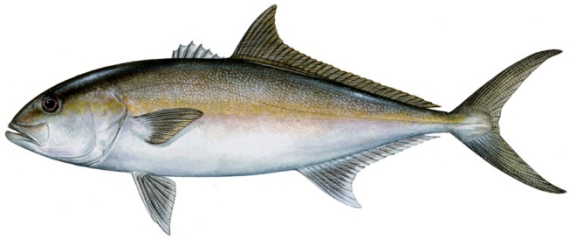
4/22/2019

Modifications to Gulf of Mexico Greater Amberjack Commercial Trip Limits



Draft Framework Action to the Fishery Management Plan for Reef Fish Resources of the Gulf of Mexico

June 2019

This is a publication of the Gulf of Mexico Fishery Management Council Pursuant to National Oceanic and Atmospheric Administration Award No. NA15NMF4410011.

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ENVIRONMENTAL ASSESSMENT COVER SHEET

Name of Action

Modifications to Gulf of Mexico Greater Amberjack Commercial Trip Limits.

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Type of Action

( ) Administrative
(X) Draft

( ) Legislative
( ) Final

ABBREVIATIONS USED IN THIS DOCUMENT

ABC	acceptable biological catch
ACL	Annual Catch Limit
ACT	Annual Catch Target
Council	Gulf of Mexico Fishery Management Council
EIS	environmental impact statement
EA	environmental assessment
FMP	Fishery Management Plan
Gulf	Gulf of Mexico
gw	gutted weight
MFMT	maximum fishing mortality threshold
MSST	minimum stock size threshold
MSY	maximum sustainable yield
NMFS	National Marine Fisheries Service
OY	optimum yield
SEDAR	Southeast Data, Assessment, and Review
SEFSC	Southeast Fisheries Science Center
SPR	spawning potential ratio
SSC	Scientific and Statistical Committee
TAC	total allowable catch
ww	whole weight

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CHAPTER 1. INTRODUCTION

1.1 Background

The commercial sector harvest of greater amberjack is managed to an annual catch target (ACT; also, 'quota') and the fishery is closed for the remainder of the fishing year when the quota is met or projected to be met. The commercial season opens January 1 each year, is closed from March 1 through May 31, and re-opens on June 1 if the quota has not been met. Greater amberjack are rarely a target species by the commercial sector but are caught while targeting other reef fish. A majority of trips land less than 500 pounds (lbs) gutted weight (gw), with greater amberjack typically being caught while targeting other reef fish species. Commercial fishermen prefer to have as long of a fishing season as possible, since these incidentally-caught fish must be discarded if the season is closed. To address this problem, the Gulf of Mexico Fishery Management Council (Council) established a commercial trip limit of 2,000 lbs whole weight ([ww] 1,923 lbs gw) in 2013 (GMFMC 2012), and further reduced the trip limit to 1,500 lbs gw in 2016 (GMFMC 2015). Despite these changes, the commercial sector routinely meets or exceeds its quota before the end of the commercial fishing year, requiring an in-season closure and a payback (see details in "Landings" below) of any overage if the commercial annual catch limit (ACL) is exceeded. The Council is considering further reductions in the commercial trip limit in an effort to reduce the harvest rate and increase the length of the commercial season without exceeding the quota, which triggers an in-season closure and leads to additional regulatory discards.

In 2016, the Southeast Data Assessment and Review (SEDAR) 33 update stock assessment for Gulf of Mexico (Gulf) greater amberjack was completed, and reviewed by the Council's Scientific and Statistical Committee (SSC) at its March 2017 meeting. The SSC accepted the SEDAR 33 update assessment as the best scientific information available. They also concluded that greater amberjack was still overfished and undergoing overfishing, and the stock would not be rebuilt by 2019 as previously projected. To address this result, the Council completed a framework action (GMFMC 2017) to modify the acceptable biological catch (ABC), sector-specific ACLs, and ACTs for greater amberjack (Table 1.1.1). For greater amberjack, the respective sector ACTs are equal to the quota. The final rule implementing this change was effective January 27, 2018.

Table 1.1.1. Greater amberjack commercial ACL and ACT established in 2017 (GMFMC 2017) based on the SEDAR 33 update assessment (2016) in lbs ww.

Fishing year	ACL (lbs ww)	ACT (lbs ww)
2018	319,140	277,651
2019	402,030	349,766
2020+	484,380	421,411

Source: GMFMC 2017 "lbs" = pounds; "ww" = whole weight

Landings:

No harvest catch limit was established for Gulf greater amberjack until the implementation of a soft quota in Secretarial Amendment 2 (GMFMC 2002). The goal of this measure was to manage greater amberjack with a combined recreational and commercial quota but not to implement any in-season closures if the quota was met or exceeded. In 2008, Amendment 30A to the Fishery Management Plan (FMP) for Reef Fish Resources in the Gulf of Mexico (Reef Fish FMP) established sector-specific ACLs and accountability measures (AMs) for Gulf greater amberjack (GMFMC 2008). Amendment 30A required that any annual harvest exceeding either the recreational or commercial ACL be deducted from the applicable sector ACT in the subsequent fishing year (Table 1.1.2). Any overage adjustments for the commercial sector are made on preliminary landings, as final landings are not completed by the beginning of the subsequent fishing year. This may result in minor deviations from the final overage (if any) and the overage deduction. Additionally, Amendment 30A required an in-season closure of the commercial fishery if the ACT was met or projected to be met.

Table 1.1.2. Summary of commercial landings relative to management targets (lbs ww) for 2008 through 2018. This time period covers the recent commercial closures for Gulf greater amberjack.

Year	Landings	ACT	Adjusted ACT	ACT %	ACL	Adjusted ACL	ACL %	Closure Date
2008	440,936	503,000		87.7			NA	
2009	601,446	503,000		119.6			NA	11/7/2009
2010	534,095	503,000	373,072	143.2			NA	10/28/2010
2011	508,871	503,000	342,091	148.8			NA	6/18/2011
2012	308,334	409,000	237,438	129.9	481,000	237,438	129.9	3/1/2012
2013	457,879	409,000	338,157	135.4	481,000	410,157	111.6	7/1/2013
2014	482,277	409,000		119.0	481,000		101.3	8/25/2014
2015	460,670	409,000		112.4	481,000		95.8	7/19/2015
2016	437,390	394,740		110.8	464,400		94.2	7/17/2016
2017	454,561	394,740		115.1	464,400		97.9	6/20/2017
2018*	331,403	277,651		119.4	319,140		103.8	4/3/2018
2019*	292,278	349,766	337,503	86.6	402,030	389,767	75.0	**

Source: Southeast Fisheries Science Center commercial (10/23/18) ACL dataset. *2018 and 2019 data are preliminary including the 2019 adjusted ACT and ACL. Data presented for 2019 are complete through 3/11/19.

Annual commercial greater amberjack landings have varied between the Gulf states since 2000 (Table 1.1.3). Florida has consistently landed the highest percentage of the commercial harvest, averaging 299,757 lbs ww annually. Louisiana and Texas have alternated as the state with the second-most commercial landings, with Texas reporting more landings than Louisiana from 2007 through 2010. Overall, Louisiana has a larger time-series average in commercial landings (155,931 lbs ww) relative to Texas (74,751 lbs ww). Combined, Alabama and Mississippi landings have increased since 2013 with an average of 30,518 lbs ww over the time series.

Table 1.1.3 Annual Gulf greater amberjack commercial landings (lbs ww) for Texas (TX), Louisiana (LA), Mississippi (MS), Alabama (AL), and western Florida (FL) since 2000. Percent contribution to total landings by state for each year is reported in parentheses. Observed minimum and maximum annual landings for each state through 2017 are bolded. Annual and average landings for Mississippi and Alabama are combined to account for confidential data.

Year	TX	LA	MS/AL	FL	Total
2000	111,526 (14.2)	205,796 (26.2)	8,517 (1.1)	**459,840 (58.5)**	785,679
2001	56,878 (9.4)	217,314 (35.9)	5,516 (0.9)	325,577 (53.8)	605,285
2002	70,671 (10.0)	259,687 (36.9)	6,217 (0.9)	366,728 (52.1)	703,303
2003	74,146 (8.7)	320,101 (37.3)	9,367 (1.1)	453,511 (52.9)	857,125
2004	38,122 (4.4)	**406,521 (46.7)**	5,648 (0.6)	420,725 (48.3)	871,016
2005	59,282 (9.0)	162,346 (24.5)	5,035 (0.8)	435,622 (65.8)	662,285
2006	88,479 (15.6)	117,563 (20.8)	**3,835 (0.7)**	356,507 (62.9)	566,384
2007	183,175 (31.1)	92,407 (15.7)	9,380 (1.6)	304,273 (51.6)	589,235
2008	88,792 (20.1)	78,748 (17.9)	7,506 (1.7)	265,890 (60.3)	440,936
2009	138,689 (23.1)	137,802 (22.9)	23,600 (3.9)	301,355 (50.1)	601,446
2010	**191,207 (35.8)**	**73,975 (13.9)**	16,064 (3.0)	252,849 (47.3)	534,095
2011	115,311 (22.7)	122,484 (24.1)	9,075 (1.8)	262,001 (51.5)	508,871
2012	33,954 (11.0)	85,367 (27.7)	16,750 (5.4)	**172,263 (55.9)**	308,334
2013	28,978 (6.3)	155,030 (33.9)	25,728 (5.6)	248,143 (54.2)	457,879
2014	55,754 (11.6)	116,552 (24.2)	79,319 (16.4)	230,652 (47.8)	482,277
2015	32,622 (7.1)	130,258 (28.3)	89,096 (19.3)	208,694 (45.3)	460,670
2016	25,133 (5.7)	127,598 (29.2)	86,086 (19.7)	198,573 (45.4)	437,390
2017	**21,029 (4.6)**	112,934 (24.8)	**106,646 (23.5)**	213,952 (47.1)	454,561
2018*	6,523 (2.0)	40,198 (12.1)	66,448 (20.1)	218,234 (65.9)	331,403
Average	74,751	155,931	30,518	299,757	-

Source: Southeast Fisheries Science Center commercial (10/23/18) ACL dataset. *2018 data are preliminary.

1.2 Purpose and Need

The purpose of this framework action is to modify the Gulf greater amberjack commercial trip limit.

The need for this framework action is to extend the Gulf greater amberjack commercial fishing season by constraining the harvest rate while continuing to prevent overfishing and rebuild the stock.

1.3 History of Management

The Reef Fish FMP (with environmental impact statement [EIS]) was implemented in November 1984. The original list of species included in the management unit consisted of snappers, groupers, and sea basses. Gray triggerfish and *Seriola* species, including greater amberjack, were in a second list of species included in the fishery, but not in the management unit. The species in this list were not considered to be target species because they were generally taken incidentally to the directed fishery for species in the management unit. Their inclusion in the Reef Fish FMP was for purposes of data collection, and their take was not regulated. The following history of management focuses on the commercial sector for greater amberjack.

Amendment 1 (with environmental assessment [EA]), implemented in 1990, added greater amberjack and lesser amberjack to the list of species in the management unit. It set a commercial minimum size limit of 36 inches FL. This amendment's objective was to stabilize the long-term population levels of all reef fish species. A framework procedure for specification of total allowable catch (TAC) was created to allow for annual management changes. This amendment also established a commercial vessel reef fish permit as a requirement for harvest in excess of the bag limit and for the sale of reef fish.

Amendment 4 (with EA), implemented in 1992, added banded rudderfish and almaco jack to the management unit and established a moratorium on the issuance of new commercial reef fish vessel permits for a maximum period of 3 years.

Amendment 5 (with supplemental EIS), implemented in 1994, required that all finfish, except for oceanic migratory species, be landed with head and fins attached and closed the region of Riley's Hump (near Dry Tortugas, Florida) to all fishing during May and June to protect mutton snapper spawning aggregations.

Amendment 15 (with EA), implemented in 1998, closed the commercial harvest of greater amberjack in the Gulf during the months of March, April, and May.

Regulatory Amendment (with EA), implemented in 1999, closed two areas (i.e., created two marine reserves), 115 and 104 square nautical miles respectively, year-round to all fishing under the jurisdiction of the Council with a 4-year sunset clause.

Generic Sustainable Fisheries Act Amendment (with EA), partially approved and implemented in 1999, set the maximum fishing mortality threshold (MFMT) for greater amberjack at the fishing mortality necessary to achieve 30% of the unfished spawning potential ratio (SPR) F30% SPR. Estimates of maximum sustainable yield (MSY), minimum stock size threshold (MSST), and optimum yield (OY) were disapproved because they were based on SPR proxies rather than biomass-based estimates.

Secretarial Amendment 2 (with EIS), implemented in 2003, specified MSY for greater amberjack as the yield associated with $F_{30\% \text{ SPR}}$ (proxy for F_{MSY}) when the stock is at equilibrium, OY as the yield associated with an $F_{40\% \text{ SPR}}$ when the stock is at equilibrium, MFMT equal to $F_{30\%SPR}$, and MSST equal to (1-M)*B_{MSY} (where M = natural mortality) or 75% of B_{MSY}. It also

set a rebuilding plan limiting the harvest to 2,900,000 lbs for 2003-2005, 5,200,000 lbs for 2006-2008, 7,000,000 lbs for 2009-2011, and for 7,900,000 lbs for 2012. This was expected to rebuild the stock in seven years. Regulations implemented in 1997 and 1998 (Amendments 12 and 15 to the Reef Fish FMP) were deemed sufficient to comply with the rebuilding plan so no new regulations were implemented.

Amendment 30A (with EIS), implemented in 2008, was developed to stop overfishing of gray triggerfish and greater amberjack. The amendment established ACLs and AMs for greater amberjack and gray triggerfish. For greater amberjack, the rebuilding plan was modified, which included setting a commercial ACT that functions as the quota. Furthermore, it set an in-season AM where if the ACT was met or projected to be met, the fishing season would close for the rest of the year. **Amendment 30A** also established an allocation for greater amberjack harvest of 73% recreational and 27% commercial.

Amendment 35 (with EA), implemented in 2012 in response to a 2010 update stock assessment, established a new ACL equal to the ABC at 1,780,000 lbs, which was less than the current ACL of 1,830,000 lbs. Reducing the ABC by 18% was expected to end overfishing. The amendment also established a commercial trip limit of 2,000 lbs whole weight (ww) throughout the fishing year.

2015 Framework Amendment (with EA), implemented in 2016 decreased the total ACL from 1,780,000 lbs to 1,720,000 lbs, set the commercial ACL at 464,400 lbs and the commercial ACT at 394,740 lbs, and reduced the commercial trip limit from 2,000 lbs ww to 1,500 lbs gw.

2017 Framework Amendment (with EA), was implemented in 2017. The commercial greater amberjack ACL was set at 319,140 lbs ww for 2018, 402,030 lbs ww for 2019, and 484,380 lb ww for 2020 and subsequent fishing years. The commercial greater amberjack ACT was set at 277,651 lbs ww for 2018, 349,766 lbs ww for 2019, and 421,411 lbs ww for 2020 and subsequent fishing years. In addition, this framework established a new rebuilding timeframe, which ends in 2027.

CHAPTER 2. MANAGEMENT ALTERNATIVES

2.1 Action 1 – Modify the Greater Amberjack Commercial Trip Limit

Alternative 1: No Action – Do not modify the current commercial trip limit for Gulf of Mexico (Gulf) greater amberjack of 1,500 pounds (lbs) gutted weight (gw) (1,560 lbs whole weight [ww]).

Alternative 2: Reduce the commercial trip limit for Gulf greater amberjack to 1,000 lbs gw (1,040-lbs ww).

Alternative 3: Reduce the commercial trip limit for Gulf greater amberjack to 750 lbs gw (780-lbs ww).

Preferred Alternative 4: Reduce the commercial trip limit for Gulf greater amberjack to 500 lbs gw (520-lbs ww).

Alternative 5: Reduce the commercial trip limit for Gulf greater amberjack to 250 lbs gw (260-lbs ww).

Alternative 6: Reduce the commercial trip limit for Gulf greater amberjack to 250 lbs gw (260-lbs ww) when 75% of the ACT is projected to be met.

The Gulf of Mexico Fishery Management Council (Council) may choose any one of Alternatives 1-4 in conjunction with Alternative 6 as preferred alternatives.

Discussion:

The commercial trip limit is a limit on the amount of Gulf greater amberjack that may be possessed on board or landed, purchased, or sold from a federally-permitted commercial vessel per day. A person who fishes commercially in the exclusive economic zone (EEZ) may not combine a trip limit with any trip or possession limit applicable to state waters. Greater amberjack taken in the EEZ may not be transferred at sea, regardless of where such transfer takes place. Commercially harvested greater amberjack are typically landed gutted rather than whole. As such, the management alternatives are stated in gutted weight (gw) with equivalent whole weight (ww) conversions noted in parentheses.

Prior to 2013, there was no commercial trip limit for Gulf greater amberjack. In 2013, a 2,000-lb ww (1,923-lb gw) commercial trip limit was implemented to slow the rate of harvest and attempt to extend the commercial fishing season (GMFMC 2012). In 2016, the commercial trip limit was further reduced to 1,500 lbs gw (1,560 lbs ww) in an additional effort to extend the season (GMFMC 2015). Few commercial fishermen target greater amberjack and landings primarily occur while fishermen are targeting other reef fish species. Western Florida accounts for approximately 60% of observed Gulf greater amberjack commercial trips, with the majority of

trips landing less than 500 lbs gw, which is reflective of the mean harvest-per-trip across the Gulf (Figure 2.1.1). The commercial trip limit on average, and the implementation of commercial trip limits, have not affected this pattern for the majority of vessels; however, the commercial trip limit has affected a small percentage of trips that were likely targeting greater amberjack and harvesting greater than 10,000 lbs gw per trip (Figure 2.1.2). While these actions have had little overall impact on average landings per trip, the commercial sector has consistently reached or exceeded its annual catch limit (ACL) prior to the end of the fishing season, thus requiring in-season closures (Table 1.1.2). In some years, the ACL overages were deducted from the ACL in the subsequent fishing year (Table 1.1.2). The commercial season for Gulf greater amberjack has closed before the end of the fishing year each year since 2009 (Table 1.1.2).

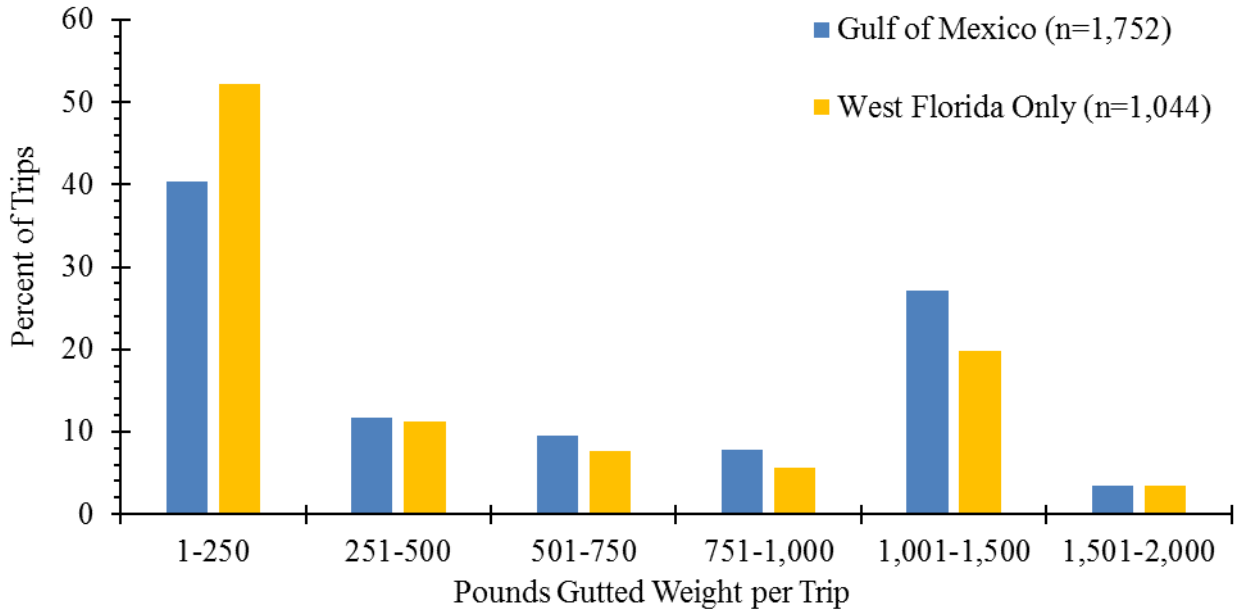

Figure 2.1.1. Percent frequency of observed commercial greater amberjack harvest (lbs gw) per trip from 2016 through 2018 for west Florida and across the entire Gulf of Mexico. Source: Southeast Fisheries Science Center (SEFSC) logbook data as of February 27, 2019 (n = 1,752 trips). Logbook data for 2018 are not complete.

The current trip limit (**Alternative 1**) is 1,500 lbs gw (1,560 lbs ww) and was implemented on January 4, 2016. Available logbook data from 2016 – 2018 were analyzed to determine the distribution of catch-per-trip after the 1,500 lbs gw trip limit was implemented. The majority of trips harvesting Gulf greater amberjack land less than 500 lbs gw per trip (Figure 2.1.1). Approximately 27% of trips harvested between 1,001 and 1,500 lbs gw, suggesting some commercial harvest up to the allowable trip limit.

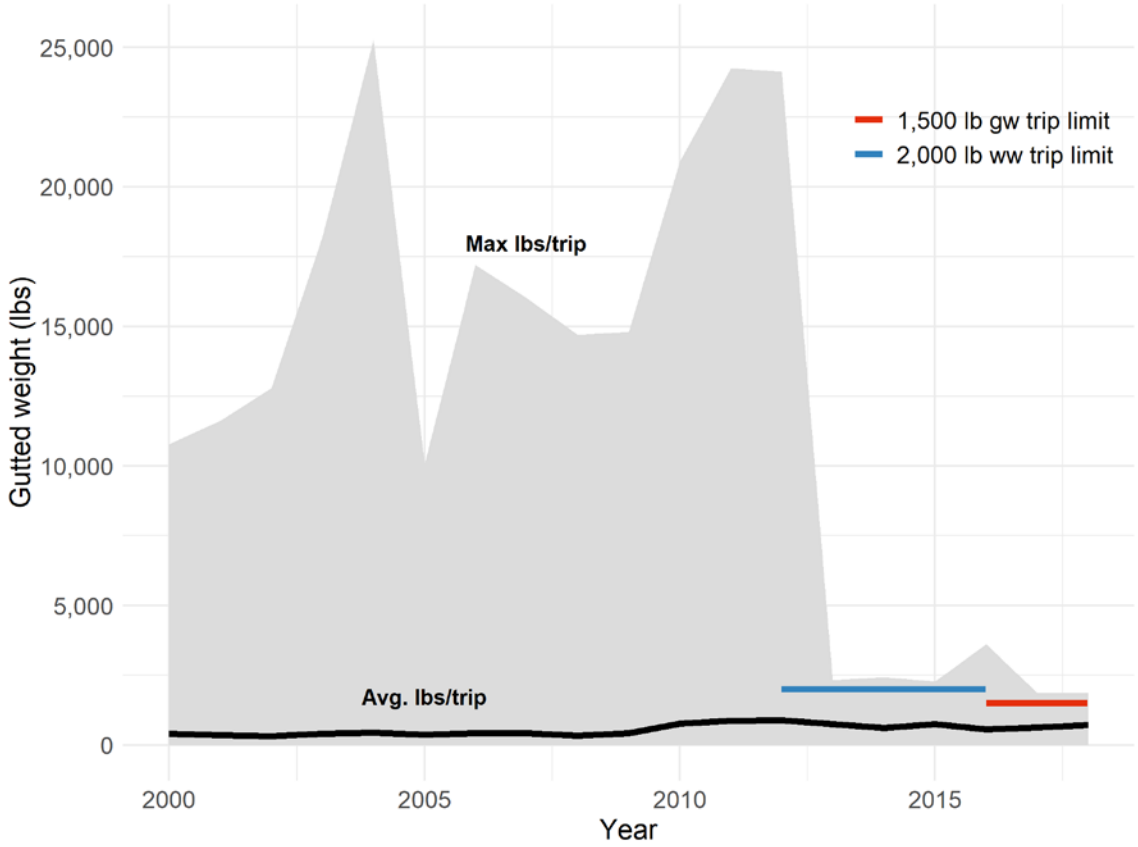

Figure 2.1.2. Mean pounds per trip (gw) of landed Gulf greater amberjack (black line) from 2000 through 2018. Gray shaded area indicates range of landings. Dark blue (2,000 lb ww) and red (1,500 lb gw) lines indicate the implementation of trip limits. Source: Southeast Fisheries Science Center commercial logbook data (2/17/19). * 2018 data are preliminary.

Alternatives 2-6 would reduce the commercial trip limit. To examine the effect of reduced trip limits on the commercial season, a trip limit analysis was completed using historical commercial trip data from 2016 – 2018. For this analysis, historical trips harvesting greater than 1,000 lbs gw (**Alternative 2**), 750 lbs gw (**Alternative 3**), 500 lbs gw (**Preferred Alternative 4**), or 250 lbs gw (**Alternative 5**) were adjusted to reflect each alternative commercial trip limit value. This was done to assess the predicted percent reduction in harvest per trip for each alternative relative to the current 1,500 lbs gw commercial trip limit. This trip limit analysis was repeated for **Alternatives 1-4** to estimate when 75% of the annual catch target (ACT) would be harvested and determine how a subsequent reduction in the commercial trip limit to 250 lbs gw would affect the duration of the commercial fishing season (**Alternative 6**). The details of these analyses are in Appendix A. The resulting number of days required to harvest the commercial quota (ACT) was calculated for each trip limit alternative. This procedure followed the same methods used previously to consider commercial trip limits for Gulf greater amberjack (GMFMC 2012, GMFMC 2015), but the current analyses were based on the most recent data available. **Alternative 2** is expected to reduce commercial landings on a per-trip basis by 17.8%, **Alternative 3**, by 31.8%, **Preferred Alternative 4**, by 49.3%, and **Alternative 5**, by 70.6%. The predicted reduction per trip for **Alternative 6** relative to **Alternatives 1 – 4** is dependent on the implemented commercial trip limit at the beginning of the fishing year, but is expected to be

70.6% when the trip limit is reduced to 250 lbs gw after harvesting 75% of the ACT (Table 2.1.1).

Table 2.1.1. Predicted percent reductions in commercial harvest per trip for Gulf greater amberjack for **Alternatives 1-6** relative to the current 1,500 lbs gw trip limit.

Trip limit (lbs gw)	Predicted Percent reduction
Alternative 1: 1,500	0
Alternative 2: 1,000	17.8
Alternative 3: 750	31.8
Preferred Alternative 4: 500	49.3
Alternative 5: 250	70.6
Alternative 6: 1,500 until 75% ACT harvested, then 250	0/70.6
Alternative 6: 1,000 until 75% ACT harvested, then 250	17.8/70.6
Alternative 6: 750 until 75% ACT harvested, then 250	31.8/70.6
Alternative 6: 500 until 75% ACT harvested, then 250	49.3/70.6

Source: Commercial logbook dataset for 2016 through 2018;
Logbook dataset downloaded on 2/17/19; 2018 data are not complete.

Commercial fishing for Gulf greater amberjack opens January 1 each year with a fixed closed season from March 1 through May 31. The fishery re-opens June 1 and is closed when the quota is met or projected to be met. Based on the quota for 2020 and beyond, **Alternative 1** is expected to result in an 85-day fishing season (Table 2.1.2). **Alternatives 2-6** would be expected to increase the commercial fishing season, with **Preferred Alternative 4** extending the season to 203 days (Table 2.1.2). **Alternative 5** and **Alternative 6** (using an initial trip limit of 500 lbs gw) could provide the longest fishing season of the options under consideration, since the commercial fishery is expected to be open the entire year except for the fixed March 1 through May 31 closure (273 day season). Thus, **Alternative 5** and **Alternative 6** (using an initial trip limit of 500 lbs gw) are expected to reduce the commercial harvest rate sufficiently to avoid an in-season closure prior to the end of the fishing year (Table 2.1.2). Data from the Southeast Fisheries Science Center (SEFSC) Trip Interview Program collected from 2012 through 2018 indicate individual Gulf greater amberjack weights sampled from 2,932 trips ranged between 9 to 109 lbs ww. **Preferred Alternative 4** would allow for a harvest of approximately 5-56 fish per trip and **Alternative 5** would allow for a harvest number of 2-28 fish per trip.

This forecasted season duration analysis attempted to predict realistic changes to the landings from the various commercial trip limit options presented in this framework action. Estimated closure dates are when the 2020+ quota of 421,411 lbs ww is projected to be harvested. For **Alternative 5**, no in-season closure is expected and an estimated 72% of the ACT would be harvest during the fishing season. For **Alternative 6** (using an initial trip limit of 500 lbs gw), forecast analyses estimated 75% of the ACT will be harvested in 140 days (August 21) and the subsequent reduction to 250 lbs gw will extend the season another 132 days with no closures for

the rest of the fishing year. 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 prediction. Additionally, it is possible that a trip limit option between 250 and 500 lbs gw may still achieve an extended season with no in-season closure and allow annual commercial landings greater than 72% of the quota, as is predicted if the 250-lb gw trip limit is implemented. However, similar to the forecasted seasonal closures, uncertainty in estimating future annual commercial landings totals exist and these potential variabilities should also be taken into consideration.

Table 2.1.2. Gulf greater amberjack commercial sector estimated closure dates for **Alternatives 1-6** and predicted dates for harvesting 75% of the ACT for each proposed commercial trip limit **(Alternative 6)**. "Number of days open" is the total number of days open for Gulf greater amberjack commercial harvest for the fishing year, accounting for the March 1 – May 31 closure.

Trip limit (lbs gw)	Predicted date of 75% ACT harvest	Estimated closure date	Number of days open
Alternative 1: 1,500	-	June 27	85
Alternative 2: 1,000	-	July 21	109
Alternative 3: 750	-	August 19	138
Preferred Alternative 4: 500	-	October 23	203
Alternative 5: 250	-	None (72% ACT)	273
Alternative 6: 1,500 until 75% ACT harvested then 250	June 7	September 2	152
Alternative 6: 1,000 until 75% ACT harvested then 250	June 20	September 20	170
Alternative 6: 750 until 75% ACT harvested then 250	July 7	October 18	198
Alternative 6: 500 until 75% ACT harvested then 250	August 21	None (99% of ACT)	273

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APPENDIX A. COMMERCIAL TRIP LIMIT ANALYSIS FOR GULF GREATER AMBERJACK

The Gulf of Mexico Fishery Management Council (Council) is considering changes to commercial trip limits in a framework action to the Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico (Reef Fish FMP). The first step in analyzing the impact of changes to the trip limit is to review the available data. Gulf Greater Amberjack landings data from the Coastal Fisheries Logbook Program (logbook) were provided from the Southeast Fisheries Science Center (SEFSC) on February 27, 2019. On January 4, 2016 a framework action to the FMP reduced the trip limit from 2,000 pounds whole weight (lbs ww) down to 1,500 pounds gutted weight (lbs gw). Since there was a change to the trip limit in early 2016 only data from 2016, 2017, and 2018 were examined (Figure A-1).

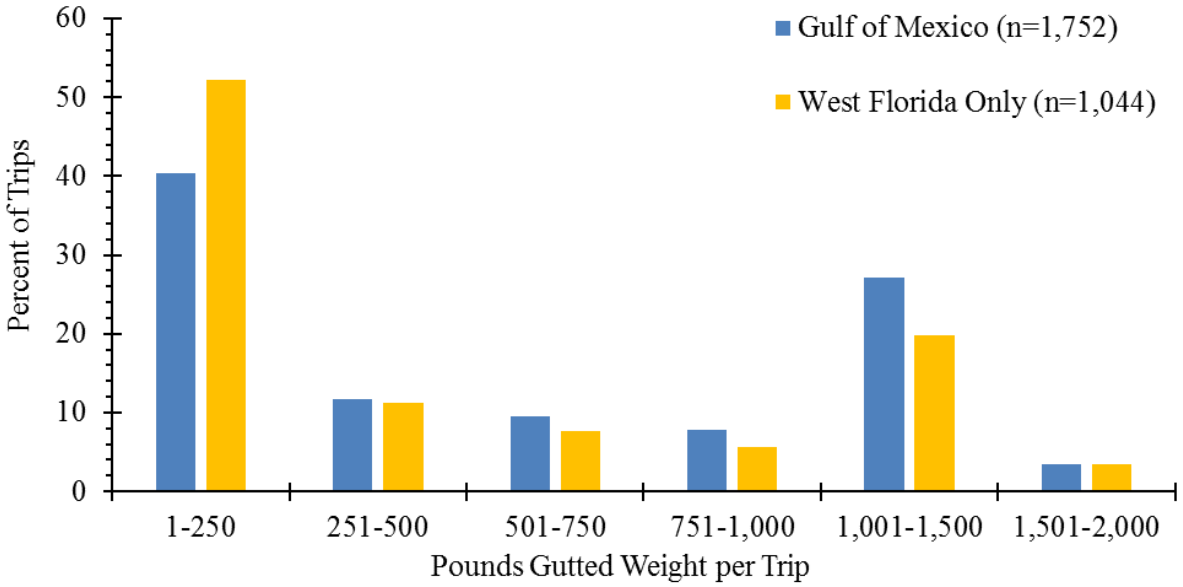

Figure A-1. Percent frequency of observed commercial greater amberjack harvest (lbs gw) per trip from 2016 through 2018. During this time period, there was a total of 1,752 trips reported across the Gulf of Mexico with 1,044 of those trips observed from west Florida.

Trip Limit Analysis

The current Framework Action is proposing a seasonal trip limit from 1,500 lbs gw (1,040-lbs ww) for **(Alternative 1)** down to either 1,000 lbs gw (780-lbs ww) for **(Alternative 2)** , 750 lbs gw for **(Alternative 3)**, 500 lbs gw (520-lbs ww) for **(Preferred Alternative 4)**, or 250 lbs gw (260-lbs ww) for **(Alternative 5)**. Additionally, another considered alternative would reduce the commercial trip limit to 250 lbs gw once 75% of the ACT is projected to be harvested **(Alternative 6)**. The impact to the landings from reducing the trip limit was calculated by limiting trips in previous years (2016 to 2018) to newly proposed trip limits. For example, if analyzing the reduction down to the 500 lbs gw trip limit a trip with 800 pounds would be reduced to 500 pounds. Estimated reductions were calculated based on the difference in landings with no trip limit change (left at status quo of 1,500 lbs gw) compared to landings when a trip

limit was imposed. These reductions were converted to percentages based on the total harvest from previous years (Table A-1).

Table A-1. Percent decreases in landings per trip for the proposed commercial greater amberjack trip limit options relative to the current 1,500 lb gw trip limit. Data were generated from logbook data for 2016 through 2018.

Trip limit (lbs gw)	Predicted Percent reduction
Alternative 1: 1,500	0
Alternative 2: 1,000	17.8
Alternative 3: 750	31.8
Preferred Alternative 4: 500	49.3
Alternative 5: 250	70.6
Alternative 6: 1,500 until 75% ACT harvested, then 250	0/70.6
Alternative 6: 1,000 until 75% ACT harvested, then 250	17.8/70.6
Alternative 6: 750 until 75% ACT harvested, then 250	31.8/70.6
Alternative 6: 500 until 75% ACT harvested, then 250	49.3/70.6

Predicting Closure Dates

The Gulf of Mexico greater amberjack commercial sector exceeded the annual catch target (ACT) in 2016, 2017, and 2018. The current framework action is considering reducing the trip limit with the intent of decreasing the rate of landings. The purpose of reducing the rate of landings is to keep the landings below the ACT and avoid an in-season closure. The commercial sector has had an in-season closure every year since 2009 with closures occurring as early as March 1 and as late as November 7. To capture recent trends in landings the average monthly commercial landings in January and February for 2016, 2017, and 2018 were used as a proxy for future January and February landings. The stock has had a March through May closure for more than a decade and this closure will continue in the future. Therefore, March through May landings were assumed to be zero. Since the stock has had numerous closures in the months of June through December the predicted landings for these months came from SERO-LAPP-2014-09. This report conducted an analysis of historic greater amberjack commercial landings and made a prediction of June through December landings. Figure A-2 shows the predicted landings for the Gulf of Mexico greater amberjack commercial sector.

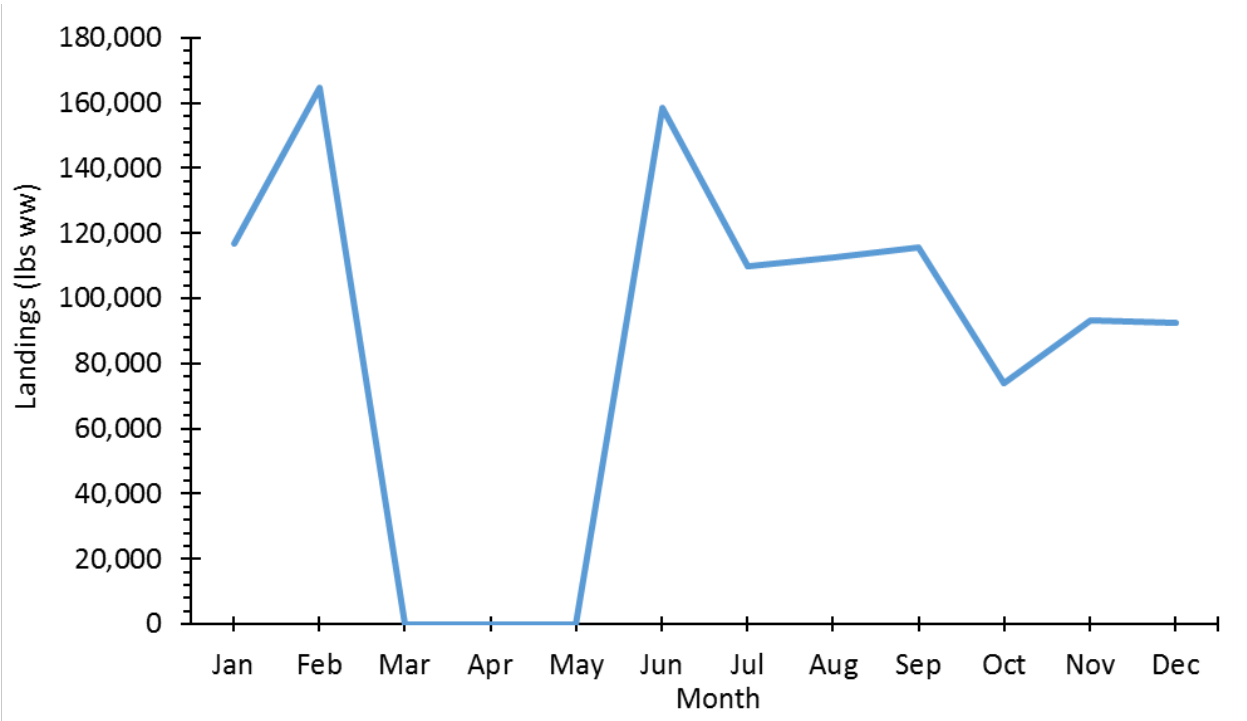

Figure A-2. Predicted commercial landings for Gulf of Mexico greater amberjack. The fishery is closed March 1 to May 31.

The predicted commercial landings (Figure A-2) were combined with the estimated percent reductions (Table A-1) to determine when the commercial sector's ACT will be met. The commercial sector ACT for 2020 and beyond is 421,411 lbs ww, and predicted closure dates are shown in Table A-2. No in-season closure is estimated for a 250 lbs gw trip limit, while a June 27 closure is estimated if the trip limit is left at the current 1,500 lbs gw value.

Table A-2. Gulf of Mexico greater amberjack commercial sector predicted closure dates for different trip limits. Closure dates are when the 2020+ ACT of 421,411 lbs ww is predicted to be met.

Trip limit (lbs gw)	Estimated closure date	Number of days open
Alternative 1: 1,500	June 27	85
Alternative 2: 1,000	July 21	109
Alternative 3: 750	August 19	138
Preferred Alternative 4: 500	October 23	203
Alternative 5: 250	None (72% ACT)	273

Forecast analyses for Alternative 6

The Council is also considering **Alternative 6** where the trip limit at the beginning of the fishing year is reduced to 250 lbs gw when 75% of the ACT (75% of ACT = 316,058 lbs ww) is projected to be met. For this alternative, analyses were conducted to estimate dates for harvesting 75% of the ACT and predict fishing season lengths for each proposed commercial trip limit (**Alternative 1:** 1,500 lbs gw, **Alternative 2:** 1,000 lbs gw, **Alternative 3:** 750 lbs gw,

Preferred Alternative 4: 500 lbs gw; Table A-3). An implementation of **Preferred Alternative 4** on January 1 is projected to harvest 75% of the ACT on August 21. The step down of the trip limit from 500 lb gw to 250 lb gw on August 21 will prevent the commercial sector from reaching the ACT of 421,411 lbs ww. The step down will allow the commercial sector to stay open for the remainder of the fishing year. Therefore, the commercial sector will be open from January 1 to December 31, except for the fixed closure of March through May.

Table A-3. Estimated dates for harvest of 75% of the ACT (316, 058 lbs ww) when the trip limit would be reduced 250 lbs gw and fishing season length for the Gulf of Mexico greater amberjack commercial sector for each proposed trip limit option. The seasonal closure date was estimated using the 2020+ ACT of 421,411 lbs ww.

Trip limit (lbs gw)	Date 75% of ACT Met	Estimated closure date	Number of days open
1,500 until 75% ACT harvested, then 250	7-Jun	2-Sep	152
1,000 until 75% ACT harvested, then 250	20-Jun	20-Sep	170
750 until 75% ACT harvested, then 250	7-Jul	18-Oct	198
500 until 75% ACT harvested, then 250	21-Aug	None (99% of ACT)	273

These analyses attempted to predict realistic changes to the landings from the various trip limit options presented in the framework action. 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. In addition to the aforementioned sources of uncertainty, the modeled reductions associated with management measures assume that past performance in the fishery is a good predictor of future dynamics. An attempt was made to constrain the range of data considered to recent years to reduce the unreliability of this assumption.

Reference

SERO-LAPP-2014-09. 2014. Modeling the combined effects of Gulf framework action proposed management for commercially and recreationally caught greater amberjack.