

# **Modifications to the Gulf of Mexico Migratory Group Spanish Mackerel Catch Limits**



## **Draft Framework Amendment 14 to the Fishery Management Plan for Coastal Migratory Pelagics Resources in the Gulf of Mexico and Atlantic Region**

**October 2023**



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# ENVIRONMENTAL ASSESSMENT COVER SHEET

## Framework Amendment 14 to Modify Gulf of Mexico Migratory Group Spanish Mackerel Catch Limits

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This Environmental Assessment is being prepared using the 2020 CEQ NEPA Regulations as modified by the Phase I 2022 revisions. The effective date of the 2022 revisions was May 20, 2022, and reviews begun after this date are required to apply the 2020 regulations as modified by the Phase I revisions unless there is a clear and fundamental conflict with an applicable statute. This Environmental Assessment began on **XXXXXX**, and accordingly proceeds under the 2020 regulations as modified by the Phase I revisions.

## ABBREVIATIONS USED IN THIS DOCUMENT

|                       |   |
|-----------------------|---|
| ABC                   | acceptable biological catch                                   |
| ACL                   | annual catch limit  |
| ACT                   | annual catch target   |
| ALS                   | accumulated landings system                                   |
| CMP                   | coastal migratory pelagics                                    |
| CHTS                  | Coastal Household Telephone Survey                            |
| CS                    | consumer surplus  |
| Councils              | Gulf of Mexico and South Atlantic Fishery Management Councils |
| CVA                   | climate vulnerability analyses                                |
| DPS                   | distinct population segment                                   |
| EA                    | environmental assessment                                      |
| EEZ                   | exclusive economic zone                                       |
| EFH                   | essential fish habitat  |
| EIS                   | Environmental Impact Statement                                |
| EJ                    | environmental justice   |
| E.O.                  | Executive Order   |
| ESA                   | Endangered Species Act  |
| F                     | fishing mortality   |
| FES                   | (mail-based) fishing effort survey                            |
| FL                    | fork length   |
| FMP                   | fishery management plan                                       |
| GDP                   | gross domestic product  |
| Gulf                  | Gulf of Mexico  |
| Gulf Council          | Gulf of Mexico Fishery Management Council                     |
| Gulf Spanish mackerel | Gulf of Mexico Migratory Group Spanish mackerel               |
| gw                    | gutted weight   |
| HAPC                  | habitat area of particular concern                            |
| IPCC                  | Intergovernmental Panel on Climate Change                     |
| IRFA                  | initial regulatory flexibility analysis                       |
| lw                    | landed weight   |
| LDWF                  | Louisiana Department of Wildlife and Fisheries                |
| Magnuson-Stevens      | Magnuson-Stevens Fishery Conservation Act                     |
| MMPA                  | Marine Mammal Protection Act                                  |
| Mp                    | million pounds  |
| MRFSS                 | Marine Recreational Fishery Statistics Survey                 |
| MRIP                  | Marine Recreational Information Program                       |
| MSST                  | minimum stock size threshold                                  |
| MSY                   | maximum sustainable yield                                     |
| NMFS                  | National Marine Fisheries Service                             |
| NOAA                  | National Oceanic and Atmospheric Agency                       |
| OFL                   | overfishing limit   |
| OY                    | optimum yield   |
| ppt                   | parts per thousand  |
| PS                    | producer surplus  |

|                        |  |
|------------------------|--|
| pw                     | product weight   |
| RFA                    | Regulator Flexibility Act  |
| RFFA                   | reasonably foreseeable future actions                            |
| RIR                    | Regulatory Impact Review   |
| RQ                     | regional quotient  |
| SBA                    | Small Business Association                                       |
| Secretary              | Secretary of Commerce  |
| SEDAR                  | Southeast Data, Assessment, and Review                           |
| SEFSC                  | Southeast Fisheries Science Center                               |
| SEFSC-SSRG             | Southeast Fisheries Science Center Social Science Research Group |
| SERO                   | NMFS Southeast Regional Office                                   |
| South Atlantic Council | South Atlantic Fishery Management Council                        |
| SPR                    | spawning potential ratio   |
| SRHS                   | Southeast Regional Headboat Survey                               |
| SSB                    | spawning stock biomass   |
| SSC                    | Scientific and Statistical Committee                             |
| TAC                    | total allowable catch  |
| TPWD                   | Texas Parks and Wildlife Department                              |
| WTP                    | willing to pay   |
| ww                     | whole weight   |

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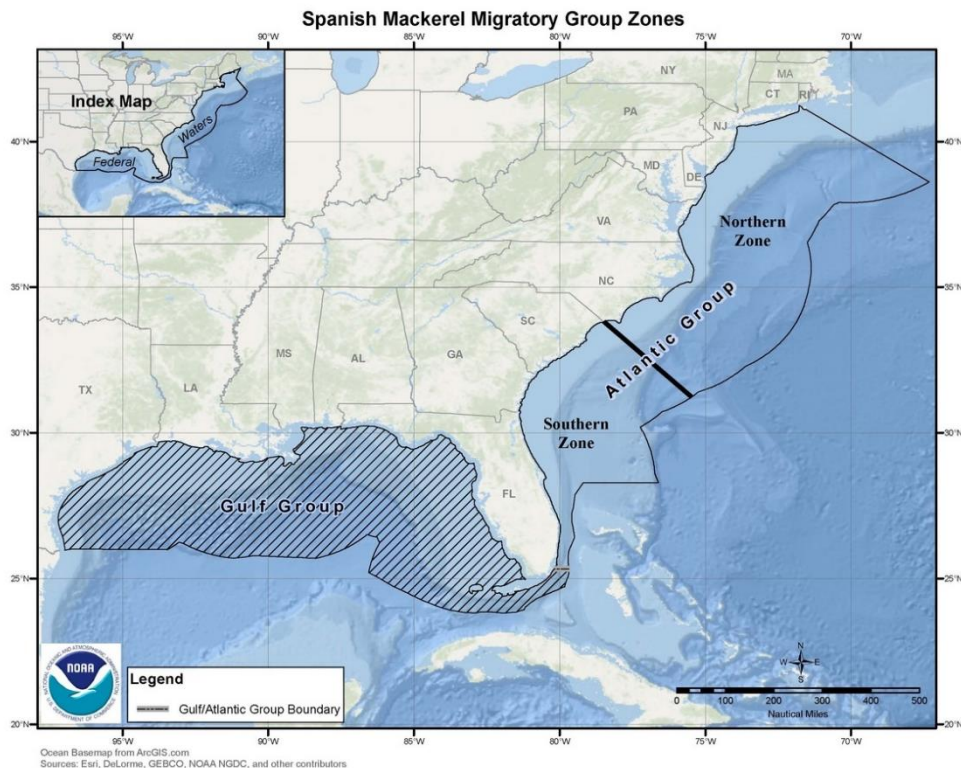


# CHAPTER 1. INTRODUCTION

## 1.1 Background

Framework Amendment 14 to the Fishery Management Plan (FMP) for Coastal Migratory Pelagic (CMP) Resources in the Gulf of Mexico (Gulf) and Atlantic Region (CMP FMP) is being developed by the Gulf of Mexico Fishery Management Council (Gulf Council) to address the results of the Southeast Data Assessment and Review (SEDAR) 81 (2023) stock assessment for the Gulf migratory group of Spanish mackerel (Gulf Spanish mackerel), and subsequent overfishing limit (OFL) and acceptable biological catch (ABC) recommendations from the Gulf Council's Scientific and Statistical Committee (SSC). Framework Amendment 14 proposes revisions to the Gulf Spanish mackerel OFL, ABC, and stock annual catch limit (ACL).

Spanish mackerel is managed jointly by the Gulf Council and South Atlantic Fishery Management Council (South Atlantic Council; together: "Councils") under the CMP FMP. Two migratory groups of Spanish mackerel are managed in the southeastern US: the Atlantic migratory group (Atlantic Spanish mackerel) and the Gulf migratory group (Gulf Spanish mackerel). The current stock and management boundaries were established in March 2015 in Amendment 20B to the CMP FMP (GMFMC and SAFMC 2014a), and are shown in Figure 1.1.1.



**Figure 1.1.1.** Gulf (hashed area) and Atlantic migratory groups of Spanish mackerel stock boundaries as currently used for management purposes by the Councils.

The Gulf Council is responsible for establishing management measures for Gulf Spanish mackerel under the CMP FMP from Texas to the Miami-Dade/Monroe County line in southeastern Florida (Figure 1.1.1.), overlapping the jurisdiction of South Atlantic Council in the Atlantic portion of the Florida Keys. Spanish mackerel landed north of the Miami-Dade/Monroe County line Florida are considered Atlantic stock and managed by the South Atlantic Council. This framework amendment focuses only on Gulf Spanish mackerel; therefore, there will be no further discussion of Atlantic Spanish mackerel.

### *Spanish Mackerel Landings*

The fishing year for Gulf Spanish mackerel is from April 1 to March 31. Gulf Spanish mackerel is managed without allocations between the commercial and recreational sectors, does not have a scheduled seasonal closure, has a minimum size limit of 12 inches fork length (FL) for both sectors and a recreational daily bag limit of 15 fish per person.

The Gulf Spanish mackerel stock ACL is monitored in pounds (lbs) of landed weight (lw); that is, combined whole and gutted weight. If the stock ACL is reached or projected to be reached within a fishing year, the Assistant Administrator for Fisheries will file a notification with the Office of the Federal Register to close the fishery for the remainder of the fishing year. The recreational landings are currently monitored in the Marine Recreational Information Program's (MRIP) Coastal Household Telephone Survey (CHTS) data units. Recently, estimates of recreational catch and effort were calibrated to MRIP's more contemporary Fishing Effort Survey (FES) data units, which is considered by the National Marine Fisheries Service to be consistent with the best scientific information available (BSIA). The landings provided in this document include recreational landings in both CHTS and FES data units for reference; however, a direct comparison between units cannot be made due to differences in the fishing effort assumed under each data unit. A more detailed description of the recent changes to the collection of recreational catch and effort data can be found in Appendix A.

At the August 2023 Council meeting, the NOAA Office of Science and Technology (OST) discussed the release of a pilot study (NOAA 2023<sup>1</sup>), which evaluated potential respondents' bias as recall-error in the mail portion of the recreational FES survey used to estimate effort. The 2023 pilot study evaluated this bias for a portion of the year across several states, and preliminary results suggest the order of the questions in the survey has led to overestimation of fishing effort. A more comprehensive pilot study is planned for 2024, will be independently peer-reviewed in early 2025, and available for evaluation by data users (e.g., the Southeast Fisheries Science Center [SEFSC], Southeast Regional Office [SERO], and the Council) thereafter.

During the last two decades, Gulf Spanish mackerel landings have been predominantly driven by the recreational sector, with one occurrence where the ACL was exceeded in the 2013/2014 fishing year (Table 1.1.1.). Landings after the last ACL modification via Framework

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<sup>1</sup> <https://www.fisheries.noaa.gov/recreational-fishing-data/fishing-effort-survey-research-and-improvements>

Amendment 1 to the CMP FMP (SAMFC GMFMC 2014b) have remained below 35% of the ACL.

**Table 1.1.1.** Gulf Spanish mackerel landings and annual catch limit (in million pounds landed weight) for the fishing years 2000/2001 to 2021/2022. Recreational landings from 2000 – 2013 are in MRFSS, and 2014 – 2021 are in CHTS. FES equivalent landings are provided for reference only.

| Year    | Rec. Landings | Rec. Landings FES | Comm. Landings | Total Landings | Total Landings FES | Stock ACL | % ACL  |
|---------|---------------|-------------------|----------------|----------------|--------------------|-----------|--------|
| 2000/01 | 2,787,759     | 7,134,661         | 1,054,259      | 3,842,018      | 8,188,920          | 9.10      | 42.2%  |
| 2001/02 | 3,453,003     | 8,245,055         | 810,099        | 4,263,102      | 9,055,154          | 9.10      | 46.8%  |
| 2002/03 | 3,171,267     | 8,183,802         | 1,745,064      | 4,916,331      | 9,928,866          | 9.10      | 54.0%  |
| 2003/04 | 2,742,259     | 6,704,231         | 941,702        | 3,683,961      | 7,645,933          | 9.10      | 40.5%  |
| 2004/05 | 2,665,254     | 7,014,438         | 1,986,512      | 4,651,766      | 9,000,950          | 9.10      | 51.1%  |
| 2005/06 | 1,595,371     | 3,746,160         | 1,221,294      | 2,816,665      | 4,967,454          | 9.10      | 31.0%  |
| 2006/07 | 2,845,319     | 5,004,288         | 1,534,040      | 4,379,359      | 6,538,328          | 9.10      | 48.1%  |
| 2007/08 | 2,724,709     | 6,044,654         | 902,827        | 3,627,536      | 6,947,481          | 9.10      | 39.9%  |
| 2008/09 | 2,525,545     | 6,687,581         | 2,360,043      | 4,885,588      | 9,047,624          | 9.10      | 53.7%  |
| 2009/10 | 1,890,078     | 4,845,791         | 942,501        | 2,832,579      | 5,788,292          | 9.10      | 31.1%  |
| 2010/11 | 2,964,208     | 7,484,430         | 1,248,711      | 4,212,919      | 8,733,141          | 9.10      | 46.3%  |
| 2011/12 | 2,677,119     | 7,048,872         | 1,347,945      | 4,025,064      | 8,396,817          | 9.10      | 44.2%  |
| 2012/13 | 3,578,421     | 7,858,124         | 1,413,904      | 4,992,325      | 9,272,028          | 5.15      | 96.9%  |
| 2013/14 | 5,232,534     | 11,738,205        | 1,464,381      | 6,696,915      | 13,202,586         | 5.15      | 130.0% |
| 2014/15 | 1,946,040     | 4,307,213         | 924,490        | 2,870,530      | 5,231,703          | 12.70     | 22.6%  |
| 2015/16 | 2,616,377     | 6,669,809         | 1,219,634      | 3,836,011      | 7,889,443          | 11.80     | 32.5%  |
| 2016/17 | 2,607,122     | 6,850,152         | 1,094,568      | 3,701,690      | 7,944,720          | 11.30     | 32.8%  |
| 2017/18 | 2,184,055     | 7,900,308         | 700,383        | 2,884,438      | 8,600,691          | 11.30     | 25.5%  |
| 2018/19 | 1,922,494     | 6,059,628         | 1,065,335      | 2,987,829      | 7,124,963          | 11.30     | 26.4%  |
| 2019/20 | 3,251,330     | 9,887,158         | 989,648        | 4,240,978      | 10,876,806         | 11.30     | 37.5%  |
| 2020/21 | 1,883,604     | 7,219,120         | 523,578        | 2,407,182      | 7,742,698          | 11.30     | 21.3%  |
| 2021/22 | 1,445,107     | 5,509,628         | 352,847        | 1,797,954      | 5,862,475          | 11.30     | 15.9%  |

Source: SEFSC Commercial ACL data (August 25, 2023). SEFSC Recreational ACL data (September 18, 2023).

### *SEDAR 81 Operational Assessment*

At its July 2023 meeting, the Gulf Council’s SSC reviewed the results and projections from the SEDAR 81 (2023) stock assessment report, prepared by the Southeast Fisheries Science Center (SEFSC). SEDAR 81 updated the data from the previous model (SEDAR 28 2013) and calibrated recreational landings to MRIP-FES, which replaced MRIP-CHTS in 2018 (Appendix A). SEDAR 81 estimated that Gulf Spanish mackerel is not overfished and not undergoing overfishing as of 2021. The SSC accepted SEDAR 81 as consistent with BSIA. The SSC set the OFL for Gulf Spanish mackerel based on SEDAR 81 using a constant catch of 12.074 million

pounds (mp) whole weight (ww) for 2025 – 2027, and subsequent years. The SSC then set the ABC using the yield at 75% of  $F_{30\%SPR}$ . The constant catch ABC for 2025 – 2027 and subsequent years is 9.630 mp ww. For the purposes of consistency in regulations, whole weight and landed weight are treated synonymously for Gulf Spanish mackerel.

### *Proposed Management Modifications*

At its August 2023 meeting, the Gulf Council decided to consider modifying the OFL, ABC, and stock ACL for Gulf Spanish mackerel, in MRIP-FES data units, based on the results from SEDAR 81 and the SSC's recommendations.

## 1.2 Purpose and Need

The purpose is to modify Gulf Spanish mackerel catch limits based on the results of the SEDAR 81 stock assessment.

The need is to use the best scientific information available for managing Gulf Spanish mackerel, and to continue to achieve optimum yield in accordance with 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. A history of management for all CMP species can be found in **CMP Amendment 18** (GMFMC and SAFMC 2011), **Amendment 20B** (GMFMC and SAFMC 2014a), and **Framework Amendment 1** (GMFMC and SAFMC 2014b) and are incorporated here by reference. A complete history of management for CMP species is provided on the Gulf Council website.<sup>2</sup>

A **May 1987 Regulatory Amendment**, with RIR, implemented in June 1987, set a total allowable catch (TAC) for Gulf Spanish mackerel at 2.5 mp with a commercial quota of 1.4 million pounds (mp) and recreational allocation for 1.1 mp.

**Amendment 2**, with an environmental assessment (EA), RIR, and RFA, implemented in July 1987, recognized two migratory groups of Spanish mackerel, established allocations of TAC for the commercial and recreational sectors, and set commercial quotas and recreational bag limits.

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<sup>2</sup> <https://gulfcouncil.org/fishery-management/implemented-plans/coastal-migratory-pelagics/>

**A May 1988 Regulatory Amendment**, with an EA and RIR, implemented in July 1988, set a TAC for Gulf Spanish mackerel at 5.0 mp allocated 43% to recreational sector and 57% to commercial sector.

**A May 1989 Regulatory Amendment**, with an EA and RIR, implemented in July 1989, set the TAC for Gulf Spanish mackerel at 5.25 mp.

**A May 1991 Regulatory Amendment**, with an EA and RIR, implemented in September 1991, increased the Gulf Spanish mackerel TAC to 8.6 mp,

**A May 1996 Regulatory Amendment**, with an EA and RIR, implemented in June 1997, reduced the Gulf Spanish mackerel TAC to 7.0 mp.

**A July 1999 Regulatory Amendment**, with an EA and RIR, implemented in September 1999, increased the TAC for Gulf Spanish mackerel to 9.1 mp.

**Amendment 18**, with an EA, RIR, and RFA, implemented in January 2012, established a stock ACL and accountability measures for Gulf Spanish mackerel.

**Framework Amendment 1**, with an EA and RIR, implemented in December 2014, updated the ACLs for Gulf and Atlantic Spanish mackerel.

## CHAPTER 2. MANAGEMENT ALTERNATIVES

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

**Alternative 1:** No Action. Retain the current OFL, ABC, and stock ACL for Gulf Spanish mackerel as established in Framework Amendment 1 to the Fishery Management Plan (FMP) for Coastal Migratory Pelagic (CMP) Resources in the Gulf of Mexico and Atlantic Regions (CMP FMP). The Gulf Spanish mackerel total stock ACL is set equal to the ABC.

| Fishing Year                         | OFL  | ABC  | Stock ACL |
|--------------------------------------|------|------|-----------|
| 2016/2017+                           | 11.5 | 11.3 | 11.3      |
| 2016/2017+<br>MRIP-FES<br>equivalent | 15.2 | 14.9 | 14.9      |

Note: Values are in million pounds (mp) landed weight (lw).  
Recreational data are in Marine Recreational Information Program  
Coastal Household Telephone System (MRIP-CHTS) data units. The  
catch limits reflect the Scientific and Statistical Committee's (SSC)  
August 2013 recommendation.

**Alternative 2:** Modify the OFL, ABC, and stock ACL as recommended by the Council's SSC, for 2025/2026 – 2027/2028 and subsequent fishing years. Retain the stock ACL being set equal to the ABC.

| Fishing Year            | OFL    | ABC   | ACL   |
|-------------------------|--------|-------|-------|
| 2023/2026 – 2027/2028 + | 12.074 | 9.630 | 9.630 |

Catch limit values are in lbs lw. Note: OFL and ABC as recommended by the Gulf Council's SSC in lbs whole weight (ww). The recreational portion of the OFL, ABC, and ACL are based on MRIP-FES data.

**Alternative 3:** Modify the OFL and ABC for Gulf Spanish mackerel as recommended by the Council's SSC for 2025/2026 – 2027/2028 and subsequent fishing years. Set the ACL using the Council's ACL/ACT Control Rule for 2025/2026 – 2027/2028 and subsequent fishing years. This results in a 10% buffer between the ABC and stock ACL.

| Fishing Year            | OFL    | ABC   | ACL   |
|-------------------------|--------|-------|-------|
| 2023/2026 – 2027/2028 + | 12.074 | 9.630 | 8.667 |



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

## **Discussion:**

The alternatives in this action apply to Gulf Spanish mackerel, which refers to Spanish mackerel landed from the southern border of Texas to the Miami-Dade/Monroe County border on the east coast of Florida. Gulf Spanish mackerel does not have sector allocations. Amendment 18 to the CMP FMP defined the ACL as equal to the ABC (GMFMC and SAFMC 2011). The fishing year is April 1 – March 31. The current OFL, ABC, and ACL were defined in Framework Amendment 1 to the CMP FMP (GMFMC and SAFMC 2014b).

The Southeast Data Assessment and Review (SEDAR) 81 operational assessment (2023) incorporated recreational landings data from MRIP-FES, and indicated that Gulf Spanish mackerel was not overfished or undergoing overfishing as of 2021. The Gulf Council's SSC determined SEDAR 81 to be consistent with the best scientific information available and recommended a constant catch for the OFL and ABC for the 2023/2024 – 2027/2028 fishing years, in MRIP-FES data units. In addition, the SSC recommends a larger buffer between the OFL and ABC to account for scientific uncertainty. Although the SSC's catch limit recommendations only go through the 2027/2028 fishing year, the regulations will remain in effect for subsequent years until modified by a future management action.

**Alternative 1** (No Action) retains the existing OFL, ABC, and total ACL, all of which are based on the previous Gulf Spanish mackerel stock assessment (SEDAR 28 2013). The ACL is equal to the ABC, as specified in Amendment 18 to the CMP FMP (GMFMC and SAFMC 2011). The OFL, ABC, and total ACL in **Alternative 1** are based, in part, on MRIP-CHTS data. One of the major changes between the SEDAR 28 (2013) and SEDAR 81 (2023) 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 consistent with the best scientific information available for Gulf Spanish mackerel. Therefore, retaining the OFL, ABC and total ACL under **Alternative 1**, which are based on MRIP-CHTS data, would be inconsistent with National Standard 2 of the Magnuson-Stevens Fishery Conservation and Management Act (2006). The catch limits in **Alternative 1** also do not reflect the Gulf Council SSC's OFL and ABC recommendation based on SEDAR 81.

**Alternative 2** would modify the catch limits for Gulf Spanish mackerel based on the SSC recommendations from SEDAR 81. The catch limits in **Alternative 2** are consistent with the transition to MRIP-FES in the recreational catch and effort data. **Alternative 2** would substantially reduce the Gulf Spanish mackerel ABC and ACL in comparison to **Alternative 1**. While the majority of historic landings have stayed below the ACL proposed in **Alternative 2** (Table 1.1.1), there is an increased probability of landing the stock ACL.

**Alternative 3** would modify the OFL and ABC based on the SSC's recommendations, and would be consistent with the transition to MRIP-FES for the recreational catch and effort data. **Alternative 3** would use the Council's ACL/ACT control rule to create a buffer of 10% between

the ABC and ACL. **Alternative 3** results in an ACL that is approximately a million pounds less than **Alternative 2**. If harvest rates remain unchanged, total landings are expected to be closer to the ACL than that proposed in **Alternative 2**, therefore the likelihood of triggering accountability measures is increased (Table 1.1.1).



## CHAPTER 3. REFERENCES

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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 Spanish mackerel since 1981. The program included the Access Point Angler Intercept Survey (APAIS), which consists of onsite interviews at marinas and other points where recreational anglers fish, to determine catch. MRFSS also included Coastal Household Telephone Survey (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: Marine Recreational Information Program (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 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 CHTS to a new mail survey (Fishing Effort Survey, FES) beginning in 2015, and in 2018, FES replaced 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).

## **References**

NOAA Fisheries. 2019. Recommended use of the current Gulf of Mexico surveys of marine recreational fishing in stock assessments. Office of Science & Technology; Southeast Fisheries Science Center; Southeast Regional Office. 32 pp.