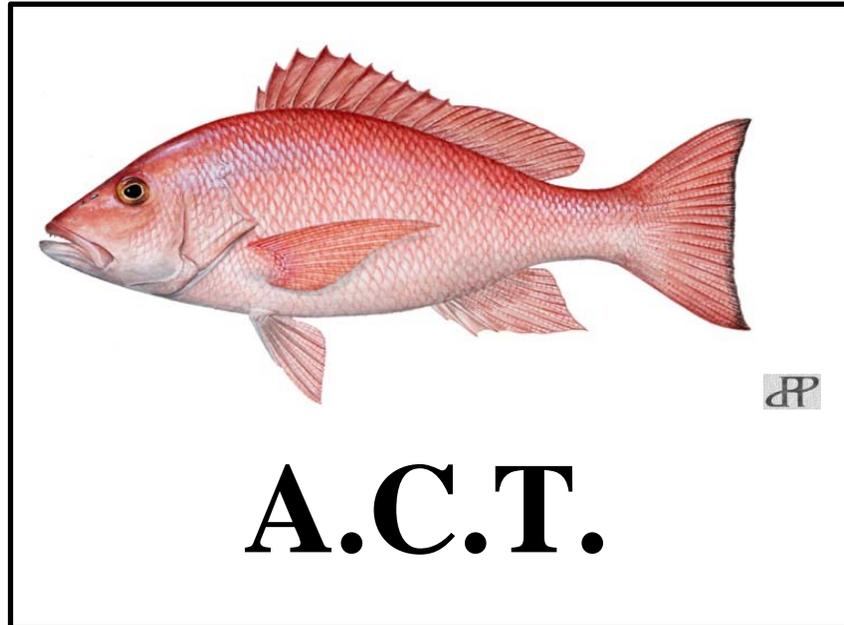


# Adjustment to the Recreational Red Snapper Annual Catch Target Buffer



## Options Paper



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## ABBREVIATIONS USED IN THIS DOCUMENT

ABC	acceptable biological catch
ACL	annual catch limit
ACT	annual catch target
Council	Gulf of Mexico Fishery Management Council
GMFMC	Gulf of Mexico Fishery Management Council
Gulf	Gulf of Mexico
Magnuson-Stevens Act	Magnuson-Stevens Fishery Conservation and Management Act
MRIP	Marine Recreational Information Program
NMFS	National Marine Fisheries Service
OFL	overfishing limit
SEDAR	Southeast Data, Assessment, and Review process
SEFSC	Southeast Fisheries Science Center
SERO	NMFS Southeast Regional Office
SRHS	Southeast region headboat survey
SSC	Scientific and Statistical Committee
TAC	total allowable catch
TPWD	Texas Parks and Wildlife Department

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# CHAPTER 1. INTRODUCTION

## 1.1 Background

Quota based management of the recreational red snapper sector was implemented in 1997 (GMFMC 1997a) in response to a provision in the Sustainable Fisheries Act of 1996 requiring the Council to establish quotas for recreational red snapper fishing. From 1997 through 2014, the recreational sector exceeded its quota 15 times, and was under the quota 3 times (Table 1.1.1). The three times when landings were under the quota were in 2006 (the final year before a reduction in quota occurred), 2010 (the year of the BP oil spill), and 2014 (the first year when a 20% annual catch target (ACT) buffer was applied to the recreational sector) (Table 1.1.1). Preliminary estimates provided by NMFS at the October 2015 Council meeting project that the 2015 recreational landings will be above the ACT, but below the annual catch limit (ACL)<sup>1</sup>.

Prior to 2014, the recreational red snapper season length was based on the projected time needed to reach the quota. Beginning in 2014, the season length was based on when the ACT was projected to be reached rather than the quota in order to reduce the likelihood of an overharvest exceeding the quota. In the two years since the ACT began to be used to project season length, the actual recreational landings have been below the ACL (in 2014) or projected to be below the ACL (in 2015). This suggests that 1) ACT-based management has been successful in constraining harvest below the ACL, and 2) a smaller ACT buffer (less than 20%) could be considered without the harvest exceeding the ACL.

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<sup>1</sup> From 2010 through 2014, red snapper quotas were stated to be functionally equivalent to ACLs, but red snapper ACLs were not explicitly specified. Beginning in 2015, Amendment 40 specified that the commercial and recreational red snapper quotas shall be the annual catch limit (ACL) for the respective sectors, and the sum of the quotas shall be the stock-ACL (GMFMC 2014a). With respect to red snapper, the terms quota and ACL may be used interchangeably.

**Table 1.1.1.** Recreational red snapper federal season lengths, quotas, and landings.

Year	Season dates in federal waters	Number of days open	Recreational Quotas/ACLs	Recreational ACTs	Recreational Landings
1996	January 1 – December 31	365	4.47 mp		5.339 mp
1997	January 1 – November 27	330	4.47 mp		6.804 mp
1998	January 1 – September 30	272	4.47 mp		4.854 mp
1999	January 1 – August 29	240	4.47 mp		4.972 mp
2000	April 21 – October 31	194	4.47 mp		4.750 mp
2001	April 21 – October 31	194	4.47 mp		5.252 mp
2002	April 21 – October 31	194	4.47 mp		6.535 mp
2003	April 21 – October 31	194	4.47 mp		6.105 mp
2004	April 21 – October 31	194	4.47 mp		6.460 mp
2005	April 21 – October 31	194	4.47 mp		4.676 mp
2006	April 21 – October 31	194	4.47 mp		4.131 mp
2007	April 21 – October 31	194	3.185 mp		5.809 mp
2008	June 1 – August 4	65	2.45 mp		4.056 mp
2009	June 1 – August 14	75	2.45 mp		5.597 mp
2010	June 1 – July 23; Oct 1 – Nov. 21 (Fri, Sat., & Sun.)	77	3.403 mp		2.651 mp
2011	June 1 – July 18	48	3.866 mp		6.734 mp
2012	June 1 – July 16	46	3.959 mp		7.524 mp
2013	June 1 – June 28; Oct 1 – Oct 14	42	5.390 mp		9.659 mp
2014	June 1 – June 9	9	5.390 mp	4.312 mp	3.867 mp
2015	June 1 – June 10 (private angling)	10	7.007 mp	5.606 mp	T.B.D.
	June 1 – July 14 (federal for-hire)	44			

Note: Quotas and landings are in millions of pounds (mp) whole weight. In 2014, the season length was estimated based on an ACT of 4.312 mp, reduced from the 5.390 mp quota. Source: Southeast Fisheries Science Center (SEFSC) annual catch limit dataset, including calibrated landings from the Marine Recreational Information Program (MRIP), Texas Parks and Wildlife Department (TPWD), and the Southeast Region Headboat Survey (SRHS) (May 2015).

Table 1.1.2 show the recreational ACLs and ACTs from 2014 through 2017, which is the final year for which acceptable biological catch (ABC) values have been set. Of note is that the ABCs on which the ACLs are based are in a declining trend after 2015 (Table 1.1.3). If reallocation is approved under Amendment 28 (GMFMC 2015a), there will be a small increase in the recreational allocation in 2016, but the overall trend for the stock-ACL is downward until it reaches the equilibrium level. The equilibrium ABC (which is also the equilibrium stock-ACL) is currently estimated by the SSC to be 12.00 mp (GMFMC 2015b), although it is subject to revision in future stock assessments. The equilibrium recreational sector ACL would be 6.150 mp under the current 49% allocation, or 6.463 mp under the 51.5% allocation proposed in Amendment 28 (GMFMC 2015a). The SSC recently recommended that, if at the end of the

projection period no new assessment is available, and the equilibrium ABC is below the ABC of the constant catch yield stream, ABC should revert to the equilibrium ABC (GMFMC 2015c).

The recreational sector ACL and ACT is currently further divided into a for-hire component ACT/ACL, and a private recreational component ACT/ACL. Although it is possible to assign different ACT buffers to these components, the separation is only in effect through 2017 under Amendment 40 (GMFMC 2014a). Furthermore, landings data is not yet available to assess how successful each of the components is to staying within their respective component-ACLs. For this reason, having different ACT buffers for each of the components is beyond the scope of this action. Any adjustment made to the recreational sector ACT will apply to both components.

**Table 1.1.2.** Recreational red snapper federal season lengths, quotas, and landings.

Year	Season dates in federal waters	Number of days open	Recreational Quotas/ACLs	Recreational ACTs	Recreational Landings	% Below ACL
2014	June 1 – June 9	9	5.390 mp	4.312 mp	3.867 mp	-28%
2015	June 1 – June 10 (private angling) June 1 – July 14 (federal for-hire)	10 44	7.007 mp	5.606 mp	6.1 mp (preliminary projection)	-13%
2016	T.B.D.	T.B.D.	6.840 mp or 7.189 mp*	5.472 mp or 5.751 mp*	T.B.D.	
2017	T.B.D.	T.B.D.	6.733 mp or 7.076 mp*	5.386 mp or 5.661 mp*	T.B.D.	
Equilibrium			6.150 mp or 6.463 mp*	4.920 mp or 5.171 mp*		

2015 preliminary landings are projections reported to the Council in October 2015 and are subject to revision. Equilibrium ACL and ACT is based on a recreational allocation of the projected equilibrium acceptable biological catch (ABC) presented to the SSC (GMFMC 2015b).

\* Amendment 28 (GMFMC 2015a), which is currently under review by NMFS, proposes to change the recreational allocation of red snapper from 49% to 51.5% of the stock-ACL. For 2016 and 2017, both the current and proposed ACLs and ACTs are shown.

**Table 1.1.3.** Red snapper ABC projections from September 2015 SSC meeting (GMFMC 2015c)

<b>Year</b>	<b>ABC Projection</b>
2015	14.30 mp
2016	13.96 mp
2017	13.74 mp
2018	13.38 mp
2019	12.84 mp
2020	12.48 mp
Equilibrium	12.55 mp

Note: Estimates assume discards continue at 2013 levels. The SSC only recommended ABCs for 2015-2017 because there is increasing uncertainty with the number of years projected. However, the overall trend is downward.

## 1.2 Purpose and Need

The purpose is to adjust the ACT buffer for the red snapper recreational sector to a level that will allow a greater harvest without exceeding the ACL.

The need is to allow the recreational sector to harvest red snapper at a level consistent with achieving optimum yield while preventing overfishing, and to address social and economic impacts of keeping the recreational gag fishing season open longer while allowing rebuilding targets to be achieved.

## 1.3 History of Management

The history of recreational red snapper quota based management has been described in Section 1.1. For a more comprehensive description of red snapper management, refer to the history of management in Amendment 40 (GMFMC 2014a), which is incorporated herein by reference.

## CHAPTER 2. MANAGEMENT ALTERNATIVES

### 2.1 Action 1 – Red Snapper Recreational Annual Catch Target

**Alternative 1.** (No Action). The ACT for the recreational red snapper sector remains at 20% below the recreational ACL.

**Alternative 2.** Set the ACT for the recreational red snapper sector at 15% below the recreational ACL. This is contingent on the final recreational landings estimates for red snapper in 2015 being at least 5% below the ACL.

**Alternative 3.** Set the ACT for the recreational red snapper sector at 10% below the recreational ACL. This is contingent on the final recreational landings estimates for red snapper in 2015 being at least 10% below the ACL.

#### **Discussion:**

##### *History of Recreational Catch Quotas and ACT Buffers*

The Sustainable Fisheries Act of 1996 added a provision to the Magnuson-Stevens Act requiring that both the commercial and recreational red snapper harvests in the Gulf be managed under a quota (Section 407(d)). Consequently, catch quotas for the recreational red snapper sector were implemented under a regulatory amendment in 1997 (GMFMC 1997a). From 1997 through 2013, the recreational quota was set at the recreational allocation of the total allowable catch (TAC), i.e., 49% of the TAC. In 2015, the TAC became the annual catch limit (ACL) under Amendment 40 (GMFMC 2014a), and the recreational ACL/quota became 49% of the stock-ACL. Amendment 28 (GMFMC 2015a), which has been submitted to NMFS and is currently under review, proposes to change the recreational allocation to 51.5% of the stock-ACL.

Until 2010, the red snapper TAC was set at the acceptable biological catch (ABC) level, which was equivalent to what is now called the overfishing limit (OFL). Beginning in 2010, ABC became the OFL as reduced to account for scientific uncertainty based on an ABC control rule. In 2009, the SSC reviewed a red snapper update assessment (SEDAR 7 Update 2009). The Council's ABC control rule had not yet been developed. In the absence of a control rule, the SSC in 2010 set the ABC at 75% of the OFL (GMFMC 2009a). The ABC continued to be set at either 75% of OFL or the yield corresponding to 75% of  $F_{26\% SPR}$  through 2012.

In 2013, after reviewing SEDAR 31 (2013), the SSC used the ABC control rule in the Generic ACL/AM Amendment to establish ABCs for 2013-2015 (GMFMC 2013a). The ABC control rule resulted in ABCs that were 0.8% to 1.5% below OFL rather than the 25% previously used. The commercial and recreational quotas continued to be based on the allocation of ABC.

The commercial harvest of red snapper has been below the commercial quota each year since implementation of the red snapper IFQ in 2007. However, recreational red snapper landings continued to exceed the recreational quota every year except 2010 (Table 1.1.1). On March 26, 2014, in response to a legal challenge from commercial fishermen, the U.S. District Court for the

District of Columbia ruled that NMFS failed to require adequate accountability measures for the recreational sector, failed to prohibit the retention of fish after the recreational quota had been harvested, and failed to use the best scientific information available when determining whether there should be a 2013 fall fishing season. In response to the Court's decision and to reduce the probability of the recreational sector exceeding its quota, the Council reviewed an analysis of buffer levels presented at the April 2014 Council meeting (Figure 2.1.1). A 20% buffer was expected to result in a 15% probability of overfishing (i.e., exceeding the quota), and the Council requested, through an emergency rule, that NMFS implement an annual catch target (ACT) that was 20% less than the 2014 recreational quota and would be used to set the season length. An October 2014 framework action (GMFMC 2014b) subsequently established a recreational red snapper ACT that is 20% less than the recreational quota. The framework action also established a recreational quota overage adjustment where, while red snapper is overfished, if the recreational red snapper quota is exceeded, the overage would be deducted from the recreational red snapper quota in the following season unless the best scientific information available determines that a greater, lesser, or no overage adjustment is necessary.

The 20% ACT buffer for 2014 resulted in a recreational ACT of 4.312 million pounds whole weight reduced from a quota of 5.39 mp. After taking into consideration inconsistent state regulations, a 9-day federal recreational red snapper season, opening at 12:01 a.m., June 1, and closing at 12:01 a.m., on June 10. ACTs for 2015 through 2017 were also adopted based on a 20% buffer under a 2015 framework action (GMFMC 2015d).

With the 20% ACT buffer in place, the recreational harvest was 28% below its ACL in 2014, and (at the time of this writing) is projected to be 13% below its ACL in 2015. This suggests that a smaller buffer could be adopted that would allow a larger harvest but still prevent the ACL from being exceeded. The Council asked for a new probability analysis of various ACT buffers to be conducted, similar to that done for the 2014 season. However, the method used by NMFS to estimate season length was changed in 2015. In 2014, the season length was based on regression estimates of catch rates that considered inter-annual trends in catch-per-day-in-numbers and average weights. These analyses used bootstrapping to also capture the uncertainty in the input data (e.g., the PSE). This is described in SERO-LAPP-2014-04 (personal communication, SERO).

In 2015, the season length was based on the mean of four different treatments of the 2013-2014 catch rate data, because the regression-based estimates appeared too high. Based on a retrospective analysis of the 2015 catch rates, the regression-based estimates were too high, and the mean of the four different treatments of the 2013-2014 data (e.g., Scenarios A-D in SERO-LAPP-2015-04) provided very good estimates of the observed catch rates (personal communication, SERO).

Because the 2015 season was not based on regression model outputs, it is impossible to replicate the approach used in 2014 to determine the ACT buffer with the updated data.

## 2014 Red Snapper Season Lengths



Recreational Quota = 5.39 mp ww

Buffer (%)	Rec ACT (lbs ww)	Federal Season (days)	Prob. of Exceeding Quota
0%	5.39	17	50%
20%	4.312	11	15%
30%	3.773	8	5%
40%	3.234	5	<1%
60%	1.889	0	<1%

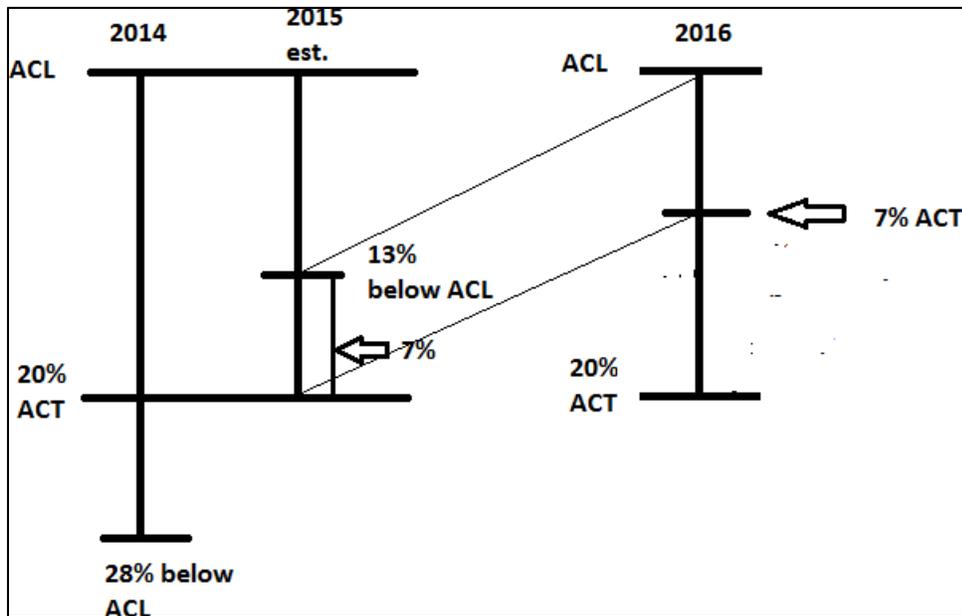


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**Figure 2.1.1.** Analysis of probability of recreational red snapper quota being exceeded in 2014 at various ACT buffer levels. Source: NMFS/SERO

One possible qualitative approach to adjusting the ACT buffer is to reduce it by the amount of excess buffer that is projected to occur in 2015 (Figure 2.1.2). This would result in a 7% ACT buffer based on the projected 2015 harvest. As discussed above, the probability of the 2016 harvest staying below the ACL with this or any other buffer level cannot be calculated using the 2014 methodology. However, given that the 2015 landings are not yet final, and there is a large difference in the relative levels below ACL between 2014 and 2015, it is highly uncertain if harvest would stay below the ACL with this buffer.

Because of these uncertainties, the alternatives presented in this action would reduce the buffer to either 10% or 15% of the ACL, but only if certain contingencies are met. Implementation of the reduced buffer would be delayed until the final 2015 landings are available. If the final 2015 landings would have been below the ACL even with the reduced buffer, it would be an indication that NMFS is successfully constraining catch, and the reduced buffer would be implemented. However, if the 2015 landings would have exceeded the ACL under the reduced buffer, then the ACT buffer would be retained.



**Figure 2.1.2** Adjusting ACT buffer based on the smaller amount of excess buffer during 2014-2015.

**Alternative 1** (no action) retains the recreational ACT being set at 20% below the recreational ACL. In 2014, recreational landings, including state water landings, were 3.867 mp; 28% below the 2014 ACL as well as 10% below the ACT (Table 1.1.2). In 2015 (with state waters still open in some states at the time of this writing), recreational landings are projected to be 6.1 mp; 13% below the ACL but 9% above the ACT. The ACL and ACT change annually. In 2015 they were 30% higher than in 2014. In 2016, they will be either 2.6% higher or 2% lower than in 2015 depending on whether the Amendment 28 reallocation is approved (Table 1.1.2). Thereafter, ABCs (and the resulting ACLs and ACTs) are projected to decline at least through 2020 (Table 1.1.3). As the ACLs and ACTs decline, it may become more difficult for NMFS to accurately project the number of fishing days needed to land the ACT, increasing the likelihood that ACT and ACL could be exceeded.

**Alternative 2** sets the ACT 15% below the ACL. However, as a contingency, this would only be implemented if the final recreational landings for 2015 are at least 5% below the 2015 ACL. If the final landings are less than 5% below the ACL, then the 15% buffer would not be implemented, and the 20% buffer would remain in place. The rationale is that if landings can be constrained to 5% or more below ACL with a 20% buffer, then it follows that landings can be constrained to at or below the ACL with a 15% buffer. However, this is dependent upon the ability of NMFS to accurately predict catch rates. With annual changes in the ACL and ACT, as well as changes in the stock, such predictions will carry a degree of uncertainty.

**Alternative 3** sets the ACT 10% below the ACL. However, as a contingency, this would only be implemented if the final recreational landings for 2015 are at least 10% below the 2015 ACL. If the final landings are less than 10% below the ACL, then the 10% buffer would not be implemented, and the 20% buffer would remain in place. The rationale is that if landings can be constrained to 10% or more below ACL with a 20% buffer, then it follows that landings can be

constrained to at or below the ACL with a 10% buffer. However, this is dependent upon the ability of NMFS to accurately predict catch rates. With annual changes in the ACL and ACT, as well as changes in the stock, such predictions will carry a degree of uncertainty.

The primary tool currently used to control recreational harvest and prevent the ACL from being exceeded in a given year is season length. The ACT buffer is used to account for uncertainty in keeping recreational catches from exceeding the ACL. At its January 5-6, 2016 meeting the Standing and Special Reef Fish SSC reviewed the methodology used by NMFS to set recreational red snapper season lengths. Numerous sources of uncertainty in projecting season length were identified, including:

- Prediction of state season lengths
- Prediction of state catch rates
- Effort compression during federal season
- Catch rates vs. rebuilding
- Fuel prices, economy, angler behavior
- Weather conditions
- States managing toward unofficial “ACLs” vs. “ACTs”
- Time-lag in receiving recreational landings estimates
- Fall re-openings uninformed by Wave 3 data
- Challenges estimating fall catch rates
- Precision issues with landings data
- Changes in recreational surveys
- Multiple sources for landings data, often with different estimates

The SSC discussed possible approaches to that could be used to could be used to evaluate a change in the ACT buffer. However, SSC members felt that, due to the numerous sources of uncertainty, there were too many moving parts to be able to establish a scientific justification for either changing or retaining the 20% buffer. In addition, with only one year of sector separation, there is little data on which to base any analysis. SSC members suggested that the buffer be re-evaluated in 3 or 4 years when there will be more landings data under sector separation.

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