

Gulf of Mexico Gray Triggerfish Recreational Season Closure Projection
NOAA Fisheries Service
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Abstract

A recent stock assessment determined the Gulf of Mexico gray triggerfish stock is experiencing overfishing and remains overfished. An interim rule and Amendment 37 were developed to establish management measures to end overfishing of gray triggerfish and rebuild the stock by 2017. The interim rule reduced the recreational annual catch limit (ACL) and annual catch target (ACT) and modified the accountability measures to require closure of the recreational sector when the ACT is reached or projected to be reached. Amendment 37, if implemented, will incorporate these changes into the Gulf of Mexico Reef Fish Fishery Management Plan, and also established a recreational closed season and reduced bag limit. The interim rule ends on May 15, 2013. Publication of the final rule for Amendment 37 is anticipated before May 15, 2013, and the actions to reduce harvest (i.e. closed season and reduced bag limit) will be effective in June. In 2012, the recreational fishery was closed on June 11, after reaching the interim rule reduced ACT. Since actions to reduce harvest will not occur until June there is a need to predict the closure date for the recreational sector in 2013. The closure date was estimated using the recreational decision model developed for Amendment 37. The closure date was predicted using two methods: (1) assuming 2013 landings are comparable to 2012 landings and no landings occur after the closure date; and, (2) assuming 2013 landings are comparable to 2012 landings and landings continue to occur after the closure date due to illegal catch and incompatible state regulations. Landings for 2012 were obtained from the Southeast Fisheries Science Center's (SEFSC) ACL database and include landings from the Marine Recreational Fisheries Statistics Survey, the Southeast Headboat Survey, and the Texas Parks and Wildlife's creel survey. Landings likely to occur after the closure were determined using 2012 post-closure landings data. In 2012 there were 41,548 pounds of gray triggerfish that were landed after the closure. If no landings occur after the closure, the model predicts the closure date to be June 2, 2013. Accounting for post-closure landings, the estimated closure date is May 20, 2013. Accounting for post-closure landings reduced the season by thirteen days.

Introduction

In 2011, an update stock assessment was conducted for the Gulf of Mexico gray triggerfish stock (SEDAR 9 Update 2011). Results indicated the stock is experiencing overfishing and remains overfished. The Gulf of Mexico Fishery Management Council (Council) developed Amendment 37 to establish management measures that will end overfishing of gray triggerfish and rebuild the stock by 2017. While Amendment 37 was being developed, an interim rule was implemented to immediately address overfishing. The interim rule reduced the recreational ACL from 457,000 pounds whole weight (ww) to 241,200 pounds ww, reduced the ACT from 405,000 pounds ww to 217,100 pounds ww, and changed the accountability measure to close the recreational sector when the ACT is reached or projected to be reached. Amendment 37, if implemented, will incorporate those changes into the Council's Reef Fish Fishery Management Plan, establish a recreational fixed closed season from June 1-July 31, and

reduced the 20 reef fish aggregate bag limit to 2 gray triggerfish per person within the 20 reef fish aggregate.

The interim rule does not contain the fixed closed season or the bag limit reduction and expires on May 15, 2013. Publication of the final rule for Amendment 37 is anticipated before May 15, 2013. The fixed closed season and reduced bag limit will be effective 30 days after the publication of the final rule (June 15, 2013). In 2012, the recreational fishery reached the ACT, and was closed on June 11, 2012. As the fixed closed season and bag limit changes from Amendment 37 will not be implemented until at least June 15, 2013, there is a need to estimate when the recreational sector will reach the ACT in 2013.

Methods

A recreational decision model was created for Amendment 37 to evaluate the impact of closed seasons, size limits, and bag limits to the Gulf of Mexico gray triggerfish landings (SERO-LAPP-2012-03). The model inputs were updated with available 2012 landings to project 2013 landings. Landings were obtained from the SEFSC's ACL database, which includes landings from the Marine Recreational Fisheries Statistics Survey (MRFSS), the Southeast headboat survey (HBS), and the Texas Parks and Wildlife Department (TPWD) creel survey. MRFSS and HBS landings from 2012 were used for the January to May 2013 landings. MRFSS and HBS landings for June 2013 were estimated by determining the average pounds per day of gray triggerfish harvested during days when the recreational sector was open in June of 2012 (June 1-10) and then extrapolating this harvest rate to the remaining days in June (June 11-30). This method assumes that if June had remained open the harvest rate would have stayed the same for the rest of the month. MRFSS and HBS landings were estimated for July-December 2013 using 2011 MRFSS and HBS landings, since the recreational sector was open all year in 2011. Gray triggerfish landings from TPWD May-November 2012 are not available at this time so monthly 2011 TPWD landings were used to predict 2013 TPWD landings.

The model was used to predict the 2013 closure date in two ways: (1) assuming 100% compliance with the closure (no landings after the closure date); and, (2) assuming landings are likely to occur after the closure due to non-compliance and incompatible state regulations. The post-closure landings were estimated from the 2012 landings that took place after the June 11, 2012 closure, unless 2012 landings were not available (which is the case for TPWD landings) and then 2011 landing were used instead.

The landings after the closure (July to December) were separated by either state or federal waters. It was necessary to explore the state and federal landings because some state waters remained open despite a federal closure. The state waters off Texas and Florida remained open after the federal closure. The states of Mississippi and Alabama closed the gray triggerfish recreational sector in their state waters on the same date as the federal closure, and Louisiana closed their state waters a few weeks later on July 4, 2012. Examination of state and federal waters after the closure allow determination of compliant and non-compliant landings.

Results

Using predicted 2013 landings and assuming there are no landings after the closure the model predicts the fishery to close on June 2, 2013. Figure 1 shows the predicted cumulative landings by month and when the ACT is projected to be reached.

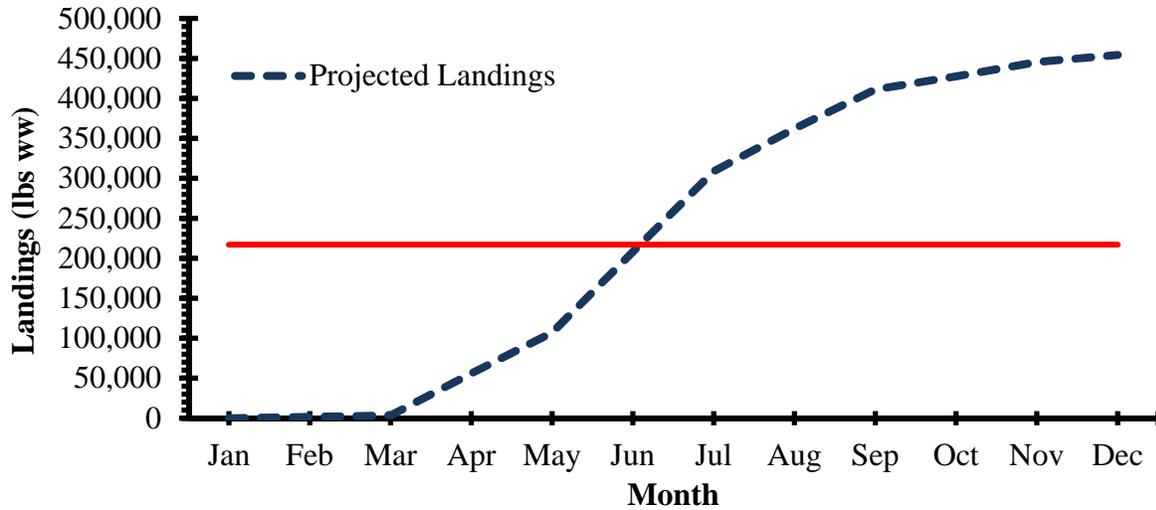


Figure 1. Projected 2013 cumulative landings by month for the Gulf of Mexico gray triggerfish recreational fishery. The recreational landings include projected MRFSS, HBS, and TPWD landings. The red line is the ACT of 217,100 pounds.

Gray triggerfish landings that occurred after the closure were examined. Table 1 provides the post-closure landings by state, and a total of 41,548 pounds ww took place after the closure. Forty percent of the landings occurred in open state waters (Texas and Florida) and sixty percent of the post-closure landings (24,875 lbs ww) were reported from federal waters after the recreational sector was closed.

Table 1. Gulf of Mexico gray triggerfish recreational landings (lbs whole weight) by state in 2012 that occurred after the June 11, 2012 closure date. These MRFSS, HBS, and TPWD landings are from July to December 2012, and are separated by state and federal waters. The fishing locations of the HBS landings are not available at this time and were added to the federal landings. TPWD landings come from 2011 because data for 2012 are currently not available.

Area Fished	Texas	Louisiana	Mississippi	Alabama	Florida West Coast	Total
State	644	0	0	0	16,028	16,672
Federal	274	3,871	0	0	20,493	24,638
Unknown	34	11	7	82	103	238
Total	951	3,882	7	82	36,625	41,548

The second method to predict the closure date included the landings that are likely to take place after the closure. These landings were subtracted from the ACT and the closure date was re-estimated. The predicted closure date incorporating the 41,548 pounds ww of post-closure landings is May 20, 2013. The addition of these post-closure landings reduced the season by thirteen days when compared to the June 2 closure date without the incorporation of the post-closure landings.

Discussion

As with most projections, the reliability of the results are dependent upon the accuracy of the underlying data and input assumptions. We have attempted to create a realistic baseline as a

foundation for comparisons, under the assumption that 2011- 2012 harvest rates are useful predictors for 2013 harvest rates. Differences in economic conditions, weather events, catch-per-unit effort, fisher responses 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 model as currently configured; as such, predicted closure dates may be under or overestimated. If catch rates decrease, the ACT would be met later in the season, and vice versa.

One of the objectives of Amendment 37 is to rebuild the stock, therefore the average size of gray triggerfish is expected to increase over time. If this is the case, and harvest rates remain the same, the ACT may be reached at an earlier date and will decrease the number of days the recreational sector is open. Figure 2 displays changes in gray triggerfish average weight from 2009-2012, and there was a small increase from 2011 to 2012.

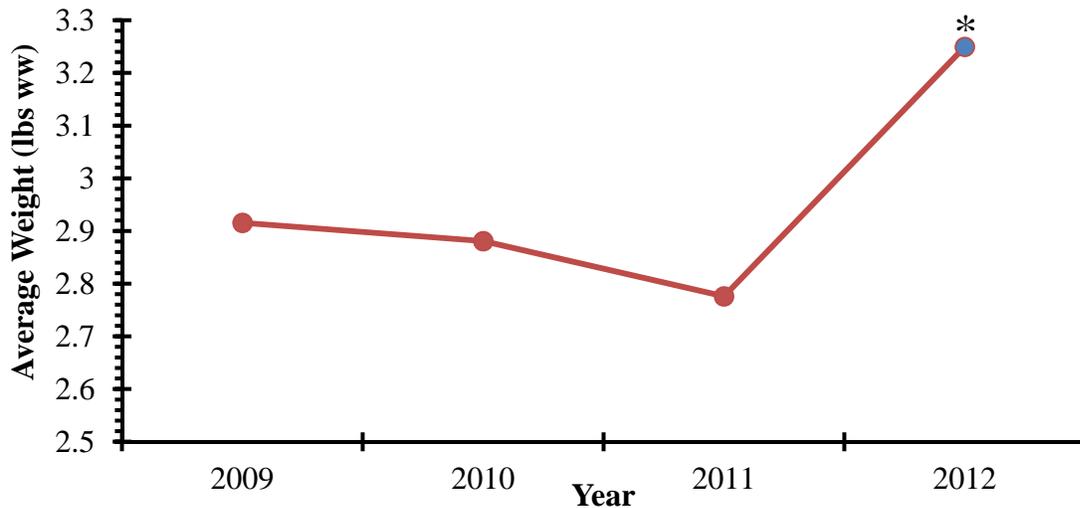


Figure 2. Average weight of Gulf of Mexico gray triggerfish for each year from 2009 to 2012. The average weight for 2012 is preliminary because they only have MRFSS and HBS data. No 2012 Texas Parks and Wildlife gray triggerfish data are available at this time.

The 41,548 pounds of post-closure landings are greater than the 24,100 pound difference between the current ACL and ACT. Therefore, if landings reach the ACT and the recreational sector is closed in 2013 then post-closure landings may cause the stock to exceed the ACL. An overage of the ACL would result in reductions of both the ACL and ACT the following year by the amount of the overage.

Under both scenarios explored, the model indicates the recreational sector will be closed before the fixed closed season and bag limit reduction from Amendment 37 are implemented (around June 15, 2013). The recreational sector will not open for the remainder of the calendar year. The season for 2014 may be longer due to reduced harvest rates expected to result from these regulatory changes.

References

SEDAR 9 Update. 2011. Update stock assessment of gray triggerfish in the Gulf of Mexico. Southeast Data, Assessment, and Review. North Charleston, South Carolina.
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