



# Amendment 34

## to the Fishery Management Plan for Coastal Migratory Pelagic Resources in the Gulf of Mexico and Atlantic Region

### Atlantic Migratory Group King Mackerel Catch Levels and Atlantic King and Spanish Mackerel Management Measures



Environmental Assessment | Regulatory Impact Review | Regulatory Flexibility Analysis

A publication of the South Atlantic Fishery Management Council pursuant to  
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## Abbreviations and Acronyms Used in the FMP

<b>ABC</b>	acceptable biological catch	<b>FMP</b>	fishery management plan
<b>ACL</b>	annual catch limits	<b>FMU</b>	fishery management unit
<b>AM</b>	accountability measures	<b>HAPC</b>	Habitat Area of Particular Concern
<b>ACT</b>	annual catch target	<b>M</b>	natural mortality rate
<b>B</b>	a measure of stock biomass in either weight or other appropriate unit	<b>MARMAP</b>	Marine Resources Monitoring Assessment and Prediction Program
<b>B<sub>MSY</sub></b>	the stock biomass expected to exist under equilibrium conditions when fishing at $F_{MSY}$	<b>MFMT</b>	maximum fishing mortality threshold
<b>B<sub>OY</sub></b>	the stock biomass expected to exist under equilibrium conditions when fishing at $F_{OY}$	<b>MMPA</b>	Marine Mammal Protection Act
<b>B<sub>CURR</sub></b>	The current stock biomass	<b>MRFSS</b>	Marine Recreational Fisheries Statistics Survey
<b>CLM</b>	Commercial Landings Monitoring System	<b>MRIP</b>	Marine Recreational Information Program
<b>CMP</b>	coastal migratory pelagics	<b>MSFCMA</b>	Magnuson-Stevens Fishery Conservation and Management Act
<b>CPUE</b>	catch per unit effort	<b>MSST</b>	minimum stock size threshold
<b>EA</b>	environmental assessment	<b>MSY</b>	maximum sustainable yield
<b>EEZ</b>	exclusive economic zone	<b>NEPA</b>	National Environmental Policy Act
<b>EFH</b>	essential fish habitat	<b>NMFS</b>	National Marine Fisheries Service
<b>ESA</b>	Endangered Species Act	<b>NOAA</b>	National Oceanic and Atmospheric Administration
<b>F</b>	a measure of the instantaneous rate of fishing mortality	<b>NS</b>	National Standard
<b>F<sub>30%SPR</sub></b>	fishing mortality that will produce a static SPR = 30%	<b>OFL</b>	overfishing limit
<b>F<sub>CURR</sub></b>	the current instantaneous rate of fishing mortality	<b>OY</b>	optimum yield
<b>F<sub>MSY</sub></b>	the rate of fishing mortality expected to achieve MSY under equilibrium conditions and a corresponding biomass of $B_{MSY}$	<b>PSE</b>	percent standard error
<b>F<sub>OY</sub></b>	the rate of fishing mortality expected to achieve OY under equilibrium conditions and a corresponding biomass of $B_{OY}$	<b>RIR</b>	regulatory impact review
<b>FEIS</b>	final environmental impact statement	<b>SEDAR</b>	Southeast Data Assessment and Review
		<b>SEFSC</b>	Southeast Fisheries Science Center
		<b>SERO</b>	Southeast Regional Office
		<b>SPR</b>	spawning potential ratio
		<b>SRD</b>	Science and Research Director
		<b>SSC</b>	Scientific and Statistical Committee

## **Amendment 34 to the Fishery Management Plan for Coastal Migratory Pelagic Resources in the Gulf of Mexico and Atlantic Region with Environmental Assessment and Regulatory Impact Review**

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<b>Proposed action:</b>	Update catch levels for Atlantic migratory group king mackerel and revise management measures for Atlantic migratory king mackerel and Atlantic migratory group Spanish mackerel.
<b>Lead agency:</b>	Amendment – South Atlantic Fishery Management Council (South Atlantic Council) Environmental Assessment – National Marine Fisheries Service (NMFS) Southeast Regional Office
<b>For Further Information Contact:</b>	<p>South Atlantic Fishery Management Council 4055 Faber Place, Suite 201 North Charleston, SC 29405 843-571-4366/ 866-SAFMC-10 <a href="http://www.safmc.net">www.safmc.net</a> Christina Wiegand <a href="mailto:Christina.Wiegand@safmc.net">Christina.Wiegand@safmc.net</a></p> <p>Gulf of Mexico Fishery Management Council 2203 North Lois Avenue, Suite 1100 Tampa, Florida 33607 813-348-1630 <a href="http://www.gulfcouncil.org">www.gulfcouncil.org</a> Natasha Mendez-Ferrer <a href="mailto:Natasha.Mendez@gulfcouncil.org">Natasha.Mendez@gulfcouncil.org</a></p> <p>NMFS, Southeast Region 263 13<sup>th</sup> Avenue South St. Petersburg, FL 33701 727-824-5305 <a href="https://www.fisheries.noaa.gov/region/southeast">https://www.fisheries.noaa.gov/region/southeast</a> Mary Vara <a href="mailto:Mary.Vara@noaa.gov">Mary.Vara@noaa.gov</a></p>

# Summary

To be completed.

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# Chapter 1. Introduction

## 1.1 What Action is Being Proposed?

Amendment 34 amends the Fishery Management Plan (FMP) for Coastal Migratory Pelagic (CMP) Resources in the Gulf of Mexico and Atlantic Region (CMP FMP). Amendment 34 to the CMP FMP (Amendment 34) includes actions to update the Atlantic migratory group king mackerel (Atlantic king mackerel) acceptable biological catch (ABC), annual catch limits (ACL), recreational annual catch targets (ACT) and sector allocations based on the SEDAR 38 Update assessment (2020). Additionally, Amendment 34 to the CMP FMP proposes changes to management measures for Atlantic king mackerel and Atlantic migratory group Spanish mackerel (Atlantic Spanish mackerel).

### *Management Agencies*

- ***Gulf of Mexico and South Atlantic Fishery Management Councils*** – Engage in a process to determine a range of actions/alternatives and recommend action to the National Marine Fisheries Service.
- ***National Marine Fisheries Service and Council staffs*** – Develop alternatives based on guidance from the Council and analyze the environmental impacts of those alternatives.
- ***Secretary of Commerce*** – Will approve, disapprove, or partially approve the amendment as recommended by the Councils.

## 1.2 Who is Proposing the Action?

The CMP fishery is managed jointly by the Gulf of Mexico (Gulf) Fishery Management Council (Gulf Council) and the South Atlantic Fishery Management Council (South Atlantic Council). Amendments to the CMP FMP (plan amendments) must be approved by both the Gulf Council and the South Atlantic Council. Because this amendment applies only to Atlantic king mackerel and Atlantic Spanish mackerel, the South Atlantic Council is proposing the action. If approved by both Councils, this amendment will be submitted to the National Marine Fisheries Service (NMFS) for approval and implementation by the Secretary of Commerce. The NMFS is a line office in the National Oceanic and Atmospheric Administration.

## 1.3 Why are the Councils Considering Action?

The South Atlantic and Gulf Councils are considering action to address updated scientific information provided by an update to SEDAR 38 (SEDAR 38 Update 2020). The update was completed in April 2020, with data through the March 2017/February 2018 fishing year. Consistent with the original stock status determined by SEDAR 38 (2014), the stock assessment indicated that Atlantic king mackerel was not overfished nor undergoing overfishing. Additionally, recreational and commercial landings, and catch per unit effort, all showed an increasing trend in biomass. Based on the results of the SEDAR 38 Update (2020), the Scientific and Statistical Committee (SSC) updated the Atlantic king mackerel catch level recommendations for the South Atlantic Council (Table 1.3.1).

The SEDAR 38 Update (2020) includes revised recreational landings that are based on the Marine Recreational Information Program's (MRIP) newer Fishing Effort Survey (FES) method, which is considered more reliable and robust compared to the Coastal Household Telephone Survey (CHTS) method. As a result of the change in methodology, the South Atlantic Council is considering revising current sector allocations, which were based on the historical (1979-1983) proportion of landings between the commercial and recreational sectors.

**Table 1.3.1.** South Atlantic SSC recommendations for acceptable biological catch for Atlantic migratory group king mackerel, using data resultant from SEDAR 38 Update (2020).

<b>Year</b>	<b>OFL Recommendations (lbs)</b>	<b>ABC Recommendations (lbs)</b>
2022/2023	33,900,000	32,800,000
2023/2024	29,400,000	28,400,000
2024/2025	26,300,000	25,400,000
2025/2026	24,200,000	23,300,000
2026/2027+	22,800,000	21,800,000

The South Atlantic and Gulf Councils are also considering action to modify management measures for Atlantic king and Atlantic Spanish mackerel based on input from the South Atlantic Council's Mackerel Cobia Advisory Panel (AP). The recreational bag limit off the east coast of Florida is two fish per person, while the rest of the Gulf, South Atlantic, and Mid-Atlantic region has a bag limit of three fish per person. The AP has requested that the Councils consider raising the bag limit in federal waters off the east coast of Florida to allow all fishermen the same opportunity to harvest Atlantic king mackerel. The AP also suggested that the Councils consider decreasing the minimum size limit for Atlantic king mackerel because many smaller Atlantic king mackerel are often caught when recreational fishing for other species, such as Atlantic Spanish mackerel, and are released as dead discards. Finally, commercial fishermen are allowed to keep cut/damaged Atlantic king and Atlantic Spanish mackerel that meet minimum size limits. Given the issue with damaged Atlantic king mackerel and the increase in shark depredation, the AP has requested that the Councils consider a similar provision for the recreational sector.

### **1.3.1 Purpose and Need Statement**

#### **Purpose for Action**

The purpose of this amendment is to revise the annual catch limits for Atlantic migratory group king mackerel; to revise recreational and commercial allocations for Atlantic migratory group king mackerel; and to revise or establish management measures for Atlantic migratory group king and Spanish mackerel.

#### **Need for Action**

The need for this amendment is to ensure annual catch limits are based on the best scientific information available and to ensure overfishing does not occur in the Atlantic migratory group king and Spanish mackerel fisheries, while increasing social and economic benefits through sustainable and profitable harvest of Atlantic migratory group king and Spanish mackerel.

### **1.4 Which Species and Areas Would Be Affected by the Action?**

Initially, the CMP FMP (GMFMC and SAFMC 1982) treated king mackerel as one stock. The present management regime in the CMP FMP recognizes two migratory groups: the Gulf

migratory group and the Atlantic migratory group. Each migratory group is primarily managed by the respective Council. Gulf and Atlantic migratory groups of king mackerel are also divided into zones and/or subzones for management purposes. This amendment considers changes to management measures for Atlantic migratory groups of king and Spanish mackerel. For the purposes of this amendment, the Gulf migratory groups will be referred to as Gulf king mackerel and Gulf Spanish mackerel and the Atlantic migratory groups will be referred to as Atlantic king mackerel and Atlantic Spanish mackerel.

The two migratory groups were historically thought to mix seasonally off the east coast of Florida and in Monroe County, Florida. However, in 2014, a stock assessment was completed for Gulf and Atlantic king mackerel (SEDAR 38). Based on the research highlighted in the assessment, the assessment scientists determined that the mixing zone was substantially smaller than originally thought and is the portion of the exclusive economic zone (EEZ) off Monroe County, Florida, south of the Florida Keys. In response to the assessment, through CMP FMP Amendment 26, the South Atlantic and Gulf Council established a year-round jurisdictional management boundary between the two Councils at the Dade/Monroe County, Florida, boundary, which puts the entire EEZ off the Keys in the Gulf Council's jurisdiction as part of the Gulf King Mackerel Southern Zone. The jurisdictional management boundary between the two Councils for Spanish mackerel is also at the Dade/Monroe County, Florida, boundary.



## Chapter 2. Proposed Actions and Alternatives

### 2.1 Action 1. Revise the total annual catch limit and annual optimum yield for Atlantic migratory group king mackerel to reflect the updated acceptable biological catch level.

**Alternative 1 (No Action).** The total annual catch limit and annual optimum yield for Atlantic migratory group king mackerel is set equal to the **current** acceptable biological catch level (12,700,000 pounds). The current acceptable biological catch level is inclusive of recreational estimates from the Marine Recreational Information Program's Coastal Household Telephone Survey.

**Alternative 2.** The total annual catch limit and annual optimum yield for Atlantic migratory group king mackerel is equal to the **updated** acceptable biological catch level. The updated acceptable biological catch level is inclusive of recreational estimates from the Marine Recreational Information Program's Fishing Effort Survey.

Fishing Year	Alternative 2 (ACL=ABC) (lbs)
2022/2023	33,300,000
2023/2024	28,500,000
2024/2025	25,400,000
2025/2026	23,300,000
2026/2027+	21,800,000

**Preferred Alternative 3.** The total annual catch limit and annual optimum yield for Atlantic migratory group king mackerel is equal to 95% of the **updated** acceptable biological catch level. The updated acceptable biological catch level is inclusive of recreational estimates from the Marine Recreational Information Program's Fishing Effort Survey.

Fishing Year	Alternative 3 (ACL=95%ABC) (lbs)
2022/2023	31,635,000
2023/2024	27,075,000
2024/2025	24,130,000
2025/2026	22,135,000
2026/2027+	20,710,000



**Alternative 4.** The total annual catch limit and annual optimum yield of Atlantic migratory group king mackerel is equal to 90% of the updated acceptable biological catch level. The updated acceptable biological catch level is inclusive of recreational estimates from the Marine Recreational Information Program's Fishing Effort Survey.

Fishing Year	Alternative 4 (ACL=90%ABC) (lbs)
2022/2023	29,970,000
2023/2024	25,650,000
2024/2025	22,860,000
2025/2026	20,970,000
2026/2027+	19,620,000

**Alternative 5.** The total annual catch limit and annual optimum yield of Atlantic migratory group king mackerel is equal to the updated acceptable biological catch level of 21,800,000 pounds. The updated acceptable biological catch level is inclusive of recreational estimates from the Marine Recreational Information Program's Fishing Effort Survey. ~~This is a constant catch value for 2022/2023 and subsequent fishing years or until changed by a future management action.~~

Fishing Year	Alternative 5 (lbs)
2022/2023	21,800,000
2023/2024	21,800,000
2024/2025	21,800,000
2025/2026	21,800,000
2026/2027+	21,800,000

### **Discussion:**

The current stock (total) annual catch limit (ACL) for Atlantic migratory group king mackerel (Atlantic king mackerel) is 12,700,000 pounds. The current stock ACL is based on the South Atlantic Fishery Management Council's (South Atlantic Council) Scientific and Statistical Committee's (SSC) acceptable biological catch (ABC) recommendation and was implemented through Amendment 26 to the Fishery Management Plan (FMP) for Coastal Migratory Pelagic (CMP) Resources in the Gulf of Mexico and Atlantic Region (CMP FMP) (GMFMC 2017). The current ABC recommendation was developed following SEDAR 38 (2014). The current ABC incorporates recreational landings for Atlantic king mackerel that were tracked using Marine Recreational Fishery Statistics Survey (MRFSS) estimation methods.

#### *Comparison of Alternatives*

The revised ACLs proposed in **Alternative 2, Preferred Alternative 3, Alternative 4** and **Alternative 5** are based on the SSC's new ABC recommendation that was developed following the SEDAR 38 Update (2020). The new recommendation uses the Marine Recreational

Information Program's (MRIP) Fishing Effort Survey (FES) methodology, is considered the best scientific information available (BSIA), and **Alternatives 2-5** are viable alternatives for further analysis (Table 2.1.1.). **Alternative 1 (No Action)** is not a viable alternative because it would retain the current total ACL for Atlantic king mackerel (equal to the current ABC), which is based on the 2014 SEDAR 38 assessment, and therefore would no longer be based on the BSIA.

**Table 2.1.1.** Atlantic king mackerel overfishing limit (OFL) and ABC recommendations (lbs) based on projections from SEDAR 38 Update (2020), and ACL options for Alternatives 2-4. The assessment and these projections use recreational data calibrated to the MRIP FES.

Fishing Year	Overfishing Limit (OFL)	Alternative 2 (ACL=ABC)	Preferred Alternative 3 (ACL=95%ABC)	Alternative 4 (ACL=90%ABC)	Alternative 5 (Constant Catch)
2021/22	33,900,000	33,300,000	31,635,000	29,970,000	21,800,000
2022/23	29,400,000	28,500,000	27,075,000	25,650,000	21,800,000
2023/24	26,300,000	25,400,000	24,130,000	22,860,000	21,800,000
2024/25	24,200,000	23,300,000	22,135,000	20,970,000	21,800,000
2025/26+	22,800,000	21,800,000	20,710,000	19,620,000	21,800,000

**NOTE:** Proposed ACLs are based on recreational data calibrated to the MRIP FES. Future recreational catches under these limits would be monitored by the FES.

The SEDAR 38 Update (2020) indicates that the Atlantic king mackerel ACL can be increased without having negative effects on the sustainability of the stock. **Preferred Alternative 3** and **Alternative 4** would have a greater long-term positive biological effect to the stock than **Alternative 2** because they would create a buffer between the ABC, annual optimum yield (OY) and total ACL, with **Alternative 4** setting the most conservative buffer with the total ACL set at 90% of the ABC. **Alternative 5** would set the total ACL and annual OY equal to the updated ABC level of 21,800,000 pounds, until modified, which is the lowest value under **Alternative 2** where the ACL equals the ABC. Therefore, **Alternative 5** is the most conservative alternative under Action 1. Specifying a buffer between the ABC, OY and ACL, as proposed under **Preferred Alternative 3**, **Alternative 4**, and **Alternative 5**, would provide greater assurance that overfishing is prevented, and the long-term average biomass is near or above  $SSB_{MSY}$ .

Although the previous and proposed ACLs and ABCs, based on SEDAR 38 (2014) and SEDAR 38 Update (2020), respectively, are not directly comparable because the updated assessment includes changes in the recreational catch estimates based on new methodology, the biological benefits to the stock would be expected to be greatest with **Alternative 1 (No Action)** since the ACL is the lowest, followed by **Alternative 5**, **Alternative 4**, **Preferred Alternative 3**, and **Alternative 2**. However, **Alternative 1 (No Action)** is not based on the recent update to the Atlantic king mackerel stock assessment (SEDAR 38 Update, 2020), would no longer represent BSIA, and is not a viable alternative.

In general, ACLs that allow for more fish to be landed can result in increased positive economic and social effects if harvest increases without notable effects on the stock of a species. The ACL does not directly impact the fishery for a species unless harvest changes, fishing behavior changes, or the ACL is exceeded, thereby potentially triggering AMs such as harvest closures or other restrictive measures. The revised total ACLs for Atlantic king mackerel in **Alternative 2** through **Alternative 5** are all higher than the observed landings in recent years. As a result, no direct economic effects are anticipated from **Alternative 2** through **Alternative 5** in the short-

term. A larger buffer between the ACL and observed landings would allow for higher potential landings and reduce the likelihood of restrictive AMs being triggered that would lead to short-term negative economic effects. Thus, under this notion, from a short-term economic perspective, **Alternative 2** would have the highest potential net economic benefits, followed by **Preferred Alternative 3**, **Alternative 4**, **Alternative 5** and **Alternative 1 (No Action)**. Higher ACLs may provide opportunity for commercial and recreational fishermen to expand their harvest providing social benefits associated with increased income to fishing businesses within the community and higher trip satisfaction. Among the action alternatives, **Alternative 2** would be the most beneficial for fishermen, followed by **Preferred Alternative 3**, **Alternative 4** and **Alternative 5**.

## **2.2 Action 2. Revise sector allocations and sector annual catch limits for Atlantic migratory group king mackerel.**

**Note:** The revised total annual catch limit in Alternatives 1 (No Action) through 5 reflect **Preferred Alternative 3 in Action 1**. The revised total annual catch limit includes recreational landings from the Marine Recreational Information Program using the Fishing Effort Survey method where appropriate, as well as updates to commercial and for-hire landings used in the latest assessment (SEDAR 38 Update 2020).

**Preferred Alternative 1 (No Action).** Retain the current recreational sector and commercial sector allocations of 62.9% and 37.1%, respectively, of the revised total annual catch limit for Atlantic migratory group king mackerel. Apply these percentages to the revised total annual catch limit.

**Alternative 2.** Allocate 77.3% of the revised total annual catch limit for Atlantic migratory group king mackerel to the recreational sector and 22.7% of the revised total annual catch limit for Atlantic migratory group king mackerel to the commercial sector. This allocation is based on approximately maintaining the current commercial annual catch limit beginning in the 2026/2027 fishing season and allocating the remaining revised total annual catch limit that is inclusive of Marine Recreational Information Program Fishery Effort Survey estimates to the recreational sector.

**Alternative 3.** Allocate 68.9% of the revised total annual catch limit for Atlantic migratory group king mackerel to the recreational sector and 31.1% of the revised total annual catch limit for Atlantic migratory group king mackerel to the commercial sector. This allocation is based on average landings for Atlantic king mackerel for the years 2014 – 2019, inclusive of Marine Recreational Information Program Fishery Effort Survey estimates.

### **Discussion:**

The SEDAR 38 Update (2020) included revised recreational landings that are based on the MRIP's newer FES method, which is considered more reliable and robust compared to the Coastal Household Telephone Survey (CHTS) method. As a result of the change in methodology, the South Atlantic Council is considering revising the current allocation between the commercial and recreational sectors.

Sector allocations for Atlantic king mackerel were set in Amendment 1 to the CMP FMP (SAFMC 1985) using the average proportion of landings for the longest time series where both commercial and recreational landings data was available. This resulted in the current allocations of 62.9% to the recreational sector and 37.1% to the commercial sector. Allocations for Atlantic king mackerel have been discussed since that time, but ultimately have not been revised.

### *Comparison of Alternatives*

The current sector allocation for Atlantic king mackerel (37.1% recreational/62.9% commercial) was specified by Amendment 1 to the CMP FMP (SAFMC 1985). The current stock ACL for

Atlantic king mackerel is 12,400,000 lbs, with 8,000,000 lbs allocated to the recreational sector and 4,700,000 lbs allocated to the commercial sector. Table 2.2.1.2 shows the sector allocations resulting from applying the percentages in **Preferred Alternative 1 (No Action)**, **Alternative 2**, and **Alternative 3** (Table 4.2.1.1) based on the revised total ACLs in **Action 1**, (Table 2.2.1.1). The revised total ACL incorporates recreational data as per the newer MRIP FES method, and updates to commercial and headboat landings.

**Table 2.2.1.1.** Current and proposed Atlantic king mackerel sector allocations for Alternatives 2-6.

<b>Action 2 (Allocations)</b>	<b>Commercial Allocation</b>	<b>Recreational Allocation</b>	<b>Calculation</b>
Alternative 1 (No Action)	37.1%	62.9%	None. See Council rationale in <b>Section 2.2</b> and <b>Section 5.2</b>
Alternative 2 <sup>1</sup>	22.7%	77.3%	Maintains current commercial ACL beginning in 2026/2017 season and allocates the remainder to the recreational sector
Alternative 3	31.1%	68.9%	Average landings 2014-2019

<sup>1</sup>The percentages for Alternative 3 reflect **Preferred Alternative 3 in Action 1** in Amendment 34 to the CMP FMP and Atlantic Region. The revised total ACL incorporate recreational data as per MRIP using the FES method, as well as updates to commercial and for-hire landings.

Prior to the implementation of Amendment 26 to the CMP FMP (Amendment 26), implemented in May 2017, the management boundary between the Gulf and Atlantic migratory groups of king mackerel shifted between the summer (April 1 – October 31) and winter (November 1 – March 31) seasons. During the winter season, the east coast of Florida from the Volusia/Flagler County boundary to the Miami-Dade/Monroe County boundary (known as the east coast subzone) was considered part of Gulf migratory group king mackerel. Amendment 26 also established a single year-round boundary for separating the Gulf and Atlantic migratory groups of king mackerel at the Miami-Dade/Monroe County, Florida, boundary. There have been no closures for the recreational or commercial sectors of Atlantic migratory group king mackerel since prior to the year 2000. However, when the east coast of Florida (east coast subzone) was considered part of the Gulf migratory group king mackerel, it did experience early closures during the 2007/2008, 2008/2009, 2009/2010, 2010/2011, and 2011/2012 seasons.

**Table 2.2.1.2.** Current and revised sector ACLs (lbs) for Atlantic king mackerel based on the revised total ACL from Alternative 2 in Action 1.

<b>Fishing Year</b>	<b>Alternative 1 (No Action)</b>			<b>Alternative 2</b>			<b>Alternative 3</b>		
	<b>Commercial (37.1%)</b>		<b>Recreational (62.9%)</b>	<b>Commercial (22.7%)</b>		<b>Recreational (77.3%)</b>	<b>Commercial (31.1%)</b>		<b>Recreational (68.9%)</b>
	<b>Northern</b>	<b>Southern</b>		<b>Northern</b>	<b>Southern</b>		<b>Northern</b>	<b>Southern</b>	
2022/23	2,704,109	9,032,476	19,898,415	1,654,536	5,526,609	24,453,855	2,266,787	7,571,698	21,796,515
2023/24	2,314,328	7,730,497	17,030,175	1,416,044	4,729,981	20,928,975	1,940,043	6,480,282	18,654,675
2024/25	2,062,594	6,889,636	15,177,770	1,262,018	4,215,492	18,652,490	1,729,021	5,775,409	16,625,570
2025/26	1,892,064	6,320,021	13,922,915	1,157,678	3,866,967	17,110,355	1,586,070	5,297,915	15,251,015
2026/27+	1,770,258	5,913,152	13,026,590	1,083,150	3,618,020	16,008,830	1,483,963	4,956,847	14,269,190

**Note:** The revised total ACL in Alternatives 1 (No Action) through 3 reflect **Preferred Alternative 3 in Action 1** in Amendment 34 to the CMP FMP and Atlantic Region.

Based on the new MRIP FES recreational landings, none of the proposed recreational ACLs are expected to be exceeded. Similarly, based on commercial fishing year landings for the past five fishing years (2015/2016 through 2019/2020), none of the proposed commercial ACLs under **Alternatives 2 through 3** are expected to be exceeded. Biological effects to the stock are not expected to vary between **Preferred Alternative 1 (No Action)**, **Alternative 2**, and **Alternative 3**, since they do not change the total ACL specified in **Action 1**. Furthermore, the commercial sector for Atlantic king mackerel has effective in-season AMs in place to prevent the ACL from being exceeded. The recreational sector does not have in-season AMs in place but does have post-season AMs in place to address overages of the recreational and stock ACLs.

In general, ACLs that allow for more fish to be landed can result in increased positive economic and social effects if harvest increases without notable long-term effects on the health of a stock. The ACL does not directly impact the fishery for a species unless harvest changes, fishing behavior changes, or the ACL is exceeded, thereby potentially triggering AMs such as harvest closures or other restrictive measures. Nevertheless, ACLs set above observed average harvest levels do create a buffer between the ACL and typical landings that may be utilized in years of exceptional abundance or accessibility of a species, thus providing the opportunity for increased landings and a reduced likelihood of triggering restrictive AMs. As such there are potential economic and social benefits from ACLs that allow for such a buffer between average landings and the ACL.

**Preferred Alternative 1 (No Action)** would maintain the current 37.1% of the total ACL allocation to the commercial sector. **Alternatives 2 and 3** would result in comparatively lower commercial allocations and ACLs. Although none of the commercial ACLs in **Action 2** are estimated to be constraining based on the average annual landings over the last five fishing years (2015/16-2019/20) of available data, it is assumed that the commercial fishery could fully harvest the sector ACL, if conditions allowed, and there would be fewer potential landings of Atlantic king mackerel under **Alternative 2** and **Alternative 3** relative to **Preferred Alternative 1 (No Action)**. Alternatively, **Alternatives 2 and 3** would result in a comparatively higher recreational allocations and ACLs. Although none of the recreational ACLs in **Action 2** are estimated to be constraining based on the average annual landings over the last five fishing years (2015/16-2019/20) of available data, it is assumed that the recreational fishery could fully harvest the sector ACL, if conditions allowed, and there would be more potential landings of Atlantic king mackerel under **Alternative 2** and **Alternative 3** relative to **Preferred Alternative 1 (No Action)**.

**Alternative 1 (No Action)** 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 **Preferred Alternative 1 (No Action)**, which could have some negative social effects if commercial fishermen have a negative perception of this change due to the decrease in fishing opportunity and concerns about long-term social effects, especially if other actions further decreased harvest opportunities. However, the increase in poundage for both sectors may result in positive social benefits associated with increased harvest.

## 2.3 Action 3. Revise the recreational annual catch target for Atlantic migratory group king mackerel.

**Note:** The revised recreational annual catch target in Alternatives 1 (No Action) through 3 reflect **Preferred Alternative 3 in Action 1** and **Preferred Alternative 1 (No Action) in Action 2**. The revised annual catch limit includes recreational landings from the Marine Recreational Information Program using the Fishing Effort Survey method where appropriate, as well as updates to commercial and for-hire landings used in the latest assessment (SEDAR 38 Update 2020).

**Alternative 1 (No Action).** Retain the current recreational annual catch target for Atlantic migratory group king mackerel. The recreational annual catch target equals the sector annual catch limit [(1-Percent Standard Error) or 0.5, whichever is greater] based on the previous acceptable biological catch (Annual Catch Target = 7,400,000 pounds).

**Preferred Alternative 2.** Revise the recreational annual catch target to reflect the updated acceptable biological catch level. The recreational annual catch target equals the sector annual catch limit [(1-Percent Standard Error) or 0.5, whichever is greater].

**Alternative 3.** Revise the recreational annual catch target to reflect the updated acceptable biological catch level. The recreational annual catch target equals 90% sector annual catch limit.

**Alternative 4.** Revise the recreational annual catch target to reflect the updated acceptable biological catch level. The recreational annual catch target equals 85% sector annual catch limit.

### **Discussion:**

In past amendments, the Council has chosen to use the five-year average proportional standard error (PSE) (Table 2.3.1) because it better represents recent catches than the three-year average. The PSE values have been updated to reflect the revised recreational landings that are based on the MRIP's newer FES method.

**Table 2.3.1.** Proportional Standard Errors (PSEs) for Atlantic king mackerel from weight estimates for all modes.

Fishing Year	2015/2016	2016/2017	2017/2018	2018/2019	2019/2020	5-Year Average
PSE Value	15.0	15.1	12.6	12.8	12.9	13.7

### *Comparison of Alternatives*

The current recreational annual catch target (ACT) of 7,400,000 lbs is derived from the previous acceptable biological catch (ABC) (as established in Amendment 18 to the CMP FMP, 2012) and is based on the ACT equation where the recreational ACT is equal to the recreational ACL\*(1-Percent Standard Error (PSE)) or recreational ACL\*0.5, whichever is greater (Table 4.3.1.1). Recreational ACTs for Atlantic king mackerel are codified and utilized in the post-



season recreational AM. Therefore, **Alternative 1 (No Action)** is not a viable alternative because it would retain the current recreational ACT for Atlantic king mackerel, which would not be based on the BSIA.

Revising Atlantic king mackerel recreational ACTs as proposed in **Preferred Alternative 2**, **Alternative 3** and **Alternative 4** would not be expected to result in negative biological impacts to the stock since overall catch would be constrained to the recreational ACTs and sector ACLs, AMs would prevent the ACL and OFL from being exceeded, correct for overages if they occur (if the stock is in an overfished condition), and prevent overfishing. Specifying a buffer between the recreational ACTs and sector ACL, as proposed under **Preferred Alternative 2**, **Alternative 3** and **Alternative 4**, would provide greater assurance that overfishing is prevented since ACTs could trigger AMs. Overall, the biological benefits to the stock would be expected to be greatest with **Alternative 1 (No Action)** since the ACL is the lowest, followed by **Alternative 4**, **Preferred Alternative 2**, and **Alternative 3**.

In the case of Atlantic king mackerel, the recreational AM is tied to the ACT. If recreational landings exceed the ACL, and the sum of the commercial and recreational landings exceed the stock ACL, a reduced bag limit would be implemented the following year by the amount necessary to ensure the recreational landings may achieve the recreational ACT, but do not exceed the recreational ACL. As such, restricting harvest to the ACT may have indirect economic effects. **Alternative 1 (No Action)** would have the greatest potential for short-term negative economic effects, however, it would not be based on the BSIA. This alternative would be followed by **Alternative 4**, **Alternative 3**, and **Preferred Alternative 2**.

Reductions in harvest thresholds may have potential negative social effects, which can range from changes in fishing behavior to other social disruptions that go beyond impacts to the fishery and may extend to the community or region. However, there would be long-term social benefits for fishermen, communities, and the public by preventing overfishing through an ACT for a stock that has potential to exceed the ACL. Those benefits would include more fishing opportunities and increased income, which should benefit the coastal economy and contribute to community resilience for those involved in these fisheries. **Alternative 1 (No Action)** would have the greatest potential for short-term negative social effects however, it would not be based on the BSIA, followed by **Alternative 4**, **Preferred Alternative 2**, and **Alternative 3**.



## **2.4 Action 4. Increase the recreational bag and possession limit for Atlantic migratory group king mackerel in the exclusive economic zone off the east coast of Florida.**

**Alternative 1 (No Action).** The daily bag limit for Atlantic migratory group king mackerel in the exclusive economic zone off Florida is two fish per person. The daily bag limit specified by Florida for its state waters is two fish per person.

**Preferred Alternative 2.** Increase the daily bag limit for Atlantic migratory group king mackerel to three fish per person in the exclusive economic zone off the east coast of Florida.

### **Discussion:**

The current recreational daily bag limit for Atlantic king mackerel is two fish per person in both federal and state waters off the east coast of Florida. The rest of the Gulf, South Atlantic, and Mid-Atlantic regions have a bag limit of three fish per person. Fishermen and Mackerel Cobia Advisory Panel (AP) members have requested to raise the east coast of Florida bag limit in federal waters to three fish per person to match the rest of the management area. Increasing the bag limit in federal waters off the east coast of Florida as proposed under **Preferred Alternative 2** would allow fishermen throughout the management jurisdiction the same opportunity to harvest the same amount of Atlantic king mackerel. **Preferred Alternative 2** would also remove language that incorporates by reference the bag limit specified in the Florida Administrative Code, provided such limit does not exceed 5-fish per person.

### *Comparison of Alternatives*

Negative biological effects to the stock could occur if more fish are allowed to be retained; however, increasing the Atlantic king mackerel bag limit from two to three fish per person under **Preferred Alternative 2** is expected to have minor effects on overall harvest since the majority of anglers are currently only catching one fish per person.

Generally, angler satisfaction (which can be measured in CS) increases with the number of fish that can be harvested. As such, an increase in the bag limit would lead to higher angler satisfaction from a recreational trip, likely resulting in higher overall economic benefits and **Preferred Alternative 2** would be expected to result in higher economic benefits than **Alternative 1 (No Action)**.

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. In general, benefits to the recreational sector would result from harvest limits that do not result in restricted access to Atlantic king mackerel (i.e., because an AM is triggered) but still maintain harvest limits large enough to have minimal effect on recreational trip satisfaction. Additionally, increasing the recreational bag limit under **Preferred Alternative 2** would create consistency in recreational bag limit in federal waters throughout the Atlantic king mackerel management range when compared to **Alternative 1 (No Action)**.

## **2.5 Action 5. Reduce the minimum size limit for recreational harvest of Atlantic migratory group king mackerel.**

**Alternative 1 (No Action).** The minimum size limit for recreational harvest of Atlantic migratory group king mackerel is 24-inches fork length.

**Preferred Alternative 2.** Reduce the minimum size limit for recreational harvest of Atlantic migratory group king mackerel to 22-inches fork length.

**Alternative 3.** Reduce the minimum size limit for recreational harvest of Atlantic migratory group king mackerel to 20-inches fork length.

**Alternative 4.** Remove the minimum size limit for recreational harvest of Atlantic migratory group king mackerel.

### **Discussion:**

The current minimum size limit for recreational and commercial harvest of Atlantic king mackerel is 24 inches fork length. The AP has suggested revising the minimum size limit for Atlantic king mackerel to account for smaller Atlantic king mackerel sometimes caught and often discarded dead when targeting other species, such as Atlantic Spanish mackerel.

### *Comparison of Alternatives*

Minimum size limits can cause increased regulatory discarding and, depending on depth of capture, may increase discard mortality. Currently, smaller Atlantic king mackerel that are caught under the current minimum size limit are often released as dead discards when targeting other species. Revising the minimum size limit under **Preferred Alternatives 2 or Alternative 3**, or removing the minimum size limit under **Alternative 4**, may increase recreational or commercial landings if smaller fish are landed rather than discarded. Negative biological impacts to the stock can be expected under **Preferred Alternative 2, Alternative 3, and Alternative 4**, when compared to **Alternative 1 (No Action)** since more fish can be landed under a reduced minimum size limit. However, less fish would be discarded, which would have positive impacts on the stock. Additionally, in terms of the risk of overfishing, biological effects of **Preferred Alternative 2, Alternative 3, and Alternative 4**, would be neutral compared to **Alternative 1 (No Action)** as reducing or removing the minimum size limit would have no effect on overall harvest, which is limited by the ACL, and AMs are in place to prevent overages.

Reducing or removing the recreational minimum size limit for Atlantic king mackerel may increase harvest, which would provide positive direct economic effects for the recreational sector provided there are no long-term negative effects for the stock. In general, the lower the size limit, the more that overall harvest will increase, thereby increasing economic benefits, such as CS, incurred from such harvest. Under this notion, the highest economic benefits would occur under **Alternative 4**, followed by **Alternative 3, Preferred Alternative 2, and Alternative 1 (No Action)**.

There is a trade-off with reducing the minimum size limit in that an increase in the number of fish that can be kept may improve recreational trip satisfaction but may also increase the harvest rate and trigger AMs if landings reach the ACL sooner in the fishing year. Reducing the minimum size limit (**Preferred Alternative 2** and **Alternative 3**) may result in positive social effects for Atlantic king mackerel fishermen by increasing the number of fish that can be retained, which may increase trip satisfaction. Removing the minimum size limit for Atlantic king mackerel (**Alternative 4**) would again be associated with the positive and negative biological effects on the species. Positive effects of removing the minimum size limit would result from reduced discards. This would be expected to reduce waste for this portion of the coastal migratory pelagic fishery, improving the perception of management success.

## **2.6 Action 6. Reduce the minimum size limit for commercial harvest of Atlantic migratory group king mackerel.**

**Alternative 1 (No Action).** The minimum size limit for commercial harvest of Atlantic migratory group king mackerel is 24-inches fork length commercial fishermen may possess undersized king mackerel in quantities not exceeding 5 percent, by weight, of the king mackerel on board.

**Preferred Alternative 2.** Reduce the minimum size limit for commercial harvest of Atlantic migratory group king mackerel to 22-inches fork length and remove the allowance for commercial fishermen to possess undersized king mackerel in quantities not exceeding 5 percent, by weight, of the king mackerel on board.

**Alternative 3.** Reduce the minimum size limit for commercial harvest of Atlantic migratory group king mackerel to 20-inches fork length and remove the allowance for commercial fishermen to possess undersized king mackerel in quantities not exceeding 5 percent, by weight, of the king mackerel on board.

**Alternative 4.** Remove the minimum size limit for commercial harvest of Atlantic migratory group king mackerel.

### **Discussion:**

The current minimum size limit for recreational and commercial harvest of Atlantic king mackerel is 24 inches fork length. The AP has suggested revising the minimum size limit for Atlantic king mackerel to account for smaller Atlantic king mackerel sometimes caught and often discarded dead when targeting other species, such as Atlantic Spanish mackerel. Commercial fishermen are currently allowed to possess undersized Atlantic king mackerel in quantities not exceeding 5 percent, by weight, of the Atlantic king mackerel on board.

### *Comparison of Alternatives*

The current minimum size limit for commercial harvest of Atlantic king mackerel is 24 inches fork length. Minimum size limits can cause increased regulatory discarding and, depending on depth of capture, may increase discard mortality. Currently, smaller Atlantic king mackerel that are caught under the current minimum size limit are often released as dead discards when targeting other species. For the commercial sector, the majority of the discarded fish were about 29 inches fork length (FL) suggesting a larger percentage of legal sized fish are discarded. Revising the minimum size limit under **Preferred Alternatives 2** or **Alternative 3**, or removing the minimum size limit under **Alternative 4**, may increase commercial landings if smaller fish are landed rather than discarded. Negative biological impacts to the stock can be expected under **Preferred Alternative 2**, **Alternative 3** and **Alternative 4**, when compared to **Alternative 1 (No Action)** since more fish can be landed under a reduced minimum size limit. However, in terms of the risk of overfishing, biological effects of **Preferred Alternative 2**, **Alternative 3** and **Alternative 4** would be neutral compared to **Alternative 1 (No Action)** as reducing or removing

the minimum size limit would have no effect on overall harvest, which is limited by the ACL, and AMs are in place to prevent overages.

Reducing or removing the commercial minimum size limit for Atlantic king mackerel may increase harvest, which would provide positive direct economic effects for the commercial sector provided there are no long-term negative effects for the stock. In general, the lower the size limit, the more that overall harvest will increase, thereby increasing economic benefits incurred from such harvest. These economic benefits may accrue in the form of increased gross and net revenue for commercial vessels, thus increasing PS for the commercial fishery. Under this notion, the highest economic benefits would occur under **Alternative 4**, followed by **Alternative 3**, **Preferred Alternative 2**, and **Alternative 1 (No Action)**.

There is a trade-off with reducing the minimum size limit in that an increase in the number of fish that can be kept may improve commercial trip profitability but may also increase the harvest rate and trigger AMs if landings reach the ACL sooner in the fishing year.

Reducing the minimum size limit (**Preferred Alternative 2** and **Alternative 3**) may result in positive social effects for Atlantic king mackerel fishermen by increasing the number of fish that can be retained, which may increase trip satisfaction. Removing the minimum size limit for Atlantic king mackerel (**Alternative 4**) would again be associated with the positive and negative biological effects on the species. Positive effects of removing the minimum size limit would result from reduced discards. This would be expected to reduce waste for this portion of the coastal migratory pelagic fishery. However, smaller king mackerel may of lower value on the market which could reduce revenues received by commercial fishermen and dealers.

## **2.7 Action 7. Modify the recreational requirement for Atlantic migratory group king mackerel and Spanish mackerel to be landed with heads and fins in intact.**

**Alternative 1 (No Action).** Cut-off (damaged) Atlantic migratory group king mackerel or Atlantic migratory group Spanish mackerel caught under the recreational bag limit may not be possessed.

**Alternative 2.** Cut-off (damaged) fish caught under the recreational bag limit, that comply with the minimum size limits, may be possessed, and offloaded ashore.

**Sub-alternative 2a.** Atlantic migratory group king mackerel

**Sub-alternative 2b.** Atlantic migratory group Spanish mackerel

### **Discussion:**

Commercial and recreational fishermen have reported increasing interactions with sharks or barracudas resulting in Atlantic king mackerel and Atlantic Spanish mackerel having their tails bitten off before they can be landed. Currently, commercial fishermen are allowed to possess cut or damaged fish, generally caused by shark depredation, that meet minimum size limits; however, the recreational sector may not. Additionally, commercial fishermen may possess five additional cut-off (damaged) Atlantic king mackerel, not subject to the size limits or trip limits. Those fish may be offloaded ashore but may not be sold or purchased and are not counted against the trip limit. This action does not consider the same provision for the recreational sector.

### *Comparison of Alternatives*

Under **Alternative 2** and its sub-alternatives, cut or damaged Atlantic king mackerel and Atlantic Spanish mackerel caught under the recreational bag limit that comply with the minimum size limits, may be possessed, and offloaded ashore. Allowing possession of damaged Atlantic king mackerel or Atlantic Spanish mackerel under **Sub-alternatives 2a** and **2b**, respectively, could be expected to minimally increase recreational harvest, while reducing the number of discarded fish. However, since fish in such a state are expected to be dead discards, the biological effects to the stock from discards and fish removal are neutral.

Allowing possession of damaged Atlantic king mackerel or Atlantic Spanish mackerel would increase harvest, which would provide positive direct economic effects for the recreational sector. Additionally, since fish in such a state do not survive release, there are no net effects for the stock. In general, an increase in overall harvest would economic benefits incurred from such harvest. Under this notion, the highest economic benefits would occur under **Sub-alternative 2a** and **Sub-alternative 2b**, followed by **Alternative 1 (No Action)**.

Allowing possession of damaged Atlantic king mackerel or Spanish mackerel would increase harvest and allow cut-fish not to be wasted which would provide positive social effects for the recreational sector. The commercial sector is already allowed to possess damaged king and Spanish mackerel and consistency in regulations between both sectors would be expected to

reduce confusion among fishermen and aid in compliance. Additionally, **Sub-alternative 2a** and **Sub-alternative 2b** directly addresses stakeholder concerns regarding damaged fish and may improve stakeholder perceptions of the management process.

## Chapter 3. Affected Environment

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

- **Habitat environment** (Section 3.1)
- **Biological environment** (Section 3.2)
- **Economic environment** (Section 3.3)
- **Social environment** (Section 3.4)
- **Administrative environment** (Section 3.5)

### 3.1. Habitat Environment

The Fishery Management Plan (FMP) for Coastal Migratory Pelagic (CMP) Resources in the Gulf of Mexico and Atlantic Region (CMP FMP) is a joint FMP between the South Atlantic Fishery Management Council (South Atlantic Council) and the Gulf of Mexico Fishery Management Council. The action in this amendment only applies to the Atlantic migratory group king mackerel (Atlantic king mackerel) fishery. The South Atlantic Council has management jurisdiction of the federal waters (3-200 nm) offshore of North Carolina, South Carolina, Georgia, and East Florida. Management of CMP species extends through the Mid-Atlantic region, which is discussed below.

Information on the habitat utilized by species in the coastal migratory pelagic fishery management unit (FMU) and managed through the CMP FMP is included in Volume II of the Fishery Ecosystem Plan<sup>1</sup> (FEP; SAFMC 2009) and the [FEP II Dashboard](#) which are incorporated here by reference. South Atlantic Fishery Management Council (Council) designated essential fish habitat (EFH) and EFH-Habitat Areas of Particular Concern (EFH-HAPC) are presented in the [SAFMC User Guide](#) and spatial representations of EFH and other habitat related layers are in the South Atlantic Council's online map services provided by the [SAFMC Digital Dashboard](#) Habitat and Ecosystem Web Services.<sup>2</sup>

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<sup>1</sup> The FEP can be found at: <http://safmc.net/ecosystem-management/fishery-ecosystem-plan/>.

<sup>2</sup> [https://ocean.floridamarine.org/safmc\\_dashboard/map-services.html](https://ocean.floridamarine.org/safmc_dashboard/map-services.html).



*South Atlantic Region*

The continental shelf from the Dry Tortugas, Florida, to Miami, Florida, is approximately 25 kilometers (km) wide and narrows to approximately 5 km off Palm Beach, Florida. The shelf then broadens to approximately 120 km off Georgia and South Carolina before narrowing to 30 km off Cape Hatteras, North Carolina. The Florida Current/Gulf Stream flows along the shelf edge throughout the region. In the southern region, this boundary current dominates the physics of the entire shelf (Lee et al. 1994). North of Cape Canaveral, Florida, to Cape Hatteras, North Carolina, additional physical processes are important, and the shelf environment can be subdivided into three oceanographic zones (Atkinson et al. 1985; Menzel 1993), the outer shelf, mid-shelf, and inner shelf. The outer shelf (40-75 m) is influenced primarily by the Gulf Stream and secondarily by winds and tides. On the mid-shelf (20-40 m), the water column is almost equally affected by the Gulf Stream, winds, and tides. Inner shelf waters (0-20 m) are influenced by freshwater runoff, winds, tides, and bottom friction. Water masses present from the Dry Tortugas, Florida, to Cape Canaveral, Florida, include Florida Current water, waters originating in Florida Bay, and shelf water. From Cape Canaveral, Florida, to Cape Hatteras, North Carolina four water masses are found: Gulf Stream water; Carolina Capes water; Georgia water; and Virginia coastal water. Spatial and temporal variation in the position of the western boundary current has dramatic effects on water column habitats. Variation in the path of the Florida Current near the Dry Tortugas induces formation of the Tortugas Gyre (Lee et al. 1994). This cyclonic eddy has horizontal dimensions of approximately 100 km and may persist near the Florida Keys for several months. The Pourtales Gyre, which has been found to the east, is formed when the Tortugas Gyres moves eastward along the shelf. Upwelling occurs in the center of these gyres, thereby adding nutrients to the near surface. Wind and input of Florida Bay water also influence the water column structure on the shelf off the Florida Keys (Smith 1994; Wang et al. 1994).

Further, downstream, the Gulf Stream encounters the “Charleston Bump,” a topographic rise on the upper Blake Ridge where the current is often deflected offshore resulting in the formation of a cold, quasi-permanent cyclonic gyre and associated upwelling (Brooks and Bane 1978). On the continental shelf, offshore projecting shoals at Cape Fear, North Carolina, Cape Lookout, North Carolina, and Cape Hatteras, North Carolina, affect longshore coastal currents and interact with Gulf Stream intrusions to produce local upwelling (Blanton et al. 1981; Janowitz and Pietrafesa 1982). Shoreward of the Gulf Stream, seasonal horizontal temperature and salinity gradients define the mid-shelf and inner-shelf fronts. In coastal waters, river discharge and estuarine tidal plumes contribute to the water column structure.

The water column from Dry Tortugas, Florida, to Cape Hatteras, North Carolina, serves as habitat for many marine fish and shellfish. Most marine fish and shellfish release pelagic eggs when spawning, and thus most species utilize the water column during some portion of their early life history (Leis 1991; Yeung and McGowan 1991). Many fish inhabit the water column as adults. Pelagic fishes include numerous clupeoids, flying fish, jacks, cobia, bluefish, dolphin, barracuda, and the mackerels (Schwartz 1989). Some pelagic species are associated with particular benthic habitats, while other species are truly pelagic.

In the South Atlantic, areas of unique habitat exist such as the Oculina Bank and large expanses of deepwater coral; however, regulations are currently in place to protect these

areas. Additionally, there are several notable shipwrecks along the South Atlantic coast in state and federal waters including Lofthus (eastern Florida), SS Copenhagen (southeast Florida), Half Moon (southeast Florida), Hebe (Myrtle Beach, South Carolina), Georgiana (Charleston, South Carolina), Monitor (Cape Hatteras, North Carolina), Huron (Nags Head, North Carolina), and Metropolis (Corolla, North Carolina). The South Atlantic coastline is also home to numerous marshes and wetland ecosystems; however, these sensitive ecological environments do not extend into federal waters of the South Atlantic. The proposed action is not expected to alter fishing practices in any manner that would affect any of the above listed habitats or historic resources, nor would it alter any regulations intended to protect them.

### *Mid-Atlantic Region*

Information about the physical environment of the Mid-Atlantic region was provided by the Mid-Atlantic Fishery Management Council (Mid-Atlantic Council) and adapted from the 2016 Mackerel, Squid, and Butterfish Specifications Environmental Assessment, available at: <http://www.greateratlantic.fisheries.noaa.gov/regs/2016/January/16msb2016specspr.html>.

Climate, physiographic, and hydrographic differences separate the Atlantic Ocean from Maine to Florida into the New England-Middle Atlantic Area and the South Atlantic Area (division/mixing at Cape Hatteras, North Carolina). The inshore New England-Middle Atlantic area is fairly uniform physically and is influenced by many large coastal rivers and estuarine areas. The continental shelf (characterized by water less than 650 ft in depth) extends seaward approximately 120 miles off Cape Cod, narrows gradually to 70 miles off New Jersey, and is 20 miles wide at Cape Hatteras. Surface circulation is generally southwesterly on the continental shelf during all seasons of the year, although this may be interrupted by coastal indrafting and some reversal of flow at the northern and southern extremities of the area. Water temperatures range from less than 33°F from the New York Bight north in the winter to over 80°F off Cape Hatteras in summer.

Within the New England-Middle Atlantic Area, the Northeast U.S. Continental Shelf Large Marine Ecosystem includes the area from the Gulf of Maine to Cape Hatteras, extending from the coast seaward to the edge of the continental shelf, including the slope sea offshore to the Gulf Stream. The Northeast U.S. Continental Shelf Large Marine Ecosystem is a dynamic, highly productive, and intensively studied system providing a broad spectrum of ecosystem goods and services. This region, encompassing the continental shelf area between Cape Hatteras and the Gulf of Maine, spans approximately 250,000 km<sup>2</sup> and supports some of the highest revenue fisheries in the U.S. The system historically underwent profound changes due to very heavy exploitation by distant-water and domestic fishing fleets. Further, the region is experiencing changes in climate and physical forcing that have contributed to large-scale alteration in ecosystem structure and function. Projections indicate continued future climate change related to both short and medium term cyclic trends as well as non-cyclic climate change.

A number of distinct subsystems comprise the region. The Gulf of Maine is an enclosed coastal sea, characterized by relatively cold waters and deep basins, with various sediment types. Georges Bank is a relatively shallow coastal plateau that slopes gently from north to south and has steep submarine canyons on its eastern and southeastern edge. It is characterized by highly productive, well-mixed waters and fast-moving currents. The Mid-Atlantic Bight is comprised

of the sandy, relatively flat, gently sloping continental shelf from southern New England to Cape Hatteras, North Carolina. Detailed information on the affected physical and biological environments inhabited by the managed resources is available in Stevenson et al. (2006).

### **3.1.1 Essential Fish Habitat**

SAFMC's Essential Fish Habitat (EFH) designation for coastal migratory pelagic species applies to all waters from the EEZ to the landward most influence of the tide, from the Virginia/North Carolina border (although see below) to the Dry Tortugas in the Florida Keys. Within this area, the specific habitats and locations that are EFH are listed below.

*EFH Designations in the Comprehensive Amendment for Coastal Migratory Pelagic Species (SAFMC 1998b)*

EFH for coastal migratory pelagic species includes sandy shoals of capes and offshore bars, high profile rocky bottom and barrier island ocean-side waters, from the surf to the shelf break zone, but from the Gulf Stream shoreward, including *Sargassum*. In addition, all coastal inlets, all state-designated nursery habitats of particular importance to coastal migratory pelagics (for example, in North Carolina this would include all Primary Nursery Areas and all Secondary Nursery Areas).

In addition, the Gulf Stream is an essential fish habitat because it provides a mechanism to disperse coastal migratory pelagic larvae. For king and Spanish mackerel EFH occurs in the South Atlantic and Mid-Atlantic Bights.

### **3.1.2 Habitat Areas of Particular Concern**

Areas which meet the criteria for EFH-Habitat Areas of Particular Concern (EFH-HAPCs) include sandy shoals of Capes Lookout, Cape Fear, and Cape Hatteras from shore to the ends of the respective shoals, but shoreward of the Gulf stream; The Point, The Ten-Fathom Ledge, and Big Rock (North Carolina); The Charleston Bump and Hurl Rocks (South Carolina); The Point off Jupiter Inlet (Florida); *Phragmatopoma* (worm reefs) reefs off the central east coast of Florida; nearshore hard bottom south of Cape Canaveral; The Hump off Islamorada, Florida; The Marathon Hump off Marathon, Florida; The "Wall" off of the Florida Keys; Pelagic *Sargassum*; and Atlantic coast estuaries with high numbers of Spanish mackerel based on abundance data from the ELMR Program. Estuaries meeting these criteria for Spanish mackerel include Bogue Sound and New River, North Carolina; Bogue Sound, North Carolina (Adults May-September salinity >30 ppt); and New River, North Carolina (Adults May-October salinity >30 ppt).

## **3.2 Biological and Ecological Environment**

A description of the biological environment for CMP species is provided in Amendment 18 (GMFMC and SAFMC 2011), is incorporated herein by reference, and is summarized below.

The mackerel family, Scombridae, includes tunas, mackerels, and bonitos, and are among the most important commercial and sport fishes. The adults in the CMP management unit utilize the coastal waters of the Atlantic Ocean out to the edge of the continental shelf as their primary habitat. Within the area, the occurrence of CMP species is governed by temperature and salinity. All species are seldom found in water temperatures less than 20°C. Salinity preference varies,

but these species generally prefer high salinity, less than 36 parts per thousand (ppt). The habitat for eggs and larvae of all species in the coastal pelagic management unit is the water column. Within the spawning area, eggs and larvae are concentrated in the surface waters.

The proposed action in this amendment specifically affects Atlantic migratory group king mackerel and Spanish mackerel.

### **3.2.1 King Mackerel**

King mackerel is a marine pelagic species that is found throughout the western Atlantic from the Gulf of Maine to Brazil, including the Gulf and Caribbean Sea, and from the shore to 200 m (656 ft) depths. The habitat of adults is the coastal waters out to the edge of the continental shelf. Within the area, the occurrence of king mackerel is governed by temperature and salinity. They are seldom found in water temperatures less than 20°C; salinity preference varies, but they generally prefer high salinity, less than 36 parts per thousand. Adults are migratory, and the CMP FMP recognizes two migratory groups (Gulf and Atlantic). Typically, adult king mackerel are found in the southern climates (south Florida and extreme south Texas/Mexico) in the winter and farther north in the summer; however, some king mackerel overwinter in deeper waters off the mouth of the Mississippi River, and off the coast of North Carolina. Food availability and water temperature are likely causes of these migratory patterns. King mackerel have longevities of 24 to 26 years for females and 23 years for males (GMFMC and SAFMC 1985; MSAP 1996; Brooks and Ortiz 2004). Adults are known to spawn in areas of low turbidity, with salinity and temperatures of approximately 30 ppt and 27°C, respectively. There are major spawning areas off Louisiana and Texas in the Gulf (McEachran and Finucane 1979); and off the Carolinas, Cape Canaveral, and Miami in the western Atlantic (Wollam 1970; Schekter 1971; Mayo 1973). Spawning occurs generally from May through October with peak spawning in September (McEachran and Finucane 1979). Eggs are believed to be released and fertilized continuously during these months. Fifty percent of females are sexually mature between 450 to 499 mm (17.7 to 19.6 inches standard length (SL) in length and most are mature by the time they are 800 mm (35.4 inches SL, or by about age 4. Fifty percent of males are sexually mature at age 3, at a length of 718 mm SL (28.3 inches). Females in U.S. waters, between the sizes of 446-1,489 mm (17.6-58.6 inches) release 69,000-12,200,000 eggs. Larvae of king mackerel have been found in waters with temperatures between 26-31°C (79-88°F). This larval developmental stage has a short duration. King mackerel can grow up to 0.54-1.33 mm (0.02-0.05 inches) per day. This shortened larval stage decreases the vulnerability of the larvae and is related to the increased metabolism of this fast-swimming species. Juveniles are generally found closer to shore than adults and occasionally in estuaries.

### **3.2.2 Spanish Mackerel**

Spanish mackerel are migratory and move into specific areas to spawn, and mature at age 1-2 years. They primarily eat other fish species (herring, sardines, and menhaden) and to a lesser extent crustaceans and squid at all life stages (larvae to adult). They are eaten primarily by larger pelagic predators like sharks, tuna, and bottlenose dolphin.

Spanish mackerel is also a pelagic species occurring in depths up to 75 meters (225 feet) but primarily found in depths of 20 meters (60 feet) or less. They occur in coastal zones of the western Atlantic from southern New England to the Florida Keys and throughout the Gulf of Mexico (Collette and Russo 1979). Adults usually are found from the low-tide line to the edge

of the continental shelf, and along coastal areas. They inhabit estuarine areas (especially higher salinity areas) during seasonal migrations, but are considered rare and infrequent in many Gulf estuaries.

Spawning occurs along the inner continental shelf from April to September (Powell 1975). Eggs and larvae occur most frequently offshore over the inner continental shelf at temperatures between 20°C (68°F) and 32°C (89.6°F) and salinities between 28 and 37 ppt. They are found frequently in water depths from 9 meters (27 feet) to about 84 meters (252 feet), but are most common in < 50 meters (150 feet).

Juveniles are most often found in coastal and estuarine habitats and at temperatures greater than 25°C (77°F) and salinities greater than 10 ppt. Although they occur in waters of varying salinity, juveniles appear to prefer marine salinity levels and generally are not considered estuarine-dependent. Like king mackerel, adult Spanish mackerel are migratory, generally moving from wintering areas of south Florida and Mexico to more northern latitudes in spring and summer. Spanish mackerel generally mature at age 1 to 2 and have a maximum age of approximately 11 years (Powell 1975).

### **3.2.3 Protected Species**

The NMFS completed a biological opinion on June 18, 2015, evaluating the impacts of the CMP fishery on Endangered Species Act (ESA)-listed species. In the biological opinion (NMFS 2015), NMFS determined that the proposed continued authorization of the CMP fishery is not likely to adversely affect any ESA-listed whales, Gulf of Mexico sturgeon, or corals. NMFS also determined that the CMP fishery is not likely to adversely affect designated critical habitat for elkhorn and staghorn coral or the Northwest Atlantic distinct population segments (DPS) of loggerhead sea turtle, and will have no effect on designated critical habitat for the North Atlantic right whale. The 2015 opinion concluded that the CMP fishery's continued authorization is likely to adversely affect, but is not likely to jeopardize, green, hawksbill, Kemp's ridley, leatherback, or the Northwest Atlantic DPS of loggerhead sea turtles, as well as Atlantic sturgeon or smalltooth sawfish. An incidental take statement for sea turtles, smalltooth sawfish, and Atlantic sturgeon was issued. Reasonable and prudent measures to minimize the impact of these incidental takes were specified, along with terms and conditions to implement them.

On April 6, 2016, NMFS and the U.S. Fish and Wildlife Service published a final rule (81 FR 20057), effective May 6, 2016, listing 11 DPSs of green sea turtle. The final rule, which superseded the previous green sea turtle listing, listed eight DPS as threatened and three DPSs as endangered. On June 29, 2016, NMFS published a final rule (81 FR 42268) to list Nassau grouper as threatened under the ESA, effective July 29, 2016. Because the range of both the North Atlantic and South Atlantic DPSs of green sea turtle and the Nassau grouper occur within the action area of the CMP fishery, NMFS reinitiated consultation on the CMP fishery in March 2017. NMFS completed an Amendment to the 2015 Opinion on November 13, 2017. The amended biological opinion (NMFS 2017) concluded that the CMP fishery's continued authorization is not likely to adversely affect Nassau grouper and is likely to adversely affect, but is not likely to jeopardize, the North Atlantic and South Atlantic DPSs of green sea turtle. A revised incidental take statement was issued.



Since then, NMFS listed the giant manta ray (*Manta birostris*) as threatened under the ESA, effective February 21, 2018. On January 30, 2018, NMFS listed the oceanic whitetip shark (*Carcharinus longimanus*) as threatened under the ESA, effective March 1, 2018.

On June 11, 2018, NMFS requested reinitiation of ESA Section 7 consultation on the continued authorization of the CMP fishery under the Magnuson-Stevens Act to address the listings of the giant manta ray and oceanic whitetip sharks. In this consultation request memorandum, NMFS developed ESA Section 7(a)(2) and Section 7(d) analyses that considered allowing the CMP fishery to continue during the reinitiation period. As a result of those analyses, NMFS determined that allowing the CMP fishery to continue during the reinitiation period is not likely to jeopardize any protected species, nor does it constitute an irreversible or irretrievable commitment of resources.

The alternatives considered in CMP Amendment 34 would not significantly modify the way in which the CMP fishery is prosecuted and, as such, are not anticipated to modify the operation of the CMP fishery in a manner that would cause effects to ESA-listed species or critical habitat not previously considered in the 2015 and 2017 biological opinions or in the June 11, 2018, analyses. Only with the completion of a new biological opinion, however, can a Section 7(a)(2) analysis be completed for the long-term, foreseeable future.

The Gulf of Mexico and South Atlantic CMP hook-and-line sector is classified in the 2021 MMPA List of Fisheries as a Category III fishery (January 14, 2021; 86 FR 3028), meaning the annual mortality and serious injury of a marine mammal resulting from the fishery is less than or equal to 1% of the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population. The Gulf of Mexico and South Atlantic CMP gillnet sector is classified as Category II fishery in the 2021 MMPA List of Fisheries. This classification indicates an occasional incidental mortality or serious injury of a marine mammal stock resulting from the fishery (1-50% annually of the potential biological removal). The gillnet sector has no documented interaction with marine mammals; NMFS classifies this sector as Category II based on analogy (i.e., similar risk to marine mammals) with other gillnet fisheries.

### **3.2.4 Bycatch**

A bycatch practicability analysis for CMP species is provided in Appendix G and is incorporated herein by reference and is summarized below.

In the Atlantic (Florida through New York) regions, most Atlantic Spanish mackerel are harvested with hook-and-line gear, which tends to have a low level of bycatch. The actions in this amendment are not expected to significantly increase or decrease the magnitude of bycatch or bycatch mortality in the CMP fishery for the king mackerel hook-and-line sector. This sector has a relatively low baseline levels of bycatch, and that is not expected to change as a result of implementation of this amendment.

## **3.3 Economic Environment**

This action concerns commercial and recreational harvest of Atlantic king mackerel and recreational harvest of all CMP in the Atlantic region. Consequently, the following description

of the economic environment is not concerned with the CMP fishery, which includes Atlantic and Gulf of Mexico king mackerel, Spanish mackerel and cobia.

### **3.3.1 Commercial Sector**

Almost all commercial landings of Atlantic king mackerel are from the South Atlantic. From 2015 through 2019, an average of 99.9% of commercial landings of king mackerel were from the South Atlantic and landed in a South Atlantic state (ACCSP data). Because commercial landings are so predominant in the South Atlantic, the following tends to focus on South Atlantic harvest.

Any commercial fishing vessel that harvests king mackerel in the Mid-Atlantic or South Atlantic EEZ must have a valid limited-access federal king mackerel permit onboard. From 2015 through 2019, an annual average of 1,446 vessels had a king mackerel permit<sup>3</sup> and an annual average of 681 (47.1%) of those vessels reported landing king mackerel from the South Atlantic (Table 3.3.1.1).

**Table 3.3.1.1.** Number of vessels with a king mackerel (km) permit, number of km permitted vessels that reported km landings from South Atlantic (SA), and percentage of km permitted vessels that reported km landings in SA, 2015 – 2019.

<b>Year</b>	<b>Number KM Permitted Vessels</b>	<b>Number KM Permitted Vessels with KM Landings in SA</b>	<b>Percent KM Permitted Vessels with KM Landings in SA</b>
2015	1,460	694	47.5%
2016	1,451	688	47.4%
2017	1,445	678	46.9%
2018	1,440	657	45.6%
2019	1,435	690	48.1%
<b>Average</b>	<b>1,446</b>	<b>681</b>	<b>47.1%</b>

Source: SEFSC Socioeconomic Panel Data (January 2021) accessed by the SEFSC Online Economic Query System (April 1, 2021).

The above average 681 vessels reported landing an annual average of approximately 2.47 million pounds gutted weight (lbs gw) of king mackerel with a dockside value of \$5.69 million (2019 dollars) (Table 3.3.1.2). That \$5.69 million represented, on average, 28.63% of the 681 vessels' combined total annual revenue of \$19.9 million (2019 \$) from all of their annual landings (Table 3.3.1.3). The average vessel landed 3,633 lbs gw of king mackerel with a value of \$8,354 annually and had total annual revenue of \$29,214 (2019 \$) from all landings (Table 3.3.1.4).

<sup>3</sup> The permit is also required to harvest king mackerel from the Gulf of Mexico. Hence, this figure also includes permitted vessels that harvest Gulf king mackerel.

**Table 3.3.1.2.** Reported landings (lbs gw) of king mackerel from South Atlantic, number of permitted vessels with those landings, and total dockside revenue from those km landings, 2015 – 2019.

Year	KM Landings (lbs gw)	Number Permitted Vessels with KM Landings	Total KM Revenue (2019 \$)
2015	2,033,905	694	\$4,767,538
2016	2,372,024	688	\$5,605,620
2017	2,769,453	678	\$6,101,657
2018	2,414,208	657	\$5,797,206
2019	2,780,434	690	\$6,161,445
<b>Average</b>	<b>2,474,005</b>	<b>681</b>	<b>\$5,686,693</b>

Source: SEFSC Socioeconomic Panel Data (January 2021) accessed by the SEFSC Online Economic Query System (April 1, 2021), and BEA for GDP deflator (March 25, 2021 release).

**Table 3.3.1.3.** Dockside revenue (2019 \$) from South Atlantic king mackerel, jointly caught species, all other species landed, and percentage of total revenue from km landings, 2015 – 2019.

Year	Revenue from KM Landings (2019 \$)	Revenue from Jointly Landed Species (2019 \$)	Revenue from All Other Landings (2019 \$)	Total Revenue (2019 \$)	Percentage Total Revenue from KM Landings
2015	\$4,767,538	\$1,864,361	\$13,191,336	\$19,823,236	24.05%
2016	\$5,605,620	\$2,257,036	\$12,548,757	\$20,411,414	27.46%
2017	\$6,101,657	\$2,723,047	\$12,294,140	\$21,118,844	28.89%
2018	\$5,797,206	\$2,896,456	\$10,594,427	\$19,288,089	30.06%
2019	\$6,161,445	\$2,569,136	\$10,129,816	\$18,860,397	32.67%
<b>Average</b>	<b>\$5,686,693</b>	<b>\$2,462,007</b>	<b>\$11,751,695</b>	<b>\$19,900,396</b>	<b>28.63%</b>

Source: SEFSC Socioeconomic Panel Data (January 2021) accessed by the SEFSC Online Economic Query System (April 1, 2021), and BEA for GDP deflator (March 25, 2021 release).

**Table 3.3.1.4.** Average annual landings (by weight and value) of South Atlantic king mackerel per permitted vessel and average annual revenue per permitted vessel from all landings, 2015 – 2019.

Year	Average KM Landings per Permitted Vessel (lbs gw)	Average KM Landings per Permitted Vessel (2019 \$)	Average Total Revenue per Permitted Vessel (2019 \$)
2015	2,931	\$6,870	\$28,564
2016	3,448	\$8,148	\$29,668
2017	4,085	\$8,999	\$31,149
2018	3,675	\$8,824	\$29,358
2019	4,030	\$8,930	\$27,334
<b>Average</b>	<b>3,633</b>	<b>\$8,354</b>	<b>\$29,214</b>

Source: SEFSC Socioeconomic Panel Data (January 2021) accessed by the SEFSC Online Economic Query System (April 1, 2021), and BEA for GDP deflator (March 25, 2021 release).

The commercial landings of Atlantic king mackerel generate beneficial economic impacts, such as jobs and income. The annual average \$5,686,693 (2019 dollars) of king mackerel sold by permitted vessels generates 706 jobs, approximately \$20.5 million in income and other beneficial impacts (Table 3.3.1.5).



**Table 3.3.1.5.** Average annual beneficial economic impacts from Atlantic king mackerel landings in South Atlantic, 2015 – 2019.

<b>Revenue from King Mackerel Landings (2019 \$)</b>	<b>Jobs</b>	<b>Income (thousands 2019 \$)</b>	<b>Sales (thousands 2019 \$)</b>	<b>Total Value Added (thousands 2019 \$)</b>
\$5,686,693	706	\$20,495	\$55,571	\$29,109

Source: SEFSC Socioeconomic Panel Data (January 2021) and BEA GDP deflator (March 25, 2021 release) for average annual revenue from landings and estimates of economic impacts calculated by NMFS SERO using model developed for NMFS (2017).

The average trip with reported landings of king mackerel had 222 lbs gw of the species with a dockside value of \$511 (2019 \$) from 2015 through 2019 (Table 3.3.1.6). With the addition of other jointly landed species, the average king mackerel trip yielded a total dockside revenue of \$732. The average dockside price of king mackerel per lb gw during those five years was \$2.30 (2019 \$).

**Table 3.3.1.6.** Average landings (by weight and value) of South Atlantic king mackerel per trip with king mackerel and average annual revenue per king mackerel trip, 2015 – 2019.

<b>Year</b>	<b>Average KM Landings per KM Trip (lbs gw)</b>	<b>Average KM Landings per KM Trip (2019 \$)</b>	<b>Ave Revenue per KM Trip (2019 \$)</b>
2015	205	\$480	\$667
2016	217	\$513	\$719
2017	229	\$504	\$729
2018	220	\$527	\$790
2019	238	\$528	\$748
<b>Average</b>	<b>222</b>	<b>\$511</b>	<b>\$732</b>

Source: SEFSC Socioeconomic Panel Data (January 2021) accessed by the SEFSC Online Economic Query System (April 1, 2021), and BEA for GDP deflator (March 25, 2021 release).

Most reported landings by both weight and value occur in Florida. From 2015 through 2019, on average, almost 83% of king mackerel harvested by permitted vessels were landed in Florida (Table 3.3.1.7). North Carolina and Florida, combined, accounted for almost 99% of reported landings of South Atlantic king mackerel by weight and value.

**Table 3.3.1.7.** Average annual percentage of South Atlantic king mackerel landings (by weight and value) by state where landed, 2015 – 2019.

<b>Landings</b>	<b>FL</b>	<b>GA</b>	<b>NC</b>	<b>SC</b>	<b>Other</b>
By Weight	82.56%	0.01%	16.26%	1.10%	0.08%
By Value	82.71%	0.01%	16.17%	1.04%	0.07%

Source: SEFSC Socioeconomic Panel Data (January 2021) accessed by the SEFSC Online Economic Query System (April 1, 2021).

Hook-and-line and gillnet gears are the most popular gears to harvest South Atlantic king mackerel. From 2015 through 2019, hook-and-line gears (electric, hand, troll and buoy)

accounted for 97.5% of the reported king mackerel landings by weight and value (Table 3.3.1.8). Gillnet gears accounted for another 2.4% by weight and value.

**Table 3.3.1.8.** Average annual percentage of South Atlantic king mackerel landings (by weight and value) by gears, 2015 – 2019.

Landings	Hook & Line	Gillnet	Other
By Weight	97.45%	2.38%	0.17
By Value	97.47%	2.36%	0.17

Source: SEFSC Socioeconomic Panel Data (January 2021) accessed by the SEFSC Online Economic Query System (April 2, 2021).

Any dealer that buys king mackerel or any CMP harvested from the Atlantic EEZ must have a federal dealer permit, which is an open-access permit. As of May 10, 2021, there were 383 entities with the permit. Additional information about the economics of commercial fishing for CMP and, particularly, king, and Spanish mackerel can be found in Overstreet et al. (2019).

### **3.3.2 Recreational Sector**

The recreational sector is composed anglers (recreational fishers) who fish either from shore, a private or leased vessel, or from a charter or headboat. A federal permit is not required for anglers aboard private or leased vessels to fish for or harvest CMP from the Atlantic EEZ. Instead, they are required to either possess a state recreational fishing license that authorizes saltwater fishing in general or be registered in the federal National Saltwater Angler Registry system, subject to appropriate exemptions. Consequently, it is not possible to identify with available data how many individual anglers fish for CMP in the Atlantic EEZ from private or leased vessels and would be affected by the proposed rule.

Any for-hire vessel that takes anglers to fish for or possess CMP from the South Atlantic is required to have a South Atlantic charter/headboat pelagics permit, which is an open-access permit. As of May 9, 2021, there were 1,715 vessels with a valid (non-expired) or renewable charter/headboat coastal migratory pelagics permit.

Recreational fishing effort derived from the Marine Recreational Information Program (MRIP) and Fishing Effort Survey (FES) database can be described in terms of target effort, which are characterized by the number of targeted trips and catch trips. Target effort is the number of individual angler trips, regardless of duration, where the angler indicated that the species or a species in a species group was targeted as either the first or second target for the trip. The species did not have to be caught. Estimates of annual Atlantic king mackerel, Spanish mackerel and cobia target effort (in terms of individual angler trips) for 2015 through 2019 are provided in Tables 3.3.2.1, 3.3.2.2, and 3.3.2.3. Note that Atlantic cobia does not include Florida because Atlantic cobia extends from waters north of Florida through New York.

**Table 3.3.2.1.** Number of trips that targeted king mackerel (primary or secondary target) by mode in all waters and percentage of those trips in Mid-Atlantic and South Atlantic EEZ, 2015 – 2019.

Year	Shore	Private	Charter	Percentage Private in EEZ	Percentage Charter in EEZ
2015	724,686	651,227	7,237	65.05%	90.82%
2016	426,155	604,808	18,927	59.43%	84.92%
2017	673,884	866,478	10,244	68.97%	88.68%
2018	826,629	826,629	46,768	63.00%	90.87%
2019	364,399	1,003,144	16,072	63.52%	74.39%
<b>Average</b>	<b>603,151</b>	<b>790,457</b>	<b>19,850</b>	<b>64.00%</b>	<b>85.93%</b>

Source: Personal communication from the National Marine Fisheries Service, Fisheries Statistics Division May 11, 2021.

**Table 3.3.2.2.** Number of trips that targeted Spanish mackerel (primary or secondary target) by mode in all waters and percentage of those trips in Mid-Atlantic and South Atlantic EEZ, 2015 – 2019.

Year	Shore	Private	Charter	Percentage Private in EEZ	Percentage Charter in EEZ
2015	1,247,287	383,059	13,684	16.89%	22.22%
2016	1,322,558	473,357	21,754	5.84%	11.25%
2017	976,372	421,433	10,969	15.19%	31.25%
2018	1,465,094	420,802	28,383	15.21%	54.70%
2019	1,764,448	600,305	34,383	13.87%	27.55%
<b>Average</b>	<b>1,355,152</b>	<b>459,791</b>	<b>21,835</b>	<b>13.40%</b>	<b>29.39%</b>

Source: Personal communication from the National Marine Fisheries Service, Fisheries Statistics Division May 11, 2021.

**Table 3.3.2.3.** Number of trips that targeted Atlantic cobia (primary or secondary target) by mode in all waters and percentage of those trips in EEZ, 2015 – 2019.

Year	Shore	Private	Charter	Percentage Private in EEZ	Percentage of Charter in EEZ
2015	233,029	375,007	6,929	26.23%	25.85%
2016	226,308	451,786	6,847	9.45%	26.32%
2017	235,785	317,986	6,726	2.44%	13.44%
2018	202,369	436,529	8,900	6.52%	7.94%
2019	239,716	400,806	7,417	13.74%	39.44%
<b>Average</b>	<b>129,068</b>	<b>180,858</b>	<b>6,155</b>	<b>11.68%</b>	<b>22.60%</b>

Source: Personal communication from the National Marine Fisheries Service, Fisheries Statistics Division May 11, 2021.

The above angler trips generate economic benefits from the purchases of recreational fishing equipment, bait, private/leased vessels, for-hire fishing trips, and other trip-related expenses. Estimates of these beneficial impacts are summarized in Tables 3.3.2.4 through 3.3.2.6 for each of the Atlantic CMP stocks. The percentages of targeted trips in the EEZ by private/leased vessel and charter vessel are the same percentages of the economic impacts by those modes. For example, the average 64% of annual trips that targeted king mackerel in the EEZ will generate

64% of the economic impacts from the average annual trips that targeted king mackerel in all waters.

**Table 3.3.2.4.** Average annual economic impacts of angler trips that targeted Atlantic king mackerel (primary or secondary target) in all waters, 2015 – 2019.

Mode	Jobs	Income (2019 dollars)	Value-Added (2019 dollars)	Sales (2019 dollars)
Charter	52,131	\$2,785,427	\$4,317,722	\$8,058,507
Private/Rental	569,948	\$28,197,166	\$49,789,179	\$99,623,911
Shore	335,548	\$15,197,180	\$26,225,992	\$49,955,303

Source: Estimates of economic impacts calculated by NMFS SERO using model developed for NMFS (2017).

**Table 3.3.2.5.** Average annual economic impacts of angler trips that targeted Atlantic Spanish mackerel (primary or secondary target) in all waters, 2015 – 2019.

Mode	Jobs	Income (2019 dollars)	Value-Added (2019 dollars)	Sales (2019 dollars)
Charter	57,344	\$3,063,975	\$4,749,503	\$8,864,374
Private/Rental	331,526	\$16,401,658	\$28,961,247	\$57,948,991
Shore	753,906	\$34,144,849	\$19,992,486	\$112,238,998

Source: Estimates of economic impacts calculated by NMFS SERO using model developed for NMFS (2017).

**Table 3.3.2.6.** Average annual economic impacts of angler trips that targeted Atlantic cobia (primary or secondary target) in all waters, 2015 – 2019.

Mode	Jobs	Income (2019 dollars)	Value-Added (2009 dollars)	Sales (2009 dollars)
Charter	16,165	\$863,710	\$1,338,847	\$2,498,796
Private/Rental	130,405	\$6,451,561	\$11,391,852	\$22,794,126
Shore	71,804	\$3,252,040	\$5,612,091	\$10,689,919

Source: Estimates of economic impacts calculated by NMFS SERO using model developed for NMFS (2017).

Estimates of economic impacts associated with headboat (also called party boat) effort for CMP are not available. While appropriate impact coefficients are available for charter fishing, potential differences in certain factors, such as the for-hire fee, rates of tourist versus local participation, and expenditure patterns, may result in significant differences in the impacts of headboats (party boats) versus charter vessels.

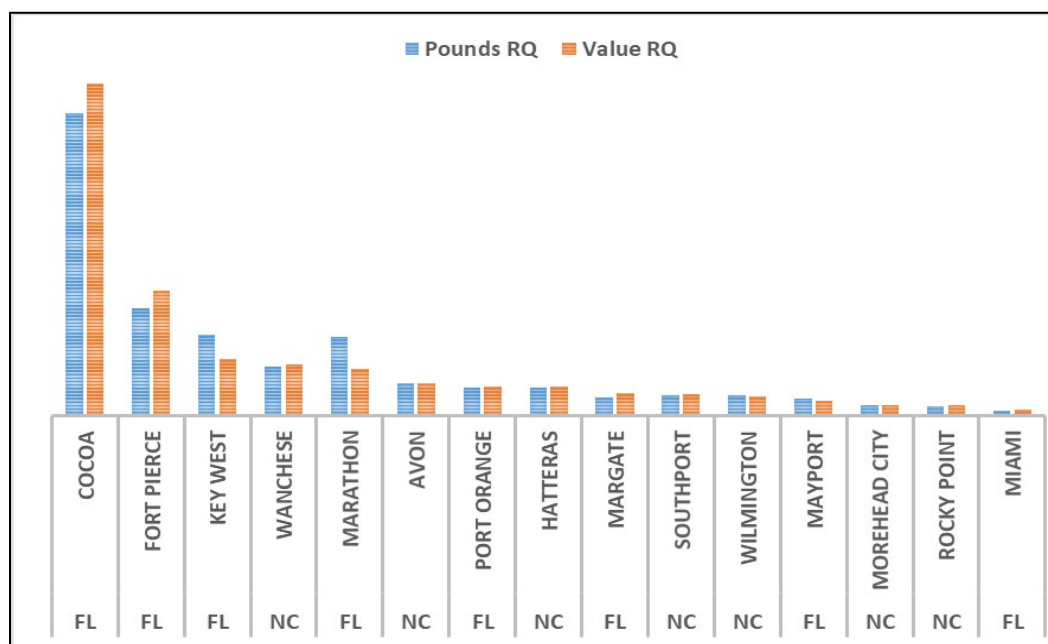
### 3.4 Social Environment

The coastal migratory pelagic fishery is conducted by fishermen in both commercial and recreational sectors. The recreational sector has both for-hire businesses and private recreational anglers that participate in that sector. Most fishing for coastal migratory pelagic fishing is conducted using hook and line gear, although there is some net fishing that is allowed in state waters.

#### 3.4.1 Coastal Migratory Fisheries Regional Quotient

The description of the social environment is limited to those communities along Florida's east coast (including the Keys), Georgia, South Carolina and North Carolina, with a focus on the communities with the highest levels of participation in the commercial king mackerel and Spanish mackerel fisheries.

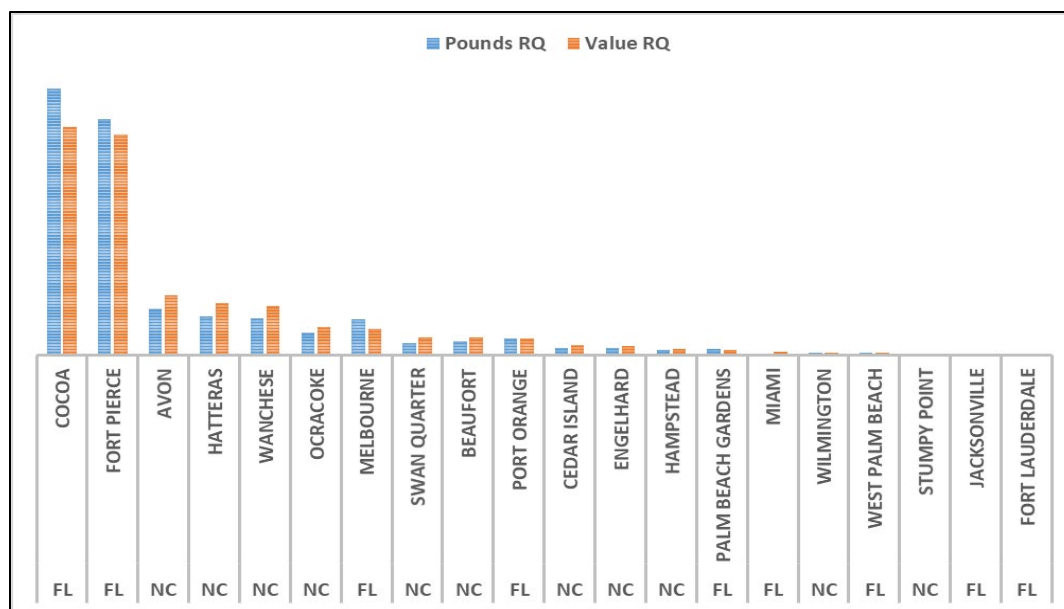
To identify key communities associated with the king mackerel commercial fishery, a ‘regional quotient’ (RQ) is calculated based on the pounds and value (US\$) of king mackerel commercial landings divided by the regional commercial pounds and value of king mackerel landings. These data were assembled from the accumulated landings system with dealer addresses which includes species from both state and federal waters landed in 2019.



**Figure 3.4.1.1.** Top 20 communities ranked by 2019 king mackerel pounds and value RQ.

Source: 2021 Southeast Regional Office Permit Database

Figure 3.4.1.1 shows the king mackerel pounds and value RQs for 2019 and the top 20 communities with only two states represented, Florida and North Carolina. The Florida communities of Cocoa and Fort Pierce have much higher RQs for king mackerel than other communities within Fig. 3.4.1.1, with Cocoa far out pacing all others. The Outer Banks communities of Wanchese, Hatteras and Avon are the top three communities in North Carolina for king mackerel RQs. Cocoa and Fort Pierce also have higher values per pound than other communities. No communities in South Carolina or Georgia are included in the top areas for king mackerel.



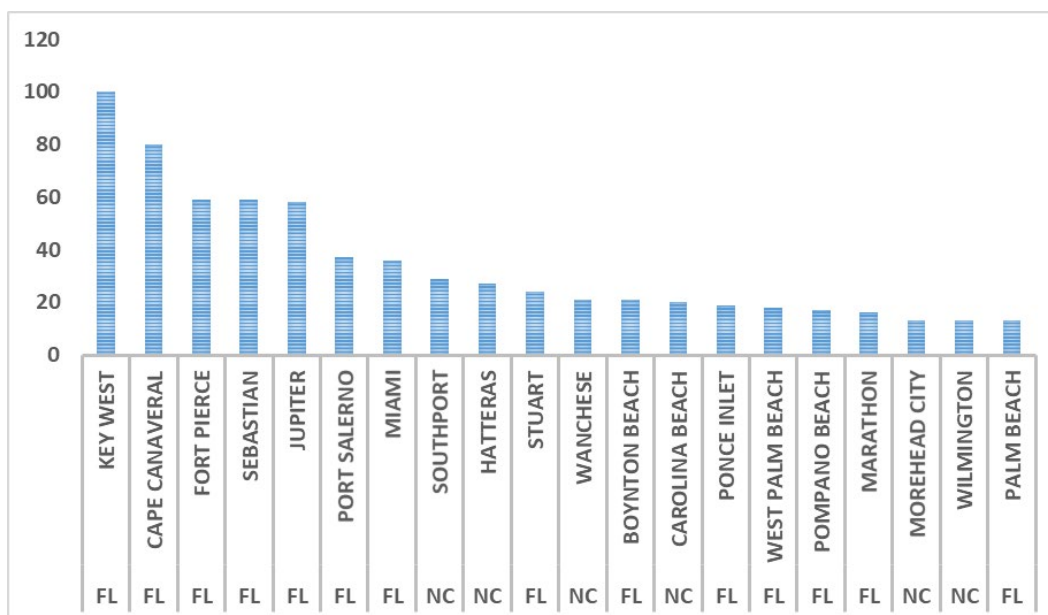
**Figure 3.4.1.2.** Top 20 communities ranked by 2019 Spanish mackerel pounds and value RQ.

Source: 2021 Southeast Regional Office Permit Database

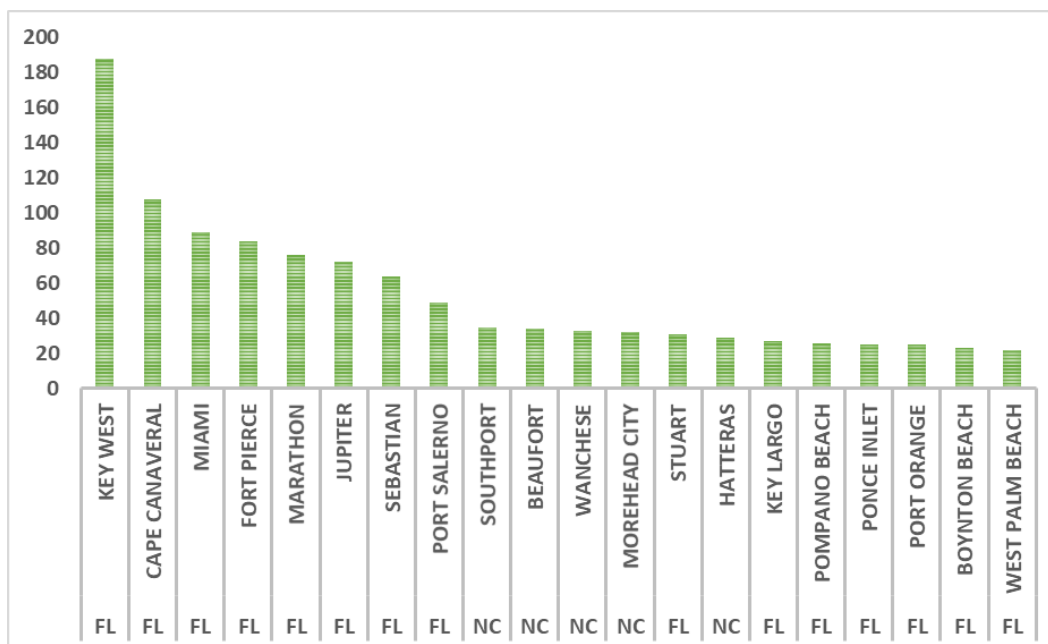
Figure 3.4.1.2 shows the Spanish mackerel pounds and value RQs for 2019 and the top 20 communities, again with only two states represented, Florida and North Carolina. The Florida communities of Cocoa and Fort Pierce again have much higher RQs for Spanish mackerel than other communities within Figure 3.4.1.2, with both communities far ahead of all others. The Outer Banks communities of Wanchese, Hatteras and Avon are also the top three communities in North Carolina for Spanish mackerel RQs. No communities in South Carolina or Georgia are included in the top areas for Spanish mackerel as was the case with king mackerel but do have permitted vessels within the states.

### 3.4.2 Coastal Migratory Fisheries Permits

Figure 3.4.2.1 depicts the king mackerel commercial permits for 2020 and the top 20 communities. The Florida communities with the majority of permits are Key West and Cape Canaveral. The top 7 communities are all in Florida. Southport, NC has the highest number of king mackerel permits for that state. The Outer Banks communities of Hatteras and Wanchese are next with 3 other North Carolina communities in the top 20. No communities in South Carolina or Georgia are included in the top areas for king mackerel but there are king mackerel permitted vessels in both states.



**Figure 3.4.2.1.** Top 20 communities ranked by 2020 king mackerel commercial permits.  
Source: 2021 Southeast Regional Office Permit Database

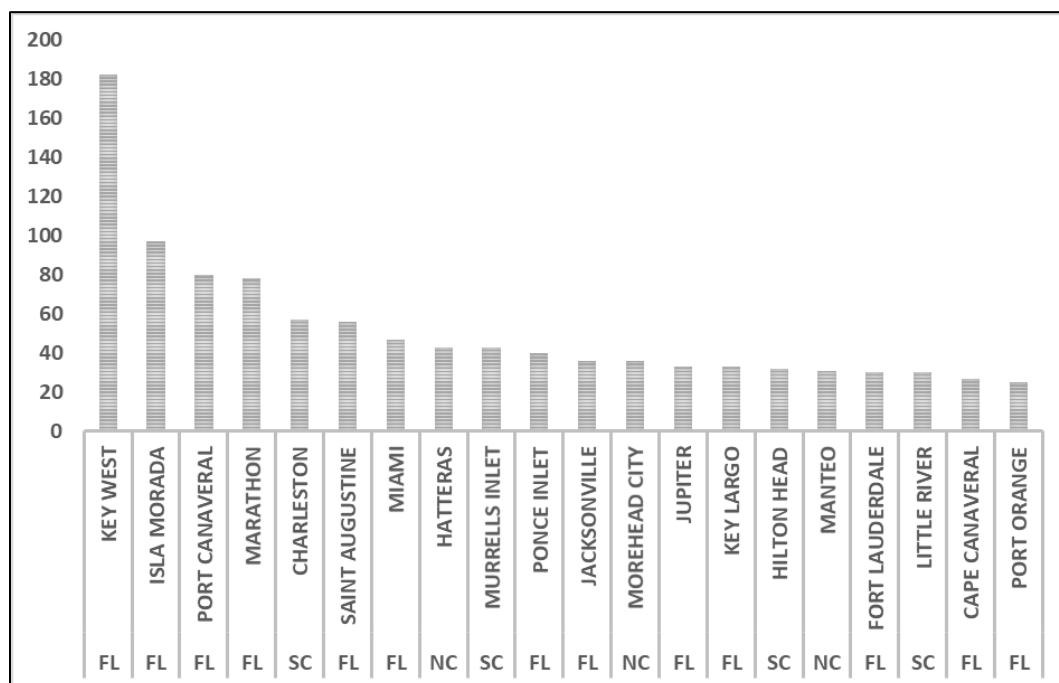


**Figure 3.4.2.2.** Top 20 communities ranked by 2020 Spanish mackerel commercial permits.  
Source: 2021 Southeast Regional Office Permit Database

Figure 3.4.2.2 depicts the Spanish mackerel commercial permits for 2020 and the top 20 communities and are dispersed very much the same as king mackerel. The Florida communities again have the majority of permits with Key West leading all other communities and the top 8 all being Florida communities. The next 4 communities are all in North Carolina. No communities in South Carolina or Georgia are included in the top areas for Spanish mackerel but there are Spanish mackerel permitted vessels in both states.



Figure 3.4.2.3 depicts the South Atlantic coastal migratory for-hire permits for 2020. The Florida communities again have the majority of permits with Key West leading all other communities, but, other South Atlantic states are more represented within the top 20 than commercial permits. South Carolina is represented in the top 20 with Charleston ranked 5<sup>th</sup> in number of for-hire permits with Murrells Inlet, Hilton Head and Little River also included. The highest ranked North Carolina is Hatteras ranked 8<sup>th</sup>, with Morehead City and Manteo in the top areas. No communities in Georgia appear in the top areas for coastal migratory for-hire permitted vessels, but permitted vessels are in the states.



**Figure 3.4.2.3.** Top 20 communities ranked by 2020 coastal migratory charter permits.

Source: 2021 Southeast Regional Office Permit Database

### 3.4.3 Environmental Justice

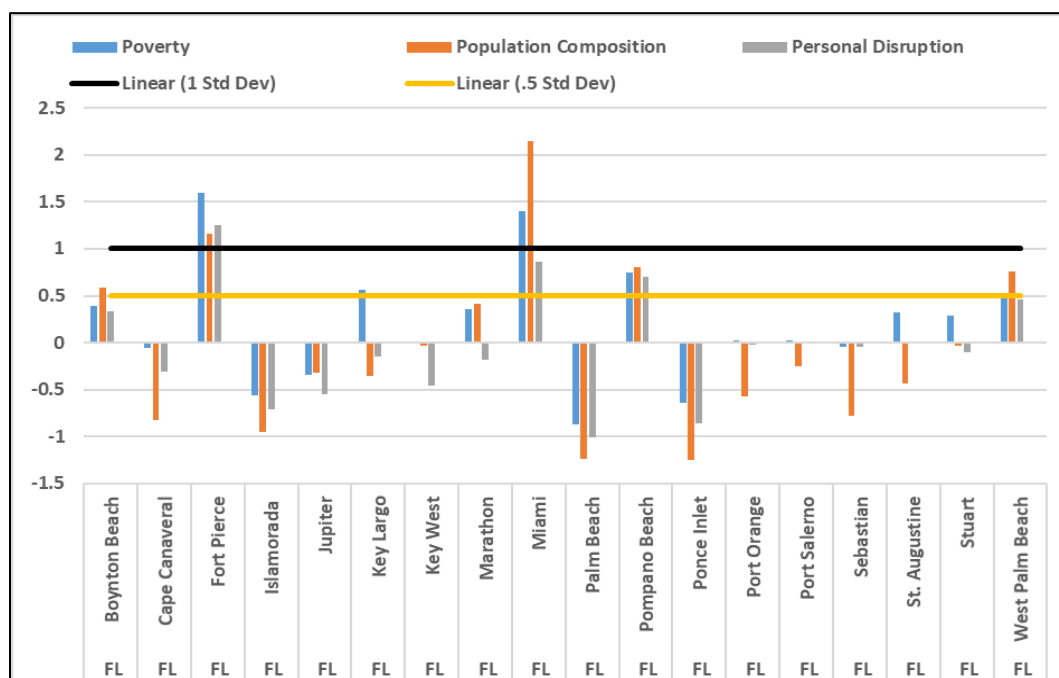
Executive Order 12898 requires federal agencies conduct their programs, policies, and activities in a manner to ensure individuals or populations are not excluded from participation in, or denied the benefits of, or subjected to discrimination because of their race, color, or national origin. In addition,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

Commercial and recreational anglers and associated industries could be impacted by the proposed actions. However, information on the race and income status for groups at the different participation levels is not available. Although information is available concerning a community's overall status with regard to minorities and poverty (e.g., census data), such information is not available specific to anglers and those involved in the industries and activities, themselves. To help assess whether any EJ concerns arise from the actions in this amendment, a suite of indices was created to examine the social vulnerability of coastal communities. The



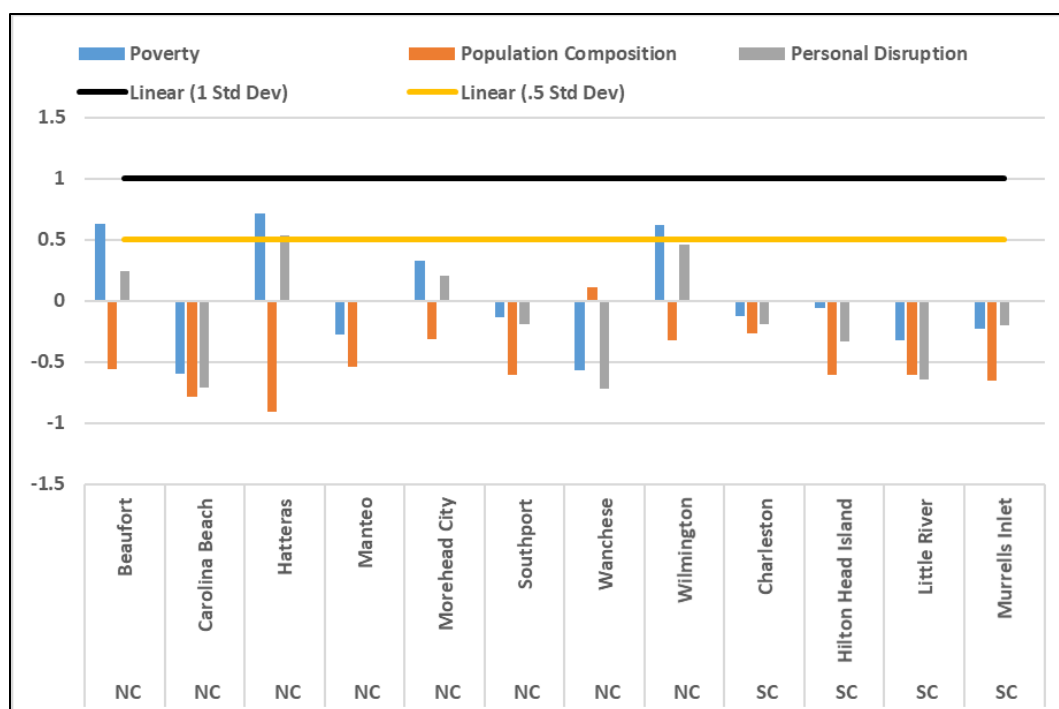
three indices are poverty, population composition, and personal disruptions. The variables included in each of these indices have been identified through the literature as being important components that contribute to a community's vulnerability. Indicators such as increased poverty rates for different groups, more single female-headed households and households with children under the age of five, disruptions such as higher separation rates, higher crime rates, and unemployment all are signs of populations experiencing vulnerabilities. Again, for those communities that exceed the threshold it would be expected that they would exhibit vulnerabilities to sudden changes or social disruption that might accrue from regulatory change.

Figures 3.4.3.1 and 3.4.3.2 provides the social vulnerability index scores of the top commercial and recreational communities that have been identified as having some association with South Atlantic coastal migratory pelagics. The communities of Fort Pierce and Miami both exceed the threshold of 1 standard deviation for poverty and population composition in Fig. 3.4.3.1. Two communities exceed the threshold of 1/2 standard deviation above the mean for more than one index (Pompano Beach and West Palm Beach). These fishing communities would be the most likely to exhibit vulnerabilities to social or economic disruption due to regulatory change with those exceeding 1 standard deviation more vulnerable. However, most communities on Florida's east coast exhibit few vulnerabilities.



**Figure 3.4.3.1.** Community social vulnerability indices for coastal migratory pelagic fishing communities on Florida's east coast.

Source: Social Indicators Database 2021 (ACS 2018), NOAA Fisheries, SERO.



**Figure 3.4.3.2.** Community social vulnerability indices for coastal migratory pelagic fishing communities in South and North Carolina.

Source: Social Indicators Database 2021 (ACS 2018), NOAA Fisheries, SERO.

The coastal migratory pelagic fishing communities of North and South Carolina in Fig. 3.4.3.2 also show very few vulnerabilities. There are only three communities that exceed the  $\frac{1}{2}$  standard deviation for any index and those are poverty and personal disruption. Those communities are Beaufort, Hatteras and Wilmington, North Carolina and poverty is the one vulnerability that all three share by exceeding the threshold. Overall, the communities in the Carolinas may be somewhat resilient to any social change that may occur.

## 3.5 Administrative Environment

### 3.5.1 Federal Fishery Management

Federal fishery management is conducted under the authority of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) (16 U.S.C. 1801 et seq.), originally enacted in 1976 as the Fishery Conservation and Management Act. The Magnuson-Stevens Act claims sovereign rights and exclusive fishery management authority over most fishery resources within the EEZ, an area extending 200 nautical miles 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 EEZ.

Responsibility for federal fishery management decision-making is divided between the 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 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 summarized in Appendix D. In most cases, the Secretary has delegated this authority to NMFS.

The Gulf Council is responsible for fishery resources in federal waters of the Gulf. These waters extend to 200 nautical miles offshore from the seaward boundaries of west Florida to Key West, Alabama, Mississippi, Louisiana, and Texas, and those boundaries have been defined by law. The Council consists of 17 voting members: 11 public members appointed by the Secretary; one each from the fishery agencies of Texas, Louisiana, Mississippi, Alabama, and Florida; and one from NOAA Fisheries. Non-voting members include representatives of the U.S. Fish and Wildlife Service (USFWS), U.S. Coast Guard (USCG), and Gulf States Marine Fisheries Commission (GSMFC).

The South Atlantic Council is responsible for conservation and management of fishery resources in federal waters of the U.S. South Atlantic. These waters extend from 3 to 200 miles offshore from the seaward boundary of the states of North Carolina, South Carolina, Georgia, and east Florida to Key West. The Council has thirteen voting members: one from NOAA Fisheries Service; one each from the state fishery agencies of North Carolina, South Carolina, Georgia, and Florida; and eight public members appointed by the Secretary. Non-voting members include representatives of the U.S. Fish and Wildlife Service, USCG, and Atlantic States Marine Fisheries Commission (ASMFC).

The Mid-Atlantic Council has two voting seats on the South Atlantic Council's Mackerel Committee but does not vote during Council sessions. The Mid-Atlantic Council is responsible for fishery resources in federal waters off New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, and North Carolina, but has delegated management of CMP species to the South Atlantic Council.

The Council's use Scientific and Statistical Committees to review the data and science being used in assessments and fishery management plans/amendments. Regulations contained within FMPs are enforced through actions of the NOAA's Office for Law Enforcement, the USCG, and various state authorities.

The public is involved in the fishery management process through participation at public meetings, on advisory panels and through council meetings that, with few exceptions for discussing personnel matters, are open to the public. The regulatory process is in accordance with the Administrative Procedures Act, in the form of "notice and comment" rulemaking, which provides extensive opportunity for public scrutiny and comment, and requires consideration of and response to those comments.

### **3.5.2 State Fishery Management**

The purpose of state representation at the Council level is to ensure state participation in federal fishery management decision-making and to promote the development of compatible regulations in state and federal waters. The state governments have the authority to manage their respective state fisheries including enforcement of fishing regulations. Each of the eight states exercises legislative and regulatory authority over their states' natural resources through discrete administrative units. Although each agency listed below is the primary administrative body with

respect to the state's natural resources, all states cooperate with numerous state and federal regulatory agencies when managing marine resources.

The states are also involved through the Gulf of Mexico Marine Fisheries Commission (GSMFC) and the ASMFC in management of marine fisheries. These commissions were created to coordinate state regulations and develop management plans for interstate fisheries.

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 commissions to develop and implement cooperative State-Federal fisheries regulations.

More information about these agencies can be found from the following web pages:

Texas Parks & Wildlife Department – <http://www.tpwd.state.tx.us>

Louisiana Department of Wildlife and Fisheries <http://www.wlf.state.la.us/>

Mississippi Department of Marine Resources <http://www.dmr.state.ms.us/>

Alabama Department of Conservation and Natural Resources <http://www.dcnr.state.al.us/>

Florida Fish and Wildlife Conservation Commission <http://www.myfwc.com>

Georgia Department of Natural Resources, Coastal Resources Division <http://crd.dnr.state.ga.us/>

South Carolina Department of Natural Resources <http://www.dnr.sc.gov/>

North Carolina Department of Environmental Quality <http://deq.nc.gov/>

## Chapter 4. Environmental Effects

### 4.1 Action 1. Revise the stock annual catch limit and annual optimum yield for Atlantic migratory group king mackerel to reflect the updated acceptable biological catch level.

#### 4.1.1 Biological Effects

The current stock (total) annual catch limit (ACL) for Atlantic migratory group king mackerel (Atlantic king mackerel) is 12,700,000 pounds (lbs). The current stock ACL is based on the South Atlantic Fishery Management Council's (South Atlantic Council) Scientific and Statistical Committee's (SSC) acceptable biological catch (ABC) recommendation and was implemented through Amendment 26 to the Fishery Management Plan (FMP) for Coastal Migratory Pelagic (CMP) Resources in the Gulf of Mexico and Atlantic Region (CMP FMP) (GMFMC 2017) (Amendment 26). The current ABC recommendation was developed following SEDAR 38 (2014). The current ABC incorporates recreational landings for Atlantic king mackerel that were tracked using Marine Recreational Fishery Statistics Survey (MRFSS) estimation methods.

The revised ACLs proposed in **Alternative 2, Preferred Alternative 3, Alternative 4**, and **Alternative 5** are based on the SSC's new ABC recommendation that was developed following the SEDAR 38 Update (2020). The new recommendation uses the Marine Recreational Information Program's (MRIP) newer Fishing Effort Survey (FES) methodology, which is considered the best scientific information available (BSIA), and **Alternatives 2-5**, including **Preferred Alternative 3**, are viable alternatives for further analysis (Table 4.1.1.1). **Alternative 1 (No Action)** is not a viable alternative because it would retain the current total ACL for Atlantic king mackerel (equal to the current ABC), which is based on the 2014 SEDAR 38 assessment, and therefore would no longer be based on the BSIA.

Historical landings by sector, and proposed revised sector ACLs, for Atlantic king mackerel are discussed in Action 2. Revising Atlantic king mackerel catch levels as proposed in **Alternatives 2, Preferred Alternative 3, Alternative 4**, and **Alternative 5** would not be expected to result in negative biological impacts to the stock since overall catch would be constrained to the ACL, and accountability measures (AM) would prevent the ACL and overfishing limit (OFL) from

#### Alternatives

1. (No Action). The total annual catch limit and annual optimum yield for Atlantic king mackerel is equal to the current acceptable biological catch level (12.7mp).
2. The total annual catch limit and annual optimum yield for Atlantic king mackerel is equal to the updated acceptable biological catch level.
- 3. The total annual catch limit and annual optimum yield for Atlantic king mackerel is equal to 95% of the updated acceptable biological catch level.**
4. The total annual catch limit and annual optimum yield for Atlantic king mackerel is equal to 90% of the updated acceptable biological catch level.
5. The total annual catch limit and annual optimum yield for Atlantic migratory group king mackerel is equal to the updated acceptable biological catch level of 21,800,000 pounds.

\*See Chapter 2 for detailed language of alternatives. Preferred indicated in bold.

being exceeded, correct for overages if they occur (if the stock is in an overfished condition), and prevent overfishing.

**Table 4.1.1.1.** Atlantic king mackerel overfishing limit (OFL) and ABC recommendations (lbs) based on projections from SEDAR 38 Update (2020), and ACL options for Alternatives 2-5. The assessment and these projections use recreational data calibrated to the Marine Recreational Information Program Fishing Effort Survey (MRIP FES).

Fishing Year	Overfishing Limit (OFL)	Alternative 2 (ACL=ABC)	Preferred Alternative 3 (ACL=95%ABC)	Alternative 4 (ACL=90%ABC)	Alternative 5 (Constant Catch)
2021/22	33,900,000	33,300,000	<b>31,635,000</b>	29,970,000	21,800,000
2022/23	29,400,000	28,500,000	<b>27,075,000</b>	25,650,000	21,800,000
2023/24	26,300,000	25,400,000	<b>24,130,000</b>	22,860,000	21,800,000
2024/25	24,200,000	23,300,000	<b>22,135,000</b>	20,970,000	21,800,000
2025/26+	22,800,000	21,800,000	<b>20,710,000</b>	19,620,000	21,800,000

**NOTE:** Proposed ACLs are based on recreational data calibrated to the Marine Recreational Information Program Fishing Effort Survey (FES). Future recreational catches under these limits would be monitored by the FES.

The SEDAR 38 Update (2020) indicates that the Atlantic king mackerel ACL can be increased without having negative effects on the sustainability of the stock. **Preferred Alternative 3** and **Alternative 4** would have a greater long-term positive biological effect to the stock than **Alternative 2** because they would create a buffer between the ABC, annual optimum yield (OY) and total ACL, with **Alternative 4** setting the most conservative buffer with the total ACL set at 90% of the ABC. **Alternative 5** would set the total ACL and annual OY equal to the updated ABC level of 21,800,000 pounds, until modified, which is the lowest value under **Alternative 2** where the ACL equals the ABC. Therefore, **Alternative 5** is the most conservative alternative under Action 1. Specifying a buffer between the ABC, OY and ACL, as proposed under **Preferred Alternative 3**, **Alternative 4**, and **Alternative 5**, would provide greater assurance that overfishing is prevented, and the long-term average biomass is near or above  $SSB_{MSY}$ . **Alternative 2** would set the ACL and OY equal to the ABC leaving no buffer between the two harvest parameters, which may increase risk that harvest could exceed the ABC. Amendment 18 to the CMP FMP (GMFMC/SAFMC 2011) established an ABC control rule for Atlantic migratory groups king mackerel and Atlantic Spanish mackerel. In accordance with the Magnuson-Stevens Fishery Conservation and Management Act National Standard (NS) 1 guidelines, the ABC control rule takes into account scientific and management uncertainty. The NS 1 guidelines indicate an ACL may typically be set very close to the ABC. Setting a buffer between the ACL and ABC would be appropriate in situations where there is uncertainty in whether or not management measures are constraining fishing mortality to target levels.

Although the previous and proposed ACLs and ABCs, based on SEDAR 38 (2014) and SEDAR 38 Update (2020), respectively, are not directly comparable because the updated assessment includes changes in the recreational catch estimates based on new methodology, the biological benefits to the stock would be expected to be greatest with **Alternative 1 (No Action)** since the ACL is the lowest, followed by **Alternative 5**, **Alternative 4**, **Preferred Alternative 3**, and **Alternative 2**. However, **Alternative 1 (No Action)** is not based on the recent update to the



Atlantic king mackerel stock assessment (SEDAR 38 Update, 2020), would no longer represent BSIA, and is not a viable alternative.

### ***Expected Effects to Bycatch and Discards***

When compared to **Alternative 1 (No Action)**, increasing the ACL under the each of the alternatives for **Action 2** could result in less discards since less fish would need to be returned back to the water. However, neither the commercial or recreational sector has harvested their respective ACLs since 2012 for the recreational sector and 2000 for the commercial sector; therefore, effects on discards are expected to be neutral. Additionally, the Commercial Landings Monitoring System and actions in the Joint Generic Dealer and Generic For-Hire Reporting amendment (GMFMC/SAFMC 2013a, effective August 7, 2014) were implemented to provide more timely and accurate data reporting and to reduce the incidence of quota overages. Additionally, the amendment enhanced reporting of commercial data by requiring that dealers have a federal permit to purchase mackerel, increased required reporting frequency for dealers to once per week, and requires a single dealer permit for all finfish dealers in the Southeast Region. See **Appendix G** (BPA) for information on bycatch and discards.

### ***Expected Effects to Protected Species***

The alternatives under this action would not significantly modify the way in which the CMP fishery is prosecuted in terms of gear types used. Therefore, there are no additional impacts on Endangered Species Act (ESA) -listed species or designated critical habitats anticipated as a result of this action (see **Section 3.2.3** for a detailed description of ESA-listed species and critical habitat in the action area). Furthermore, no adverse impacts on Essential Fish Habitat (EFH) or EFH-Habitat Areas of Particular Concern (HAPC) are expected to result from any of the alternatives considered for this action (see **Section 3.1.** and **Appendix D** for detailed descriptions of EFH in the South Atlantic region).

These predicted effects on EFH and ESA-listed species and designated critical habitats are applicable to all actions in this amendment.

## **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 on the stock of a species. The ACL does not directly impact the fishery for a species unless harvest changes, fishing behavior changes, or the ACL is exceeded, thereby potentially triggering accountability measures (AM) such as harvest closures or other restrictive measures. As such, ACLs that are set above observed landings in a fishery for a species and do not change harvest or fishing behavior may not have realized economic effects each year. Nevertheless, ACLs set above observed average harvest levels do create a buffer between the ACL and typical landings that may be utilized in years of exceptional abundance or accessibility of a species, thus providing the opportunity for increased landings and a reduced likelihood of triggering restrictive AMs. As such there are potential economic benefits from ACLs that allow for such a buffer.



As noted in **Section 4.1.1, Alternative 1 (No Action)** is not a viable alternative. The potential revised total ACLs for Atlantic king mackerel in **Alternative 2** through **Alternative 5** are all higher than the observed landings in recent years. Based on the average landings over the most recent five years of available data (2015/16-2019/20), landings would be expected to continue to be below the existing and potential new ACLs and thus not constraining. As a result, no direct economic effects are anticipated from **Alternative 2** through **Alternative 5** in the short-term.

While king mackerel harvest or fishing behavior for king mackerel are not expected to change as a result of revising the total ACL, a larger buffer between the ACL and observed landings would allow for higher potential landings and reduce the likelihood of restrictive AMs being triggered that would lead to short-term negative economic effects. Thus, under this notion, from a short-term economic perspective, **Alternative 2** would have the highest potential net economic benefits, followed by **Preferred Alternative 3, Alternative 4, Alternative 5** and **Alternative 1 (No Action)** (Table 4.1.2.1).

**Table 4.1.2.1.** Percent difference between the ACLs in **Action 1** compared to 5-year average landings from 2015/16-2019/20.

<b>Alternative<sup>1</sup></b>	<b>King mackerel ACL (lbs)<sup>1</sup></b>	<b>Percent difference between the ACL and average annual landings from 2015/2016-2019/2020</b>
Alternative 1 (No Action)	12,400,000	64%
Alternative 2	28,500,000	74%
<b>Preferred Alternative 3</b>	<b>27,075,000</b>	<b>72%</b>
Alternative 4	25,650,000	71%
Alternative 5	21,800,000	

<sup>1</sup>**Alternative 1 (No Action)** is tracked in part using CHTS estimates for charter and private recreational landings and thus is not applicable to comparison to the other alternatives. **Alternatives 2 (Preferred)** through **4** would be tracked in part using FES estimates for charter and private recreational landings.

<sup>2</sup> Assumes the 2022/23 total ACL since this is the first full year that the revised total ACL would be implemented.

### 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 altogether 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 **Alternative 2, Preferred Alternative 3, Alternative 4, and Alternative 5** the ACL for Atlantic king mackerel 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 Atlantic king mackerel ACL based on current information and would not provide the social benefits associated with up-to-date scientific information.

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. Additionally, higher ACLs may provide opportunity for commercial and recreational fishermen to expand their harvest providing social benefits associated with increased income to fishing businesses within the community and higher trip satisfaction. Among the action alternatives, **Alternative 2** would be the most beneficial for fishermen, followed by **Preferred Alternative 3**, **Alternative 4**, and **Alternative 5**.

#### **4.1.4 Administrative Effects**

Since ACLs are already in place for Atlantic King mackerel, modifying the ACLs for Atlantic king mackerel under **Alternative 2**, **Preferred Alternative 3**, **Alternative 4** and **Alternative 5** are not likely to have negative administrative impacts. **Alternative 1 (No Action)**, **Alternative 2**, **Preferred Alternative 3**, **Alternative 4** and **Alternative 5** would not result in significant administrative cost or time burdens other than notifying fishery participants of the change in the sector ACLs and continued monitoring of the sector ACLs. The burden on law enforcement would not change based on any of the proposed alternatives since commercial and recreational quota closures are currently enforced.

## 4.2 Action 2. Revise sector allocations and sector annual catch limits for Atlantic migratory group king mackerel.

### 4.2.1 Biological Effects

Biological effects to the stock are not expected to vary between **Preferred Alternative 1 (No Action)**, **Alternative 2**, and **Alternative 3**, since they do not change the total ACL specified in **Action 1**. Furthermore, the commercial sector for Atlantic king mackerel has effective in-season AMs in place to prevent the ACL from being exceeded. The current sector allocation for Atlantic king mackerel (37.1% recreational/62.9% commercial) was specified by Amendment 1 to the CMP FMP (SAFMC 1985). The current stock ACL for Atlantic king mackerel is 12,700,000 lbs, with 8,000,000 lbs allocated to the recreational sector and 4,700,000 lbs allocated to the commercial sector. The current sector ACLs are based on landings, which included Monroe County, Florida, from March to October, and were based on recreational data as per the older MRIP Coastal Household Telephone Survey (CHTS) method as well as an older data stream for headboat and commercial landings. Table 4.2.1.2 shows the sector allocations resulting from applying the percentages in **Preferred Alternative 1 (No Action)**, **Alternative 2**, and **Alternative 3**, (Table 4.2.1.1) based on the revised total ACLs in **Action 1**, (Table 4.1.1.1). The revised total ACL includes recreational landings from Monroe County, Florida, and incorporates recreational data as per the newer MRIP FES method, and updates to commercial and headboat landings.

#### Alternatives

**1 (No Action).** Retain the current recreational sector and commercial sector allocations as **62.9% and 37.1%, respectively, of the revised total annual catch limit for Atlantic king mackerel.**

2. Allocate 22.7% of the total annual catch limit to the commercial sector and 77.3% of the total annual catch limit to the recreational sector.

3. Allocate 31.1% of the total annual catch limit to the commercial sector and 68.9% of the total annual catch limit to the recreational sector.

\*See Chapter 2 for detailed language of alternatives. Preferred indicated in bold.

**Table 4.2.1.1.** Current and proposed Atlantic king mackerel sector allocations for Alternatives 1-3.

Action 2 (Allocations)	Commercial Allocation	Recreational Allocation	Calculation
<b>Preferred Alternative 1 (No Action)</b>	<b>37.1%</b>	<b>62.9%</b>	<b>None. See Council rationale in Section 2.2 and Section 5.2</b>
Alternative 2 <sup>1</sup>	22.7%	77.3%	Maintains current commercial ACL beginning in 2026/2017 season and allocates the remainder to the recreational sector
Alternative 3	31.1%	68.9%	Average landings 2014-2019

**Note:** The percentages for Alternative 3 reflect **Preferred Alternative 3 in Action 1** in Amendment 34 to the CMP FMP and Atlantic Region. The revised total ACL incorporate recreational data as per MRIP using the Fishery Effort Survey method, as well as updates to commercial and for-hire landings.

**Table 4.2.1.2.** Current and revised sector ACLs (lbs) for Atlantic king mackerel based on the revised total ACL from Alternative 2 in Action 1.

Fishing Year	Preferred Alternative 1 (No Action)			Alternative 2			Alternative 3		
	Commercial (37.1%)		Recreational (62.9%)	Commercial (22.7%)		Recreational (77.3%)	Commercial (31.1%)		Recreational (68.9%)
	Northern	Southern		Northern	Southern		Northern	Southern	
2022/23	2,704,109	9,032,476	19,898,415	1,654,536	5,526,609	24,453,855	2,266,787	7,571,698	21,796,515
2023/24	2,314,328	7,730,497	17,030,175	1,416,044	4,729,981	20,928,975	1,940,043	6,480,282	18,654,675
2024/25	2,062,594	6,889,636	15,177,770	1,262,018	4,215,492	18,652,490	1,729,021	5,775,409	16,625,570
2025/26	1,892,064	6,320,021	13,922,915	1,157,678	3,866,967	17,110,355	1,586,070	5,297,915	15,251,015
2026/27+	1,770,258	5,913,152	13,026,590	1,083,150	3,618,020	16,008,830	1,483,963	4,956,847	14,269,190

**Note:** The revised ACLs in Alternatives 1 (No Action) through 3 reflect Preferred Alternative 3 in Action 1 in Amendment 34 to the CMP FMP and Atlantic Region. The revised total ACL incorporate recreational data as per MRIP using the Fishery Effort Survey method, as well as updates to commercial and for-hire landings.

**Table 4.2.1.3.** Atlantic king mackerel recreational landings by year for the 2000-2001 through 2019-2020 fishing years in lbs ww.

Fishing Year	Fishing Year	Landings (lb ww)
April 1 through March 31	2000/2001	9,259,038
	2001/2002	6,665,905
	2002/2003	10,034,879
	2003/2004	8,113,088
	2004/2005	8,172,472
March 1 through February 28	2005/2006	5,493,679
	2006/2007	9,972,016
	2007/2008	11,323,009
	2008/2009	6,811,391
	2009/2010	8,534,919
	2010/2011	4,974,195
	2011/2012	3,619,123
	2012/2013	3,014,884
	2013/2014	2,982,792
	2014/2015	3,780,719
	2015/2016	3,141,846
	2016/2017	4,523,353
	2017/2018	5,168,647
	2018/2019	5,840,390
	2019/2020	7,053,331

Source: MRIP\_FES\_rec81\_20wv6\_02Mar21w2014to2020LAcreel.xlsx

**Table 4.2.1.4.** Atlantic king mackerel commercial landings by year for the 2000-2001 through 2019-2020 fishing years.

<b>Fishing Year</b>	<b>Fishing Year</b>	<b>Landings (lbs)</b>
April 1 through March 31	2000/2001	2,101,605
	2001/2002	2,015,443
	2002/2003	1,736,623
	2003/2004	1,725,840
	2004/2005	2,818,029
March 1 through February 28	2005/2006	2,249,706
	2006/2007	2,993,392
	2007/2008	2,665,020
	2008/2009	3,105,888
	2009/2010	3,561,137
	2010/2011	3,402,676
	2011/2012	2,052,140
	2012/2013	1,346,434
	2013/2014	1,138,833
	2014/2015	1,393,419
	2015/2016	1,810,640
	2016/2017	1,555,185
	2017/2018	2,688,778
	2018/2019	2,899,528
	2019/2020	2,971,512

Sources: Commercial landings from 2000 to 2013 are from ACL\_FILES\_100920.xlsm; and commercial landings from 2014 to 2020 are from WH\_ACLS\_2014-2020\_05APR2021workingcopy.xlsx

Prior to the implementation of Amendment 26, the management boundary between the Gulf and Atlantic migratory groups of king mackerel shifted between the summer (April 1 – October 31) and winter (November 1 – March 31) seasons. During the winter season the east coast of Florida from the Volusia/Flagler County boundary to the Miami-Dade/Monroe County boundary (known as the east coast subzone) was considered part of Gulf migratory group king mackerel. Amendment 26 also established a single year-round boundary for separating the Gulf and Atlantic migratory groups of king mackerel at the Miami-Dade/Monroe County, Florida, boundary. There have been no closures for the recreational sector of Atlantic king mackerel since prior to the year 2000. Additionally, there have been no closures to the commercial sector for Atlantic migratory group king mackerel since prior to the year 2000. However, when the east coast of Florida (east coast subzone) was considered part of the Gulf migratory group king mackerel, it did experience early closures during the 2007/2008, 2008/2009, 2009/2010, 2010/2011, and 2011/2012 seasons.

Based on the new MRIP FES recreational landings, none of the proposed recreational ACLs are expected to be exceeded. An average of the last five years (2015/2016 through 2019/2020) of MRIP FES fishing year landings are 5,145,513 lbs, and the maximum MRIP FES landings was 7,053,331 lb. These totals are both below the lowest recreational ACLs proposed in Action 2.

Therefore, no closures are expected for the recreational sector for **Preferred Alternative 1 (No Action)**, **Alternative 2**, and **Alternative 3**.

Similarly, based on commercial fishing year landings for the last five years (2015/2016 through 2019/2020), none of the proposed commercial ACLs under **Preferred Alternative 1 (No Action)**, **Alternative 2**, and **Alternative 3** are expected to be exceeded. An average of the last five years of commercial landings is 2,385,128 lbs and the maximum commercial landings was 2,971,512 lbs. These are both below the lowest commercial ACLs under **Preferred Alternative 1 (No Action)**, **Alternative 2**, and **Alternative 3**. Therefore, no closures are expected for the commercial sector for under **Preferred Alternative 1 (No Action)**, **Alternative 2**, and **Alternative 3**.

#### **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 long-term effects on the health of a stock. The ACL does not directly impact the fishery for a species unless harvest changes, fishing behavior changes, or the ACL is exceeded, thereby potentially triggering AMs such as harvest closures or other restrictive measures. As such, ACLs that are set above observed landings in a fishery for a species and do not change harvest or fishing behavior may not have realized economic effects each year. Nevertheless, ACLs set above observed average harvest levels do create a buffer between the ACL and typical landings that may be utilized in years of exceptional abundance or accessibility of a species, thus providing the opportunity for increased landings and a reduced likelihood of triggering restrictive AMs. As such there are potential economic benefits from ACLs that allow for such a buffer between average landings and the ACL.

#### **Commercial Sector**

**Preferred Alternative 1 (No Action)** would maintain the current 37.1% of the total ACL allocation to the commercial sector. **Alternatives 2** through **3** would result in comparatively lower commercial allocations and ACLs. Although none of the commercial ACLs in **Action 2** are estimated to be constraining based on the average annual landings over the last five years (2015/16-2019/20) of available data (Table 4.2.4), it is assumed that the commercial fishery could fully harvest the sector ACL, if conditions allowed, and there would be fewer potential landings of king mackerel under **Alternative 2** through **Alternative 3** relative to **Preferred Alternative 1 (No Action)**. These additional landings would be expected to comparatively decrease total producer surplus (PS) for the commercial sector. **Alternative 2** would create the largest estimated decrease in PS of \$2,003,169 in the first year of implementation (2022/23), followed by **Alternative 3** with estimated increases in PS of \$773,424 (2019 \$) (Tables 4.2.5 through 4.2.9).

**Table 4.2.5.** Comparison of the estimated change in producer surplus (PS) for **Preferred Alternative 1 (No Action)** in **Action 2** (2019 \$).

Year	Difference between ACL and 5-year average landings (lbs)	Estimated change in CS	Comparison to Alternative 1 (No Action)
2022/23	7,659,696	\$3,646,781	\$0
2023/24	6,567,101	\$3,126,597	\$0
2024/25	5,826,956	\$2,774,214	\$0
2025/26+	5,298,281	\$2,522,512	\$0

**Table 4.2.6.** Comparison of the estimated change in producer surplus (PS) for **Alternative 2** in **Action 2** (2019 \$).

Year	Difference between ACL and 5-year average landings (lbs)	Estimated change in CS	Comparison to Alternative 1 (No Action)
2022/23	3,452,241	\$1,643,612	-\$2,003,169
2023/24	2,817,299	\$1,341,316	-\$1,785,281
2024/25	2,387,177	\$1,136,535	-\$1,637,679
2025/26+	2,079,947	\$990,263	-\$1,532,249

**Table 4.2.7.** Comparison of the estimated change in producer surplus (PS) for **Alternative 3** in **Action 2** (2019 \$).

Year	Difference between ACL and 5-year average landings (lbs)	Estimated change in CS	Comparison to Alternative 1 (No Action)
2022/23	6,035,196	\$2,873,357	-\$773,424
2023/24	5,119,301	\$2,437,299	-\$689,298
2024/25	4,498,856	\$2,141,906	-\$632,308
2025/26+	4,055,681	\$1,930,910	-\$591,602

Assumptions used in calculating the estimates provided in Tables 4.2.5 through 4.2.7 include application of an ex-vessel price of \$2.30/lbs (2019 \$; derived from Table 3.3.1.2) and a net cash flow estimate of 20.7%; (Overstreet et al., 2019) to estimate producer surplus (PS) for the commercial sector. In comparing alternatives, the status quo (**Preferred Alternative 1 (No Action)**) was used as a baseline which applied the current allocation of 37.1% of the total ACL to the commercial sector. The total ACL in this case was based on Preferred Alternative 3 in Action 1 and applied to the alternatives in **Action 2**. All other alternatives considered in **Action 2** would decrease the commercial allocation on a percent and thus pound basis, thereby comparatively decreasing economic benefits to the commercial sector.

## Recreational Sector



**Preferred Alternative 1 (No Action)** would maintain the current 62.9% of the total ACL allocation to the recreational sector. **Alternatives 2 through 3** would result in a comparatively higher recreational allocations and ACLs. Although none of the recreational ACLs in **Action 2** are estimated to be constraining based on the average annual landings over the last five years (2015/16-2019/20) of available data (Table 4.2.3), it is assumed that the recreational fishery could fully harvest the sector ACL, if conditions allowed, and there would be more potential landings of king mackerel under **Alternative 2** through **Alternative 3** relative to **Alternative 1 (No Action)**. These additional landings would be expected to comparatively increase total consumer surplus (CS) for the recreational sector. When compared to **Preferred Alternative 1 (No Action)**, **Alternative 2** would create the largest estimated increase in CS of \$32,215,905 in the first year of implementation (2022/23), followed by **Alternative 3** with estimated increase of \$12,438,574 respectively (2019 \$)(Tables 4.2.10 through 4.2.14).

**Table 4.2.10.** Comparison of the estimated change in consumer surplus (CS) for **Preferred Alternative 1 (No Action)** in **Action 2** (2019 \$).

Year	Difference between ACL and 5-year average landings (lbs)	Estimated change in CS	Comparison to Alternative 1 (No Action)
2022/23	11,884,662	\$90,999,223	\$0
2023/24	10,032,257	\$76,815,612	\$0
2024/25	8,777,402	\$67,207,359	\$0
2025/26+	7,881,077	\$60,344,322	\$0

**Table 4.2.11.** Comparison of the estimated change in consumer surplus (CS) for **Alternative 2** in **Action 2** (2019 \$).

Year	Difference between ACL and 5-year average landings (lbs)	Estimated change in CS	Comparison to Alternative 1 (No Action)
2022/23	16,092,117	\$123,215,128	\$32,215,905
2023/24	13,782,059	\$105,527,331	\$28,711,719
2024/25	12,217,181	\$93,545,275	\$26,337,916
2025/26+	11,099,411	\$84,986,664	\$24,642,342

**Table 4.2.13.** Comparison of the estimated change in consumer surplus (CS) for **Alternative 3** in **Action 2** (2019 \$).

Year	Difference between ACL and 5-year average landings (lbs)	Estimated change in CS	Comparison to Alternative 1 (No Action)
2022/23	13,509,162	\$103,437,796	\$12,438,574
2023/24	11,480,057	\$87,901,218	\$11,085,606
2024/25	10,105,502	\$77,376,439	\$10,169,079
2025/26+	9,123,677	\$69,858,739	\$9,514,418

Assumptions used in calculating the estimates provided in Tables 4.3.5 through 4.3.7 include a CS estimate of \$70.29 (2019 \$) per fish that was applied to the recreational buffer between the ACL and average annual landings (2015/16-2019/20) which is the CS estimate for the third king mackerel kept on a recreational trip (Carter and Liese, 2012). CS estimates are available for the second through sixth king mackerel kept on a recreational trip. This value was chosen since the recreational bag limit on Atlantic king mackerel is 3 fish per person outside of Florida where the bag limit is 2 fish person. Furthermore, an action in this amendment considers raising the bag limit for Atlantic king mackerel to 3 fish per person in Florida. A weight of 9.12 lbs ww per king mackerel was used to convert the recreational portion of the buffer between the ACL and average annual landings (2015-2019) from lbs ww to numbers of fish (MRIP Query, accessed July 28, 2021). In comparing alternatives, the status quo (**Preferred Alternative 1 (No Action)**) was used as a baseline which applied the current allocation of 62.9% of the total ACL to the recreational sector. The total ACL in this case was based on Preferred Alternative 3 in Action 1 and applied to the alternatives in **Action 2**. All other alternatives considered in **Action 2** would increase the recreational allocation on a percentage and thus pound basis, thereby comparatively increasing economic benefits to the recreational sector. In the analysis of the action, it was also assumed that changes in the recreational portion of the total ACL would only affect catch per angler trip and not the overall number of trips. This included no change to for-hire fishing activity and thus no change in economic effects for the for-hire component of the recreational sector. As such there are no estimated changes in producer surplus (PS) provided for the recreational sector.

### Change in Net Economic Benefits

In general, higher ACLs offer a larger buffer between the sector ACL and observed landings which allows for increased harvest when fishery conditions allow, thereby increasing net economic benefits. Thus, under this notion, the alternatives in **Action 2** can be ranked for the commercial sector from a short-term economic perspective with **Preferred Alternative 1 (No Action)** having the highest potential economic benefit, followed by **Alternative 3** and **Alternative 2**. For the recreational sector the ranking would be the opposite from a short-term economic perspective with **Alternative 2** having the highest potential economic benefit, followed by **Alternative 3** and **Preferred Alternative 1 (No Action)**. In terms of estimated net benefits for the action, the same ranking would apply as stated for the recreational sector (Table 4.2.15 and 4.2.18).

**Table 4.2.15.** Estimated change in net economic benefits from **Alternative 2** in comparison to **Alternative 1 (No Action)**(2019 \$).

Year	Estimated change in net economic benefits for the recreational sector	Estimated change in net economic benefits for the commercial sector	Estimated total change in net economic benefits
2022/23	\$32,215,905	-\$2,003,169	\$30,212,736
2023/24	\$28,711,719	-\$1,785,281	\$26,926,439
2024/25	\$26,337,916	-\$1,637,679	\$24,700,237
2025/26+	\$24,642,342	-\$1,532,249	\$23,110,093

**Table 4.2.17.** Estimated change in net economic benefits from **Alternative 3** in comparison to **Alternative 1 (No Action)**(2019 \$).

Year	Estimated change in net economic benefits for the recreational sector	Estimated change in net economic benefits for the commercial sector	Estimated total change in net economic benefits
2022/23	\$12,438,574	-\$773,424	\$11,665,149
2023/24	\$11,085,606	-\$689,298	\$10,396,308
2024/25	\$10,169,079	-\$632,308	\$9,536,771
2025/26+	\$9,514,418	-\$591,602	\$8,922,816

### 4.2.3 Social Effects

Sector allocations exist for the recreational and commercial sectors already, **Preferred 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)**, which could have some negative social effects if commercial fishermen have a negative perception of this change due to the decrease in fishing opportunity and concerns about long-term social effects, especially if other actions further decreased harvest opportunities. However, the increase in poundage for both sectors may result in positive social benefits associated with increased harvest.

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 sector's percentage allocation. 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 would 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.

Based on **Action 1-Preferred Alternative 3** and recent commercial and recreational landings, none of the proposed commercial or recreational ACLs are expected to be exceeded (**Section 4.2.1**). Additionally, modifications to recreational (**Actions 4, 5, and 7**) and commercial (**Action 6**) are not anticipated to increase landings to the extent that would result in a closure for either sector.

### 4.2.4 Administrative Effects

Compared to **Alternative 1 (No Action)**, none of the action alternatives under consideration for Atlantic king mackerel allocations would result in commercial or recreational closures; therefore, no significant impacts on the administrative environment would be expected. Similar to **Preferred Alternative 1 (No Action)**, **Alternative 2** and **Alternative 3**, are not likely to result in increased staff time, require increased agency funding, or alter the manner in which law enforcement efforts are presently carried out. Other administrative burdens that may result from

revising the values under **Alternatives 2** and **3** would take the form of development and dissemination of outreach and education materials for fishery participants and law enforcement. Overall, because sector allocations are currently in place for Atlantic king mackerel, the impacts of the proposed action to modify those allocations on the administrative environment are expected to be neutral.

### 4.3 Action 3. Revise the recreational annual catch target for Atlantic migratory group king mackerel.

#### 4.3.1 Biological Effects

The current recreational annual catch target (ACT) of 7,400,000 lbs is derived from the previous ABC (as established in Amendment 18 to the CMP FMP) and is based on the ACT equation where the recreational ACT is equal to the recreational ACL\*(1-Percent Standard Error (PSE)) or recreational ACL\*0.5, whichever is greater (Table 4.3.1.1), using the 5-year average PSE. Recreational ACTs for Atlantic king mackerel are codified and utilized in the post-season recreational accountability measure (AM). Therefore, **Alternative 1 (No Action)** is not a viable alternative because it would retain the current recreational ACT for Atlantic king mackerel, which would not be based on the best scientific information available (BSIA).

#### **Alternatives**

1. (No Action). Update the recreational annual catch target for Atlantic king mackerel to reflect the updated acceptable biological catch level.
2. Revise the recreational annual catch target for Atlantic king mackerel to reflect the updated acceptable biological catch level, equal to 90% sector ACL.
3. Revise the recreational annual catch target for Atlantic king mackerel to reflect the updated acceptable biological catch level, equal to 85% sector ACL.

\*See Chapter 2 for detailed language of alternatives. Preferred indicated in bold.

The recreational ACTs in **Preferred Alternative 2**, **Alternative 3**, and **Alternative 4** are based on the SSC's new ABC recommendation from the SEDAR 38 Update (2020), are considered BSIA, and are viable alternatives for further analysis. Revising Atlantic king mackerel recreational ACTs as proposed in **Preferred Alternative 2**, **Alternative 3**, and **Alternative 4** would not be expected to result in negative biological impacts to the stock since overall catch would be constrained to the recreational ACTs and sector ACLs, AMs would prevent the ACL and OFL from being exceeded, correct for overages if they occur (if the stock is in an overfished condition), and prevent overfishing.

#### **Recreational ACTs**

An annual catch target (ACT) can be set below the ACL to account for management uncertainty and provide greater assurance overfishing does not occur (see Section 1.3).

#### The current recreational ACT and AMs for Atlantic king mackerel:

- 7.4 million lbs for the 2019-2020 fishing year and subsequent fishing years
- If the recreational landings exceed the recreational ACL and the sum of the commercial and recreational landings, exceeds the stock ACL the Regional Administrator (RA) may reduce the bag limit for the following fishing year by the amount necessary to ensure recreational landings may achieve the recreational ACT, but do not exceed the recreational ACL. Additionally, if the sum of the commercial and recreational landings exceeds the stock ACL and Atlantic king mackerel are overfished, the RA may reduce the recreational ACL and ACT for that following year by the amount of any recreational sector overage in the prior fishing year.

**Table 4.3.1.1.** Percent Standard Errors (PSEs) for Atlantic migratory group king mackerel from weight estimates for all modes.

Fishing Year	2015/2016	2016/2017	2017/2018	2018/2019	2019/2020	3-Year Average	5-Year Average
PSE Value	15.0	15.1	12.6	12.8	12.9	12.8	13.7

**Table 4.3.1.2.** Proposed recreational annual catch targets for Atlantic migratory group king mackerel.

Fishing Year	Recreational ACL	Recreational ACT			
		Alternative 1 (No Action)	Preferred Alternative 2 <sup>1</sup>	Alternative 3	Alternative 4
2021/2022	19,898,415	Not BSIA, not a viable alternative.	17,172,332	17,908,574	16,913,653
2022/2023	17,030,175		14,697,041	15,327,158	14,475,649
2023/2024	15,177,770		13,098,416	13,659,993	12,901,105
2024/2025	13,922,915		12,015,476	12,530,624	11,834,478
2025/2026+	13,026,590		11,241,947	11,723,931	11,072,602

<sup>1</sup>The five-year average PSE for the recreational data was 0.137. The resulting recreational ACT would be equal to the recreational ACL multiplied by (1-0.137), or 0.863, setting the recreational ACT at 86.3% of the recreational ACL.

Note: The revised total ACTs reflect **Preferred Alternative 3 in Action 1** and **Preferred Alternative 2 in Action 2** in Amendment 34 to the CMP FMP and Atlantic Region.

The SEDAR 38 Update (2020) indicates that the Atlantic king mackerel ACLs and recreational ACTs can be increased without having negative effects on the sustainability of the stock. **Preferred Alternative 2** would utilize the same equation as **Alternative 1 (No Action)** but would update the recreational ACT based on the revised recreational ACL and recreational PSEs. However, **Alternatives 3** and **4** would have a greater long-term positive biological effects to the stock than **Preferred Alternative 2** because it would create a larger buffer between the recreational ACT and sector ACL (**Table 4.3.1.2**). Biological benefits to the stock would be expected to be greater for the alternative that provides the most timely and realistic trigger for the AM. Specifying a buffer between the recreational ACTs and sector ACL, as proposed under **Alternatives 3** and **4**, would provide greater assurance that overfishing is prevented since ACTs could trigger AMs. Overall, the biological benefits to the stock would be expected to be greatest with **Alternative 1 (No Action)** since the ACL is the lowest, followed by **Alternative 4**, **Preferred Alternative 2**, and **Alternative 3**. However, **Alternative 1 (No Action)** is not based on the recent update to the Atlantic king mackerel stock assessment (SEDAR 38 Update, 2020), would no longer represent BSIA, and is not a viable alternative.

## 4.3.2 Economic Effects

The purpose of ACTs is to help prevent a sector from exceeding its ACL due to management uncertainty. Exceeding an ACL would have direct negative economic effects on all sectors potentially due to a reduced stock size. In the case of Atlantic king mackerel, the recreational AM is tied to the ACT. If recreational landings exceed the ACL, and the sum of the commercial and recreational landings exceed the stock ACL, a reduced bag limit would be implemented the following year by the amount necessary to ensure the recreational landings may achieve the

recreational ACT, but do not exceed the recreational ACL, in the following fishing year. As such, restricting harvest to the ACT may have indirect economic effects. The more that harvest must be restricted, the greater the loss in consumer surplus (CS) received from such harvest and thus negative economic effects. Under this notion, the lower the ACT, the greater potential for short-term negative economic effects. **Alternative 1 (No Action)** would have the greatest potential for short-term negative economic effects, however, it would not be based on the BSIA. This alternative would be followed by **Alternative 4**, **Alternative 3**, and **Preferred Alternative 2**.

#### **4.3.3 Social Effects**

If tied to management action such as AMs, ACTs would result in negative social impacts in the short term because these would be linked to reduced economic benefits and reduced fishing opportunities. Reductions in harvest thresholds may have potential negative social effects, which can range from changes in fishing behavior to other social disruptions that go beyond impacts to the fishery and may extend to the community or region. However, there would be long-term social benefits for fishermen, communities, and the public by preventing overfishing through an ACT for a stock that has potential to exceed the ACL. Those benefits would include more fishing opportunities and increased income, which should benefit the coastal economy and contribute to community resilience for those involved in these fisheries. **Alternative 1 (No Action)** would have the greatest potential for short-term negative social effects however, it would not be based on the BSIA, followed by **Alternative 4**, **Preferred Alternative 2**, and **Alternative 3**.

#### **4.3.4 Administrative Effects**

Modifying the recreational ACTs for Atlantic king mackerel is not likely to have direct impacts on the administrative environment unless harvest triggers AMs. A recreational ACT is already in place for Atlantic king mackerel and therefore, negative administrative impacts of this action are likely to be minimal. **Alternative 1 (No Action)**, and **Preferred Alternative 2**, **Alternative 3** and **Alternative 4** would not result in significant administrative cost or time burdens other than notifying fishery participants of the change in the recreational ACTs and continued monitoring of the recreational ACTs, sector ACLs, and stock status. The burden on law enforcement would not change under any of the alternatives since changes to the recreational ACT would not alter the manner in which law enforcement efforts are presently carried out, and quota closures are currently enforced.



## 4.4 Action 4. Increase the recreational bag and possession limit for Atlantic migratory group king mackerel in the exclusive economic zone off the east coast of Florida.

### 4.4.1 Biological Effects

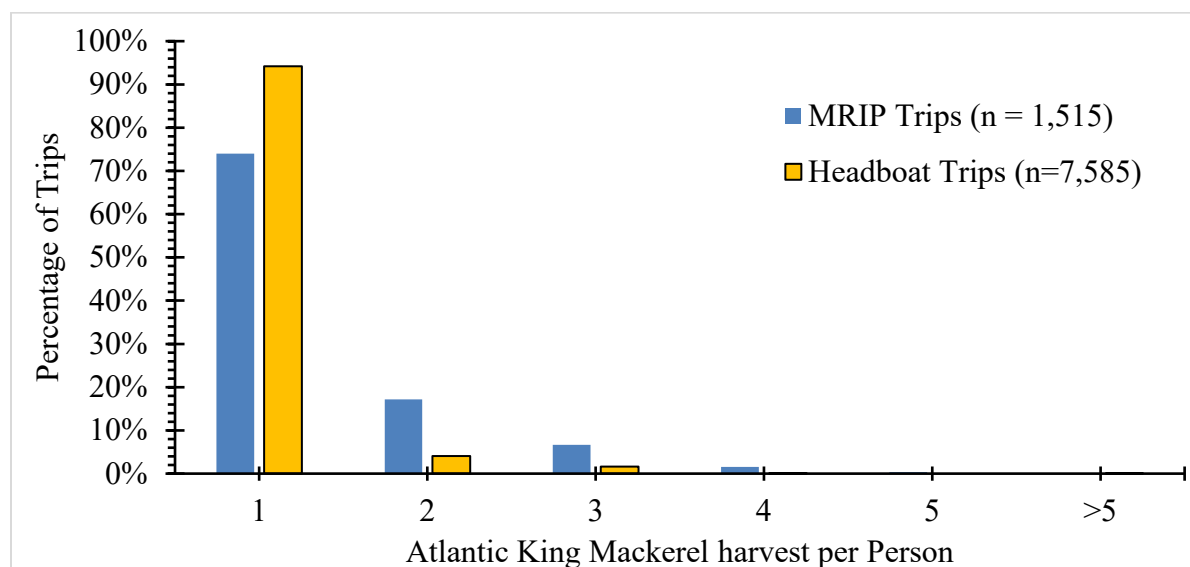
The current recreational daily bag limit for Atlantic king mackerel is two fish per person in both federal and state waters off the east coast of Florida. The rest of the Gulf, South Atlantic, and Mid-Atlantic regions have a bag limit of three fish per person. Increasing the bag limit in federal waters off the east coast of Florida as proposed under **Alternative 2** would allow fishermen throughout the management jurisdiction the same opportunity to harvest the same amount of Atlantic king mackerel. Negative biological effects to the stock could occur if more fish are allowed to be retained; however, increasing the Atlantic king mackerel bag limit from two to three fish per person under **Preferred Alternative 2** is expected to have minor effects on overall harvest since the majority of anglers are currently only catching one fish per person (Figures 4.4.1 and 4.4.2). Under **Preferred Alternative 2**, recreational landings could increase between 4 and 19% (MRIP)/1-3% (headboat), with a total percent increase of recreational landings between 3-14% (Tables 4.4.1 and 4.4.2). Additionally, in terms of the risk of overfishing, harvest is limited by the ACL, and AMs are in place to prevent overages, so biological effects from both alternatives are expected to be neutral.

#### **Alternatives**

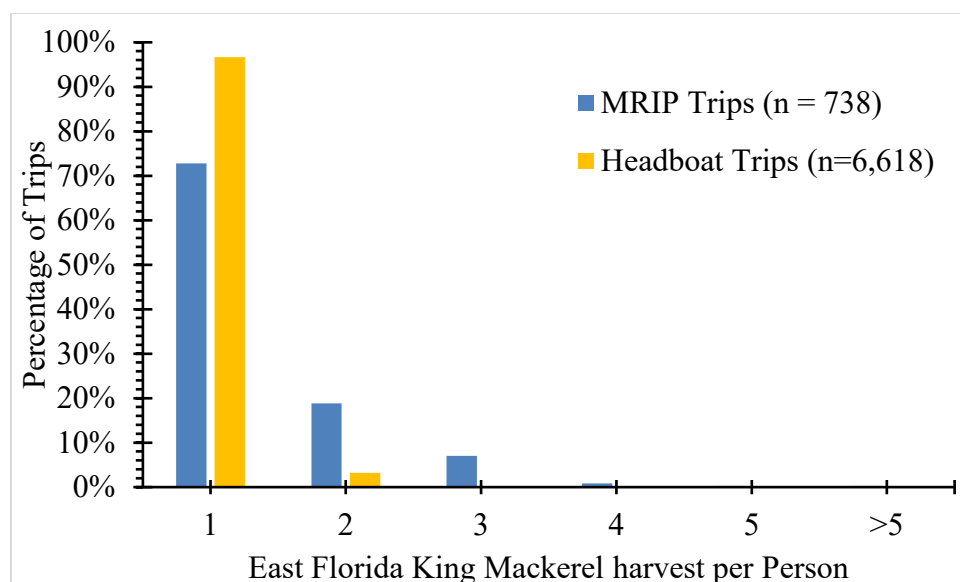
1. (No Action). The daily bag limit for Atlantic migratory group king mackerel in the exclusive economic zone off Florida is two fish per person. The daily bag limit specified by Florida for its waters is two fish per person.

**2. Increase the recreational bag limit for Atlantic king mackerel to three fish per person in the exclusive economic zone off Florida.**

\*See Chapter 2 for detailed language of alternatives. Preferred indicated in bold.



**Figure 4.4.1.** Distribution of Atlantic king mackerel harvested per angler from the two recreational datasets (MRIP and Headboat). The data used are from 2017 through 2019.



**Figure 4.4.2.** Distribution of East Florida king mackerel per person from the two recreational datasets (MRIP and Headboat). The data used are from 2017 through 2019.

**Table 4.4.1.** Calculated percent increase in east Florida king mackerel recreational landings from increasing the bag limit from 2 to 3 Atlantic king mackerel per person.

Bag Limit	MRIP	Headboat
Impact on East Florida Recreational Landings		
<b>Method 1</b>		
2 to 3 Fish	19%	3%
<b>Method 2</b>		
2 to 3 Fish	4%	<1%

Note: Percent increase in landings was calculated with two different methods (Method 1 and Method 2 (see **Appendix E** for detail).

**Table 4.4.2.** Percent increase in Atlantic king mackerel recreational landings generated from data for the years of 2017 to 2019.

Bag Limit	Method 1	Method 2
2 to 3 Fish in East Florida	14%	3%

Refer to **Appendix E** for detailed analytical methodology for proposed bag limit alternatives for Atlantic king mackerel.

#### 4.4.2 Economic Effects

Generally, angler satisfaction (which can be measured in CS) increases with the number of fish that can be harvested. As such, an increase in the bag limit would lead to higher angler

satisfaction from a recreational trip, likely resulting in higher overall economic benefits and **Preferred Alternative 2** would be expected to result in higher economic benefits than **Alternative 1 (No Action)**. The estimated change in CS from **Preferred Alternative 2** ranges between \$1,181,955 and \$5,515,789, depending on the method used to estimate the change in recreational landings (Table 4.4.2 and Table 4.4.3).

**Table 4.4.3.** Estimated change in recreational Atlantic king mackerel landings and associated change in net economic benefits.

	Method 1	Method 2
Increase in Atlantic king mackerel harvest (%)	14%	3%
Increase in Atlantic king mackerel harvest (lbs ww) <sup>1</sup>	720,372	154,365
Increase in Atlantic king mackerel harvest (#s of fish) <sup>2</sup>	78,472	16,815
Increase in CS (2019 \$) <sup>3</sup>	\$5,515,789	\$1,181,955

<sup>1</sup>Based on five year (2015/16-2019/20) average recreational landings of 5,145,513 lbs (Table 4.2.3).

<sup>2</sup>A weight of 9.12 lbs ww per king mackerel was used to convert recreational landings from lbs to numbers of fish (MRIP Query, accessed July 28, 2021).

<sup>3</sup>Based on a consumer surplus (CS) estimate of \$70.29 (2019 \$) per fish.

#### 4.4.3 Social Effects

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. In general, benefits to the recreational sector would result from harvest limits that do not result in restricted access to Atlantic king mackerel (i.e., because an AM is triggered) but still maintain harvest limits large enough to have minimal effect on recreational trip satisfaction. The social effects of the potential increase in 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 whether recreational effort and landings in that year are higher than the average landings in recent years.

Increasing the recreational bag limit under **Preferred Alternative 2** would create consistency in recreational bag limit in federal waters throughout the Atlantic king mackerel management range when compared to **Alternative 1 (No Action)**. Consistency in regulations throughout federal waters would be expected to reduce confusion among fishermen and aid in compliance. Alternatively, it would create inconsistency between the bag limit in the Florida east coast state waters and the federal waters off the east coast of Florida.

#### 4.4.4 Administrative Effects

Increasing the recreational bag limit for Atlantic king mackerel to three fish per person under **Alternative 2** so the administrative effects would be minor since the recreational bag limits are already in place and being monitored. Additionally, since the rest of the Gulf, South Atlantic, and Mid-Atlantic regions have a bag limit of three fish per person, increasing the bag limit in federal waters off the east coast of Florida as proposed under **Alternative 2** would reduce the burden on law enforcement. Minor administrative burdens related to deviating from **Alternative 1 (No Action)** would be related to distributing information, education, and enforcement.

## 4.5 Action 5. Reduce the minimum size limit for recreational harvest of Atlantic migratory group king mackerel.

### 4.5.1 Biological Effects

The current minimum size limit for recreational and harvest of Atlantic king mackerel is 24 inches fork length. Minimum size limits can cause increased regulatory discarding and, depending on depth of capture, may increase discard mortality. Currently, smaller Atlantic king mackerel that are caught under the current minimum size limit are often released as dead discards when targeting other species.

For the recreational sector, the discarded Atlantic king mackerel length data from the FWC charter and headboat trips had the majority (about 44%) of the recreational discards at 23 inches fork length, and also has discarded lengths down to 22 (19% of discard lengths) and 20 inches fork length (17% of discard lengths) (Figure 4.5.2). This suggests that there are Atlantic king mackerel being caught at the lengths below the current minimum size limit of 24 inches FL. Therefore, the decrease in the minimum size limit will likely result in an increase in recreational landings.

#### **Alternatives**

1. (No Action). The minimum size limit for Atlantic migratory group king mackerel 24-inches fork length.

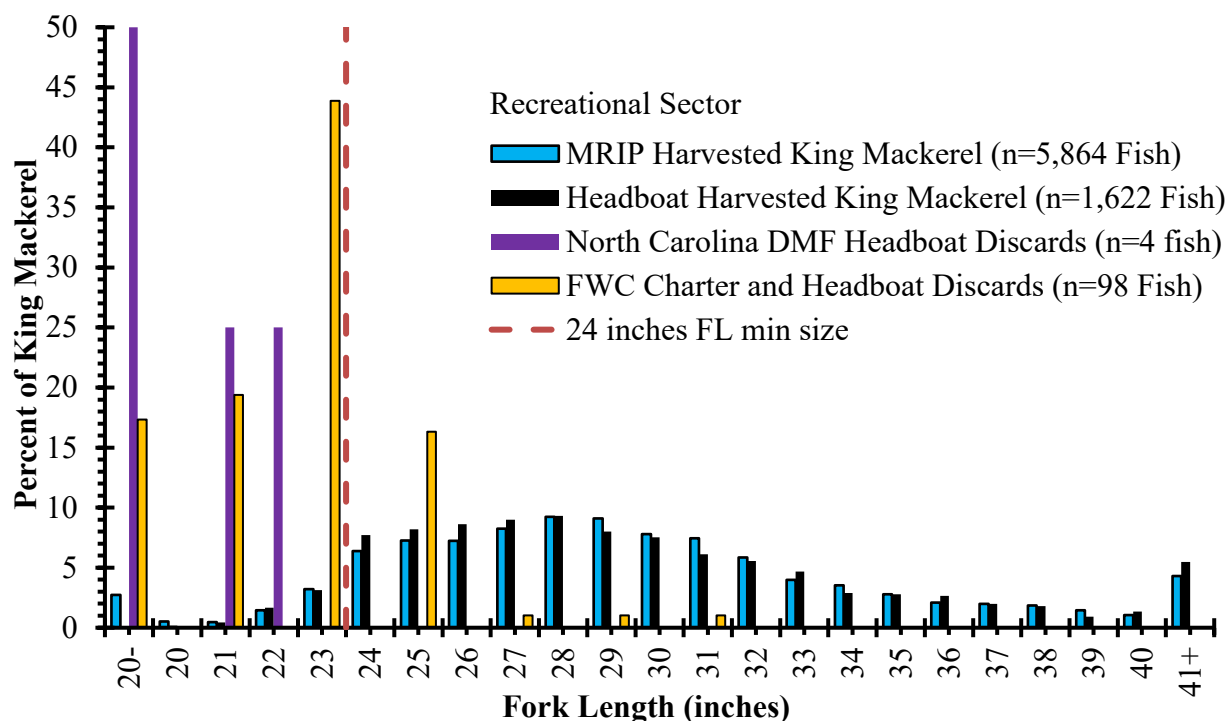
**2. Reduce the minimum size limit for Atlantic migratory group king mackerel to 22-inches fork length.**

3. Reduce the minimum size limit for Atlantic migratory group king mackerel to 20-inches fork length.

4. Remove the minimum size limit for Atlantic migratory group king mackerel.

\*See Chapter 2 for detailed language of alternatives. Preferred indicated in bold.

Revising the minimum size limit under **Preferred Alternatives 2** or **Alternative 3**, or removing the minimum size limit under **Alternative 4**, may increase recreational or commercial landings if smaller fish are landed rather than discarded. Negative biological impacts to the stock can be expected under **Preferred Alternative 2**, **Alternative 3**, and **Alternative 4**, when compared to **Alternative 1 (No Action)** since more fish can be landed under a reduced minimum size limit. However, in terms of the risk of overfishing, biological effects of **Preferred Alternative 2**, **Alternative 3**, and **Alternative 4**, would be neutral compared to **Alternative 1 (No Action)** as reducing or removing the minimum size limit would have no effect on overall harvest, which is limited by the ACL, and AMs are in place to prevent overages.



**Figure 4.5.2.** Percent of Atlantic king mackerel lengths from the recreational sector in 1-inch fork length increments by dataset.

Note: Length data came from MRIP harvested lengths, Headboat harvested lengths, North Carolina DMF headboat discard lengths, and FWC charter and headboat discard lengths. All of the data came from 2015 through 2020.

## 4.5.2 Economic Effects

Reducing or removing the recreational minimum size limit for Atlantic king mackerel may increase harvest, which would provide positive direct economic effects for the recreational sector provided there are no long-term negative effects for the stock. In general, the lower the size limit, the more that overall harvest will increase, thereby increasing economic benefits, such as CS, incurred from such harvest. Under this notion, the highest economic benefits would occur under **Alternative 4**, followed by **Alternative 3**, **Preferred Alternative 2**, and **Alternative 1 (No Action)**.

## 4.5.3 Social Effects

Some social effects of minimum size limits would be associated with the biological effects on Atlantic king mackerel (see **Section 4.5.1**). Additionally, there is a trade-off with reducing the minimum size limit in that an increase in the number of fish that can be kept may improve recreational trip satisfaction but may also increase the harvest rate and trigger AMs if landings reach the ACL sooner in the fishing year.

Reducing the minimum size limit (**Preferred Alternative 2** and **Alternative 3**) may result in positive social effects for Atlantic king mackerel fishermen by increasing the number of fish that can be retained, which may increase trip satisfaction. Removing the minimum size limit for Atlantic king mackerel (**Alternative 4**) would again be associated with the positive and negative

biological effects on the species (see **Section 4.5.1**). Positive effects of removing the minimum size limit would result from reduced discards. This would be expected to reduce waste for this portion of the coastal migratory pelagic fishery, improving the perception of management success.

#### **4.5.4 Administrative Effects**

Because there is a minimum size limit currently in place for Atlantic king mackerel, administrative effects incurred from **Preferred Alternative 2**, **Alternative 3**, and **Alternative 4**, when compared with **Alternative 1 (No Action)**, are expected to be minimal. Administrative impacts on NMFS associated with reducing the minimum size limit under **Preferred Alternative 2** and **Alternative 3**, or removing the size limit under **Alternative 4**, would be incurred by rulemaking, outreach, education, and enforcement. Therefore, administrative effects would be greatest under **Preferred Alternatives 2**, **Alternative 3** and **Alternative 4**, followed by **Alternative 1 (No Action)**.

## 4.6 Action 6. Reduce the minimum size limit for commercial harvest of Atlantic migratory group king mackerel.

### 4.6.1 Biological Effects

The current minimum size limit for commercial harvest of Atlantic king mackerel is 24 inches fork length. Minimum size limits can cause increased regulatory discarding and, depending on the sector, gear used, and depth of capture, may increase the discard (or release) mortality rate. Currently, smaller Atlantic king mackerel that are caught under the current minimum size limit are often released as dead discards when targeting other species. Release mortality rates of CMP species in the South Atlantic from the SEDAR 38 Update assessment (2020) range from 20-22 percent for the recreational sector and the commercial handline fishery (**Table 4.6.1**). The commercial gillnet fishery has a release mortality rate of 100%. However, overall commercial discards appear to be very low relative to landed commercial catch (Appendix H,BPA).

#### Alternatives

1. (No Action). The minimum size limit for Atlantic migratory group king mackerel 24-inches fork length.

**2. Reduce the minimum size limit for Atlantic migratory group king mackerel to 22-inches fork length.**

3. Reduce the minimum size limit for Atlantic migratory group king mackerel to 20-inches fork length.

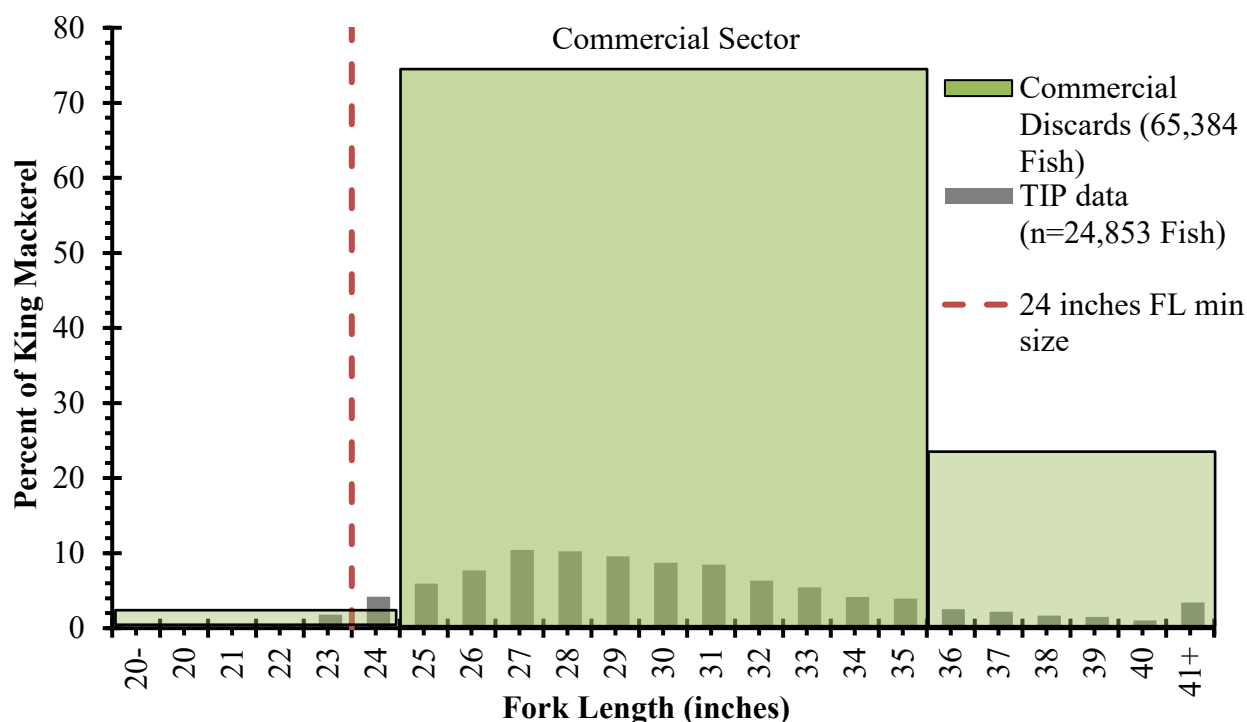
4. Remove the minimum size limit for Atlantic migratory group king mackerel.

\*See Chapter 2 for detailed language of alternatives. Preferred indicated in bold.

**Table 4.6.1.** Release mortality rates of CMP species from recent assessments.

Species	Region	Fishery	Release mortality	Data Source
Cobia	Gulf of Mexico	Recreational	5%	SEDAR 28 Update (2019)
Cobia	Gulf of Mexico	Commercial	5%	SEDAR 28 Update (2019)
Cobia	South Atlantic	Recreational	5%	SEDAR 58 (2020)
Cobia	South Atlantic	Commercial Vertical Line	5.6%	SEDAR 58 (2020)
Cobia	South Atlantic	Commercial Gill Net	55%	SEDAR 58 (2020)
King Mackerel	Gulf of Mexico & South Atlantic	Recreational Private & Charter	20%	SEDAR 38 Update (2020)
King Mackerel	Gulf of Mexico & South Atlantic	Recreational Headboat	22%	SEDAR 38 Update (2020)
King Mackerel	Gulf of Mexico	Commercial Handline	25%	SEDAR 38 Update (2020)
King Mackerel	South Atlantic	Commercial Handline	20%	SEDAR 38 Update (2020)
King Mackerel	South Atlantic	Commercial Gillnet	100%	SEDAR 38 Update (2020)
Spanish Mackerel	Gulf of Mexico & South Atlantic	Recreational	20%	SEDAR 28 (2013)
Spanish Mackerel	Gulf of Mexico & South Atlantic	Commercial Handline	10%	SEDAR 28 (2013)





**Figure 4.5.1.** Percent of Atlantic king mackerel lengths in the commercial sector in 1-inch fork length increments by dataset.

Note: Length data came from TIP harvested lengths and commercial observer discard lengths. Commercial discards come from an observer program where lengths are recorded in size bins, and these size bins were provided in the figure. All of the data came from 2015 through 2020.<sup>4</sup>

For the commercial sector, about 74% of the discarded fish fell into the 61-90 cm bin, or 24.2-35.4 inches (with a median of about 29.5 inches FL) suggesting a larger percentage of legal sized fish are discarded (**Figure 4.5.1**). The sparse data available on commercial discards prevent a thorough analysis of the impact on landings from a decrease in size limit. Refer to **Appendix F**

<sup>4</sup> Length data on harvested and discarded king mackerel from the commercial sector were collected to explore a decrease in the minimum size limit. Atlantic king mackerel commercial sector harvest data came from the Southeast Fisheries Science Center (SEFSC) Trip Intercept Program (TIP), and sector discard data came from the SEFSC commercial observer program. The commercial observer program places observers on commercial trips and the observers record the length of discarded Atlantic king mackerel. The commercial observer program had a large sample size of discarded king mackerel ( $n = 24,853$  fish), however, the observer program records Atlantic king mackerel discard lengths in 30 cm size bins (e.g. 30 to 60 cm fork length, 60 to 90 cm FL). These large size bins were converted to inches and this resulted in discard length data size bins with large 12-inch interval gaps. Due to the range of the bins, it is difficult to distinguish the exact Atlantic king mackerel lengths that were discarded.

for detailed analytical methodology for proposed minimum size limit alternatives for Atlantic king mackerel.

Revising the minimum size limit under **Preferred Alternative 2** or **Alternative 3**, or removing the minimum size limit under **Alternative 4**, may increase commercial landings if smaller fish are landed rather than discarded. Negative biological impacts to the stock can be expected under **Preferred Alternative 2**, and **Alternatives 3** and **4**, when compared to **Alternative 1 (No Action)** since more fish can be landed under a reduced minimum size limit; however, allowing more fish to be harvested by reducing the size limit could decrease the amount of fish that are discarded, which could be beneficial to the stock. Additionally, in terms of the risk of overfishing, biological effects of **Preferred Alternative 2**, and **Alternatives 3** and **4** would be neutral compared to **Alternative 1 (No Action)** as reducing or removing the minimum size limit would have no effect on overall harvest, which is limited by the ACL, and AMs are in place to prevent overages.

#### **4.6.2 Economic Effects**

Reducing or removing the commercial minimum size limit for Atlantic king mackerel under **Preferred Alternative 2**, **Alternative 3**, and **Alternative 4** may increase harvest since smaller fish that were previously discarded due to the current 24-inch minimum size limit (**Alternative 1 (No Action)**) could be landed. This would provide positive direct economic effects for the commercial sector provided there are no long-term negative effects for the stock from the increased harvest. In general, the lower the size limit, the more that overall harvest will increase, thereby increasing economic benefits incurred from such harvest. These economic benefits may accrue in the form of increased gross and net revenue for commercial vessels, thus increasing PS for the commercial fishery. Under this notion, the highest economic benefits would occur under **Alternative 4**, followed by **Alternative 3**, **Preferred Alternative 2**, and **Alternative 1 (No Action)**.

#### **4.6.3 Social Effects**

Some social effects of minimum size limits would be associated with the biological effects on Atlantic king mackerel (see **Section 4.6.1**). Additionally, there is a trade-off with reducing the minimum size limit in that an increase in the number of fish that can be kept may improve commercial trip profitability but may also increase the harvest rate and trigger AMs if landings reach the ACL sooner in the fishing year.

Reducing the minimum size limit (**Preferred Alternative 2** and **Alternative 3**) may result in positive social effects for Atlantic king mackerel fishermen by increasing the number of fish that can be retained, which may increase trip satisfaction. Removing the minimum size limit for Atlantic king mackerel (**Alternative 4**) would again be associated with the positive and negative biological effects on the species (see **Section 4.6.1**). Positive effects of removing the minimum size limit would result from reduced discards. This would be expected to reduce waste for this portion of the coastal migratory pelagic fishery. However, smaller king mackerel may of lower value on the market which could reduce revenues received by commercial fishermen and dealers.

#### **4.6.4 Administrative Effects**

Because there is a minimum size limit currently in place for Atlantic king mackerel, administrative effects incurred from **Preferred Alternative 2**, **Alternative 3**, and **Alternative 4**, when compared with **Alternative 1 (No Action)**, are expected to be minimal. Administrative impacts on NMFS associated with reducing the minimum size limit under **Alternative 2** and **Alternative 3**, or removing the size limit under **Alternative 4**, would be incurred by rulemaking, outreach, education, and enforcement. Therefore, administrative effects would be greatest under **Preferred Alternatives 2**, **Alternative 3** and **Alternative 4**, followed by **Alternative 1 (No Action)**.

## 4.7 Action 7. Modify the recreational requirement for Atlantic migratory group king mackerel and Spanish mackerel to be landed with heads and fins in intact.

### 4.6.1 Biological Effects

Currently, commercial fishermen are allowed to possess cut or damaged fish, generally caused by shark depredation, that meet minimum size limits; however, the recreational sector may not. Under **Alternative 2** and its sub-alternatives, cut or damaged Atlantic king mackerel and Atlantic Spanish mackerel caught under the recreational bag limit that comply with the minimum size limits, may be possessed, and offloaded ashore. Allowing possession of damaged Atlantic king mackerel or Atlantic Spanish mackerel under **Sub-alternatives 2a** and **2b**, respectively, could be expected to minimally increase harvest, while reducing the amount of discarded fish. However, since fish in such a state are expected to be dead discards, the biological effects to the stock from discards and fish removal are neutral. Additionally, in terms of the risk of overfishing, biological effects of **Alternative 2** and its sub-alternatives would be neutral compared to **Alternative 1 (No Action)** since harvest is limited to bag limits and by the sector ACL, and AMs are in place to reduce the chances of any overages.

#### **Alternatives**

1. (No Action). Cut-off (damaged) Atlantic migratory group king mackerel or Spanish mackerel caught under the recreational bag limit may not be possessed.
2. Cut-off (damaged) fish caught under the recreational bag limit that comply with the minimum size limits, may be possessed, and offloaded ashore.
  - 2a. Atlantic migratory group king mackerel
  - 2b. Atlantic migratory group Spanish mackerel
4. Remove the minimum size limit for Atlantic migratory group king mackerel.

\*See Chapter 2 for detailed language of alternatives. Preferred indicated in bold.

### 4.6.2 Economic Effects

Allowing possession of damaged Atlantic king mackerel or Spanish mackerel would increase harvest, which would provide positive direct economic effects for the recreational sector. Additionally, since fish in such a state do not survive release, there are no net effects for the stock. In general, an increase in overall harvest would economic benefits incurred from such harvest. Under this notion, the highest economic benefits would occur under **Sub-alternative 2a** and **Sub-alternative 2b**, followed by **Alternative 1 (No Action)**.

### 4.6.3 Social Effects

Commercial and recreational have reported increasing interactions with sharks or barracudas resulting in king and Spanish mackerel having their tails bitten off by before they can be landed. Allowing possession of damaged Atlantic king mackerel or Spanish mackerel would allow cut-fish not to be wasted which would provide positive social effects for the recreational sector. The commercial sector is already allowed to possess damaged king and Spanish mackerel and consistency in regulations between both sectors would be expected to reduce confusion among fishermen and aid in compliance. Additionally, **Sub-alternative 2a** and **Sub-alternative 2b** directly addresses stakeholder concerns regarding damaged fish and may improve stakeholder perceptions of the management process.

#### **4.6.4 Administrative Effects**

Effects associated with removing the requirement under **Alternatives 2** and its sub-alternatives would be incurred by rulemaking, outreach, education, and enforcement. However, since there is a regulation currently in place for Atlantic king mackerel and Atlantic Spanish mackerel that limits possession of damaged fish for the recreational sector, administrative impacts on NMFS are expected to be minimal. Additionally, these effects incurred from **Alternatives 2** and its **sub-alternatives**, when compared with **Alternative 1 (No Action)**, are expected to be beneficial to the public and to enforcement.

## **Chapter 5. Council's Choice for the Preferred Alternatives**

To be completed.

## **Chapter 6. Cumulative Effects**

To be completed.



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

<b>Name</b>	<b>Agency/Division</b>	<b>Title</b>
Christina Wiegand	SAFMC	IPT Lead/Fishery Social Scientist
Mary Vara	SERO/SF	IPT Lead/ Fishery Biologist
Myra Brouwer	SAFMC	Deputy Executive Director for Management
John Hadley	SAFMC	Fishery Economist
Chip Collier	SAFMC	Deputy Executive Director for Science
Denise Johnson	SERO	Industry Economist
Mike Barnette	SERO/PR	Fishery Biologist
Amy Schueller	SEFSC	Fishery Biologist
Juan Agar	SEFSC	Fishery Economist
Mike Jepson	SERO/SF	Social Sciences Branch Chief
Mike Larkin	SERO/LAPP	Biologist
Shepherd Grimes	NOAA GC	General Counsel
Monica Smit-Brunello	NOAA GC	General Counsel
Rick DeVictor	SERO/SF	South Atlantic Branch Chief
Scott Sandorf	SERO	Technical Writer
Matt Walia	NOAA OLE	Law Enforcement
David Dale	SERO/HCD	Fishery Biologist

NMFS = National Marine Fisheries Service, GMFMC = Gulf of Mexico Fishery Management Council, 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, OLE= Office of Law Enforcement.

## **Chapter 8. Agencies Consulted**

### Responsible Agencies

South Atlantic Fishery Management Council (Administrative Lead)  
4055 Faber Place Drive, Suite 201  
N. Charleston, South Carolina 29405  
843-571-4366/ 866-SAFMC-10 (TEL)  
843-769-4520 (FAX)  
www.safmc.net

### **Environmental Assessment:**

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

### List of Agencies, Organizations, and Persons Consulted

Gulf of Mexico Fishery Management Council  
Gulf of Mexico Marine Fisheries Commission  
SAFMC Scientific and Statistical Committee  
Florida Fish and Wildlife Conservation Commission  
Georgia Department of Natural Resources  
South Carolina Department of Natural Resources  
North Carolina Division of Marine Fisheries  
Virginia Marine Resources Commission  
Mid-Atlantic Fishery Management Council  
Atlantic States Marine Fisheries Commission  
National Marine Fisheries Service

- Washington Office
- Office of Ecology and Conservation
- Southeast Regional Office
- Southeast Fisheries Science Center

## **Chapter 9. References**

To be completed.

## Appendix A. Other Applicable Law

The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) (16 U.S.C. 1801 et seq.) provides the authority for fishery management in federal waters of the Exclusive Economic Zone. However, fishery management decision-making is also affected by a number of other federal statutes designed to protect the biological and human components of U.S. fisheries, as well as the ecosystems that support those fisheries. Major laws affecting federal fishery management decision-making are summarized below.

### **Administrative Procedures Act**

All federal rulemaking is governed under the provisions of the Administrative Procedure Act (APA) (5 U.S.C. Subchapter II), which establishes a “notice and comment” procedure to enable public participation in the rulemaking process. Under the APA, National Marine Fisheries Service (NMFS) is required to publish notification of proposed rules in the *Federal Register* and to solicit, consider, and respond to public comment on those rules before they are finalized. The APA also establishes a 30-day waiting period from the time a final rule is published until it takes effect.

The proposed rule associated with this amendment will include a request for public comment, and if approved, upon publication of the final rule, there will be a 30-day wait period before the regulations are effective in compliance with the APA.

### **Coastal Zone Management Act**

Section 307(c)(1) of the federal Coastal Zone Management Act of 1972 (CZMA), as amended, requires federal activities that directly affect any land or water use or natural resource of a state’s coastal zone be conducted in a manner consistent, to the maximum extent practicable, with approved state coastal management programs. The requirements for such a consistency determination are set forth in NOAA regulations at 15 C.F.R. part 930, subpart C. According to these regulations and CZMA Section 307(c)(1), when taking an action that affects any land or water use or natural resource of a state’s coastal zone, NMFS is required to provide a consistency determination to the relevant state agency at least 90 days before taking final action.

Upon submission to the Secretary of Commerce, NMFS will determine if this amendment is consistent with the Coastal Zone Management programs of the states of Florida, Georgia, South Carolina, North Carolina, Texas, Louisiana, Mississippi, and Alabama to the maximum extent possible. Their determination will then be submitted to the responsible state agencies under Section 307 of the CZMA administering approved Coastal Zone Management programs for these states.

### **Information Quality Act**

The Information Quality Act (IQA) (Public Law 106-443) effective October 1, 2002, requires the government to set standards for the quality of scientific information and statistics used and disseminated by federal agencies. Information includes any communication or representation of

knowledge such as facts or data, in any medium or form, including textual, numerical, cartographic, narrative, or audiovisual forms (includes web dissemination, but not hyperlinks to information that others disseminate; does not include clearly stated opinions).

Specifically, the IQA directs the Office of Management and Budget (OMB) to issue government wide guidelines that “provide policy and procedural guidance to federal agencies for ensuring and maximizing the quality, objectivity, utility, and integrity of information disseminated by federal agencies.” Such guidelines have been issued, directing all federal agencies to create and disseminate agency-specific standards to: 1) ensure information quality and develop a pre-dissemination review process; 2) establish administrative mechanisms allowing affected persons to seek and obtain correction of information; and 3) report periodically to OMB on the number and nature of complaints received.

Scientific information and data are key components of fishery management plans (FMPs) and amendments, and the use of best available information is the second national standard under the Magnuson-Stevens Act. To be consistent with the IQA, FMPs and amendments must be based on the best information available. They should also properly reference all supporting materials and data and be reviewed by technically competent individuals. With respect to original data generated for FMPs and amendments, it is important to ensure that the data are collected according to documented procedures or in a manner that reflects standard practices accepted by the relevant scientific and technical communities. Data will also undergo quality control prior to being used by the agency and a pre-dissemination review.

### **Endangered Species Act (ESA)**

The ESA of 1973 (16 U.S.C. Section 1531 et seq.) requires that federal agencies must ensure actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of threatened or endangered species or the habitat designated as critical to their survival and recovery. The ESA requires NMFS to consult with the appropriate administrative agency (itself for most marine species, and the U.S. Fish and Wildlife Service for all remaining species) when proposing an action that may affect threatened or endangered species or adversely modify critical habitat. Consultations are necessary to determine the potential impacts of the proposed action. They conclude informally when proposed actions may affect but are “not likely to adversely affect” threatened or endangered species or designated critical habitat. Formal consultations, resulting in a biological opinion, are required when proposed actions may affect and are “likely to adversely affect” threatened or endangered species or adversely modify designated critical habitat.

The NMFS completed a biological opinion on June 18, 2015, evaluating the impacts of the CMP fishery on Endangered Species Act (ESA)-listed species. In the biological opinion (NMFS 2015), NMFS determined that the proposed continued authorization of the CMP fishery is not likely to adversely affect any ESA-listed whales, Gulf of Mexico sturgeon, or corals. NMFS also determined that the CMP fishery is not likely to adversely affect designated critical habitat for elkhorn and staghorn coral or the Northwest Atlantic distinct population segments (DPS) of loggerhead sea turtle, and will have no effect on designated critical habitat for the North Atlantic right whale. The 2015 opinion concluded that the CMP fishery’s continued authorization is

likely to adversely affect, but is not likely to jeopardize, green, hawksbill, Kemp's ridley, leatherback, or the Northwest Atlantic DPS of loggerhead sea turtles, as well as Atlantic sturgeon or smalltooth sawfish. An incidental take statement for sea turtles, smalltooth sawfish, and Atlantic sturgeon was issued. Reasonable and prudent measures to minimize the impact of these incidental takes were specified, along with terms and conditions to implement them.

On April 6, 2016, NMFS and the U.S. Fish and Wildlife Service published a final rule (81 FR 20057), effective May 6, 2016, listing 11 DPSs of green sea turtle. The final rule, which superseded the previous green sea turtle listing, listed eight DPS as threatened and three DPSs as endangered. On June 29, 2016, NMFS published a final rule (81 FR 42268) to list Nassau grouper as threatened under the ESA, effective July 29, 2016. Because the range of both the North Atlantic and South Atlantic DPSs of green sea turtle and the Nassau grouper occur within the action area of the CMP fishery, NMFS reinitiated consultation on the CMP fishery in March 2017. NMFS completed an Amendment to the 2015 Opinion on November 13, 2017. The amended biological opinion (NMFS 2017) concluded that the CMP fishery's continued authorization is not likely to adversely affect Nassau grouper and is likely to adversely affect, but is not likely to jeopardize, the North Atlantic and South Atlantic DPSs of green sea turtle. A revised incidental take statement was issued.

Since then, NMFS listed the giant manta ray (*Manta birostris*) as threatened under the ESA, effective February 21, 2018. On January 30, 2018, NMFS listed the oceanic whitetip shark (*Carcharinus longimanus*) as threatened under the ESA, effective March 1, 2018.

On June 11, 2018, NMFS requested reinitiation of ESA Section 7 consultation on the continued authorization of the CMP fishery under the Magnuson-Stevens Act to address the listings of the giant manta ray and oceanic whitetip sharks. In this consultation request memorandum, NMFS developed ESA Section 7(a)(2) and Section 7(d) analyses that considered allowing the CMP fishery to continue during the reinitiation period. As a result of those analyses, NMFS determined that allowing the CMP fishery to continue during the reinitiation period is not likely to jeopardize any protected species, nor does it constitute an irreversible or irretrievable commitment of resources.

The alternatives considered in CMP Amendment 34 would not significantly modify the way in which the CMP fishery is prosecuted and, as such, are not anticipated to modify the operation of the CMP fishery in a manner that would cause effects to ESA-listed species or critical habitat not previously considered in the 2015 and 2017 biological opinions or in the June 11, 2018, analyses. Only with the completion of a new biological opinion, however, can a Section 7(a)(2) analysis be completed for the long-term, foreseeable future.

### **Marine Mammal Protection Act**

The Marine Mammal Protection Act (MMPA) established a moratorium, with certain exceptions, on the taking of marine mammals in U.S. waters and by U.S. citizens on the high seas. It also prohibits the importing of marine mammals and marine mammal products into the United States. Under the MMPA, the Secretary of Commerce (authority delegated to NMFS) is responsible for the conservation and management of cetaceans and pinnipeds (other than walruses). The

Secretary of the Interior is responsible for walruses, sea otters, polar bears, manatees, and dugongs.

Part of the responsibility that NMFS has under the MMPA involves monitoring populations of marine mammals to make sure that they stay at optimum levels. If a population falls below its optimum level, it is designated as “depleted.” A conservation plan is then developed to guide research and management actions to restore the population to healthy levels.

In 1994, Congress amended the MMPA, to govern the taking of marine mammals incidental to commercial fishing operations. This amendment required the preparation of stock assessments for all marine mammal stocks in waters under U.S. jurisdiction; development and implementation of take-reduction plans for stocks that may be reduced or are being maintained below their optimum sustainable population levels due to interactions with commercial fisheries; and studies of pinniped-fishery interactions. The MMPA requires a commercial fishery to be placed in one of three categories, based on the relative frequency of incidental serious injuries and mortalities of marine mammals. Category I designates fisheries with frequent serious injuries and mortalities incidental to commercial fishing; Category II designates fisheries with occasional serious injuries and mortalities; and Category III designates fisheries with a remote likelihood or no known serious injuries or mortalities.

Under the MMPA, to legally fish in a Category I and/or II fishery, a fisherman must take certain steps. For example, owners of vessels or gear engaging in a Category I or II fishery, are required to obtain a marine mammal authorization by registering with the Marine Mammal Authorization Program (50 CFR 229.4). They are also required to accommodate an observer if requested (50 CFR 229.7(c)) and they must comply with any applicable take reduction plans.

The Gulf of Mexico and South Atlantic CMP hook-and-line sector is classified in the 2021 MMPA List of Fisheries as a Category III fishery (January 14, 2021; 86 FR 3028), meaning the annual mortality and serious injury of a marine mammal resulting from the fishery is less than or equal to 1% of the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population. The Gulf of Mexico and South Atlantic CMP gillnet sector is classified as Category II fishery in the 2021 MMPA List of Fisheries. This classification indicates an occasional incidental mortality or serious injury of a marine mammal stock resulting from the fishery (1-50% annually of the potential biological removal). The gillnet sector has no documented interaction with marine mammals; NMFS classifies this sector as Category II based on analogy (i.e., similar risk to marine mammals) with other gillnet fisheries.

Because of the nature of this fishery, the action in this amendment is not expected to negatively impact marine mammals.

### **Essential Fish Habitat**

The amended Magnuson-Stevens Act included a new habitat conservation provision known as essential fish habitat (EFH) that requires each existing and any new FMPs to describe and identify EFH for each federally managed species, minimize to the extent practicable impacts



from fishing activities on EFH that are more than minimal and not temporary in nature, and identify other actions to encourage the conservation and enhancement of that EFH. To address these requirements, the South Atlantic Council has, under separate action, approved an environmental impact statement (SAFMC 1998) to address the new EFH requirements contained within the Magnuson-Stevens Act. Section 305(b)(2) requires federal agencies to obtain a consultation for any action that may adversely affect EFH.

### **Executive Orders**

#### **E.O. 12630: Takings**

The Executive Order on Government Actions and Interference with Constitutionally Protected Property Rights that became effective March 18, 1988, requires each federal agency prepare a Takings Implication Assessment for any of its administrative, regulatory, and legislative policies and actions that affect, or may affect, the use of any real or personal property. Clearance of a regulatory action must include a takings statement and, if appropriate, a Takings Implication Assessment. The NOAA Office of General Counsel will determine whether a Taking Implication Assessment is necessary for this amendment.

#### **E.O. 12866: Regulatory Planning and Review**

Executive Order 12866: Regulatory Planning and Review, signed in 1993, requires federal agencies to assess the costs and benefits of their proposed regulations, including distributional impacts, and to select alternatives that maximize net benefits to society. To comply with E.O. 12866, NMFS prepares a Regulatory Impact Review (RIR) for all fishery regulatory actions that either implement a new fishery management plan or significantly amend an existing plan. RIRs provide a comprehensive analysis of the costs and benefits to society of proposed regulatory actions, the problems and policy objectives prompting the regulatory proposals, and the major alternatives that could be used to solve the problems. The reviews also serve as the basis for the agency's determinations as to whether proposed regulations are a "significant regulatory action" under the criteria provided in E.O. 12866 and whether proposed regulations would have a significant economic impact on a substantial number of small entities in compliance with the Regulatory Flexibility Act.

On July 1, 2016, the Small Business Administration final rule revising the small business size standards for several industries became effective (79 FR 33647). The rule increased the size standard for Finfish Fishing from \$19.0 to \$20.5 million, Shellfish Fishing from \$5.0 to \$5.5 million, and Other Marine Fishing from \$7.0 to \$7.5 million.

In light of these standards, NMFS has preliminarily determined that the proposed action would not have a significant economic impact on a substantial number of small entities.

#### **E.O. 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations**

This Executive Order mandates that each federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on

minority populations and low-income populations in the United States and its territories and possessions. Federal agency responsibilities under this Executive Order include conducting their programs, policies, and activities that substantially affect human health or the environment, in a manner that ensures that such programs, policies, and activities do not have the effect of excluding persons from participation in, denying persons the benefit of, or subjecting persons to discrimination under, such, programs policies, and activities, because of their race, color, or national origin. Furthermore, each federal agency responsibility set forth under this Executive Order shall apply equally to Native American programs. Environmental justice considerations are discussed in detail in **Section 3.4**.

The action in this amendment is not expected to negatively impact minority or low-income populations.

**E.O. 12962: Recreational Fisheries**

This Executive Order requires federal agencies, in cooperation with states and tribes, to improve the quantity, function, sustainable productivity, and distribution of U.S. aquatic resources for increased recreational fishing opportunities through a variety of methods including, but not limited to, developing joint partnerships; promoting the restoration of recreational fishing areas that are limited by water quality and habitat degradation; fostering sound aquatic conservation and restoration endeavors; and evaluating the effects of federally-funded, permitted, or authorized actions on aquatic systems and recreational fisheries, and documenting those effects. Additionally, it establishes a seven-member National Recreational Fisheries Coordination Council (Council) responsible for, among other things, ensuring that social and economic values of healthy aquatic systems that support recreational fisheries are considered by federal agencies in the course of their actions, sharing the latest resource information and management technologies, and reducing duplicative and cost-inefficient programs among federal agencies involved in conserving or managing recreational fisheries. The Council also is responsible for developing, in cooperation with federal agencies, states and tribes, a Recreational Fishery Resource Conservation Plan - to include a five-year agenda. Finally, the Order requires NMFS and the U.S. Fish and Wildlife Service to develop a joint agency policy for administering the ESA.

The action in this amendment is intended to improve recreational fishing opportunities in the CMP Fishery and is consistent with the provisions of E.O. 12962.

**E.O. 13132: Federalism**

The Executive Order on Federalism requires agencies in formulating and implementing policies, to be guided by the fundamental federalism principles. The Order serves to guarantee the division of governmental responsibilities between the national government and the states that was intended by the framers of the Constitution. Federalism is rooted in the belief that issues not national in scope or significance are most appropriately addressed by the level of government closest to the people. This Order is relevant to FMPs and amendments given the overlapping authorities of NMFS, the states, and local authorities in managing coastal resources, including fisheries, and the need for a clear definition of responsibilities. It is important to recognize those components of the ecosystem over which fishery managers have no direct control and to develop

## **DRAFT DOCUMENT**

strategies to address them in conjunction with appropriate state, tribes and local entities (international too).

No federalism issues have been identified relative to the action proposed in this amendment.

### References

National Marine Fisheries Service (NMFS). 2015. Biological Opinion, ESA Section 7 Consultation for the Continued Authorization of Fishing under the Fishery Management Plan (FMP) for Coastal Migratory Pelagic Resources in the Atlantic and Gulf of Mexico (CMPR FMP). NMFS Southeast Regional Office Protected Resources Division: St. Petersburg, FL.

South Atlantic Fishery Management Council (SAFMC). 1998. Comprehensive Amendment Addressing Essential Fish Habitat in Fishery Management Plans in the South Atlantic Region, including environmental assessment, regulatory impact review, and fishery impact statement. South Atlantic Fishery Management Council, Charleston, South Carolina. Available at: [http://ocean.floridamarine.org/efh\\_coral/pdfs/Comp\\_Amend/EFHAmendCovTOC.pdf](http://ocean.floridamarine.org/efh_coral/pdfs/Comp_Amend/EFHAmendCovTOC.pdf).

# **Appendix B. Regulatory Impact Review**

# **Appendix C. Regulatory Flexibility Analysis**

To be completed.

## **Appendix D. Essential Fish Habitat**

### **EFH and EFH-HAPC Designations and Cooperative Habitat Policy Development and Protection**

The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) requires federal fishery management Councils and the National Marine Fisheries Service (NMFS) to designate essential fish habitat (EFH) for species managed under federal fishery management plans (FMP). Federal regulations that implement the EFH program encourage fishery management Councils and NMFS also to designate subsets of EFH as a way to highlight priority areas within EFH for conservation and management. These subsets of EFH are called EFH-Habitat Areas of Particular Concern (EFH-HAPCs or HAPCs) and are designated based on ecological importance, susceptibility to human-induced environmental degradation, susceptibility to stress from development, or rarity of the habitat type. Information supporting EFH and EFH-HAPC designations was updated (pursuant to the EFH Final Rule) in Fishery Ecosystem Plan (FEP) II.

#### **South Atlantic Council EFH User Guide**

The EFH Users Guide (<https://safmc.net/download/SAFMCEFHUsersGuideNov20.pdf>) developed during the FEP II development process is available through the FEP II Dashboard (see following sections) and provides a comprehensive list of the designations of EFH and EFH-HAPCs for all species managed by the South Atlantic Fishery Management Council (South Atlantic Council) and the clarifications identified during FEP II development. As noted above, additional detailed information supporting the EFH designations appears in FEP, FEP II, and in individual FMPs, and general information on the EFH provisions of the Magnuson-Stevens Act and its implementing regulations (50 CFR 900 Subparts J and K) can be found at <https://www.fisheries.noaa.gov/region/southeast#habitat>. These sources should be reviewed for information on the components of EFH assessments, steps to EFH consultations, and other aspects of EFH program operation.

#### **South Atlantic Council EFH Policy and EFH Policy Statements**

##### *South Atlantic Council Habitat and Environmental Protection Policy*

In recognizing that species are dependent on the quantity and quality of their essential habitats, it is the policy of the South Atlantic Council to protect, restore, and develop habitats upon which fisheries species depend; to increase the extent of their distribution and abundance; and to improve their productive capacity for the benefit of present and future generations. For purposes of this policy, “habitat” is defined as the physical, chemical, and biological parameters that are necessary for continued productivity of the species that is being managed. The objectives of the South Atlantic Council policy will be accomplished through the recommendation of no net loss or significant environmental degradation of existing habitat. A long-term objective is to support

and promote a net-gain of fisheries habitat through the restoration and rehabilitation of the productive capacity of habitats that have been degraded, and the creation and development of productive habitats where increased fishery production is probable. The South Atlantic Council will pursue these goals at state, Federal, and local levels. The South Atlantic Council shall assume an aggressive role in the protection and enhancement of habitats important to fishery species, and shall actively enter Federal, decision making processes where proposed actions may otherwise compromise the productivity of fishery resources of concern to the South Atlantic Council.

### **South Atlantic Council EFH Policy Statements**

#### *Considerations to Reduce or Eliminate the Impacts of Non-Fishing Activities on EFH*

In addition to implementing regulations to protect habitat from degradation due to fishing activities, the South Atlantic Council in cooperation with NMFS, actively comments on non-fishing projects or policies that may impact fish habitat. The South Atlantic Council established a Habitat Protection and Ecosystem Based Management Advisory Panel (AP) and adopted a comment and policy development process. Members of the AP serve as the South Atlantic Council's habitat contacts and professionals in the field and have guided the South Atlantic Council's development of the following Policy Statements:

- [EFH Policy Statement on South Atlantic Climate Variability and Fisheries \(December 2016\)](#)
- [EFH Policy Statement on South Atlantic Food Webs and Connectivity \(December 2016\)](#)
- [Protection and Restoration of EFH from Marine Aquaculture \(June 2014\)](#)
- [Protection and Enhancement of Marine Submerged Aquatic Vegetation \(June 2014\)](#)
- [Protection and Restoration of EFH from Beach Dredging and Filling, Beach Re-nourishment and Large Scale Coastal Engineering \(March 2015\)](#)
- [Protection and Restoration of EFH from Energy Exploration, Development, Transportation and Hydropower Re-Licensing \(December 2015\)](#)
- [Protection and Restoration of EFH from Alterations to Riverine, Estuarine and Nearshore Flows \(June 2014\)](#)
- [Policies for the Protection of South Atlantic Marine & Estuarine Ecosystems from Non-Native and Invasive Species \(June 2014\)](#)
- [Policy Considerations for Development of Artificial Reefs in the South Atlantic Region and Protection of Essential Fish Habitat \(September 2017\)](#)

### **Habitat Conservation and Fishery Ecosystem Plans**

The South Atlantic Council, views habitat conservation as the foundation in the move to Ecosystem Based Fishery Management (EBFM) in the region. The South Atlantic Council has been proactive in advancing habitat conservation through extensive gear restrictions in all South Atlantic Council FMPs and by directly managing habitat and fisheries affecting those habitats through two FMPs, the [FMP for Coral, Coral Reefs and Live/Hard Bottom Habitat of the South Atlantic Region](#) (Coral FMP) and the [FMP for the Sargassum Fishery of the South Atlantic Region](#). The FMP for the Dolphin and Wahoo Fishery in the Atlantic represents a proactive



FMP which established fishery measures and identified EFH in advance of overfishing or habitat impacts from the fisheries.

Building on the long-term conservation approach, the South Atlantic Council facilitated the evolution of the Habitat Plan into the first FEP to provide a clear description and understanding of the fundamental physical, biological, and human/institutional context of ecosystems within which fisheries are managed and identify information needed and how that information should be used in the context of FMPs. Developing a South Atlantic FEP required a greater understanding of the South Atlantic ecosystem, including both the complex relationships among humans, marine life, the environment and essential fish habitat and a more comprehensive understanding of the biological, social, and economic impacts of management necessary to initiate the transition from single species management to EBFM in the region. To support the move towards EBFM, the South Atlantic Council adopted broad goals: (1) maintaining or improving ecosystem structure and function; (2) maintaining or improving economic, (3) social, and cultural benefits from resources; and (4) maintaining or improving biological, economic, and cultural diversity.

### **Ecosystem Approach to Conservation and Management of Deep-water Ecosystems**

The South Atlantic Council's Habitat and Environmental Protection AP and Coral AP supported an ecosystem approach and proactive efforts to identify and protect deep-water coral ecosystems in the South Atlantic region. Through [Comprehensive Ecosystem-Based Amendment 1](#), [Comprehensive Ecosystem-Based Amendment 2](#), and [Coral Amendment 8](#), the South Atlantic Council established and expanded deep-water coral HAPCs (CHAPCs) and co-designated them as EFH-HAPCs to protect the largest continuous distribution (>23,000 square miles) of pristine deep-water coral ecosystems in the world from fishing and non-fishing activities.

### **FEP II Development**

The South Atlantic Council developed FEP II, in cooperation with NMFS, as a mechanism to incorporate ecosystem principles, goals, and policies into the fishery management process, including consideration of potential indirect effects of fisheries on food web linkages when developing harvest strategies and management plans. South Atlantic Council policies developed through the process support data collection, model and supporting tool development, and implementation of FEP II. FEP II and the FEP II Implementation Plan provide a system to incorporate of ecosystem considerations into the management process.

FEP II was developed employing writing and review teams established from the South Atlantic Council's Habitat Protection and Ecosystem Based Management AP, and experts from state, federal, NGOs, academia and other regional organizations and associations. Unlike the original Plan, FEP II is a living continually developing online information system presenting core sections and sections with links to documents or other online systems with detailed updated information on species, habitat, fisheries and research. For example, FEP II provides both concise summaries of South Atlantic Council-managed species with links to detailed information served through the South Atlantic Ecospecies online species information system cooperatively

developed with Florida Fish and Wildlife Research Institute (FWRI). The system provides online access to detailed information on habitat, life history, the fishery and management. A core part of the FEP II development process involved engaging the South Atlantic Council's Habitat Protection and Ecosystem Based Management AP and regional experts in developing new sections and ecosystem-specific policy statements to address South Atlantic food webs and connectivity and South Atlantic climate variability and fisheries. In addition, standing essential fish habitat policy statements were updated and a new artificial reef habitat policy statement was approved. In combination, these statements advance habitat conservation and the move to EBFM in the region. They also serve as the basis for further policy development, consideration in habitat and fish stock assessments and future management of fisheries and habitat. They also support a more comprehensive view of conservation and management in the South Atlantic and identify long-term information needs, available models, tools, and capabilities that will advance EBFM in the region.

## **FEP II Dashboard**

The FEP II Dashboard and associated online tools provide a clear description of the fundamental physical, biological, human, and institutional context of South Atlantic ecosystems within which fisheries are managed. The FEP II Digital Dashboard layout and online links follow are below:

- [Introduction](#)
- [South Atlantic Ecosystem](#)
- [South Atlantic Habitats](#)
- [Managed Species](#)
- [Social and Economic](#)
- [Essential Fish Habitat](#)
- [SAFMC Managed Areas](#)
- [Research & Monitoring](#)
- [SAFMC Tools](#)

## **NOAA EBFM Policy and Road Map**

To support the move to EBFM, NMFS developed an agency-wide EBFM Policy and Road Map (available through Ecosystem page of the FEP II Dashboard <http://safmc.net/fishery-ecosystem-plan-ii-south-atlantic-ecosystem/>) that outlines a set of principles to guide actions and decisions over the long-term to: implement ecosystem-level planning; advance our understanding of ecosystem processes; prioritize vulnerabilities and risks of ecosystems and their components; explore and address trade-offs within an ecosystem; incorporate ecosystem considerations into management advice; and maintain resilient ecosystems.

## **FEP II Implementation Plan Structure and Framework**

The Implementation Plan (<http://safmc.net/download/SAFMC-FEP-II-Implementation-Plan-March-2018.pdf>) is structured to translate approved policy statements of the South Atlantic Council into actionable items. The plan encompasses chapters beginning with an introduction to

the policy statement, a link to the complete policy statement, and a table which translates policies and policy components into potential action items. The actions within the plan are recommendations for activities that could support the South Atlantic Council's FEP II policies and objectives.

### **FEP II Two Year Roadmap**

The FEP II Two Year Roadmap (<http://safmc.net/download/SAFMC-FEP-II-Two-Year-Roadmap-March-2018.pdf>) draws from the Implementation Plan and presents three to five priority actions for each of the nine approved policy statements of the South Atlantic Council which would be initiated or completed over the next two years. The Roadmap provides "Potential Partners" and other potential regional collaborators, a focused list of priority actions they could cooperate with the South Atlantic Council on to advance policies supporting the move to EBFM in the South Atlantic region.

### **Monitoring/Revisions to FEP II Implementation Plan**

FEP II and this supporting Implementation Plan are considered active and living documents. The Implementation Plan will be reviewed and updated periodically. During their spring meeting in 2021 and every three years following, the Habitat Protection and Ecosystem Based Management AP will engage regional experts as needed, to determine whether additional actions addressing council policies should be added to the implementation plan. The South Atlantic Council's Habitat Protection and Ecosystem Based Management Committee will review, revise and refine those recommendations for South Atlantic Council consideration and approval for inclusion into the implementation plan.

### **Regional Habitat and Ecosystem Partners**

The South Atlantic Council, with the Habitat Protection and Environmental Based Management AP as the foundation, collaborates with regional partners to create a comprehensive habitat and ecosystem network in the region to enhance habitat conservation and EBFM.

### **Integrated Ocean Observing System (IOOS) and Southeast Coastal and Ocean Observing Regional Association (SECOORA)**

The Integrated Ocean Observing System (IOOS®) is a partnership among federal, regional, academic, and private sector parties that works to provide new tools and forecasts to improve safety, enhance the economy, and protect our environment. IOOS supplies critical information about our Nation's oceans, coasts, and Great Lakes. Scientists working to understand climate change, governments adapting to changes in the Arctic, municipalities monitoring local water quality, and industries affected by coastal and marine spatial planning all have the same need: reliable, timely, and sustained access to data and information that inform decision-making. Improving access to key marine data and information supports several purposes. IOOS data sustain national defense, marine commerce, and navigation safety. Scientists use these data to issue weather, climate, and marine forecasts. IOOS data are also used to make decisions for

energy siting and production, economic development, and ecosystem-based resource management. Emergency managers and health officials need IOOS information to make decisions about public safety. Teachers and government officials rely on IOOS data for public outreach, training, and education.

### **Southeast Coastal and Ocean Observing Regional Association (SECOORA)**

The Southeast Coastal Ocean Observing Regional Association (SECOORA) is the coastal ocean observing system for the Southeast U.S. SECOORA is one of 11 [regional coastal observing systems](#) that comprise the NOAA-led [United States Integrated Ocean Observing System](#) (U.S. IOOS®). SECOORA's [mission](#) is to observe, understand, and increase awareness of our coastal ocean; promoting knowledge, economic, and environmental health through strong regional partnerships. Guided by their [members](#), users, regional ocean experts, managers, and other stakeholders, SECOORA collects [data](#) and creates tools that support human populations, coastal economies and a healthy, sustainable environment. The SECOORA [observing system](#) is comprised of multiple data products, moored and coastal stations, high-frequency radars, and a glider observatory. The SECOORA footprint spans the eastern side of Gulf of Mexico to South Atlantic Bight and is connected by the Loop Current-Florida Current-Gulf Stream continuum. The [SECOORA Strategic Plan](#) (2016-2020) was developed by the Board in 2015 and guides tasks for the next 4 years. SECOORA supports projects that are important to stakeholders in the southeast. SECOORA talks to users and produces oceanographic observations, models, web tools, applications, and products based on their needs. Data are available on the portal <http://secoora.org/data/>. Each project SECOORA supports is linked to one of four focus areas: [Marine Operations](#), [Coastal Hazards](#), [Ecosystems](#), and [Climate Variability](#).

The South Atlantic Council is a voting member and South Atlantic Council staff serves on the Board of Directors to guide and direct priority needs for observation and modeling to support fisheries oceanography and integration into stock assessments through SEDAR.

Collaboration facilitates SECOORAs ability to: refine current or water column designations of EFH and EFH-HAPCs (e.g., Gulf Stream and Florida Current); provide oceanographic models linking benthic, pelagic habitats, and food webs; provide oceanographic input parameters for ecosystem mode; integrate OOS information into SEDAR process in the South Atlantic; facilitate OOS system collection of data and other research necessary to support the South Atlantic Council's conservation of habitat and use of area-based management tools in the South Atlantic Region including designation of EFH and EFH-HAPC and establishment of Marine Protected Areas, Deep-water CHAPCs, Special Management Zones, Spawning Special Management Zones and Allowable Gear Areas; characterize connectivity of habitats and managed areas; highlight the OOS program in the South Atlantic FEP II Dashboard; and provide access to OOS products to facilitate model and tool development and provide researchers access to data or products including those collected/developed by South Atlantic OOS partners. The South Atlantic Council is also collaborating with SECOORA to advance the coordination, techniques and data integration for biodiversity and environmental observations in support of region-specific decision making and implement a sustainable National Marine Biodiversity Observation Network ([Marine Biodiversity Observation Network](#)).

## **National Fish Habitat Plan and Southeast Aquatic Resource Partnership (SARP)**

The Councils serve on the National Habitat Board <http://www.fishhabitat.org/> and, as a member of the Southeast Aquatic Resource Partnership (SARP) <https://southeastaquatics.net/>, has highlighted this collaboration by including the Southeast Aquatic Habitat Plan (SAHP) and associated watershed conservation restoration targets into the original FEP. Many of the habitat, water quality, and water quantity conservation needs identified in the threats and recommendations Volume of the original FEP are directly addressed by on-the-ground projects supported by SARP. This cooperation results in funding fish habitat restoration and conservation intended to increase the viability of fish populations and fishing opportunity, which also meets the needs to conserve and manage EFH for Council-managed species or habitat important to their prey. This work supports conservation objectives identified in the SAHP to improve, establish, or maintain riparian zones, water quality, watershed connectivity, sediment flows, bottoms and shorelines, and fish passage, and addresses other key factors associated with the loss and degradation of fish habitats. SARP also developed the Southern Instream Flow Network (SIFN) <https://southeastaquatics.net/sarps-programs/sifn> to address the impacts of flow alterations in the Southeastern US aquatic ecosystems which leverages policy, technical experience, and scientific resources among partners based in 15 states. Maintaining appropriate flow into South Atlantic estuarine systems to support healthy inshore habitats essential to Council-managed species is a major regional concern and efforts of SARP through SIFN are envisioned to enhance state and local partners ability to maintain appropriate flow rates.

## **South Atlantic Landscape Conservation Cooperative**

The South Atlantic Council participates as Steering Committee member for the South Atlantic Landscape Conservation Cooperative (SALCC), an applied conservation science partnership focused on the South Atlantic region that informs on-the-ground strategic conservation efforts at landscape scales. LCC partners included Department of Interior (DOI) agencies, other federal agencies, states, tribes, non-governmental organizations, universities, and others. The DOI Southeast Climate Services Center (CSC) had the LCCs in the region as their primary clients. One of the initial charges of the CSCs is to downscale climate models for use at finer scales.

The SALCC developed a Strategic Plan and a regional blueprint to address the rapid changes in the South Atlantic including climate change, urban growth, and increasing human demands on resources which are reshaping the landscape. Integration of connectivity, function, and threats to river, estuarine and marine systems supporting South Atlantic Council-managed species is supported by the SALCC and enhanced by the South Atlantic Council being a voting member of its Steering Committee. In addition, the South Atlantic Council's Webservices present spatial representations of EFH, managed areas, regional fish and fish habitat distribution, and fishery operation information which was drawn on as a critical part of the collaboration with the SALCC Conservation Planning Atlas and the Regional Conservation Blueprint. While the LCCs are no longer funded, the South Atlantic Conservation Blueprint continues to be refined and serves as the technical foundation for the Southeast Conservation Adaptation Strategy (SECAS).

**Southeast Conservation Adaptation Strategy:** <http://secassoutheast.org/>

SECAS unites the conservation community around a shared, long-term vision for the future to consider dramatic changes sweeping the Southeastern United States including urbanization, competition for water resources, extreme weather events, sea-level rise, and climate change which pose unprecedented challenges for sustaining our natural and cultural resources. Through SECAS, diverse partners are working together to design and achieve a connected network of lands and waters that supports thriving fish and wildlife populations and improved quality of life for people across the Southeastern United States and the Caribbean. The primary product of SECAS is the Southeast Conservation Blueprint SECAS Blueprint.

<http://secassoutheast.org/blueprint.html>. The Blueprint stitches together smaller sub-regional plans into one unifying map that identifies important areas for conservation and restoration.

### **Regional Ecosystem Modeling in the South Atlantic**

#### *South Atlantic Ecopath with Ecosim Model*

The South Atlantic Council worked cooperatively with the University of British Columbia and the Sea Around Us project to develop a straw-man and preliminary food web models (Ecopath with Ecosim) to characterize the ecological relationships of South Atlantic species, including those managed by the South Atlantic Council. This effort helped the South Atlantic Council and cooperators identify available information and data gaps while providing insight into ecosystem function. More importantly, the model development process provided a vehicle to identify research necessary to better define populations, fisheries, and their interrelationships. While individual efforts were underway in the South Atlantic, only with significant investment of resources through other programs was a comprehensive regional model further developed.

A subsequent collaboration building on the previous Ecopath model developed through the Sea Around Us project for the South Atlantic Bight focused on simulating forage fish population changes that could result from environmental or oceanographic variation associated with climate change effect and how it could potentially affect managed species.

As part of the FEP II development process a new generation South Atlantic ecosystem modeling effort funded by the SALCC, was conducted to engage a broader scope of regional partners. This effort facilitated development of a new generation Ecopath with Ecosim (EwE) model which will ultimately provide evaluation tools for the SSC and South Atlantic Council and inform other regional conservation planning efforts.

The new South Atlantic EwE model provides a more complete view of the system and supports potential future evaluations that may be possible with the model. With the model complete and tuned to the available data it can be used to address broad strategic issues, and explore “what if” scenarios that could then be used to address tactical decision-making questions such as provide ecosystem context for single species management, address species assemblage questions, and address spatial questions using Ecospace.



A modeling team comprised of FWRI staff, South Atlantic Council staff and other technical experts as needed, will coordinate with members of the original Ecosystem Modeling Workgroup to maintain and further refine the South Atlantic Model. The South Atlantic Ecospecies online species information system will be the long-term repository for the processed inputs and outputs associated with the South Atlantic model. Online access to the EcoSpecies system is available through the FEP II Dashboard through individual links under Managed Species Section <http://safmc.net/uncategorized/safmc-managed-species/> and through the Tools Section <http://safmc.net/fishery-ecosystem-plan-ii-tools/>. The direct link to the system is <http://saecospecies.azurewebsites.net/>.

### **Tools to support EBFM in the South Atlantic Region**

The South Atlantic Council developed a Habitat Conservation and Ecosystem Management Section of the website <http://safmc.net/fishery-ecosystem-plan-ii-introduction/> which provides access to the FEP II Digital Dashboard and associated tools. Florida's FWRI maintains and distributes GIS data, imagery, and documents relevant to habitat conservation and ecosystem-based fishery management in their jurisdiction. Over the last several years, FWRI has created web services and applications using the ArcGIS for Server (AGS) software. AGS enables collaboration among various federal, state and local agencies to evaluate and analyze fisheries-related information in a new way. By transitioning to the AGS platform, the South Atlantic Council enhanced their online suite of tools to support fisheries management in their region. The South Atlantic Council has continued its collaboration with FWRI in the evolution to Web Services provided through the regional South Atlantic Habitat and Ecosystem Atlas ([http://ocean.floridamarine.org/safmc\\_atlas/](http://ocean.floridamarine.org/safmc_atlas/)) and the South Atlantic Digital Dashboard ([http://ocean.floridamarine.org/safmc\\_dashboard/](http://ocean.floridamarine.org/safmc_dashboard/)). The online systems provide access to the following Services:

*South Atlantic Fisheries Webservice:* ([http://ocean.floridamarine.org/SA\\_Fisheries/](http://ocean.floridamarine.org/SA_Fisheries/))

The service provides access to species distribution and spatial presentation of regional fishery independent data from the Southeast Area Monitoring and Assessment Program (South Atlantic) SEAMAP-SA, the Marine Resources Monitoring, Assessment, and Prediction program (MARMAP), and NOAA Southeast Fishery-Independent Survey (SEFIS).

*South Atlantic EFH Webservice:* ([http://ocean.floridamarine.org/sa\\_efh/](http://ocean.floridamarine.org/sa_efh/))

The EFH service provides access to spatial representation of EFH and EFH-HAPCs for South Atlantic Council-managed species and Highly Migratory Species.

*South Atlantic Managed Areas Service:* ([http://ocean.floridamarine.org/safmc\\_managedareas/](http://ocean.floridamarine.org/safmc_managedareas/)).

The Managed Area service provides access to spatial presentations of South Atlantic Council and other managed areas in the region. A new data layer of gear restrictions to include in the Managed Areas map service. Restrictions for black sea bass pots, fish traps, roller rigs, octocoral

harvest, spiny lobster closed areas, golden crab closed areas, pelagic sargassum harvest, and longline prohibited areas are provided.

*South Atlantic EcoSpecies Online Species Information System:*

(<http://saecospecies.azurewebsites.net/>)

FWRI works with the South Atlantic Council to provide support relevant to habitat conservation and ecosystem-based fishery management in the South Atlantic Council’s jurisdiction. The system provides species life history and habitat information to flexibly fill the needs of the South Atlantic Council and other regional users. The updated and refined system provides the South Atlantic Council with the foundation from which to attain a more comprehensive understanding of habitat and biology of species, fisheries information, social and economic impacts of management, and ecological consequences of conservation and management. The system was further refined with information supporting EFH designations, annual catch limits, and accountability measures associated with all South Atlantic Council-managed species, added and additional refinement of structure and function further enhancing the systems capabilities and utility. In addition, new habitat information based on life history stage was imported into the database and a link to a User’s Guide (<http://safmc.net/download/EcoSpecies-WebUser-Manual-3-17.pdf>) was added. The project in 2019 will continue to update and refine the online data system. Updates included in this phase of the project address the need by the South Atlantic Council to refine and update species information for future 5-year EFH reviews and to highlight and expand accessibility and availability of detailed species, habitat, and fishery information for FEP II to further support the move to Ecosystem-Based Fishery Management.

*South Atlantic Artificial Reefs Web Application:*

(<http://myfwc.maps.arcgis.com/apps/webappviewer/index.html?id=f3c6ac59ee5f49e59f1ae5c96c5bc76b>). This application provides a regional view of artificial reefs locations, contents and eventually imagery associated with programs in the southeastern U.S. overseen by individual states (Florida, Georgia, South Carolina, North Carolina).

*South Atlantic ACCSP Web Map and Application:*

A new ArcGIS Online [web map](#) displays Atlantic Coastal Cooperative Statistics Program (ACCSP) Statistical Areas with related ACCSP non-spatial tables of non-confidential data binned into 5-year time steps to better represent catch and values of Council-managed species across time. The web map provides an easy interface to view landings of a statistical area over time. FWRI also created an [ACCSP web application](#) for users to query by species for each time step or query by ACCSP Statistical Areas. The ACCSP web application is powered by the web map to display charts of landings and values for ACCSP Statistical Areas. The related table widgets summarize the fields for “live\_pounds” and “dollar\_values” by species and time step.

### **South Atlantic Council Habitat and Ecosystem Digital Dashboard Enhancements:**

To further enhance the South Atlantic Council’s Digital Dashboard and enhance linkages with regional partners mapping and characterizing habitats and documenting species use of habitats in



the South Atlantic Region, a live link to the *Okeanos Explorer* while on cruise was added to the [Projects](#) page and a link to the Atlantic Coastal Fish Habitat Partnership (ACFHP) was added to the [Partners](#) page.

### **Ecosystem-Based Action, Future Challenges and Needs**

The South Atlantic Council has implemented ecosystem-based principles through several existing fishery management actions including establishment of deep-water Marine Protected Areas for the Snapper Grouper fishery, proactive harvest control rules on species (e.g., dolphin and wahoo) which are not overfished, implementing extensive gear area closures which in most cases eliminate the impact of fishing gear on EFH, and use of other spatial management tools including Special Management Zones and Spawning Special Management Zones. Through development of the Comprehensive Ecosystem-Based Amendments, the Council has taken an ecosystem approach to protecting deep-water ecosystems while providing for traditional fisheries for the Golden Crab and Royal Red shrimp in areas where they do not impact deep-water coral habitat. The stakeholder-based process tapped into an extensive regional Habitat and Ecosystem network. Support tools facilitate South Atlantic Council deliberations and with the help of regional partners, are being refined to address long-term habitat conservation and EBFM needs.

One of the greatest challenges to enhance habitat conservation and EBFM in the region is funding high priority research, including comprehensive benthic mapping and ecosystem model and management tool development. In addition, collecting detailed information on fishing fleet dynamics including defining fishing operation areas by species, species complex, and season, as well as catch relative to habitat is critical for assessment of fishery, community, and habitat impacts and for South Atlantic Council use in place-based management measures. Additional resources need to be dedicated to expanding regional coordination of modeling, mapping, characterization of species use of habitats, and full funding of regional fishery independent surveys (e.g., MARMAP, SEAMAP, and SEFIS) which are linking directly to addressing high priority management needs. The [FEP II Implementation Plan](#) includes Appendix A to highlight research and data needs excerpted from the [SEAMAP 5 Year Plan](#) because they represent short and long-term research and data needs that support EBFM and habitat conservation in the South Atlantic Region.

Development of ecosystem information systems to support South Atlantic Council management should build on existing tools (e.g., Regional Habitat and Ecosystem GIS and Arc Services) and provide resources to regional cooperating partners for expansion to address long-term South Atlantic Council needs. NOAA should support and build on the regional coordination efforts of the South Atlantic Council as it transitions to a broader management approach. Resources need to be provided to collect information necessary to update information supporting FEP II, which support refinement of EFH designations and spatial representations and future EBFM actions. These are the highest priority needs to support habitat conservation and EBFM, the completion of mapping of near-shore, mid-shelf, shelf edge, and deep-water habitats in the South Atlantic region and refinement in the characterization of species use of habitats.

## Appendix E. Alternatives Considered but Rejected

**Action 2.** Revise sector allocations and sector annual catch limits for Atlantic migratory group king mackerel.

**Alternative 2.** Allocate 62.9% of the revised total annual catch limit for Atlantic migratory group king mackerel to the recreational sector. Allocate 37.1% of the revised total annual catch limit for Atlantic migratory group king mackerel to the commercial sector.

**Alternative 4.** Allocate 70.95% of the revised total annual catch limit for Atlantic migratory group king mackerel to the recreational sector. Allocate 29.05% of the revised total annual catch limit for Atlantic migratory group king mackerel to the commercial sector. The allocations are calculated based on MRIP-FES average landings for Atlantic king mackerel for the years 2004 – 2019.

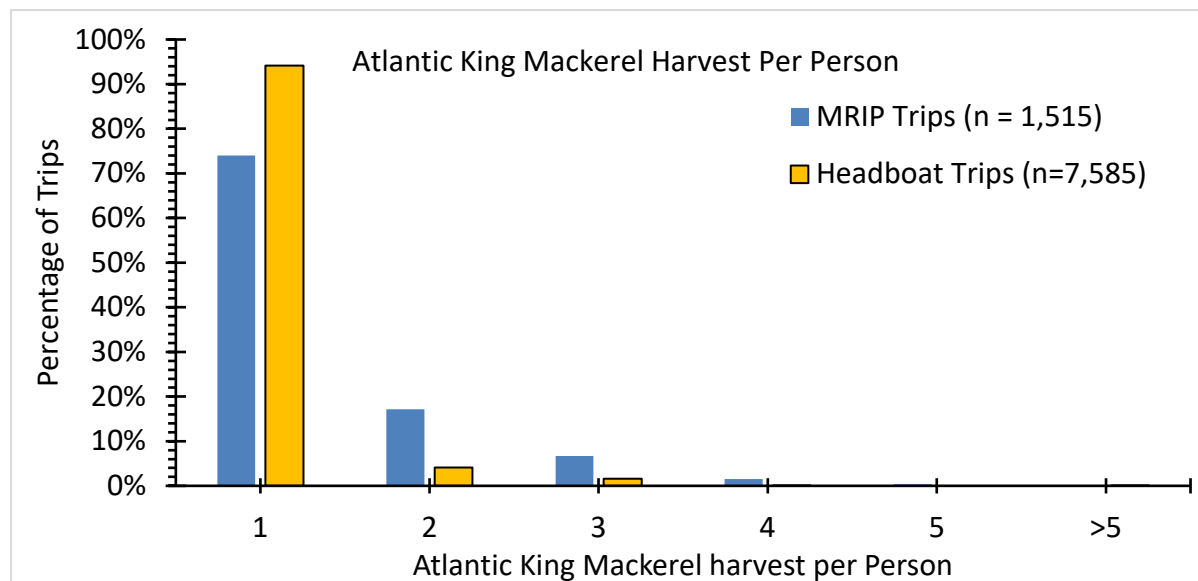
**Alternative 6.** Allocate 72.92% of the revised total annual catch limit for Atlantic migratory group king mackerel to the recreational sector. Allocate 27.08% of the revised total annual catch limit for Atlantic migratory group king mackerel to the commercial sector. The allocations are calculated based on MRIP-FES landings which balanced historical catches (2000-2008) with more recent landings (2017-2019) using the following formula.

## Appendix F. Atlantic King Mackerel Bag Limit and Size Limit Analysis

### Increased Bag Limit Analysis for Atlantic King Mackerel

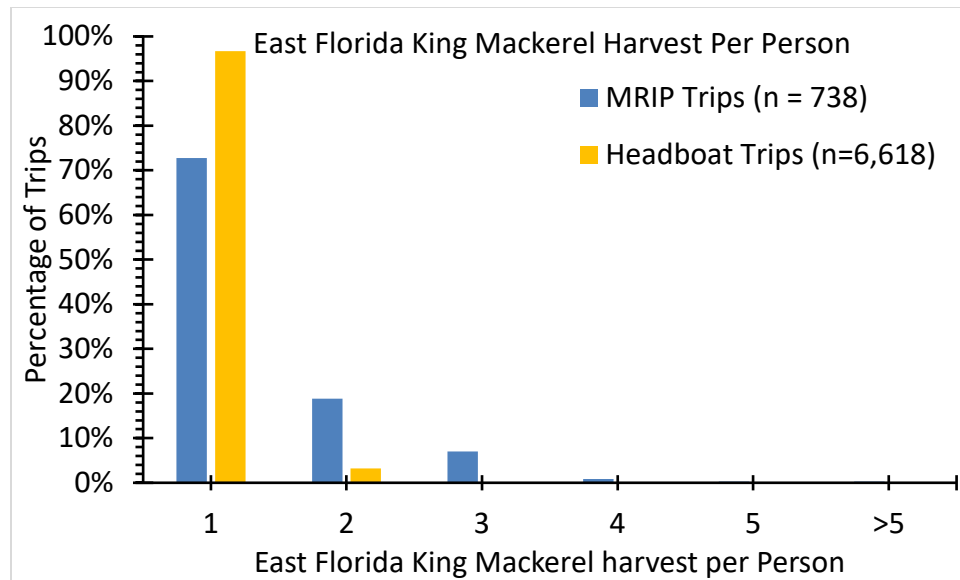
Amendment 34 to the Fishery Management Plan for Coastal Migratory Pelagic Resources in the Gulf of Mexico and Atlantic Region (Amendment 34) is considering increasing the Atlantic migratory group king mackerel recreational bag limit off east Florida. The current east Florida bag limit is 2 fish per person and Amendment 34 is considering increasing the east Florida bag limit to 3 fish per person.

Atlantic recreational datasets from the Marine Recreational Information Program (MRIP) and the Southeast Region Headboat Survey (Headboat) were explored to determine the numbers of king mackerel harvested per angler. MRIP was downloaded from the NOAA fisheries recreational landings website (fisheries.noaa.gov) in September of 2020. Headboat data was provided from the Southeast Fisheries Science Center (SEFSC) in July of 2020. Data from the most recent years of complete data (2017-2019) were used to look at the king mackerel harvest per person. Figure F.1 provides the distribution of the Atlantic king mackerel harvested per angler, and Figure F.2 provides the distribution of the east Florida king mackerel harvested per angler.



**Figure F.1.** Distribution of Atlantic king mackerel harvested per angler from the two recreational datasets (MRIP and Headboat).

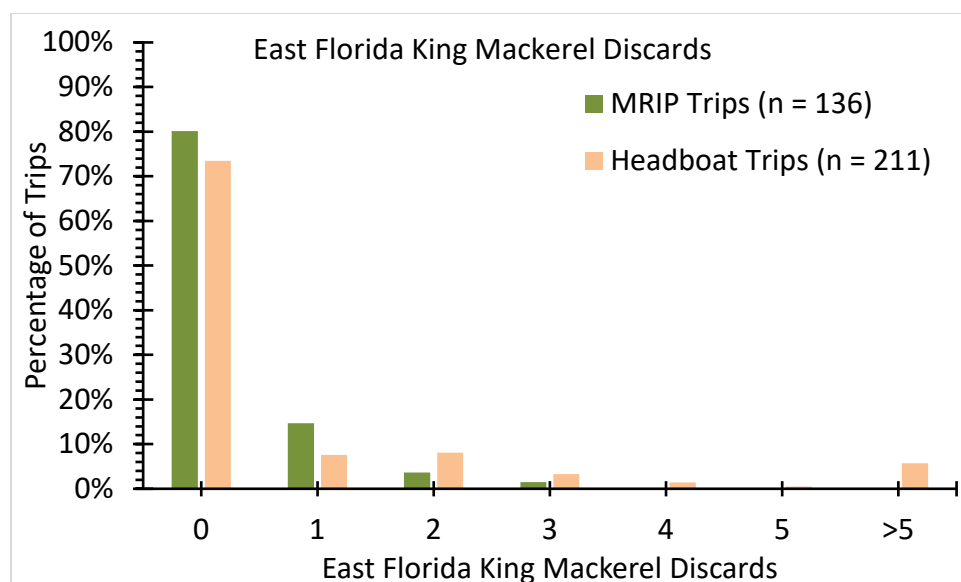
Note: The data used are from 2017 through 2019.



**Figure F.2.** Distribution of East Florida king mackerel per person from the two recreational datasets (MRIP and Headboat).

Note: The data used are from 2017 through 2019.

Increasing the east Florida king mackerel bag limit from 2 to 3 king mackerel per person were analyzed with two different methods that modified the trips that met the current 2 king mackerel per angler bag limit. Trips that harvested less than 2 king mackerel per angler or more than 2 king mackerel per angler were not modified. The first of the two methods assumed that all trips that met the 2-king mackerel per angler bag limit would also meet the 3-king mackerel per person bag limit. The second method isolated the trips that met the 2-king mackerel bag limit and assumed they met the 3-king mackerel bag limit if those trips also had discards of 1 or more king mackerel, respectively. For example, a trip that met the 2-king mackerel bag limit and had at least one discarded king mackerel was analyzed by assuming 3 king mackerel (2 harvested fish plus the 1 discarded fish) were harvested for that trip. It must be noted that the second method assumes discarded king mackerel were only discarded because the trip limit was met. However, these discards could have been released because these fish were below the minimum size limit of 24 inches fork length. The length of the discarded fish is not available, so it is not possible to distinguish if the discards were because the fish was below the minimum size. The distribution of the number of discarded king mackerel for the trips that met the 2 fish bag limit in east Florida are shown in Figure F.3. The calculated percent increase in landings by dataset (MRIP and Headboat) are shown in Table F.1.



**Figure F.3.** Distribution of discarded east Florida king mackerel from MRIP and Headboat data for trips that met the current 2 king mackerel bag limit.

Note: The data used are from 2017 through 2019.

**Table F.1.** Calculated percent increase in east Florida king mackerel recreational landings from increasing the bag limit from 2 to 3 king mackerel per person.

Bag Limit	MRIP	Headboat
Impact on East Florida Recreational Landings		
Method 1		
2 to 3 Fish	19%	3%
Method 2		
2 to 3 Fish	4%	<1%

Note: Percent increase in landings was calculated with two different methods. Method 1 assumes all the trips that met the 2-king mackerel bag limit would also meet the 3-king mackerel bag limit. Method 2 isolated the trips that met the 2-king mackerel bag limit and allowed them to meet the 3-king mackerel bag limit if these trips also had discarded king mackerel.

An overall percent increase in recreational landings was calculated by weighting the percent increase for each dataset by the percentage of landings that dataset contributed to the overall Atlantic king mackerel recreational landings. An Annual Catch Limit recreational landings dataset comprised of MRIP Fishing Effort Survey (FES) landings was provided from the SEFSC on March 2, 2021. The percentage of east Florida king mackerel recreational landings compared to the total Atlantic king mackerel recreational landings from 2017 to 2019 are shown in Table F.2. Additionally, the increase in the bag limit was only for east Florida so the percent increase from the two-method analysis was only applied to the east Florida landings. The overall percent increase from the two methods are shown in Table F.3.

**Table F.2.** Percentages of the total Atlantic king mackerel recreational landings by dataset for the east Florida data.

<b>Data</b>	<b>% of Total Atlantic King Mackerel Recreational Landings</b>
East Florida MRIP	73%
East Florida Headboat	1%

Note: This data comes MRIP FES from 2017 to 2019. The landings are in pounds whole weight (lbs ww) and percent of the total Atlantic king mackerel recreational landings.

**Table F.3.** Percent increase in Atlantic king mackerel recreational landings generated from data for the years of 2017 to 2019.

<b>Bag Limit</b>	<b>Method 1</b>	<b>Method 2</b>
2 to 3 Fish in East Florida	14%	3%

Note: The percent increase estimates (Table 1) were modified by weighting the increase in the bag limit for each dataset (Table 2). The weighting was based on the percentage of landings each east Florida dataset contributed to the overall landings from 2017 to 2019 (Table 2). Percent increase in landings was calculated with two different methods. Method 1 assumes all the trips that met the 2 king mackerel bag limit would also meet the 3 king mackerel bag limit. Method 2 isolated the trips that met the 2 king mackerel bag limit and allowed them to meet the 3 king mackerel bag limit if these trips also had discarded king mackerel.

This analysis attempted to predict realistic changes to king mackerel recreational landings by applying increases to the current 2-fish bag limit. Uncertainty exists in these projections, as economic conditions, weather events, changes in catch-per-unit effort, fisher response to management regulations, and a variety of other factors may cause departures from this assumption. The bounds of this uncertainty are not captured by the analysis as currently configured; as such, it should be used with caution as a ‘best guess’ for future dynamics. In addition to the sources of uncertainty, the predicted increase in landings associated with bag limit options assume past performance in the fishery is a good predictor of future dynamics. The analysis constrained the range of data considered to recent years to reduce the unreliability of this assumption.

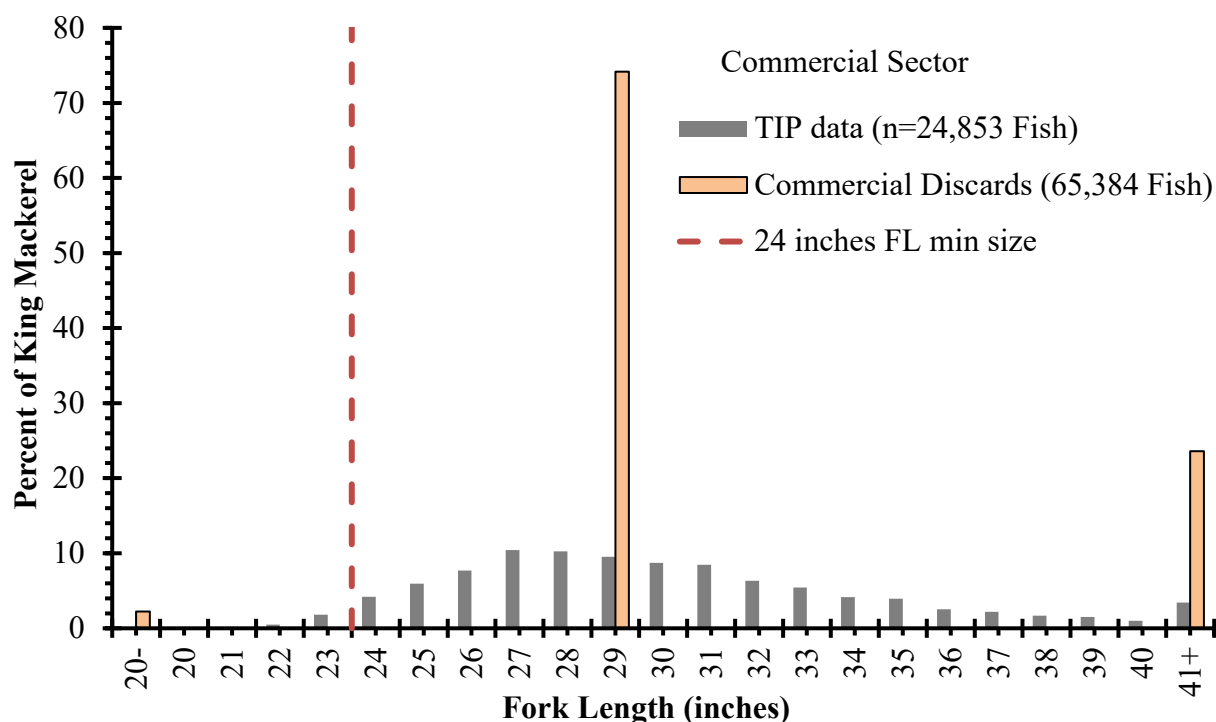
### **Decrease the Size Limit for Atlantic King Mackerel**

Amendment 34 to the Fishery Management Plan for Coastal Migratory Pelagic Resources in the Gulf of Mexico and Atlantic Region (Amendment 34) is considering decreasing the Atlantic migratory group king mackerel commercial and recreational size limit. The current Atlantic migratory group size limit is 24 inches fork length for both the commercial and recreational sector.

#### *Commercial Sector*

Length data on harvested and discarded king mackerel from the commercial sector were collected to explore a decrease in the minimum size limit. King mackerel commercial sector harvest data came from the Southeast Fisheries Science Center (SEFSC) Trip Intercept Program (TIP). TIP data comes from dockside commercial intercepts and records the length of all fish harvested on a trip. TIP data was provided from the SEFSC in April of 2021. King mackerel commercial sector discard data came from the SEFSC commercial observer program. The commercial observer program places observers on commercial trips and the observers record the

length of discarded king mackerel. The commercial observer program had a large sample size of discarded king mackerel ( $n = 24,853$  fish), however, the observer program records king mackerel discard lengths in 30 cm size bins (e.g. 30 to 60 cm fork length, 60 to 90 cm fork length). These large size bins were converted to inches and this resulted in discard length data size bins with large 12-inch interval gaps. **Figure F.4** provides the distribution of commercial king mackerel lengths for both the harvested and discarded fish.



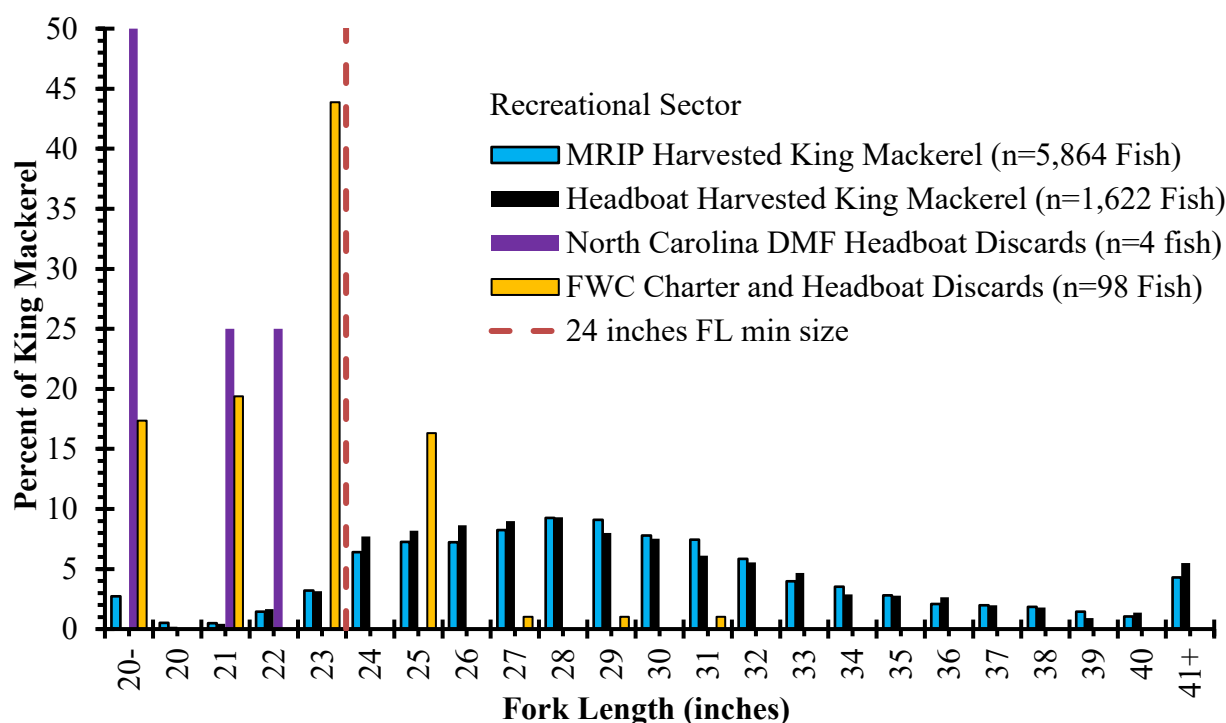
**Figure F.4.** Percent of Atlantic king mackerel lengths in the commercial sector in 1-inch fork length increments by dataset.

Note: Length data came from TIP harvested lengths and commercial observer discard lengths. All of the data came from 2015 through 2020.

The commercial harvest lengths from the TIP data did have some harvest below the 24 inches fork length minimum size. About 2.5% of the TIP lengths were below the minimum size limit. Therefore, there is some harvest of undersized fish, however it's a low percentage (about 2.5%) of the total harvested fish. The discarded lengths also had some lengths below the size limit with 2.2% of the total discarded fish being below the minimum size limit. However, these undersized king mackerel were discarded which is following the current size limit. The median of the discarded king mackerel lengths (about 74%) were about 29 inches fork length suggesting a percentage of legal sized king mackerel are discarded in the commercial sector. However, the discarded king mackerel lengths from the commercial observer program were recorded in large size bins making it difficult to clearly distinguish the percentage of king mackerel lengths discarded that were below and above the minimum size limit. The sparse data available on commercial discards prevent a thorough analysis of the impact on landings from a decrease in size limit.

### Recreational Sector

Length data on harvested and discarded king mackerel from the recreational sector were collected to explore if a decrease in the size limit. King mackerel harvest data came from two different recreational surveys: NOAA's Marine Recreational Information Program (MRIP) and the SEFSC's Southeast Region Headboat Survey (Headboat). Atlantic king mackerel MRIP harvest data from 2015 through 2020 were downloaded from the NOAA fisheries recreational landings website (fisheries.noaa.gov) in April of 2021. Specifically, the MRIP size files were downloaded from the website. Headboat biological profile data were provided from the SEFSC in July of 2020. King mackerel discard data were collected from two different recreational observer projects: North Carolina Department of Marine Fisheries (DMF) and Florida Fish and Wildlife (FWC) observer programs. These two programs place observers on charter and headboat fishing trips to measure the discards. The North Carolina DMF only had king mackerel discards available from headboat trips, but the FWC program had king mackerel discards available from both charter and headboats. Both the North Carolina DMF and the east Florida FWC 2015 to 2020 king mackerel discard data were provided in March of 2020. **Figure E.5** provides the distribution of recreational king mackerel lengths for both harvested and discarded fish.



**Figure F.5.** Percent of Atlantic king mackerel lengths from the recreational sector in 1-inch fork length increments by dataset.

Note: Length data came from MRIP harvested lengths, Headboat harvested lengths, North Carolina DMF headboat discard lengths, and FWC charter and headboat discard lengths. All of the data came from 2015 through 2020.

The recreational harvest lengths from the MRIP and Headboat both had some harvest below the 24 inches fork length minimum size. About 8.3% of the MRIP and 5.4% of the SRHS harvest king mackerel lengths were below the minimum size limit. Therefore, there is some harvest of undersized king mackerel, however it's a low percentage (less than 10%) of the of the

**Coastal Migratory Pelagics**  
**Amendment 34**



total harvested king mackerel. The discarded lengths also had some length data from king mackerel below the size limit with 100% of the North Carolina DMF lengths below the minimum size limit, but the North Carolina DMF only had a sample of 4 king mackerel. The FWC charter and headboat discards had a sample of 98 fish and about 80% of the discarded lengths were below the minimum size limit. Therefore 20% of the FWC discarded lengths were king mackerel that were above the minimum size limit.

Action 5 of Amendment 34 is considering a reduction in the recreational size limit from 24 inches fork length down to 22 inches, 20 inches, and no minimum size limit. The discarded king mackerel length data from the FWC charter and headboat trips had the majority (about 44%) of the recreational discards at 23 inches fork length and has discarded lengths down to 22 (19% of discard lengths) and 20 inches fork length (17% of discard lengths). This suggest that there are king mackerel being caught at the lengths below the current minimum size limit of 24 inches fork length. Therefore, the decrease in the minimum size limit will likely result in an increase in recreational landings.

# **Appendix G. Bycatch Practicability Analysis**

## **Standardized Bycatch Reporting Requirement**

The standardized bycatch reporting methodology (SBRM) for all South Atlantic fisheries proposed in the Final Comprehensive SFA Amendment is to “include reporting requirements as specified in the Atlantic States Cooperative Coastal Statistics Program (ACCSP). National Marine Fisheries Service (NMFS) implemented this SBRM in a final rule published 11/02/99, stating the improved reporting requirements specified in the ACCSP, along with the required commercial logbook reporting expected January 1, 2001, will significantly improve bycatch reporting.

The SBRM for all Gulf of Mexico fisheries proposed in the Generic SFA Amendment is that: 1) MRFSS provides information on bycatch in the recreational fisheries, 2) cooperative state-federal programs developed or under development by the Gulf Council are anticipated to provide adequate information on bycatch for all fisheries, and 3) NMFS is developing a bycatch reporting requirement for commercial logbooks (to be implemented about 6 months after the Generic SFA Amendment). NMFS disapproved this SBRM stating that the Gulf Council had not fulfilled the Magnuson-Stevens Act requirement to develop standardized reporting to assess the amount and type of bycatch.

Current SBRM includes: MRIP collects bycatch data from private anglers and for-hire fishermen; SEFSC headboat survey requires collection of bycatch data in electronic logbooks and from observed trips; all commercial fishermen are required to submit logbooks and selected commercial fishermen report bycatch in logbooks (20% of all commercial permit holders within a gear type); and gillnet component of the fishery observed indirectly via the Atlantic Shark observer program.

## **Current Bycatch Reporting**

Coastal Migratory Pelagics (i.e., king mackerel, Spanish mackerel, and cobia) are managed by a joint permit for the South Atlantic and Gulf. The South Atlantic jurisdiction extends from east Florida to New York. Commercial discards are reported via the supplemental discard logbook program and recreationally via MRIP and the SEFSC headboat survey. Commercial discard data are collected using the Supplemental Discard Logbook that is sent to a 20% stratified random sample of the active commercial permit holders in the fishery. In addition to the number of self-reported discards per trip and gear, the SEFSC Supplemental Discard Logbook attempts to quantify the reason why discarding occurs using four codes.<sup>5</sup> Fishers can specify multiple reasons for a species discarded on the same trip and gear.

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<sup>5</sup> More information on the discard logbook is available here <https://www.fisheries.noaa.gov/about/southeast-fisheries-science-center>.

- 1) Regulation – Not legal size: Animals that would have been sold, however local or federal size limits forbid it.
- 2) Regulation – Out of season: Animals that would have been sold, however the local or federal fishing season is closed.
- 3) Regulation – Other: Animals that would have been sold, however a local or federal regulation other than size or season, forbids it (Other than size or season; i.e., protected species, not properly permitted).
- 4) Market conditions: Animals that have no market value (rotten, damaged).

For the recreational sector, estimates of discards from private recreational and charter fishermen are collected through the Marine Recreational Information Program (MRIP)/Fishing Effort Survey (FES). MRIP/FES replaced MRFSS. The Southeast Region Headboat Survey, which includes limited headboat observer sampling, collects discard information from headboat vessels. There is no commercial observer program for coastal migratory pelagics fishery; however, the gillnet component is observed indirectly via the Atlantic Shark observer program. The U.S. National Bycatch Report (NMFS 2011) indicates there is minimal bycatch associated with pelagic trolling gear that targets the Coastal Migratory Pelagic and Dolphin Wahoo fisheries (Table 4.2.A.8, NMFS 2011).

### **Characteristics of Bycatch**

#### *Amount and Type of Bycatch*

##### Commercial Sector

Mean commercial landings (2015-2019) of Gulf CMP species were highest from trolling gear (44%), handline gear (25%), and net gear (18%). Mean commercial landings (2015-2019) of South Atlantic CMP species were highest from trolling (58%) and net gear (39%). Other gear, including handline gear, represent 3% of the South Atlantic CMP landings.

The coastal discard logbook was used to compute discard levels for the coastal migratory pelagics fishery by gear. Assignment to the fishery was based on CMP landings comprising greater than 50% of the reported landings on the trip. The tables below are provided separately for the two regions because observer coverage and management measures for the two regions are determined separately. The Gulf CMP fishery is characterized by low discards of CMP and other species (Table G-1 and Figure G-1). Most discards are from trolling gear. The South Atlantic CMP fisheries are also characterized by relatively low discards for all species (Table G-1 and Figure G-1). The discard levels from gillnet, handline, and trolling gear are roughly equivalent. The ratio of commercial landings to commercial discards is not compared, because commercial landings are reported in pounds and discards are reported in numbers of fish; however, commercial discards appear to be very low relative to landed commercial catch for both regions. Both commercial and recreational discard estimates may differ from stock assessments due to difference in data sources or methodology.

The discard logbook only contains self-reported discards from a 20% sub-sample by region and gear fished; thus, it may not be representative of the entire fishery. Of the four discard codes, not legal size and market conditions was the most common reason selected for CMP species based on the number of self-reported discards depending on the species and region (Table G-2). The

**Coastal Migratory Pelagics**

#### **Appendix G. Bycatch Practicability Analysis**

minimum size limit appears to be the primary driver of commercial discards for all CMP species in the Gulf of Mexico and for cobia and Spanish mackerel in the South Atlantic. Market conditions appears to be the primary driver of discards for South Atlantic king mackerel. Commercial harvest in the CMP fisheries results in the occasional bycatch of sea turtles, Atlantic sturgeon, and smalltooth sawfish. The 2015 biological opinion on CMP fisheries describes the best available information on past and present interactions.

**Table G-1.** Top ten species categories with mean estimated commercial discards (#fish) during CMP trips (defined as trips with >50% of landings from CMP stocks), sorted from largest to smallest, by gear, for the 2015-2019 period.

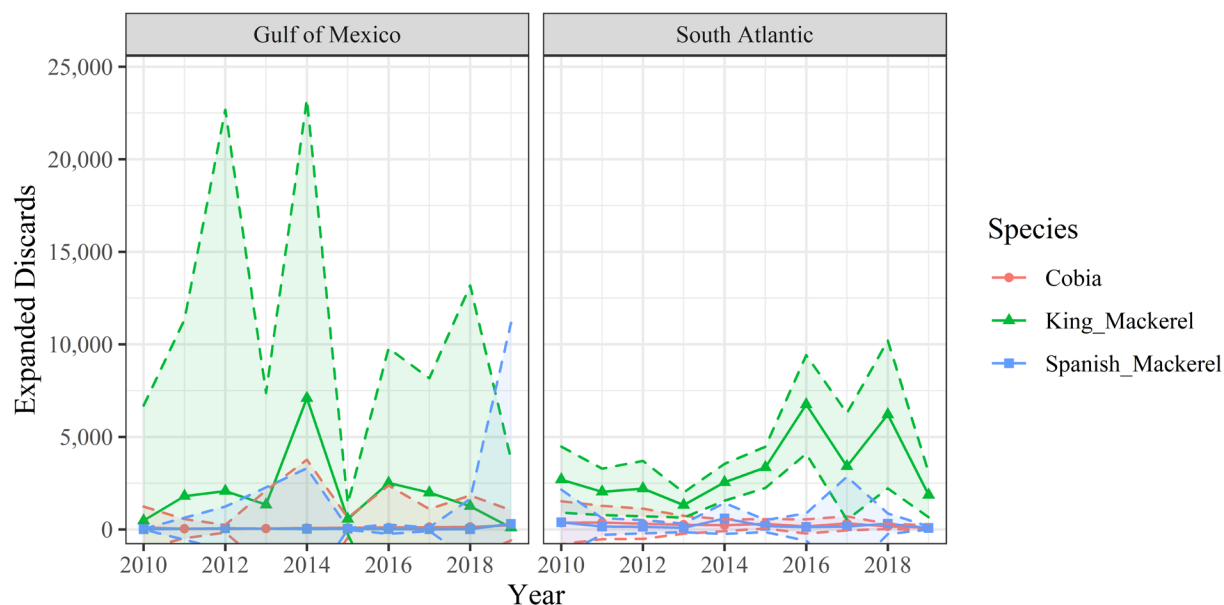
**A. Gulf of Mexico**

Species Category	Gillnet	Species Category	Handline	Species Category	Trolling
American Shad	272	Red Snapper	136	King Mackerel	725
Sharks					
Unclassified	108	King Mackerel	128	Crevalle Jack	216
Grass Porgy	74	Spanish Mackerel	94	Red Snapper	141
Sea Catfishes	50	Bluefish	80	Sharks Unclassified	97
Bonnethead Shark	29	Gray Triggerfish	76	Little Tunny	64
Grunts					
Unclassified	29	Yellow Jack	62	Blacktip Shark	60
Ladyfish	26	Crevalle Jack	58	Cobia	44
Weakfish	25	Blue Runner	47	Red Drum	25
Blacktip Shark	15	Bony Fish		Amberjacks	
		Unclassified	24	Unclassified	19
Red Grouper	13	Sharks			
		Unclassified	20	Greater Amberjack	15

**B. South Atlantic**

Species Category	Gillnet	Species Category	Handline	Species Category	Trolling
Menhaden	7,117	King Mackerel	1,238	King Mackerel	2,787
Sharks					
Unclassified	337	Red Snapper	527	Sandbar Shark	225
Rudderfish	289	Vermilion Snapper	249	Red Snapper	185
Porgies				Amberjacks	
Unclassified	217	Red Porgy	142	Unclassified	163
Rays Unclassified	206	Black Sea Bas	117	Sharks Unclassified	154
Bony Fish		Sharks		Atlantic Sharpnose	
Unclassified	196	Unclassified	102	Shark	107
Atlantic Sharpnose		Grunts			
Shark	192	Unclassified	101	Barracudas	105
Bluefish	118	Blue Runner	95	Little Tunny	91
Skates					
Unclassified	82	Barracudas	88	Remoras	82
		Snappers			
Sandbar Shark	75	Unclassified	85	Cobia	56

Source: SEFSC Coastal Logbook (accessed May 2020) and Discard Logbook (accessed May 2020).



**Figure G-1.** Annual expanded discard estimates for CMP species (number of fish) by year and region from 2010 through 2019 with 95% confidence interval.

Source: SEFSC Coastal Logbook (accessed May 2020) and Discard Logbook (accessed May 2020).

**Table G-2.** The percentage of unexpanded discards for each discard reason out of the total number of self-reported discards reported to the Supplemental Discard Logbook in the Gulf of Mexico and South Atlantic from 2015 through 2019 for CMP species.

**A. Gulf of Mexico**

Species	Not Legal Size	Out of Season	Other Regulations	Market Conditions
Cobia	78%	0%	13%	8%
King Mackerel	65%	32%	2%	0%
Spanish Mackerel	77%	0%	17%	6%

**B. South Atlantic**

Species	Not Legal Size	Out of Season	Other Regulations	Market Conditions
Cobia	63%	6%	31%	1%
King Mackerel	28%	0%	19%	53%
Spanish Mackerel	90%	0%	9%	1%

Source: SEFSC Supplemental Commercial Discard Logbook (May 2020).

Recreational Sector

From 2015 through 2019, the other most discarded species on trips capturing a CMP species in the Gulf of Mexico was red snapper for headboat and charter modes (Table G-3). From 2015 through 2019, the other most discarded species on trips capturing a CMP species in the South Atlantic was black sea bass for headboat and charter modes (Table G-3). In both regions, tomtate, blue runner, gray triggerfish and Spanish mackerel were in the top ten for most modes. Recreational discards of CMP species are much lower than the landings for most modes of fishing (Table G-4); however, private and charter discards of cobia are relatively high. Across all of the CMP species, the magnitude of private mode discards is much higher compared to the headboat or charter modes.

**Table G-3.** From 2015 through 2019, the top ten species with discards reported on trips capturing a CMP species by recreational mode and region. Species are sorted by number of total discards for each mode from 2015-2019.

**A. Gulf of Mexico**

Rank	HEADBOAT		CHARTER		PRIVATE	
	Species	Discards (N)	Species	Discards (N)	Species	Discards (N)
1	Red Snapper	135,074	Red Snapper	879,641	Spotted Seatrout	10,183,221
2	Gray Triggerfish	102,231	Gray Triggerfish	737,277	Ladyfish	6,469,167
3	Red Grouper	52,792	Spanish Mackerel	399,356	Spanish Mackerel	6,031,247
4	White Grunt	37,405	Red Grouper	354,287	Red Snapper	5,545,785
5	Vermilion Snapper	36,140	Spotted Seatrout	281,654	Gray Snapper	3,165,484
6	Tomtate	26,812	White Grunt	256,977	White Grunt	2,631,791
7	Gag	15,837	Blue Runner	243,670	Hardhead Catfish	2,310,774
8	Black Sea Bass	13,881	Gray Snapper	193,107	Blue Runner	2,034,310
9	Sand Perch	9,956	Hardhead Catfish	190,490	Pinfish	1,982,762
10	Greater Amberjack	8,588	Gag	182,702	Scaled Sardine	1,851,526

Note: Charter and private modes do not include data from LA and TX

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**B. South Atlantic**

Rank	HEADBOAT		CHARTER		PRIVATE	
	Species	Discards (N)	Species	Discards (N)	Species	Discards (N)
1	Black Sea Bass	324,333	Black Sea Bass	236,568	Spanish Mackerel	3,369,596
2	Vermilion Snapper	185,112	Red Snapper	205,024	Bluefish	3,331,048
3	Tomtate	140,512	Spanish Mackerel	118,850	Black Sea Bass	2,909,537
4	Red Snapper	107,809	Vermilion Snapper	93,064	Red Snapper	2,169,789
5	Gray Triggerfish	64,802	Grunt Family	84,404	Vermilion Snapper	1,232,790
6	Blue Runner	62,187	Blue Runner	78,253	Tomtate	1,113,810
7	Atlantic Sharpnose Shark	43,445	King Mackerel	65,233	Little Tunny	1,093,830
8	Yellowtail Snapper	28,277	Bluefish	64,602	King Mackerel	1,058,777
9	Mutton Snapper	28,075	Tomtate	57,117	Blue Runner	935,603
10	Red Porgy	22,821	Greater Amberjack	55,667	Gray Triggerfish	803,369

Sources: MRIP FES survey data available at <https://www.fisheries.noaa.gov/recreational-fishing-data/recreational-fishing-data-downloads>; Headboat data from SEFSC Headboat Logbook CRNF files (expanded; July 2020).

**Table G-4.** CMP headboat, charter, and private mean annual estimates of landings and discards (2015-2019) by region. Headboat and MRIP (charter and private) landings and discards are in numbers of fish.

**A. Gulf of Mexico**

Species	HEADBOAT			CHARTER			PRIVATE		
	Landings (N)	Discards (N)	Ratio (D:L)	Landings (N)	Discards (N)	Ratio (D:L)	Landings (N)	Discards (N)	Ratio (D:L)
Cobia	618	254	41%	6,196	6,909	112%	58,902	145,552	247%
King Mackerel	9,655	153	2%	120,167	35,690	30%	325,221	159,107	49%
Spanish Mackerel	2,438	98	4%	249,887	79,871	32%	1,173,804	1,208,243	103%

**B. South Atlantic**

Species	HEADBOAT			CHARTER			PRIVATE		
	Landings (N)	Discards (N)	Ratio (D:L)	Landings (N)	Discards (N)	Ratio (D:L)	Landings (N)	Discards (N)	Ratio (D:L)
Cobia	929	1,184	127%	5,267	5,188	98%	78,432	106,211	135%
King Mackerel	10,658	1,503	14%	84,702	13,047	15%	489,817	211,757	43%
Spanish Mackerel	6,308	1,059	17%	131,520	23,769	18%	846,372	673,919	80%

Sources: MRIP FES data from SEFSC Recreational ACL Dataset (September 2020); Headboat data from SEFSC Headboat Logbook CRNF files (expanded; July 2020).

### Importance of Bycatch in Estimating Fishing Mortality and Effect of Bycatch on Ecosystems

The ecological effects of bycatch mortality are the same as fishing mortality from directed fishing efforts. If not properly managed and accounted for, either form of mortality could potentially reduce stock biomass to an unsustainable level. Release mortality rates for the CMP fishery are widely variable depending on species and fishing mode ranging from 5% for cobia in

the Gulf of Mexico to 100% for the South Atlantic king mackerel commercial gillnet fishery (Table G-5).

**Table G-5.** Release mortality rates of CMP species from recent assessments.

<b>Species</b>	<b>Region</b>	<b>Fishery</b>	<b>Release mortality</b>	<b>Data Source</b>
Cobia	Gulf of Mexico	Recreational	5%	SEDAR 28 Update (2019)
Cobia	Gulf of Mexico	Commercial	5%	SEDAR 28 Update (2019)
Cobia	South Atlantic	Recreational	5%	SEDAR 58 (2020)
Cobia	South Atlantic	Commercial Vertical Line	5.6%	SEDAR 58 (2020)
Cobia	South Atlantic	Commercial Gill Net	55%	SEDAR 58 (2020)
King Mackerel	Gulf of Mexico & South Atlantic	Recreational Private & Charter	20%	SEDAR 38 Update (2020)
King Mackerel	Gulf of Mexico & South Atlantic	Recreational Headboat	22%	SEDAR 38 Update (2020)
King Mackerel	Gulf of Mexico	Commercial Handline	25%	SEDAR 38 Update (2020)
King Mackerel	South Atlantic	Commercial Handline	20%	SEDAR 38 Update (2020)
King Mackerel	South Atlantic	Commercial Gillnet	100%	SEDAR 38 Update (2020)
Spanish Mackerel	Gulf of Mexico & South Atlantic	Recreational	20%	SEDAR 28 (2013)
Spanish Mackerel	Gulf of Mexico & South Atlantic	Commercial Handline	10%	SEDAR 28 (2013)



## **Appendix H. Fishery Impact Statement**

To be completed.

## Appendix I. History of Management

The Fishery Management Plan for Coastal Migratory Pelagic Resources in the Gulf of Mexico and South Atlantic Region (CMP FMP; GMFMC/SAFMC 1982), with an environmental impact statement (EIS), was approved in 1982 and implemented by regulations effective in February 1983. Managed species included king mackerel, Spanish mackerel, and cobia. The CMP FMP treated king and Spanish mackerel as unit stocks in the Atlantic and Gulf of Mexico (Gulf). The CMP FMP established allocations for the recreational and commercial sectors harvesting these stocks, and the commercial allocations were divided between net and hook-and-line fishermen.

### CMP FMP Amendments

**Amendment 1**, with EIS, implemented in September 1985, provided a framework procedure for pre-season adjustment of total allowable catch (TAC), revised the estimate of king mackerel maximum sustainable yield (MSY) downward, recognized separate Atlantic and Gulf migratory groups of king mackerel, and established fishing permits and bag limits for king mackerel. Commercial allocations among gear users, except purse seines, which were allowed 6% of the commercial allocation of TAC, were eliminated. The Gulf commercial allocation for king mackerel was divided into Eastern and Western Zones for the purpose of regional allocation, with 69% of the remaining allocation provided to the Eastern Zone and 31% to the Western Zone. Amendment 1 also established minimum size limits for Spanish mackerel at 12 inches fork length (FL) or 14 inches total length (TL), and for cobia at 33 inches FL or 37 inches TL.

**Amendment 2**, with an environmental assessment (EA), implemented in July 1987, revised MSY for Spanish mackerel downward, recognized two migratory groups, established allocations of TAC for the commercial and recreational sectors, and set commercial quotas and bag limits. Charter boat permits were established, and it was clarified that TAC must be set below the upper range of the acceptable biological catch. The use of purse seines on overfished stocks was prohibited, and their allocation of TAC was redistributed under the 69%:31% split.

**Amendment 3**, with EA, was partially approved in August 1989, revised, resubmitted, and approved in April 1990. It prohibited drift gillnets for coastal pelagic species and purse seines for the overfished migratory groups of mackerels.

**Amendment 4**, with EA, implemented in October 1989, reallocated Atlantic migratory group Spanish mackerel equally between recreational and commercial fishermen.

**Amendment 5**, with EA, implemented in August 1990, made the following changes in the management regime:

- Extended the management area for Atlantic migratory groups of mackerels through the Mid-Atlantic Council's area of jurisdiction;
- Revised problems in the fishery and plan objectives;
- Revised the fishing year for Gulf Spanish mackerel from July-June to April-March;
- Revised the definition of "overfishing;"
- Added cobia to the annual stock assessment procedure;

- Provided that the South Atlantic Council will be responsible for pre-season adjustments of TACs and bag limits for the Atlantic migratory groups of mackerels while the Gulf Council will be responsible for Gulf migratory groups;
- Continued to manage the two recognized Gulf migratory groups of king mackerel as one until management measures appropriate to the eastern and western migratory groups can be determined;
- Re-defined recreational bag limits as daily limits;
- Deleted a provision specifying that bag limit catch of mackerel may be sold;
- Provided guidelines for corporate commercial vessel permits;
- Specified that Gulf migratory group king mackerel may be taken only by hook-and-line and run-around gillnets;
- Imposed a bag and possession limit of two cobia per person per day;
- Established a minimum size of 12 inches FL or 14 inches TL for king mackerel and included a definition of “conflict” to provide guidance to the Secretary.

**Amendment 6**, with EA, implemented in November of 1992, made the following changes:

- Identified additional problems and an objective in the fishery;
- Provided for rebuilding overfished stocks of mackerels within specific periods;
- Provided for biennial assessments and adjustments;
- Provided for more seasonal adjustment actions;
- Allowed for Gulf migratory group king mackerel stock identification and allocation when appropriate;
- Provided for commercial Atlantic migratory group Spanish mackerel possession limits;
- Changed commercial permit requirements to allow qualification in one of three preceding years;
- Discontinued the reversion of the bag limit to zero when the recreational quota is filled;
- Modified the recreational fishing year to the calendar year; and
- Changed the minimum size limit for king mackerel to 20 inches FL, and changed all size limit measures to FL only.

**Amendment 7**, with EA, implemented in November 1994, equally divided the Gulf commercial allocation in the Eastern Zone at the Miami-Dade-Monroe county line in Florida. The sub-allocation for the area from Monroe County through Western Florida is equally divided between commercial hook-and-line and net gear users.

**Amendment 8**, with EA, implemented in March 1998, made the following changes to the management regime:

- Clarified ambiguity about allowable gear specifications for the Gulf migratory group king mackerel fishery by allowing only hook-and-line and run-around gillnets. However, catch by permitted, multi-species vessels and bycatch allowances for purse seines were maintained;
- Established allowable gear in the South Atlantic and Mid-Atlantic areas as well as providing for the Regional Administrator to authorize the use of experimental gear;
- Established the Gulf and South Atlantic Councils’ intent to evaluate the impacts of permanent jurisdictional boundaries between the Gulf and South Atlantic Councils and

development of separate fishery management plans for coastal pelagic species in these areas;

- Established a moratorium on commercial king mackerel permits until no later than October 15, 2000, with a qualification date for initial participation of October 16, 1995;
- Increased the income requirement for a king or Spanish mackerel permit to 25% of earned income or \$10,000 from commercial sale of catch or charter or head boat fishing in one of the three previous calendar years, but allowed for a one-year grace period to qualify under permits that are transferred;
- Legalized retention of up to five cut-off (damaged) king mackerel on vessels with commercial trip limits;
- Set an optimum yield target at 30% static spawning potential ratio (SPR) for the Gulf and 40% static SPR for the Atlantic;
- Provided the South Atlantic Council with authority to set vessel trip limits, closed seasons or areas, and gear restrictions for Gulf migratory group king mackerel in the North Area of the Eastern Zone (Dade/Monroe to Volusia/Flagler county lines);
- Established various data consideration and reporting requirements under the framework procedure;
- Modified the seasonal framework adjustment measures and specifications (see Appendix A);
- Expanded the management area for cobia through the Mid-Atlantic Council's area of jurisdiction (to New York).

**Amendment 9**, with EA, implemented in April 2000, made the following changes to the management regime:

- Reallocated the percentage of the commercial allocation of TAC for the North Area (Florida east coast) and South/West Area (Florida west coast) of the Eastern Zone to 46.15% North and 53.85% South/West and retained the recreational and commercial allocations of TAC at 68% recreational and 32% commercial;
- Subdivided the commercial hook-and-line king mackerel allocation for the Gulf migratory group, Eastern Zone, South/West Area (Florida west coast) by establishing two subzones with a dividing line between the two subzones at the Collier/Lee county line;
- Established regional allocations for the west coast of Florida based on the two subzones with 7.5% of the Eastern Zone allocation of TAC being allowed from Subzone 2 and the remaining 92.5% being allocated as follows:
  - 50% - Florida east coast
  - 50% - Florida west coast that is further subdivided:
    - 50% - Net Fishery
    - 50% - Hook-and-Line Fishery
- Established a trip limit of 3,000 pounds per vessel per trip for the Western Zone;
- Established a moratorium on the issuance of commercial king mackerel gillnet endorsements and allow re-issuance of gillnet endorsements to only those vessels that: 1) had a commercial mackerel permit with a gillnet endorsement on or before the moratorium control date of October 16, 1995 (Amendment 8), and 2) had landings of king mackerel using a gillnet in one of the two fishing years, 1995/1996 or 1996/1997, as verified by the NMFS or trip tickets from Florida; allowed transfer of gillnet endorsements to immediate family members (son, daughter, father, mother, or spouse)

only; and prohibited the use of gillnets or any other net gear for the harvest of Gulf migratory group king mackerel north of an east/west line at the Collier/Lee county line;

- Increased the minimum size limit for Gulf migratory group king mackerel from 20 inches to 24 inches FL;
- Allowed the retention and sale of cut-off (damaged), legal-sized king and Spanish mackerel within established trip limits.

**Amendment 10**, with Supplemental Environmental Impact Statement (SEIS), approved June 1999, incorporated essential fish habitat provisions for the South Atlantic.

**Amendment 11**, with SEIS, partially approved in December 1999, included proposals for mackerel in the South Atlantic Council's Comprehensive Amendment Addressing Sustainable Fishery Act Definitions and other Provisions in FMPs of the South Atlantic Region.

**Amendment 12**, with EA, implemented October 2000, extended the commercial king mackerel permit moratorium from its current expiration date of October 15, 2000, to October 15, 2005, or until replaced with a license limitation, limited access, and/or individual fishing quota or individual transferable quota system, whichever occurs earlier.

**Amendment 13**, with SEIS, implemented August 2002, established two marine reserves in the EEZ of the Gulf in the vicinity of the Dry Tortugas, Florida, known as Tortugas North and Tortugas South in which fishing for coastal migratory pelagic species is prohibited. This action complements previous actions taken under the National Marine Sanctuaries Act.

**Amendment 14**, with EA, implemented July 2002, established a three-year moratorium on the issuance of charter vessel and head boat Gulf migratory group king mackerel permits in the Gulf Council unless sooner replaced by a comprehensive effort limitation system. The control date for eligibility was established as March 29, 2001. Also includes provisions for eligibility, application, appeals, and transferability.

**Amendment 15**, with EA, implemented August 2005, established an indefinite limited access program for the commercial king mackerel fishery in the EEZ under the jurisdiction of the Gulf, South Atlantic Council, and Mid-Atlantic Council. It also changed the fishing season to March 1 through February 28/29 for the Atlantic migratory groups of king and Spanish mackerel.

**Amendment 16** was not developed.

**Amendment 17**, with SEIS, implemented June 2006, established a limited access system on for-hire reef fish and coastal migratory pelagic permits. Permits are renewable and transferable in the same manner as currently prescribed for such permits. There will be a periodic review at least every 10 years on the effectiveness of the limited access system.

**Amendment 18**, with EA, implemented in January 2012, established ACLs, ACTs, and AMs for king mackerel, Spanish mackerel, and cobia. The amendment also established both Atlantic and Gulf migratory groups for cobia; modified the framework procedures; and removed the following species from the FMU: cero, little tunny, dolphin and bluefish. The South Atlantic and

Gulf Councils approved the amendment for formal review in August 2011. The amendment was approved by the Secretary of Commerce in December 2011.

**Amendment 20A**, with EA, implemented July 2014, prohibits the sale of king and Spanish mackerel caught under the bag limit in each region except under limited circumstances. For the Gulf of Mexico, the amendment prohibits the sale of king and Spanish mackerel caught under the bag limit unless those fish are either caught on a for-hire trip and the vessel has both a for-hire and commercial vessel permit, or the fish are caught as part of a state-permitted tournament and the proceeds from the sale are donated to charity. For the Atlantic region, the amendment prohibits the sale of king and Spanish mackerel caught under the bag limit unless the fish are caught as part of a state-permitted tournament and the proceeds from the sale are donated to charity. In addition, the amendment removes the income qualification requirement for king and Spanish mackerel commercial permits.

**Amendment 20B**, with EA, implemented in March 2015, created a transit provision for areas closed to king mackerel and established Northern and Southern zones with separate commercial quotas for Atlantic king and Spanish mackerel.

**Amendment 21**, with EA, implemented in January 2012, addressed recreational fishing measures in South Carolina Special Management Zones (SMZs).

**Amendment 22**, with EA, implemented in January 2014, required weekly electronic reporting for headboats in the South Atlantic.

**Amendment 23**, with EA, implemented in August 2014, required Atlantic king mackerel and Spanish mackerel permit holders to sell to a federal dealer and required weekly electronic reporting for federal dealers.

**Amendment 26**, with EA, implemented in May 2017, updated the Gulf and Atlantic king mackerel ACLs based on SEDAR 30; modified the stock boundary between the Gulf and Atlantic migratory groups of king mackerel to be at the Miami-Dade/Monroe county line in southeastern Florida, with the Gulf Council managing king mackerel to that line year-round; allowed bag limit sales on Atlantic king mackerel in the small coastal shark gillnet fishery; increased the recreational bag limit from 2-fish per person per day to 3-fish per person per day, other than off Florida and revised the commercial trip limits for Atlantic king mackerel.

**Framework Amendment 6**, implemented September 2019, updated the Atlantic king mackerel commercial trip limits in the Atlantic Southern Zone during Season 1 (March 1 through September 30) of the fishing year.

**Framework Amendment 8**, implemented September 2020, updated the Atlantic king mackerel commercial trip limits in the Atlantic Southern Zone during Season 2 (October 1 through the end of February) of the fishing year.

**Emergency Rule**, effective September 17, 2020, through March 16, 2021, updated the recreational bag limit for Atlantic migratory group king mackerel (Atlantic king mackerel) from: (1) 3-fish per person to 4-fish per person in federal waters from the Connecticut/Rhode Island/New York boundary to the Georgia/Florida boundary, and (2) 2-fish per person to 4-fish per person in federal waters from the Georgia/Florida boundary south to the Miami-Dade/Monroe County, Florida boundary.

**DRAFT DOCUMENT**