

Revised Appendix H for CMP Framework Amendment 4 — 9/6/16

Predicted Atlantic cobia recreational ACL overage dates

August 2016 Analysis

Predicted dates when the ACL will be exceeded in 2017 were generated with the average Atlantic (New York through Georgia) cobia recreational landings from 2005 through 2014 (Figure 1). These landings came from the Southeast Fisheries Science Center's recreational ACL dataset which was provided in August of 2016.

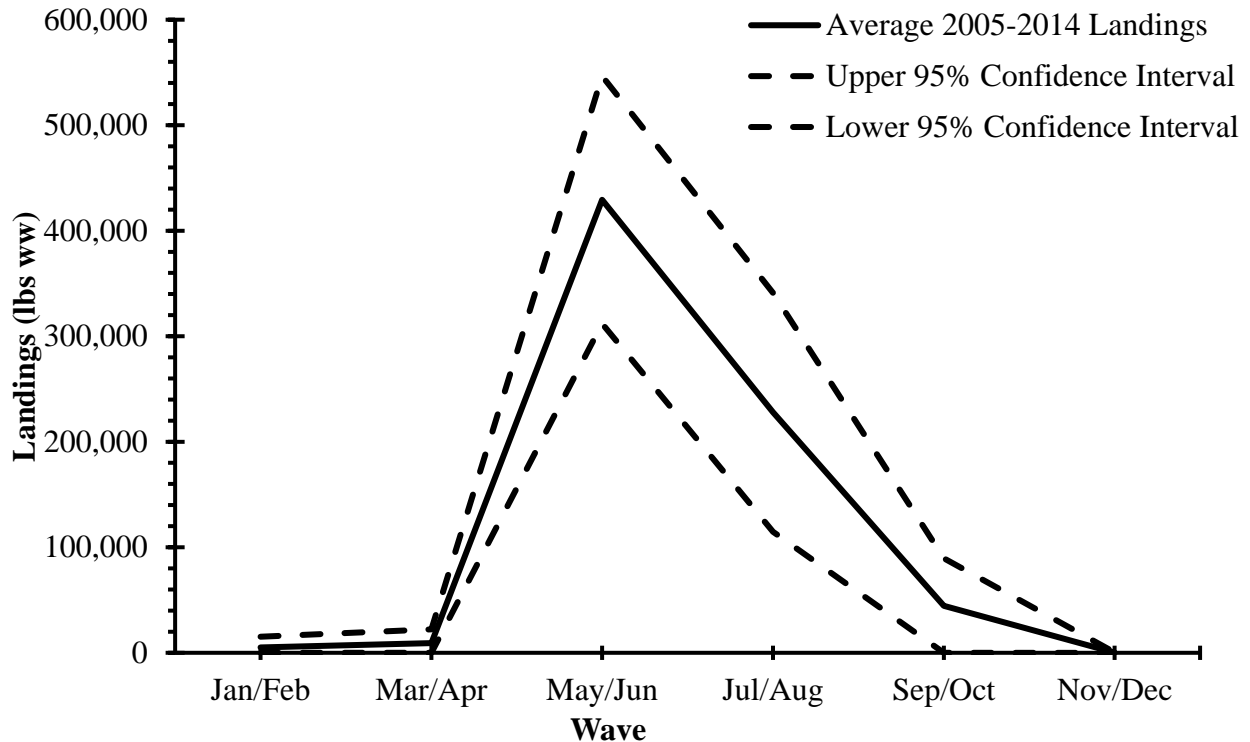


Figure 1.- Average and 95% confidence interval Atlantic cobia recreational landings from 2005 through 2014. The Atlantic cobia stock is defined from the waters of New York through Georgia.

ACL overage dates were determined by evaluating when the landings were predicted to exceed the 2017 ACL of 620,000 pounds whole weight. The closure dates also assume all of the Atlantic cobia states will follow the same regulations. Therefore, the regulations will be consistent for both state and federal waters.

Framework amendment 4 is considering a range of size limits, bag limits, and vessel limits. The ACL overage dates were determined by first calculating percent decrease in landings from the regulations being considered (size limits, bag limits, and vessel limits). Then the reductions were multiplied against the projected monthly recreational landings (RL). This was done with the following equation of:

$$RL_m = AAL_m * \zeta_m * \beta_m$$

where AAL: average annual landings from 2005-2014, ζ : projected size limit reduction, and β : projected bag or vessel limit reduction. The projected recreational landings were calculated for each month (m). Additional details of the method can be found in SERO-LAPP-2012-03 (http://sero.nmfs.noaa.gov/sustainable_fisheries/lapp_dm/archives/documents/pdfs/2012/sero_lapp_2012_03_gulf_gray_triggerfish_decision_tool_rpt.pdf). The landings were summed over time, and closure dates were determined when the landings exceeded the ACL of 620,000 lbs.

The percent decrease in landings from the size limits, bag limits, and vessel limits were determined with dock-side intercept data from 2013 through 2015. Data from the most recent three years (2013-2015) were used because they are likely to reflect current cobia sizes and catch behavior of fishers. Table 1 displays the percent decrease in landings from the size limits, bag limits, and vessel limits being considered in Amendment 4.

Table 1. Estimated percent decrease in Atlantic cobia landings for a combination of minimum size limits, bag limits, and vessel limits. These estimates came from dock-side intercept data from 2013 through 2015. The reductions assume the regulations are implemented in both state and federal waters.

	Minimum Size Limit (FL)								
	33	34	35	36	37	38	39	45	50
Bag Limit									
1 per Person	2.0	4.9	8.1	12.7	16.7	21.3	23.8	59.5	73.7
2 per Person	0	2.9	6.1	10.7	14.7	19.3	21.8	57.5	71.7
Vessel Limit									
1 per Vessel	20.4	23.3	26.5	31.1	35.1	39.7	42.2	77.9	92.1
2 per Vessel	8.8	11.7	14.9	19.5	23.5	28.1	30.6	66.3	80.5
3 per Vessel	4.4	7.3	10.5	15.1	19.1	23.7	26.2	61.9	76.1
4 per Vessel	2.7	5.6	8.8	13.4	17.4	22.0	24.5	60.2	74.4
5 per Vessel	2.1	5.0	8.2	12.8	16.8	21.4	23.9	59.6	73.8
6 per Vessel	0.9	3.8	7.0	11.6	15.6	20.2	22.7	58.4	72.6

Amendment 4 is considering different fishing year start dates in Action 2. ACL overage dates were calculated for each fishing year being considered. The fishery year start dates under consideration are January 1 through December 31 (Table 2), May 1 through April 30 (Table 3), June 1 through May 31 (Table 4), and April 1 through March 31 (Table 5).

Table 2. Estimated ACL overage dates for Alternative 1 of Action 2 under a range of size limits, bag limits, and vessel limits. Alternative 1 has the current fishing year of January 1 through December 31st. The ACL is 620,000 lbs ww.

	Minimum Size Limit (inches fork length)								
	33	34	35	36	37	38	39	45	50
Bag Limit									

1 per Person	21-Aug	26-Aug	5-Sep	23-Oct	None	None	None	None	None
2 per Person	17-Aug	23-Aug	28-Aug	2-Oct	None	None	None	None	None
Vessel Limit									
1 per Vessel	None	None	None	None	None	None	None	None	None
2 per Vessel	12-Sep	12-Oct	None	None	None	None	None	None	None
3 per Vessel	25-Aug	31-Aug	29-Sep	None	None	None	None	None	None
4 per Vessel	22-Aug	27-Aug	12-Sep	31-Oct	None	None	None	None	None
5 per Vessel	21-Aug	26-Aug	6-Sep	25-Oct	None	None	None	None	None
6 per Vessel	19-Aug	24-Aug	30-Aug	11-Oct	None	None	None	None	None

Table 3. Estimated ACL overage dates for Alternative 2 of Action 2 under a range of size limits, bag limits, and vessel limits. Alternative 2 has the current fishing year of May 1 through April 30. The ACL is 620,000 lbs ww.

	Minimum Size Limit (inches fork length)								
	33	34	35	36	37	38	39	45	50
Bag Limit									
1 per Person	25-Aug	30-Aug	24-Sep	21-Mar	None	None	None	None	None
2 per Person	21-Aug	26-Aug	5-Sep	21-Oct	None	None	None	None	None
Vessel Limit									
1 per Vessel	None	None	None	None	None	None	None	None	None
2 per Vessel	1-Oct	3-Jan	None	None	None	None	None	None	None
3 per Vessel	29-Aug	16-Sep	19-Oct	None	None	None	None	None	None
4 per Vessel	26-Aug	31-Aug	1-Oct	28-Apr	None	None	None	None	None
5 per Vessel	25-Aug	30-Aug	25-Sep	26-Mar	None	None	None	None	None
6 per Vessel	23-Aug	28-Aug	13-Sep	31-Oct	None	None	None	None	None

Table 4. Estimated ACL overage dates for Alternative 3 of Action 2 under a range of size limits, bag limits, and vessel limits. Alternative 3 has the current fishing year of June 1 through May 31. The ACL is 620,000 lbs ww.

	Minimum Size Limit (inches fork length)								
	33	34	35	36	37	38	39	45	50
Bag Limit									
1 per Person	20-May	22-May	26-May	31-May	None	None	None	None	None
2 per Person	18-May	20-May	24-May	28-May	None	None	None	None	None
Vessel Limit									
1 per Vessel	None	None	None	None	None	None	None	None	None
2 per Vessel	26-May	29-May	None	None	None	None	None	None	None
3 per Vessel	22-May	25-May	28-May	None	None	None	None	None	None
4 per Vessel	20-May	23-May	26-May	31-May	None	None	None	None	None

5 per Vessel	20-May	22-May	26-May	31-May	None	None	None	None	None
6 per Vessel	19-May	21-May	24-May	29-May	None	None	None	None	None

Table 5. Estimated ACL overage dates for Alternative 4 of Action 2 under a range of size limits, bag limits, and vessel limits. Alternative 4 has the current fishing year of April 1 through March 31. The ACL is 620,000 lbs ww.

	Minimum Size Limit (inches fork length)								
	33	34	35	36	37	38	39	45	50
Bag Limit									
1 per Person	24-Aug	29-Aug	18-Sep	12-Feb	None	None	None	None	None
2 per Person	20-Aug	25-Aug	31-Aug	15-Oct	None	None	None	None	None
Vessel Limit									
1 per Vessel	None	None	None	None	None	None	None	None	None
2 per Vessel	25-Sep	26-Oct	None	None	None	None	None	None	None
3 per Vessel	28-Aug	10-Sep	13-Oct	None	None	None	None	None	None
4 per Vessel	25-Aug	30-Aug	25-Sep	29-Mar	None	None	None	None	None
5 per Vessel	24-Aug	29-Aug	19-Sep	22-Feb	None	None	None	None	None
6 per Vessel	22-Aug	27-Aug	7-Sep	25-Oct	None	None	None	None	None

This analysis attempted to predict realistic changes to cobia recreational landings by estimated decreases in landings from the regulations considered in Amendment 4. Uncertainty exists in these projections, as economic conditions, weather events, changes in catch-per-unit effort, fisher response to management regulations, and a variety of other factors may cause departures from this assumption. The bounds of this uncertainty are not captured by the analysis as currently configured; as such, it should be used with caution as a ‘best guess’ for future dynamics. In addition to the aforementioned sources of uncertainty, the predicted change in landings associated with the regulations considered assume past performance in the fishery is a good predictor of future dynamics.

References

SERO-LAPP-2012-03. Modeling the combined effects of Gulf reef fish Amendment 37 proposed management measures for gray triggerfish. Southeast Region technical report. http://sero.nmfs.noaa.gov/sustainable_fisheries/lapp_dm/archives/documents/pdfs/2012/sero_lapp_2012_03_gulf_gray_triggerfish_decision_tool_rpt.pdf