeguarding long term social benefits.

Alternatives

1 (No action). If recreational landings exceed the recreational annual catch limit, then during the following fishing year, recreational landings will be monitored for persistence in increased landings. If the recreational annual catch limit is exceeded, it will be reduced by the amount of the recreational overage in the following fishing year and the recreational season will be reduced by the amount necessary to ensure that recreational landings do not exceed the reduced annual catch limit only if the species is overfished and the total annual catch limit is exceeded. However, the recreational annual catch limit and length of the recreational season will not be reduced if the Regional Administrator determines, using the best available science, that it is not necessary.

2. Implement post season accountability measures in the following fishing year if the recreational annual catch limits are constant and the 3-year geometric mean of landings exceed the recreational sector annual catch limit. If in any year the recreational sector annual catch limit is changed, the moving multi-year geometric mean of landings will start over.

3. Implement post season accountability measures in the following fishing year if the summed total of the most recent past three years of recreational landings exceeds the sum of the past three years recreational sector annual catch limits.

4. Implement post season accountability measures in the following fishing year if recreational landings exceed the recreational sector annual catch limit in two of the previous three fishing years or exceeds the total acceptable biological catch in any one year.

5. Implement post season accountability measures in the following fishing year if the total (commercial and recreational combined) annual catch limit is exceeded.

6. Implement post season accountability measures in the following fishing year if the recreational annual catch limit is exceeded.

4.7.4 Administrative Effects

4.8 Action 8. Revise the post season recreational accountability measure for dolphin

4.8.1 Biological Effects

4.8.2 Economic Effects

In general, AMs help ensure that ACLs are not exceeded, particularly on a consistent basis. Exceeding an ACL on a consistent basis presents a high likelihood of overfishing which could possibly derail a rebuilding strategy adopted for an overfished stock or even drive an otherwise healthy stock to being overfished. Once overfishing occurs, or a stock becomes overfished, and more restrictive regulations are adopted, affected fishery participants could redirect their effort to other species that could also experience overfishing or be overfished over time. This could eventually trigger untoward repercussions on the ecological environment for a stock and other associated species.

4.8.3 Social Effects

Alternative 1 (No Action) and **Alternative 2** would require payback by the amount of the previous seasons overage and would shorten the next season. Payback would reduce the next year's ACL and could have negative social effects depending upon the amount of payback. However, over time such payback may be necessary to sustain the stock. **Alternative 1 (No Action)** includes close monitoring of the fishery and may have social benefits if management is able to respond in a timely manner to keep the fishing season open for as long as possible, maintaining access for participants.

Overall, longer seasons result in increased fishing opportunities for the recreational sector and increased revenue opportunities for the for-hire sector. Reducing the season length (**Alternative 1 (No Action)**, **Alternative 2**, and **Alternative 3**) are anticipated to result in direct negative social effects associated with loss of access to the resource.

Alternatives

1 (No action). If recreational landings exceed the recreational annual catch limit, then during the following fishing year, recreational landings will be monitored for persistence in increased landings. If the recreational annual catch limit is exceeded, it will be reduced by the amount of the recreational overage in the following fishing year and the recreational season will be reduced by the amount necessary to ensure that recreational landings do not exceed the reduced annual catch limit only if the species is overfished and the total annual catch limit is exceeded. However, the recreational annual catch limit and length of the recreational season will not be reduced if the Regional Administrator determines, using the best available science, that it is not necessary.

2. Reduce the recreational sector annual catch limit by the amount of the overage in the following year. Also reduce the length of the following recreational fishing season by the amount necessary to prevent the revised annual catch limit from being exceeded in the following fishing year. However, the recreational annual catch limit and recreational fishing season will not be reduced if the Regional Administrator determines, using the best available science, that it is not necessary.

3. Reduce the length of the following recreational fishing season by the amount necessary to prevent the annual catch limit from being exceeded in the following year. However, the length of the recreational season will not be reduced if the Regional Administrator determines, using the best available science, that it is not necessary.

4. Reduce the bag limit in the following recreational fishing season by the amount necessary to prevent the annual catch limit from being exceeded in the following year. However, the bag limit will not be reduced if the Regional Administrator determines, using the best available science, that it is not necessary.

5. Reduce the vessel limit in the following recreational fishing season by the amount necessary to prevent the annual catch limit from being exceeded in the following year. However, the vessel limit will not be reduced if the Regional Administrator determines, using the best available science, that it is not necessary.

The social effects of reducing the bag limit (**Alternative 4**) or the vessel limit (**Alternative 5**) depend upon how fishermen are affected by either higher bag/vessel limits and shorter seasons, or lower bag limits and longer seasons. Reducing the bag limit and/or vessel limit may have beneficial social effects as the season may be extended. Fishermen will likely prefer the longest fishing season with the highest bag limit and the subsequent trade-offs between shorter seasons or lower bag limits may depend upon the area fished.

4.8.4 Administrative Effects

4.9 Action 9. Revise the trigger for the post-season recreational accountability measure for wahoo

4.9.1 Biological Effects

4.9.2 Economic Effects

4.9.3 Social Effects

The AM trigger itself should not have any negative social effects but could impose negative effects indirectly if the trigger initiates management action that is unnecessary at the time or delays management action when it is necessary. **Alternative 1 (No Action)** would not revise the trigger for post-season recreational AMs, which requires payback of any recreational overage and a reduction in the season length to ensure the ACL is not exceeded if the stock is overfished and the total ACL is exceeded. Proposed alternatives would use various methods trigger post season AMs based upon landing. **Alternative 2** uses the geometric mean over the past three years, which could be beneficial if for some reason landings in one or more years were artificially high or low due to anomalies in harvesting behavior or stock status. Similarly, **Alternative 3** and **Alternative 4** use an extended time frame for which may also be beneficial if landings are especially volatile. Alternatively, less conservative triggers may indirectly result in negative long-term social effects if they delay necessary management action.

Alternatives

1 (No action). If recreational landings exceed the recreational annual catch limit, then during the following fishing year recreational landings will be monitored for persistence in increased landings. If the recreational annual catch limit is exceeded, it will be reduced by the amount of the recreational overage in the following fishing only if the species is overfished and the total annual catch limit is exceeded. However, the recreational annual catch limit will not be reduced if the Regional Administrator determines, using the best available science, that it is not necessary.

2. Implement post season accountability measures in the following fishing year if the recreational annual catch limits are constant and the 3-year geometric mean of landings exceed the recreational sector annual catch limit. If in any year the recreational sector annual catch limit is changed, the moving multi-year geometric mean of landings will start over.

3. Implement post season accountability measures in the following fishing year if the summed total of the most recent past three years of recreational landings exceeds the sum of the past three years recreational sector annual catch limits.

4. Implement post season accountability measures in the following fishing year if recreational landings exceed the recreational sector annual catch limit in two of the previous three fishing years or exceeds the total acceptable biological catch in any one year.

5. Implement post season accountability measures in the following fishing year if the total (commercial and recreational combined) annual catch limit is exceeded.

6. Implement post season accountability measures in the following fishing year if the recreational annual catch limit is exceeded.

Alternative 5 and **Alternative 6** are more conservative triggers, with **Alternative 6** being the more conservative, which could impose negative short-term social effects if AMs are triggered due to volatile landings in a single year. Alternatively, if management action is necessary, conservative triggers many ensure that harvest remains sustainable safeguarding long term social benefits.

4.9.4 Administrative Effects

4.10 Action 10. Revise the post season recreational accountability measures for wahoo

4.10.1 Biological Effects

4.10.2 Economic Effects

In general, AMs help ensure that ACLs are not exceeded, particularly on a consistent basis. Exceeding an ACL on a consistent basis presents a high likelihood of overfishing which could possibly derail a rebuilding strategy adopted for an overfished stock or even drive an otherwise healthy stock to being overfished. Once overfishing occurs, or a stock becomes overfished, and more restrictive regulations are adopted, affected fishery participants could redirect their effort to other species that could also experience overfishing or be overfished over time. This could eventually trigger untoward repercussions on the ecological environment for a stock and other associated species.

4.10.3 Social Effects

Alternative 1 (No Action) and **Alternative 2** would require payback by the amount of the previous seasons overage and would shorten the next season. Payback would reduce the next year's ACL and could have negative social effects depending upon the amount of payback. However, over time such payback may be necessary to sustain the stock. **Alternative 1 (No Action)** includes close monitoring of the fishery and may have social benefits if management is able to respond in a timely manner to keep the fishing season open for as long as possible, maintaining access for participants.

Alternatives

1 (No action). If recreational landings exceed the recreational annual catch limit, then during the following fishing year recreational landings will be monitored for persistence in increased landings. If the recreational annual catch limit is exceeded, it will be reduced by the amount of the recreational overage in the following fishing only if the species is overfished and the total annual catch limit is exceeded. However, the recreational annual catch limit will not be reduced if the Regional Administrator determines, using the best available science, that it is not necessary.

2. Reduce the recreational sector annual catch limit by the amount of the overage in the following year. Also reduce the length of the following recreational fishing season by the amount necessary to prevent the revised annual catch limit from being exceeded in the following fishing year. However, the recreational annual catch limit and recreational fishing season will not be reduced if the Regional Administrator determines, using the best available science, that it is not necessary.

3. Reduce the length of the following recreational fishing season by the amount necessary to prevent the annual catch limit from being exceeded in the following year. However, the length of the recreational season will not be reduced if the Regional Administrator determines, using the best available science, that it is not necessary.

4. Reduce the bag limit in the following recreational fishing season by the amount necessary to prevent the annual catch limit from being exceeded in the following year. However, the bag limit will not be reduced if the Regional Administrator determines, using the best available science, that it is not necessary.

5. Implement a vessel limit in the following recreational fishing season that would prevent the annual catch limit from being exceeded in the following year. However, the vessel limit will not be implemented if the Regional Administrator determines, using the best available science, that it is not necessary.

Overall, longer seasons result in increased fishing opportunities for the recreational sector and increased revenue opportunities for the for-hire sector. Reducing the season length (**Alternative 1 (No Action)**, **Alternative 2**, and

Alternative 3) are anticipated to result in direct negative social effects associated with loss of access to the resource.

The social effects of reducing the bag limit (**Alternative 4**) or the vessel limit (**Alternative 5**) depend upon how fishermen are affected by either higher bag/vessel limits and shorter seasons, or lower bag limits and longer seasons. Reducing the bag limit and/or vessel limit may have beneficial social effects as the season may be extended. Fishermen will likely prefer the longest fishing season with the highest bag limit and the subsequent trade-offs between shorter seasons or lower bag limits may depend upon the area fished.

4.10.4 Administrative Effects

4.11 Action 11. Allow properly permitted commercial fishing vessels with trap, pot, or buoy gear on board that are not authorized for use in the dolphin wahoo fishery to possess commercial quantities of dolphin and wahoo

Alternatives

1 (No Action). The following are the only authorized commercial gear types in the fisheries for dolphin and wahoo in the Atlantic Exclusive Economic Zone: automatic reel, bandit gear, handline, pelagic longline, rod and reel, and spearfishing gear (including powerheads). A vessel in the Atlantic Exclusive Economic Zone that has on board gear types (including trap, pot, or buoy gear) other than authorized gear types may not possess a dolphin or wahoo. The current commercial trip limit for wahoo is 500 pounds. The current trip limit for dolphin is 4,000 pounds once 75 percent of the commercial sector annual catch limit is reached. Prior to reaching 75 percent of the commercial sector annual catch limit, there is no commercial trip limit for dolphin.

2. A vessel in the Atlantic Exclusive Economic Zone that possesses both a valid Atlantic Dolphin/Wahoo Commercial Permit and valid federal commercial permits required to fish trap, pot, or buoy gear is authorized to retain dolphin caught by rod and reel while in possession of such gears. Dolphin retained by such a vessel shall not exceed (*Sub-alternatives 2a through 2d*). A vessel in the Atlantic Exclusive Economic Zone that has on board other gear types that are not authorized in the fisheries for dolphin may not possess a dolphin.

Sub-alternative 2a. 250 pounds gutted weight
Sub-alternative 2b. 500 pounds gutted weight
Sub-alternative 2c. 750 pounds gutted weight
Sub-alternative 2d. 1,000 pounds gutted weight

3. A vessel in the Atlantic Exclusive Economic Zone that possesses both a valid Atlantic Dolphin/Wahoo Commercial Permit and valid federal commercial permits required to fish trap, pot, or buoy gear are authorized to retain wahoo caught by rod and reel while in possession of such gears. The wahoo commercial trip limit will be 500 pounds. A vessel in the Atlantic Exclusive Economic Zone that has on board other gear types that are not authorized in the fisheries for wahoo may not possess a wahoo.

4.11.1 Biological Effects

4.11.2 Economic Effects

4.11.3 Social Effects

In general, management measures that increase the number of fish an angler can land are expected to be more beneficial to fishermen and fishing communities by increasing access to the resource, so long as overharvest is not occurring to negatively affect the stock in the long term. Once the ACL is met or exceeded, triggering AMs that restrict, or close harvest could negatively affect the commercial fleet, for-hire fleet, and private anglers.

Allowing harvest of dolphin (**Alternative 2**) and wahoo (**Alternative 3**) by vessels with the necessary Atlantic Dolphin/Wahoo Commercial Permit and valid commercial permits required to harvest via fish trap, pot, or buoy gear by rod and reel is anticipated to result in direct positive social effects to fishermen and communities. Under **Alternative 1 (No Action)** fishermen with non-authorized gear on board their vessels are unable to harvest dolphin or wahoo despite encountering these species while tending their gear. Allowing harvest via rod and reel would increase their access to the fishery and is anticipated to result in direct social benefits to commercial fishing business in the form of increased revenue and indirect social benefits to fishing communities in the form of increased job opportunities and fish available to the market. Alternatively, if the additional landings result in the dolphin or wahoo ACL being met or exceeded, triggering AMs, all dolphin and wahoo commercial fishermen would experience negative social effects associated with loss of access to the resource.

4.11.4 Administrative Effects

4.12 Action 12. Remove the requirement of vessel operators or crew to hold an Operator Card in the Dolphin Wahoo Fishery

4.12.1 Biological Effects

4.12.2 Economic Effects

4.12.3 Social Effects

Alternatives

1 (No Action). An Atlantic Charter/Headboat for Dolphin/Wahoo Permit or an Atlantic Dolphin/Wahoo Commercial Permit is not valid unless the vessel operator or a crewmember holds a valid Operator Card issued by either the Southeast Regional Office or by the Greater Atlantic Regional Fisheries Office.

2. Neither a vessel operator nor any crewmember is required to have an Operator Card for an Atlantic Charter/Headboat for Dolphin/Wahoo Permit to be valid.

3. Neither a vessel operator nor any crewmember is required to have an Operator Card for an Atlantic Dolphin/Wahoo Commercial Permit to be valid.

Alternative 1 (No Action) and **Alternatives 2** and **3** are expected to have minimal effects on coastal communities. Public testimony from dolphin and wahoo fishermen has indicated that operator cards are rarely checked by law enforcement tool and are burdensome to renew annually. Additionally, law enforcement officials have indicated that operators are no longer regularly used to aid in enforcement efforts or gathering data and distributed information. **Alternative 2** would remove the burden of obtaining and renewing an operator card for the holders of the Atlantic Charter/Headboat for Dolphin/Wahoo Permit and **Alternative 3** would remove the burden from Atlantic Dolphin/Wahoo Commercial Permit holders resulting in minor social benefits. Additionally, consistency in regulations between dolphin/wahoo permits and other federal permits that do not require an operator card would be expected to reduce confusion among fishermen and aid in compliance.

4.12.4 Administrative Effects

4.13 Action 13. Reduce the recreational vessel limit for dolphin

4.13.1 Biological Effects

4.13.2 Economic Effects

Generally, angler satisfaction (which can be measured in consumer surplus) increases with the number of fish that can be harvested and the size of the fish. The smaller the bag limit the greater the probability that the satisfaction from an angler trip could be affected. Additionally, for-hire captains have indicated that higher bag limits for dolphin encourages some anglers to book trips, thereby potentially increasing annual revenue for these vessels. Given the larger scope of **Alternative 2**, this alternative is expected to have the largest potential short-term negative economic effects followed by **Alternative 3**, and **Alternative 1 (No Action)**.

4.13.3 Social Effects

In general, the social effects of modifying the recreational harvest limits would be associated with the biological costs of each alternative, as well as the effects on current recreational fishing opportunities. While **Alternatives 2** and **3** could restrict recreational fishing opportunities for dolphin, the harvest limits may help to extend the recreational fishing season by slowing the rate of harvest if landings were to increase. Different levels of recreational fishing opportunities under each alternative could affect recreational anglers and for-hire businesses targeting dolphin. In general, benefits to the recreational sector would result from harvest limits that do not result in restricted access to dolphin (i.e., because an accountability measure (AM) is triggered) but still maintain harvest limits large enough to have minimum effect on recreational trip satisfaction. The social effects of the potential harvest limits would depend on the trade-off between restrictive measures that may affect trip satisfaction or triggering the AMs because harvest exceeds the ACL in a short period of time and would depend on if recreational effort and landings in that year are higher than the average landings in recent years.

Alternatives

1 (No Action). The recreational daily bag limit is 10 dolphin per person, not to exceed 60 dolphin per vessel, whichever is less, except on board a headboat where the limit is 10 dolphin per paying passenger.

2. The recreational daily bag limit is 10 dolphin per person, not to exceed:

- Sub-alternative 2a. 40 dolphin per vessel, whichever is less, except on board a headboat where the limit is 10 dolphin per paying passenger.
- Sub-alternative 2b. 42 dolphin per vessel, whichever is less, except on board a headboat where the limit is 10 dolphin per paying passenger.
- Sub-alternative 2c. 48 dolphin per vessel, whichever is less, except on board a headboat where the limit is 10 dolphin per paying passenger.
- Sub-alternative 2d. 54 dolphin per vessel, whichever is less, except on board a headboat where the limit is 10 dolphin per paying passenger.

3. In Florida only, the recreational daily bag limit is 10 dolphin per person, not to exceed:

- Sub-alternative 3a. 40 dolphin per vessel, whichever is less, except on board a headboat where the limit is 10 dolphin per paying passenger.
- Sub-alternative 3b. 42 dolphin per vessel, whichever is less, except on board a headboat where the limit is 10 dolphin per paying passenger.
- Sub-alternative 3c. 48 dolphin per vessel, whichever is less, except on board a headboat where the limit is 10 dolphin per paying passenger.
- Sub-alternative 3d. 54 dolphin per vessel, whichever is less, except on board a headboat where the limit is 10 dolphin per paying passenger.

In general, measures that reduce the number of fish that a recreational angler can keep may negatively affect trip satisfaction. As measures are more restrictive there could be more expected

negative effects on trip satisfaction for recreational fishermen. Additionally, lower vessel limits would have more negative effects on boats and trips with more fishermen on board, such as on headboat trips. However, more restrictive measures are also expected to benefit participants in the recreational sector by slowing harvest to not reach the ACL until later in the year. Benefits would be particularly apparent in years with high recreational effort and catch.

Alternative 2 and **Alternative 3** are unlikely to result in decreased trip satisfaction as recreational data indicates that majority of private recreational and for-hire trips land less than 40 fish per trip. However, should recreational harvest increase beyond current estimates, **Alternative 2** and **Alternative 3** would help slow harvest and extend the fishing season. **Alternative 2** and its sub-alternatives would likely slow harvest more than **Alternative 3** and its sub-alternatives which would only restrict harvest along the east coast of Florida.

4.13.4 Administrative Effects

4.14 Action 14. Allow filleting of dolphin at sea on board charter or headboat vessels in the Atlantic Exclusive Economic Zone north of the Virginia/North Carolina border.

4.14.1 Biological Effects

4.14.2 Economic Effects

4.14.3 Social Effects

Alternatives

1 (No Action). Dolphin possessed in the Atlantic Exclusive Economic Zone must be maintained with head and fins intact, with specific exceptions for fish lawfully harvested in the Bahamas. Such fish harvested from the Atlantic Exclusive Economic Zone may be eviscerated, gilled, and scaled, but must otherwise be maintained in a whole condition.

2. Exempt dolphin from regulations requiring head and fins be intact on board properly permitted charter and headboat vessels in the Atlantic Exclusive Economic Zone north of the Virginia/North Carolina border where dolphin may be filleted under the following requirement(s):

Sub-alternative 2a. Skin must remain intact on the entire fillet of any dolphin carcass.

Sub-alternative 2b. Two fillets of dolphin, regardless of the length of each fillet, is the equivalent to one dolphin.

The social effects of the proposed action on the fishing fleets, and associated businesses and communities are expected to be positive. Allowing fillets to be brought back by properly permitted charter and headboat vessels north of the Virginia/North Carolina line could contribute to improved quality of dolphin caught on these trips since whole fish would not have to be stored with head and fins intact. This management measure could be beneficial to Mid-Atlantic fishermen who must travel farther to productive fishing grounds when harvesting dolphin. Requiring the skin to be intact on fillets of dolphin (**Sub-alternative 2a**) and counting two fillets as one dolphin for trip limit purposes (**Sub-alternative 2b**) would be expected to enhance the ability of law enforcement officers to identify species and enforce regulations, which would be expected to result in long-term broad social benefits.

4.14.4 Administrative Effects

Chapter 5. Council's Choice for the Preferred Alternative

Chapter 6. Cumulative Effects

Chapter 7. List of Preparers

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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.

Time period/dates	Cause	Observed and/or Expected Effects
Effective November 23, 2004	Dolphin Wahoo FMP	Operators of commercial vessels, charter vessels and headboats that are required to have a federal vessel permit for dolphin and wahoo must display operator permits.
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.

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