

# Modifications to the Gulf of Mexico Migratory Group King Mackerel Catch Limits and Sector Allocations



## Amendment 33 to the Fishery Management Plan for the Coastal Migratory Pelagic Resources of the Gulf of Mexico and Atlantic Region

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# AMENDMENT 33 TO THE FISHERY MANAGEMENT PLAN FOR COASTAL MIGRATORY PELAGIC RESOURCES IN THE GULF OF MEXICO AND ATLANTIC REGION

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## Type of Action

Administrative  
 Draft

Legislative  
 Final

## ABBREVIATIONS USED IN THIS DOCUMENT

ABC	acceptable biological catch
ACL	annual catch limit
AM	accountability measure
CMP	coastal migratory pelagics
CHTS	coastal household telephone survey
Councils	Gulf of Mexico and South Atlantic Fishery Management Councils
EA	environmental assessment
EIS	environmental impact statement
F	fishing mortality
FES	Fishing Effort Survey
FMP	Fishery Management Plan
Gulf	Gulf of Mexico
Gulf Council	Gulf of Mexico Fishery Management Council
lw	landed weight
MFMT	maximum fishing mortality threshold
mp	million pounds
MRIP	Marine Recreational Information Program
MSY	maximum sustainable yield
OFL	overfishing limit
OY	optimum yield
RFA	regulatory flexibility analysis
RIR	regulatory impact review
SAFMC	South Atlantic Fishery Management Council
SEDAR	Southeast Data, Assessment, and Review
SEFSC	Southeast Fisheries Science Center
South Atlantic Council	South Atlantic Fishery Management Council
SSC	Scientific & Statistical Committee
TAC	total allowable catch
ww	whole weight

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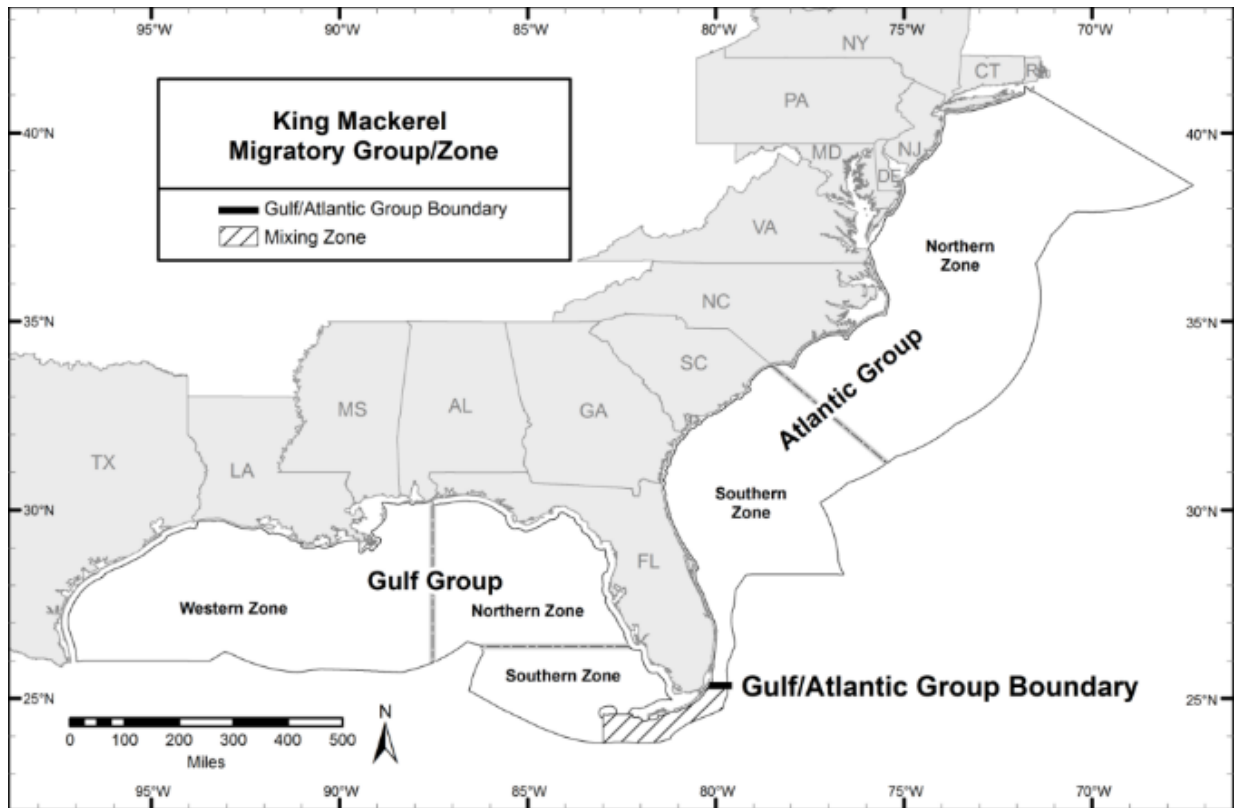
# CHAPTER 1. INTRODUCTION

## 1.1 Background

Amendment 33 to the Fishery Management Plan (FMP) for Coastal Migratory Pelagic (CMP) Resources of the Gulf of Mexico and Atlantic Region (CMP FMP) is being developed by the Gulf of Mexico (Gulf) Fishery Management Council (Gulf Council) and the South Atlantic Fishery Management Council (South Atlantic Council) to address the results of the Southeast Data Assessment and Review (SEDAR) 38 Update (2020) stock assessment and subsequent overfishing limit (OFL) and acceptable biological catch (ABC) recommendations from the Gulf Council’s Scientific and Statistical Committee (SSC). Amendment 33 proposes revisions to the Gulf migratory group of king mackerel allocation between the commercial and recreational sectors and modifies the OFL, ABC, and the total and sector annual catch limits (ACL).

King mackerel is managed jointly by the Gulf Council and South Atlantic Council (together: “Councils”) under the CMP FMP. Two migratory groups of king mackerel are managed in the southeastern US: the Atlantic migratory group (Atlantic king mackerel) and the Gulf migratory group (Gulf king mackerel). The current stock and management boundaries were established in Amendment 26 to the CMP FMP (GMFMC and SAFMC 2016), and are shown in Figure 1.1.1.





**Figure 1.1.1.** Gulf and Atlantic king mackerel stock boundaries used for management purposes by the Councils. The Gulf is divided into commercial management Zones, which are managed by the Gulf Council, and includes the mixing zone (hashed area). The South Atlantic Council management area is divided into a Northern and Southern Zone, extending north to the easternmost tip of Long Island, New York.

### *Migratory Groups*

Gulf king mackerel is found from Texas to the Miami-Dade/Monroe County line in southeastern Florida, and includes a seasonal mixing zone south of U.S. Highway 1 in the Florida Keys (Figure 1.1.1). This mixing zone occurs between November 1 and April 30, within which king mackerel from the Gulf and Atlantic migratory groups are thought to mix (SEDAR 38 2014). Management authority over this region was designated to the Gulf Council by the Councils in Amendment 26 (GMFMC and SAFMC 2016). The Gulf Council is responsible for establishing management measures for Gulf king mackerel within its jurisdiction; the South Atlantic Council is responsible for establishing management measures for Atlantic king mackerel within its jurisdiction. This amendment focuses only on Gulf king mackerel; therefore, there will be no further references to Atlantic king mackerel.

## *Gulf King Mackerel*

Found from Texas to the Miami-Dade/Monroe County Line in southeastern Florida. Management authority is given to the Gulf Council; however, Gulf king mackerel is jointly managed between the Gulf and South Atlantic Councils.

### *Sector Allocations*

The total ACL is divided 68% to the recreational sector, and 32% to the commercial sector. 2% of the commercial allocation is intended to accommodate the sale of king mackerel by the for-hire component of the recreational sector.

### *Commercial Zones*

Three management zones are established for Gulf king mackerel: the Western zone, which extends from Texas to the Florida-Alabama state line; the Northern Zone, which extends from the Florida-Alabama state line south to the Monroe/Collier County Line in southwestern Florida; and, the Southern Zone, which extends from Monroe/Collier County Line east to the Miami-Dade/Monroe County line in southeastern Florida.

### *Allocations*

Within the Gulf, king mackerel is managed with sector allocations, dividing the total stock ACL with 32% going to the commercial sector and 68% going to the recreational sector. These sector allocations, established in Amendment 1 to the CMP FMP (GMFMC and SAFMC 1985), used the average of available commercial and recreational landings data from the years 1975 – 1979. At that time, it was determined the recreational fishery accounted for approximately 70% of harvest, and the commercial fishery approximately 30%. However, the recreational allocation was reduced to 68% to allow for recreational catch that was sold by the for-hire component of the recreational sector and counted against the commercial allocation. This 2% shift is still included in the current sector allocations for Gulf king mackerel.

In the Gulf, the commercial zone allocations are divided between three zones across two fishing fleets. The three commercial fishing zones are the Western, Northern, and Southern Zones (see Figure 1.1.1). Handline (hook-and-line) fishing for Gulf king mackerel is permitted in all three zones. Run-around gillnet fishing for Gulf king mackerel is permitted only in the Southern Zone.

### *Gulf King Mackerel Landings*

The Gulf king mackerel total ACL is monitored in pounds of landed weight, that is, combined whole and gutted weight (lbs lw). The total Gulf king mackerel ACL has not been exceeded in the past 20 years (Table 1.1.1). The ACL is currently monitored using the Marine Recreational

Information Program's (MRIP) Coastal Household Telephone Survey (CHTS) data currency. Recently, estimates of recreational catch and effort are being calibrated to MRIP's more contemporary Fishing Effort Survey (FES) data currency, which are currently considered to be the best scientific information available. The landings provided in this document include recreational landings in both units for reference; however, a direct comparison between units cannot be made. A more detailed description of the recent changes to the collection of recreational catch and effort data can be found in Appendix A. Commercial landings by commercial zone since the 2001/02 fishing year are provided in Table 1.1.2.

**Table 1.1.1.** Gulf king mackerel recreational (lbs ww) and commercial landings (lbs lw) current sector allocation (32% commercial, 68% recreational), the recreational ACL in MRIP-CHTS and MRIP-FES, the commercial ACL, total landings using MRIP-CHTS and MRIP-FES units, and the total Gulf migratory group ACL in MRIP-CHTS, for the fishing years 2001/2002 – 2019/2020.

Year	Rec. Landings (CHTS)	Rec. Landings (FES)	Rec. ACL (CHTS)	Com. Landings	Com. ACL	Total Landings (CHTS)	Total Landings (FES)	Total ACL (CHTS)
2001/02	3,941,457	9,070,883	6,936,000	2,143,730	3,264,000	6,085,187	11,214,613	10,200,000
2002/03	2,983,798	6,169,130	6,936,000	2,172,736	3,264,000	5,156,534	8,341,866	10,200,000
2003/04	3,498,288	6,823,391	6,936,000	2,239,631	3,264,000	5,737,919	9,063,022	10,200,000
2004/05	2,564,642	5,339,214	6,936,000	2,455,472	3,264,000	5,020,114	7,794,686	10,200,000
2005/06	2,465,383	4,781,778	6,936,000	2,214,562	3,264,000	4,679,945	6,996,340	10,200,000
2006/07	3,319,495	6,074,882	7,344,000	2,268,479	3,456,000	5,587,974	8,343,361	10,800,000
2007/08	2,464,224	4,871,760	7,344,000	2,306,886	3,456,000	4,771,110	7,178,646	10,800,000
2008/09	2,790,428	5,168,997	7,344,000	2,841,106	3,456,000	5,631,534	8,010,103	10,800,000
2009/10	3,261,388	7,939,505	7,344,000	2,624,519	3,456,000	5,885,907	10,564,024	10,800,000
2010/11	1,993,088	5,497,642	7,344,000	2,413,761	3,456,000	4,406,849	7,911,403	10,800,000
2011/12	2,012,068	5,060,923	7,344,000	2,337,022	3,456,000	4,349,090	7,397,945	10,800,000
2012/13	3,224,351	6,856,317	7,344,000	2,613,825	3,456,000	5,838,176	9,470,142	10,800,000
2013/14	2,082,852	3,948,649	7,344,000	2,482,019	3,456,000	4,564,871	6,430,668	10,800,000
2014/15	4,015,683	7,777,977	7,344,000	2,693,209	3,456,000	6,708,892	10,471,186	10,800,000
2015/16	2,531,260	4,812,866	7,344,000	2,593,733	3,456,000	5,124,993	7,406,599	10,800,000
2016/17	2,587,187	4,986,684	6,260,000	2,902,360	2,950,000	5,489,547	7,889,044	9,210,000
2017/18	2,356,343	5,210,721	6,040,000	3,031,888	2,840,000	5,388,231	8,242,609	8,880,000
2018/19	2,338,564	5,044,834	5,920,000	2,780,809	2,790,000	5,119,373	7,825,643	8,710,000
2019/20	1,622,334	3,238,966	5,810,000	2,658,942	2,740,000	4,281,276	5,897,908	8,550,000

Source: SEFSC Commercial ACL data (June 7, 2021), and SEFSC Recreational ACL data (Accessed May 10, 2021 [CHTS] and May 11, 2021 [FES]).

Note: The king mackerel fishing year for the recreational sector and commercial sector Western and Southern Zone is July 1 – June 30. The fishing year for the commercial sector Northern Zone is October 1 – September 30. The total ACL was reduced in the 2016/17 fishing year due to the results of SEDAR 38 (2014) and the mixing zone changing with fish being reallocated to the Atlantic king mackerel migratory group that were previously allotted to the Gulf king mackerel migratory group. Landings are “as reported”, which is a combination of gutted and whole weight.

**Table 1.1.2.** Gulf king mackerel commercial landings (lbs lw) by Zone.

Year	Northern	Southern Gillnet	Southern Handline	Western
2001/02	222,916	316,814	702,997	901,003
2002/03	148,115	349,924	724,848	949,849
2003/04	186,341	458,194	613,714	981,382
2004/05	105,108	645,985	610,021	1,094,358
2005/06	140,989	491,046	714,967	867,560
2006/07	159,083	468,044	620,351	1,021,001
2007/08	214,417	586,800	556,016	949,653
2008/09	276,998	845,017	734,291	984,800
2009/10	287,838	589,462	706,442	1,040,777
2010/11	341,775	522,267	638,007	911,712
2011/12	267,958	437,040	622,299	1,009,725
2012/13	216,184	498,609	810,077	1,088,955
2013/14	246,110	595,382	611,227	1,029,300
2014/15	100,051	543,730	685,062	1,364,366
2015/16	182,600	529,745	658,723	1,222,665
2016/17	473,282	538,213	731,655	1,159,210
2017/18	538,274	552,775	872,694	1,068,145
2018/19	397,926	604,700	687,587	1,090,596
2019/20	324,971	517,481	628,486	1,188,004

Source: SEFSC Commercial ACL data (June 7, 2021)

### *SEDAR 38 Update Stock Assessment*

At its September 2020 meeting, the Gulf Council’s SSC reviewed the results and projections from the SEDAR 38 Update (2020) stock assessment report, prepared by the Southeast Fisheries Science Center (SEFSC). A key change in this stock assessment was the use of recreational catch and effort data calibrated to the MRIP FES, which formally replaced MRIP CHTS in 2018, and results in increased estimates of both recreational landings and fishing effort (see Appendix A). SEDAR 38 Update estimated that Gulf king mackerel is not overfished and not undergoing overfishing as of the 2017 – 2018 fishing year. SEDAR 38 Update predicted that the current level of landings (i.e., the 2020 total ACL of 8.55 million pounds [mp] whole weight [ww]) can be maintained with a low probability of overfishing occurring in the short-term. The stock status determination criteria are defined as: minimum stock size threshold (MSST) = (1-M) \* SSB<sub>MSY</sub>, where M (natural mortality) = 0.174 and the spawning stock biomass at maximum sustainable yield (SSB<sub>MSY</sub>) = SSB<sub>SPR30%</sub> (Amendment 16 to the CMP FMP; GMFMC and SAFMC 2003). In 2017, the stock was being harvested at 84% of the maximum fishing mortality threshold (MFMT), and SSB was 112% of MSST. Gulf Council SSC members discussed discomfort with the narrow buffers produced using the probability density functions (PDFs) in the projections. The SEFSC also noted that the scientific uncertainty in the SEDAR 38 Update base model is larger than that produced by the PDFs, and that a percentage of the MSY proxy may be more appropriate for determining the difference between the OFL and ABC. As such, the Gulf Council’s SSC determined the results to be the best scientific information available for Gulf king

mackerel and recommended an increasing yield stream for the OFL and ABC for the 2021 – 2023 fishing years (Table 1.1.3).

**Table 1.1.3.** Catch limits for Gulf king mackerel stock for 2021 – 2023 and subsequent years, as recommended by the Gulf Council’s SSC in September 2020. Values are in pounds whole weight and MRIP-FES.

Year	OFL	ABC
2021	10,890,000	9,370,000
2022	11,050,000	9,720,000
2023	11,180,000	9,990,000

### *Proposed Management Modifications*

At its October 2020 meeting, the Gulf Council began work on this amendment (Amendment 33 to the CMP FMP), to modify the OFL, ABC, and ACLs for Gulf king mackerel in response to the findings of SEDAR 38 Update and the Gulf Council SSC’s subsequent catch recommendations. The Gulf Council also decided to consider modifications to the allocations between the commercial and recreational fishing sectors. Historically, the commercial sector has met or exceeded the commercial ACL while the recreational sector has landed low proportions of the recreational ACL. At the March 2015 Gulf Council CMP Advisory Panel (Gulf CMP AP) meeting, members recommended that the Councils abstain from reallocating any Gulf king mackerel from the recreational sector to the commercial sector. The Gulf CMP AP subsequently recommended an increase for the Gulf king mackerel recreational bag limit as a way to potentially increase utilization of the Gulf king mackerel recreational ACL. This increase to the recreational bag limit went into effect in May 2017 (Amendment 26; GMFMC and SAFMC 2016). Recreational landings are relatively unchanged since the implementation of the increased recreational bag limit (Table 1.1.1).

## **1.2 Purpose and Need**

The purpose of this amendment is to revise the catch limits for Gulf migratory group king mackerel; and, to review recreational and commercial allocations in response to new information on the stock provided in the SEDAR 38 Update stock assessment.

The need for this amendment is to ensure catch limits are based on the best scientific information available and to ensure overfishing does not occur, while increasing the social and economic benefits of the king mackerel component of the CMP fishery through sustainable harvest in accordance with provisions set forth in the Magnuson-Stevens Fishery Conservation and Management Act.

## **1.3 History of Management**

The **CMP FMP**, with environmental impact statement (EIS) and regulatory impact review (RIR), was approved in 1982 and implemented by regulations effective in February 1983

(GMFMC and SAFMC 1983). The management unit includes king mackerel, Spanish mackerel, and cobia. The CMP FMP treated king and Spanish mackerel as unit stocks in the Atlantic and Gulf. The original CMP FMP also established a Gulf king mackerel poundage allocation, which was approximately 75.7% recreational, 24.3% commercial, based on a total allowable catch (TAC) of 37 mp. A history of management for all CMP species can be found in CMP **Amendment 18** (GMFMC and SAFMC 2011), **Amendment 20B** (GMFMC and SAFMC 2014), and **Amendment 26** (GMFMC 2016) and are incorporated here by reference. A complete history of management for CMP species is provided on the Gulf Council website.<sup>1</sup> The following management actions relate specifically to allocations and catch limits for Gulf king mackerel.

**Amendment 1**, with EIS and RIR, implemented in September 1985, revised the Gulf king mackerel maximum sustainable yield (MSY) downward, recognized separate Atlantic and Gulf migratory groups of king mackerel, and established sector allocations of 32% commercial and 68% recreational for Gulf king mackerel. These allocations were based on the average commercial and recreational landings from 1975 – 1979; the years for which complete data for both sectors were available, and including a shift of 2% of the recreational allocation to the commercial sector to account for sales of king mackerel by the for-hire component of the recreational sector. Commercial allocations among gear users were eliminated. The Gulf commercial allocation for king mackerel was divided into eastern and western zones for the purpose of regional allocation.

A **May 1986 Regulatory Amendment**, with RIR, implemented in July 1986, set a TAC for Gulf king mackerel at 2.9 mp with 0.93 mp commercial quota and 1.97 mp recreational allocation for the 1986/87 season (July 1 – June 30). The commercial quota was allocated 6% for purse-seines, 64.5% for eastern zone (Florida) and 29.5% for western zone (AL-TX).

A **May 1987 Regulatory Amendment**, with RIR, implemented in June 1987, set a TAC for Gulf king mackerel at 2.2 mp with 0.7 mp commercial quota and 1.5 mp recreational allocation for the 1987/88 season. The commercial quota was set at zero for purse-seines.

A **May 1988 Regulatory Amendment**, with RIR, implemented in July 1988, set a TAC for Gulf king mackerel at 3.4 mp with 1.1 mp commercial quota and 2.3 mp recreational allocation for the 1988/89 season. The commercial quota was allocated 69% to eastern zone (FL) and 31% to western zone (AL-TX).

A **May 1989 Regulatory Amendment**, with RIR, implemented in July 1989, set a TAC for Gulf king mackerel at 4.25 mp with 1.36 mp commercial quota and 2.89 mp recreational allocation for the 1989/90 season.

**Amendment 5**, with environmental assessment (EA) and RIR, implemented in August 1990, provided that the Gulf Council will be responsible for managing the Gulf migratory groups of CMP species. The two recognized Gulf migratory groups of king mackerel continued to be managed as one until management measures appropriate to the eastern and western Gulf groups could be determined.

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<sup>1</sup> <https://gulfcouncil.org/fishery-management/implemented-plans/coastal-migratory-pelagics/>



A **May 1990 Regulatory Amendment**, with RIR, implemented in August 1990, retained the TAC for Gulf king mackerel at 4.25 mp with 1.36 mp commercial quota and 2.89 mp recreational allocation for the 1990/91 season.

A **May 1991 Regulatory Amendment**, with RIR, implemented in September 1991, retained the TAC for Gulf king mackerel at 5.75 mp with 1.84 mp commercial quota and 3.91 mp recreational allocation for the 1991/92 season. The amendment also set the overfishing thresholds at 30% spawning potential ratio (SPR).

A **May 1992 Regulatory Amendment**, with RIR, implemented in September 1992, set the TAC for Gulf king mackerel at 7.8 mp with 2.5 mp commercial quota and 5.3 mp recreational allocation for the 1992/93 season.

**Amendment 6**, with EA and RIR, and regulatory flexibility analysis (RFA), implemented in December 1992, provided for rebuilding overfished stocks of mackerels within specific periods; provided for biennial assessments and adjustments; and, allowed for Gulf king mackerel stock identification and allocation when appropriate.

A **May 1993 Regulatory Amendment**, with RIR, implemented in November 1993, retained the TAC for Gulf king mackerel at 7.8 mp with 2.5 mp commercial quota and 5.3 mp recreational allocation for the 1993/94 season.

A **May 1994 Regulatory Amendment**, with RIR, implemented in November 1994, retained the TAC for Gulf king mackerel at 7.8 mp with 2.5 mp commercial quota and 5.3 mp recreational allocation for the 1994/95 season.

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

A **May 1995 Regulatory Amendment**, with EA, RIR, and RFA, implemented in November 1995, retained the TAC for Gulf king mackerel at 7.8 mp with 2.5 mp commercial quota and 5.3 mp recreational allocation for the 1994/95 season.

A **May 1996 Regulatory Amendment**, with EA, RIR, and RFA, implemented in June 1997, retained the TAC for Gulf king mackerel at 7.8 mp with 2.5 mp commercial quota and 5.3 mp recreational allocation for the 1996/97 season.

A **May 1997 Regulatory Amendment**, with EA, RIR, and RFA, implemented in February 1998, set the TAC for Gulf king mackerel at 10.6 mp with 3.39 mp commercial quota and 7.21 mp recreational allocation for the 1997/98 season.

A **May 1998 Regulatory Amendment**, with EA, RIR, and RFA, implemented in February 1998, retained the TAC for Gulf king mackerel at 10.6 mp with 3.39 mp commercial quota and 7.21 mp recreational allocation for the 1998/99 season.



**Amendment 8**, with EA, RIR, and RFA, implemented in March 1998, established the Council's intent to evaluate the impacts of permanent jurisdictional boundaries between the Gulf Council and the South Atlantic Council and separate FMPs for CMP species in these areas; and set an optimum yield (OY) target at 30% static SPR.

A **July 1999 Regulatory Amendment**, with EA, RIR, and RFA, implemented in September 1999, retained the TAC for Gulf king mackerel at 10.6 mp with 3.39 mp commercial quota and 7.21 mp recreational allocation for the 1999/2000 season.

**Amendment 9**, with EA, RIR, and RFA, implemented in April 2000, reallocated the percentage of the commercial allocation of the 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, as well as retain 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 Eastern Zone, and South/West Area (Florida west coast) by establishing 2 subzones with a dividing line between the 2 subzones at the Collier/Lee County line; established regional allocations for the west coast of Florida based on the 2 subzones with 7.7% of the Eastern Zone allocation of TAC being allowed from Subzone 2 and the remaining 92.3% being allocated as follows: 50% – Florida east coast, 50% – Florida west coast, 50% – gillnet fishery, 50% – hook-and-line fishery.

A **July 2000 Regulatory Amendment**, with EA and RIR, implemented in April 2001, reduced the TAC for Gulf king mackerel to 10.2 mp with 3.26 mp commercial quota and 6.94 mp recreational allocation for the 2000/2001 season.

**Amendment 16/July 2003 Regulatory Amendment**, with EA, RIR, and RFA, implemented in April 2004, established definitions of MSY, OY, the overfishing threshold, and the overfished condition for Gulf king mackerel.

**Amendment 18**, with EA, RIR, and RFA, implemented in December 2011, established ACLs and accountability measures (AM) for Gulf king mackerel.

**Amendment 26**, with EA, RIR, and RFA, implemented in May 2017, created a single year-round regulatory boundary between the Gulf and South Atlantic migratory groups of king mackerel at a line extending east from the Miami-Dade/Monroe County, Florida boundary. The amendment also removed the Gulf Florida East Coast subzone, renamed the zones in the Gulf, and revised the Gulf king mackerel ACLs and commercial zone quotas (Western Zone 40%, Northern Zone 18%, Southern Zone Handline component 21%; and Southern Zone Gillnet component 21%).

## CHAPTER 2. MANAGEMENT ALTERNATIVES

### 2.1 Action 1 – Modify the Gulf of Mexico (Gulf) Migratory Group King Mackerel (Gulf King Mackerel) Overfishing Limit (OFL), Acceptable Biological Catch (ABC), and Annual Catch Limit (ACL).

**Alternative 1:** No action. Retain the current OFL, ABC, and total ACL for Gulf king mackerel as established in Amendment 26 to the Fishery Management Plan (FMP) for Coastal Migratory Pelagic (CMP) Resources in the Gulf of Mexico and Atlantic Regions (CMP FMP). The Gulf king mackerel total ACL is equal to the ABC recommended by the Gulf Scientific and Statistical Committee (SSC) for 2015-2019 and subsequent years. Catch limit values are in millions of pounds (mp), whole weight (ww):

Year	Gulf King Mackerel		
	OFL	ABC	ACL
2019/2020+	8.95	8.55	8.55

Note: The recreational portion of the current OFL, ABC, and ACL is based on Marine Recreational Information Program Coastal Household Telephone Survey (MRIP-CHTS) data.

**Alternative 2:** Revise the OFL and ABC for Gulf king mackerel as recommended by the Gulf SSC for 2021 – 2023 and subsequent years. The total ACL is set equal to the ABC. An annual catch target is not used.

Year	OFL	ABC/ACL
2021	10.89	9.37
2022	11.05	9.72
2023+	11.18	9.99

Note: Catch limits in mp ww. The recreational portion of the OFL, ABC, and ACL are based on MRIP Fishing Effort Survey (FES) data.

*Note: Landings are reported in mixed weight, meaning whole weight and weight as landed. Therefore, while the OFL, and ABC were recommended by the Gulf Council SSC in lbs ww, ACLs and quotas will be in mixed weights consistent with current regulations.*

#### **Discussion:**

Alternatives in Action 1 apply to the Gulf king mackerel stock, which refers to the king mackerel that would be landed from the Texas/Mexico border to the Miami-Dade/Monroe County line in southeastern Florida.

The Southeast Data Assessment and Review (SEDAR) 38 Update assessment (2020) indicated that Gulf king mackerel was not overfished or undergoing overfishing. The Gulf of Mexico

Fishery Management Council's (Gulf Council) SSC determined SEDAR 38 Update to be the best scientific information available and recommended increasing yields for the OFL and ABC based on the assessment for the 2021 – 2023 fishing years. A buffer between the OFL and the ABC remains due to scientific uncertainty, and was fixed at 85% of the fishing mortality rate (F) at maximum sustainable yield (MSY) which, in the case of Gulf king mackerel, is set at the proxy value of 30% of the spawning potential ratio (i.e., the projected yield at 85% of  $F_{SPR30\%}$ ). This value also corresponds to the definition of optimum yield (OY) for Gulf king mackerel. Amendment 18 to the CMP FMP defined the ACL as equal to ABC (GMFMC and SAFMC 2011) with Amendment 26 to the CMP FMP retaining this definition (GMFMC and SAFMC 2016).

The actions in Amendment 26 provided the definition for the Gulf king mackerel total ACL being set equal to the ABC (GMFMC and SAFMC 2016) with no buffer, because: 1) it was highly improbable that the Gulf king mackerel stock ACL would be met and unlikely the recreational ACL would be reached; 2) there was no indication at the time that Gulf king mackerel was overfished or experiencing overfishing; and, 3) setting the ACL equal to the ABC would provide the commercial sector with the greatest opportunity to increase their catch with the associated benefits. The Gulf king mackerel OFL has not been exceeded in over 20 years.

The Gulf Council has not used an ACT as a management measure for Gulf king mackerel, since combined sector landings have regularly been below the total ACL. Thus, an ACT is not considered herein, in keeping with the Gulf Council's determination that managing to the ACL would provide the greatest economic and social benefits to both sectors and to the Nation with few biological consequences.

**Alternative 1** (No Action) retains the existing OFL, ABC, and ACLs, all of which are based on the previous Gulf king mackerel stock assessment (SEDAR 38 2014). The ACL is equal to the ABC, as specified in Amendment 26 to the CMP FMP (GMFMC and SAFMC 2016). The OFL, ABC and total ACL in **Alternative 1** are based, in part, on the Marine Recreational Information Program Coastal Household Telephone Survey (MRIP-CHTS) data. One of the major changes between the SEDAR 38 (2014) and SEDAR 38 Update (2020) base models is the incorporation of the MRIP-FES adjustments to the recreational catch and effort estimates, which are considered by the National Marine Fisheries Service to be the best scientific information available. Therefore, retaining the OFL, ABC and total ACL under **Alternative 1**, which are based on MRIP-CHTS data, makes **Alternative 1** not viable Under National Standard 2 and the Magnuson-Stevens Fishery Conservation and Management Act. The catch limits in **Alternative 1** also do not reflect the Gulf Council SSC's OFL and ABC recommendation based on SEDAR 38 Update.

**Alternative 2** would modify the catch limits for Gulf king mackerel based on the recommendations of the Gulf Council's SSC from the SEDAR 38 Update. The revised Gulf king mackerel total ACL is consistent with the MRIP-FES transition in the recreational catch and effort data. **Alternative 2** sets the total ACL equal to the Gulf Council's SSC's recommendation for the ABC for 2021 – 2023, and then maintains the ABC and total ACL at the 2023 level for subsequent years until changed by future management action. Historical Gulf king mackerel landings that are adjusted to MRIP-FES currency would be below the 2021 OFL, ABC, and total

ACL in **Alternative 2** (the lowest of the 2021 – 2023 SSC-recommended catch limits (Table 2.1.1)).

**Table 2.1.1.** Gulf king mackerel recreational (in MRIP-CHTS and MRIP-FES units) and commercial (Zones combined) landings in pounds whole weight using current sector allocation (32% commercial, 68% recreational), total landings using MRIP-CHTS or MRIP-FES units, and the total Gulf migratory group proposed ACLs for 2021 and 2023+ in MRIP-FES, for the fishing years 2000 – 2020.

Year	Rec. Landings (CHTS)	Rec. Landings (FES)	Com. Landings	Total Landings (CHTS)	Total Landings (FES)	Proposed 2021 ACL (FES)	Proposed 2023+ ACL (FES)
2001/02	3,941,457	9,070,883	2,143,730	6,085,187	11,214,613	9,370,000	9,990,000
2002/03	2,983,798	6,169,130	2,172,736	5,156,534	8,341,866	9,370,000	9,990,000
2003/04	3,498,288	6,823,391	2,239,631	5,737,919	9,063,022	9,370,000	9,990,000
2004/05	2,564,642	5,339,214	2,455,472	5,020,114	7,794,686	9,370,000	9,990,000
2005/06	2,465,383	4,781,778	2,214,562	4,679,945	6,996,340	9,370,000	9,990,000
2006/07	3,319,495	6,074,882	2,268,479	5,587,974	8,343,361	9,370,000	9,990,000
2007/08	2,464,224	4,871,760	2,306,886	4,771,110	7,178,646	9,370,000	9,990,000
2008/09	2,790,428	5,168,997	2,841,106	5,631,534	8,010,103	9,370,000	9,990,000
2009/10	3,261,388	7,939,505	2,624,519	5,885,907	10,564,024	9,370,000	9,990,000
2010/11	1,993,088	5,497,642	2,413,761	4,406,849	7,911,403	9,370,000	9,990,000
2011/12	2,012,068	5,060,923	2,337,022	4,349,090	7,397,945	9,370,000	9,990,000
2012/13	3,224,351	6,856,317	2,613,825	5,838,176	9,470,142	9,370,000	9,990,000
2013/14	2,082,852	3,948,649	2,482,019	4,564,871	6,430,668	9,370,000	9,990,000
2014/15	4,015,683	7,777,977	2,693,209	6,708,892	10,471,186	9,370,000	9,990,000
2015/16	2,531,260	4,812,866	2,593,733	5,124,993	7,406,599	9,370,000	9,990,000
2016/17	2,587,187	4,986,684	2,902,360	5,489,547	7,889,044	9,370,000	9,990,000
2017/18	2,356,343	5,210,721	3,031,888	5,388,231	8,242,609	9,370,000	9,990,000
2018/19	2,338,564	5,044,834	2,780,809	5,119,373	7,825,643	9,370,000	9,990,000
2019/20	1,622,334	3,238,966	2,658,942	4,281,276	5,897,908	9,370,000	9,990,000

Source: SEFSC Commercial ACL data (June 7, 2021), and SEFSC Recreational ACL data (Accessed May 10, 2021 [CHTS] and May 11, 2021 [FES]).

## 2.2 Action 2 – Modify the Sector Allocations and Commercial Zone Quotas for Gulf King Mackerel.

**Alternative 1:** No Action. Maintain the sector allocations of the total ACL for Gulf king mackerel between the commercial and recreational sectors. The allocations for Gulf king mackerel are 32% commercial and 68% recreational. This allocation was derived from the average landings using available landings data from the years 1975 through 1979, established in Amendment 1 to the CMP FMP in 1985.

**Alternative 2:** Modify the sector allocations of the total ACL between the recreational and commercial sectors as the average of the commercial and recreational landings including MRIP-FES data for the years **YEAR** through **YEAR**, based on the SEFSC ACL monitoring datasets. The allocations for Gulf king mackerel are **X%** commercial and **X%** recreational.

### **Discussion:**

Over the past twenty years, the commercial sector of the Gulf king mackerel fishery has consistently harvested near or above the commercial ACL, while the recreational sector has landed low proportions of the recreational ACL (Table 2.2.1 and Figure 2.2.1).

Past actions to modify allocations by the Gulf Council have often relied on landings from a reference time period to inform how to divide the total ACL between the recreational and commercial sectors, and also within those sectors. In the case of Gulf king mackerel, the current sector allocations have been in effect since 1985 (Amendment 1), and are based on landings data collected before the advent of the more contemporary data collection programs (i.e., the commercial trip interviewer program, MRIP). This reality presents two atypical challenges in modifying the allocation for Gulf king mackerel. First, the entirety of the time series for which contemporary data collection programs have either been in place, or those landings so calibrated (i.e., 1986 to present), has been biased by the current sector allocations. Thus, the respective fisheries have not been able to operate otherwise unrestricted to determine the portion of the catch typical for a given fleet. Second, contemporary data collection programs have not been calibrated back further than 1986; this means that landings data prior to 1986 cannot be compared to current data, particularly for the recreational sector. Thus, it will not be possible to present as an option for reallocation a calibration of the 1975 – 1979 time series, adjusted for MRIP-FES, as has been presented for GMFMC consideration for other species.

Previously, the Gulf Council considered Amendment 28 to the CMP FMP, which would have established an allocation sharing mechanism to shift allocation between the recreational and commercial sectors for Gulf king mackerel. However, after hearing public comment, the Gulf Council chose not to proceed with Amendment 28. Recreational fishermen noted that the recreational ACL was not being harvested, but commented that leaving a portion of the recreational ACL in the water likely increased the probability of a recreational fisherman interacting with king mackerel while fishing, regardless of whether that fish was ultimately harvested or released. Commercial fishermen were divided, with some in favor of the measure and some opposed, for various reasons.

Action 2 focuses on the Gulf king mackerel sector allocations between the commercial and recreational sector. For the commercial sector, the Gulf king mackerel ACL is allocated in regional quotas, with 40% allocated to the Western Zone, 18% to the Northern Zone, 21% to the Southern Zone Handline component, and 21% to the Southern Zone Gillnet component (see Figure 1.1.1 for a map of these Zones). Commercial quotas for these zones will be updated based on the commercial sector allocation selected in this action.

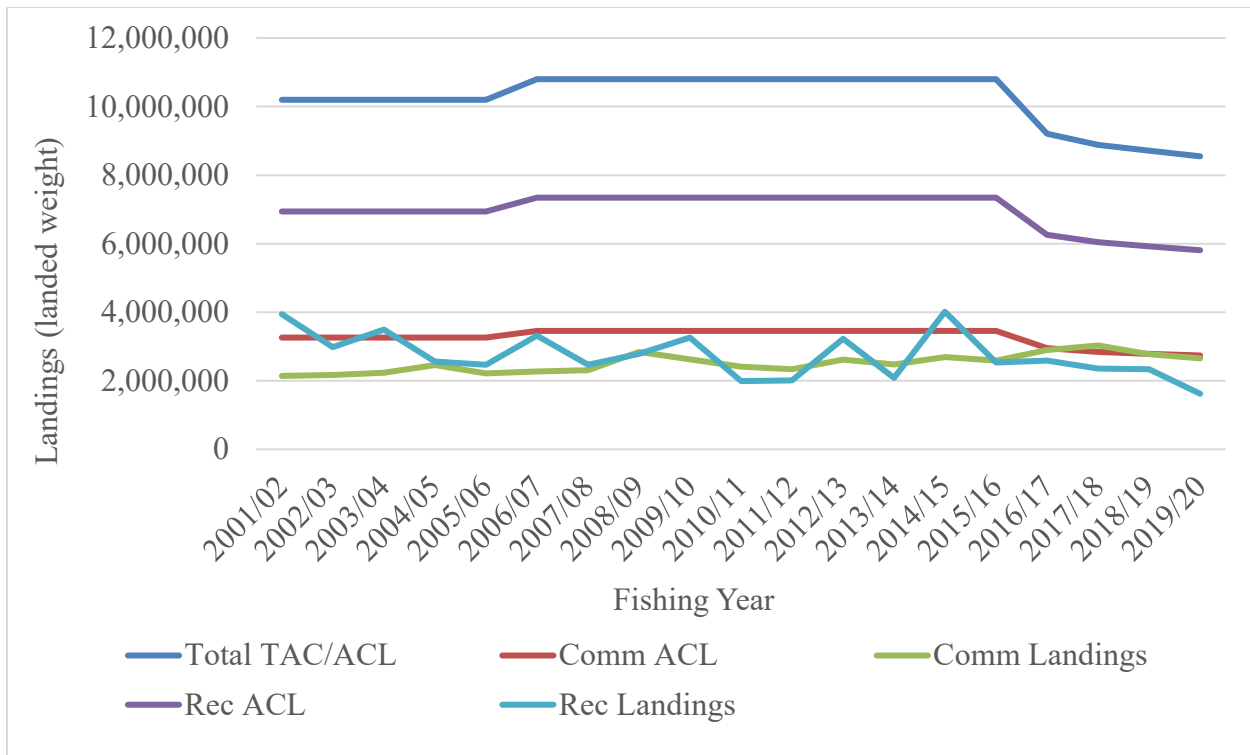
**Table 2.2.1.** Proportion of sector ACLs landed and proportion of total ACL landed for Gulf king mackerel in MRIP-CHTS for the 2001/2002 – 2019/2020 fishing years. The Total TAC/ACL is in lbs landed weight (lw). Recreational landings are in lbs ww, and commercial landings are in lbs lw. Percentages are rounded up to the nearest whole number.

Fishing Year	Total TAC/ACL	Comm Sector ACL	Comm Landings	Rec Sector ACL	Rec Landings	% of Sector ACL Landed		% of Total ACL Landed
						Comm <sup>1</sup>	Rec <sup>2</sup>	
2001/02	10,200,000	3,264,000	2,143,730	6,936,000	3,941,457	66	57	60
2002/03	10,200,000	3,264,000	2,172,736	6,936,000	2,983,798	67	43	51
2003/04	10,200,000	3,264,000	2,239,631	6,936,000	3,498,288	69	50	56
2004/05	10,200,000	3,264,000	2,455,472	6,936,000	2,564,642	75	37	49
2005/06	10,200,000	3,264,000	2,214,562	6,936,000	2,465,383	68	36	46
2006/07	10,800,000	3,456,000	2,268,479	7,344,000	3,319,495	66	45	52
2007/08	10,800,000	3,456,000	2,306,886	7,344,000	2,464,224	67	34	44
2008/09	10,800,000	3,456,000	2,841,106	7,344,000	2,790,428	82	38	52
2009/10	10,800,000	3,456,000	2,624,519	7,344,000	3,261,388	76	44	54
2010/11	10,800,000	3,456,000	2,413,761	7,344,000	1,993,088	70	27	41
2011/12	10,800,000	3,456,000	2,337,022	7,344,000	2,012,068	68	27	40
2012/13	10,800,000	3,456,000	2,613,825	7,344,000	3,224,351	76	44	54
2013/14	10,800,000	3,456,000	2,482,019	7,344,000	2,082,852	72	28	42
2014/15	10,800,000	3,456,000	2,693,209	7,344,000	4,015,683	78	55	62
2015/16	10,800,000	3,456,000	2,593,733	7,344,000	2,531,260	75	35	47
2016/17	9,210,000	2,950,000	2,902,360	6,260,000	2,587,187	98	41	60
2017/18	8,880,000	2,840,000	3,031,888	6,040,000	2,356,343	107	39	61
2018/19	8,710,000	2,790,000	2,780,809	5,920,000	2,338,564	100	40	59
2019/20	8,550,000	2,740,000	2,658,942	5,810,000	1,622,334	97	28	50

<sup>1</sup>Commercial allocation = 32%      <sup>2</sup>Recreational allocation = 68%

Source: SEFSC Commercial ACL data (June 7, 2021), and SEFSC Recreational ACL data (Accessed May10, 2021). Note: The king mackerel fishing year for the recreational sector and commercial sector Western and Southern Zone is July 1 – June 30. The fishing year for the commercial sector Northern Zone is October 1 – September 30. The total ACL was reduced in the 2016/17 fishing year due to the results of SEDAR 38 (2014) and the mixing zone changing with fish being reallocated to the Atlantic king mackerel migratory group that were previously allotted to the Gulf king mackerel migratory group. Landings are “as reported”, which is a combination of gutted and whole weight.





**Figure 2.2.1.** Trends in Gulf king mackerel landings by sector compared to the sector and total ACLs for the 2001/2002 – 2019/2020 fishing years.

**Alternative 1** (No action) would maintain the sector allocations established in Amendment 1 to the CMP FMP (GMFMC and SAFMC 1985), with the recreational and commercial allocation of the Gulf king mackerel total ACL divided 68% and 32%, respectively. **Alternative 1** used the average sector landings from 1975 – 1979 to set the allocation. When Amendment 1 was developed, the resulting sector allocations were based on all available years during which both recreational and commercial landings data were available and complete. This sector allocation included a 2% shift from the recreational sector to the commercial sector to account for the sale of king mackerel by the for-hire component of the recreational sector. The recreational portion of the current OFL, ABC, and ACLs are based on MRIP-CHTS data, with the current recreational ACL set at 5.81 million pounds in MRIP CHTS units for 2019 and subsequent years.

**Alternative 2** would revise the sector allocations of the total ACL between the recreational and commercial sectors as the average of the commercial and recreational landings including MRIP-FES data for the years **YEAR** through **YEAR**, using the SEFSC ACL monitoring datasets; MRIP-FES calibrated data do not exist before 1986. The data over this time series would result in recreational and commercial allocations of **X%** and **X%**, respectively. These allocations would use the MRIP-FES calibrated recreational catch and effort data and, therefore, the best scientific information available.

**Table 2.2.2.** Resultant allocations based on alternatives and options presented in Action 2.

<b>Option</b>	<b>Commercial Allocation</b>	<b>Recreational Allocation</b>
<b>Alternative 1 (retains current allocation)</b>	32%	68%
<b>Alternative 2 (average of YEAR - YEAR)</b>	X%	X%



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# APPENDIX A. CHANGES TO RECREATIONAL DATA COLLECTION

## *Changes to the Recreational Data Collection Survey*

The Marine Recreational Fisheries Statistics Survey (MRFSS) was created in 1979 by NMFS. In the Gulf, MRFSS collected data on catch and effort in recreational fisheries, including king mackerel since 1981. The program included the APAIS, which consists of onsite interviews at marinas and other points where recreational anglers fish, to determine catch. MRFSS also included CHTS, which used random-digit dialing of homes in coastal counties to contact anglers to determine fishing effort. In 2000, the For-Hire Survey (FHS) was implemented to incorporate for-hire effort due to lack of coverage of charter boat anglers by the CHTS. The FHS used a directory of all known charter boats and a weekly telephone sample of the charter boat operators to obtain effort information.

MRFSS included both offsite telephone surveys and onsite interviews at marinas and other points where recreational anglers fish. In 2012 a new design was certified and subsequently implemented in 2013: MRIP replaced MRFSS to meet increasing demand for more precise, accurate, and timely recreational catch estimates. MRIP is a more scientifically sound methodology for estimating catch because it reduces some sources of potential bias as compared to MRFSS resulting in more accurate catch estimates. Specifically, CHTS was improved to better estimate private angling effort. Instead of random telephone calls, MRIP-CHTS used targeted calls to anglers registered with a federal or state saltwater fishing registry. The MRIP Access Point Angler Intercept Survey (APAIS) began incorporating a new survey design in 2013. This new design addressed concerns regarding the validity of the survey approach, specifically that trips recorded during a given time period are representative of trips for a full day (Foster et al. 2018). The more complete temporal coverage with the new survey design provides for consistent increases or decreases in APAIS angler catch rate statistics, which are used in stock assessments and management, for at least some species (NOAA Fisheries 2019).

MRIP also transitioned from the legacy Coastal Household Telephone Survey (CHTS) to a new mail survey (Fishing Effort Survey, FES) beginning in 2015, and in 2018, the FES replaced the CHTS. Both survey methods collect data needed to estimate marine recreational fishing effort (number of fishing trips) by shore and private/rental boat anglers on the Atlantic and Gulf coasts. The CHTS used random-digit dialing of homes in coastal counties to contact anglers. The new mail-based FES uses angler license and registration information as one way to identify and contact anglers (supplemented with data from the U.S. Postal Service, which includes virtually all U.S. households). Because the FES and CHTS are so different, NMFS conducted side-by-side testing of the two methods from 2015 to 2018 and developed calibration procedures to convert the historical catch estimates (MRFSS, MRIP-CHTS, MRIP-APAIS [collectively MRFSS]) into MRIP-FES. In general, landings estimates are higher using the MRIP-FES as compared to the MRFSS estimates. This is because the FES is designed to more accurately measure fishing activity than the CHTS, not because there was a sudden rise in fishing effort. NMFS developed a calibration model to adjust historic effort estimates so that they can be accurately compared to new estimates from the FES. The new effort estimates alone do not lead

to definitive conclusions about stock size or status in the past or at current. NMFS determined that the MRIP-FES data, when fully calibrated to ensure comparability among years and across states, produced the best available data for use in stock assessments and management (NOAA Fisheries 2019). Table 1 reports Gulf king mackerel landings for 1986 through 2020 fishing years comparing MRIP-CHTS harvest data to MRIP-FES harvest data.

**Table A1.** Gulf king mackerel recreational (lbs ww) and commercial landings in pounds (lbs lw) using MRIP-CHTS and MRIP-FES units, and stock TAC/ACL in MRIP-CHTS by fishing year.

Fishing Year	Rec. Landings (CHTS)	Rec. Landings (FES)	Rec. ACL (CHTS)	Total Com. Landings	Com. ACL (CHTS)	Total Landings (CHTS)	Total Landings (FES)	Total stock TAC/ACL
1986/87	3,303,880	6,888,855		514,369		3,818,249	7,403,224	
1987/88	1,719,525	3,195,820		120,991		1,840,516	3,316,811	
1988/89	3,948,659	3,667,029		548,250		4,496,909	4,215,279	
1989/90	3,657,342	7,616,589		862,927		4,520,269	8,479,516	
1990/91	3,281,701	8,780,069		353,040		3,634,741	9,133,109	
1991/92	4,029,052	7,405,610		842,049		4,871,101	8,247,659	
1992/93	4,380,699	5,887,572		1,682,752		6,063,451	7,570,324	
1993/94	4,632,854	8,018,533		1,225,302		5,858,156	9,243,835	
1994/95	6,246,263	9,140,649		1,321,839		7,568,102	10,462,488	
1995/96	4,496,494	5,325,483		1,329,771		5,826,265	6,655,254	
1996/97	5,623,857	10,829,297		1,102,480		6,726,337	11,931,777	
1997/98	4,813,475	6,980,657		1,495,900		6,309,375	8,476,557	
1998/99	3,284,779	6,775,346		1,745,974		5,030,753	8,521,320	
1999/00	2,845,960	5,965,918		1,221,746		4,067,706	7,187,664	
2000/01	3,600,140	7,445,968		1,243,462		4,843,602	8,689,430	
2001/02	3,941,457	9,070,883	6,936,000	2,143,730	3,264,000	6,085,187	11,214,613	10,200,000
2002/03	2,983,798	6,169,130	6,936,000	2,172,736	3,264,000	5,156,534	8,341,866	10,200,000
2003/04	3,498,288	6,823,391	6,936,000	2,239,631	3,264,000	5,737,919	9,063,022	10,200,000
2004/05	2,564,642	5,339,214	6,936,000	2,455,472	3,264,000	5,020,114	7,794,686	10,200,000
2005/06	2,465,383	4,781,778	6,936,000	2,214,562	3,264,000	4,679,945	6,996,340	10,200,000
2006/07	3,319,495	6,074,882	7,344,000	2,268,479	3,456,000	5,587,974	8,343,361	10,800,000
2007/08	2,464,224	4,871,760	7,344,000	2,306,886	3,456,000	4,771,110	7,178,646	10,800,000
2008/09	2,790,428	5,168,997	7,344,000	2,841,106	3,456,000	5,631,534	8,010,103	10,800,000
2009/10	3,261,388	7,939,505	7,344,000	2,624,519	3,456,000	5,885,907	10,564,024	10,800,000
2010/11	1,993,088	5,497,642	7,344,000	2,413,761	3,456,000	4,406,849	7,911,403	10,800,000
2011/12	2,012,068	5,060,923	7,344,000	2,337,022	3,456,000	4,349,090	7,397,945	10,800,000
2012/13	3,224,351	6,856,317	7,344,000	2,613,825	3,456,000	5,838,176	9,470,142	10,800,000
2013/14	2,082,852	3,948,649	7,344,000	2,482,019	3,456,000	4,564,871	6,430,668	10,800,000
2014/15	4,015,683	7,777,977	7,344,000	2,693,209	3,456,000	6,708,892	10,471,186	10,800,000
2015/16	2,531,260	4,812,866	7,344,000	2,593,733	3,456,000	5,124,993	7,406,599	10,800,000
2016/17	2,587,187	4,986,684	6,260,000	2,902,360	2,950,000	5,489,547	7,889,044	9,210,000
2017/18	2,356,343	5,210,721	6,040,000	3,031,888	2,840,000	5,388,231	8,242,609	8,880,000
2018/19	2,338,564	5,044,834	5,920,000	2,780,809	2,790,000	5,119,373	7,825,643	8,710,000
2019/20	1,622,334	3,238,966	5,810,000	2,658,942	2,740,000	4,281,276	5,897,908	8,550,000

Source: SEFSC Commercial ACL data (June 7, 2021), and SEFSC Recreational ACL data (Accessed May10, 2021 [CHTS] and May 11, 2021 [FES]).

## References

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