

## **Projected Stock Assessment: Red Snapper Stock Drastically Declines if Private Angler State ACLs Remain Uncalibrated Beyond 2020**

### Summary:

Ocean Conservancy conducted a simple stock assessment model to look at the impacts of uncalibrated and unaddressed private recreational quota overages of red snapper. These overages are occurring currently, as calibrations between the state surveys and federal quota assignments were not completed under the Exempted Fishing Permits (EFP) and were not addressed prior to the state management final rule. The model produces projections for red snapper biomass under three productivity assumptions (low, average, high) using landings similar to those that have occurred under the 2018-2019 EFP-managed seasons. The results of the model, which projects out to 2025, show that if state management continues without a units calibration, the red snapper stock significantly declines as early as 2022, with the greatest magnitude of impact in the Eastern Gulf. The model suggests that under current fishing trajectories, the eastern portion of the red snapper population will decline to 0-7 percent of the unfished spawning stock size by 2025, depending on the assumption of recruitment. Rebuilding progress will also be threatened. To avoid these outcomes, state ACLs must immediately be calibrated.

### Background:

State management for private recreational red snapper fishing in the Gulf of Mexico allows each individual Gulf state to monitor the fishing of their anglers using state-specific surveys. Because every state survey has a different methodology, the landing estimates produced by each survey are not directly comparable to each other without calibration. Similarly, the results of the surveys are also not directly comparable to the quota allocated to each state, which were derived from federal surveys. To date, managers have not taken the actions necessary to calibrate these data despite simple calibration ratios having already been created by NOAA Fisheries experts. So while on paper, states are managing their individual quotas and implementing paybacks for overages, the failure to calibrate means that they are actually exceeding their individual quotas in most cases. These uncalibrated and unaddressed overages total to as much as 3 million pounds of extra catch a year<sup>1</sup>. Ocean Conservancy undertook a modeling exercise to estimate the likely impacts of these unaddressed overages.

### Approach:

The impacts of the uncalibrated landings to the red snapper stock were explored using the most recent red snapper stock assessment, SEDAR52<sup>2</sup>. The magnitude of the uncalibrated landings from each state were combined using the simple calibration ratios produced by NOAA experts<sup>3</sup> to scale state landings into the same currency as the stock assessment and quotas (CHTS units). These rough-calibrated landings from the eastern and western Gulf of Mexico were then input into the red snapper assessment model to determine the implications of these uncalibrated landings on the stock if calibrations are not applied immediately, i.e. if managers wait until the next stock assessment is completed in 2025 to calibrate. Given the historical underestimation of productivity for red snapper, three scenarios for recruitment (low, medium, high) were also explored in order to capture the range of observed recruitment in the past to determine whether the results were sensitive to productivity estimates.

---

<sup>1</sup> See our previous comment letters, available at <https://www.regulations.gov/docket?D=NOAA-NMFS-2017-0122>

<sup>2</sup> SEDAR 2018. SEDAR 52 Stock Assessment Report Gulf of Mexico Red Snapper Stock Assessment. North Charleston, SC.

<sup>3</sup> Recommended Use of the Current Gulf of Mexico Surveys of Marine Recreational Fishing in Stock Assessments, available at <https://www.fisheries.noaa.gov/feature-story/noaa-fisheries-recommends-source-recreational-catch-statistics-assessing-gulf-reef>

## Results:

As detailed in several comment letters from Ocean Conservancy,<sup>4</sup> applying these scalars resulted in nearly 7 million pounds of red snapper landed annually by the private recreational sector in rough-calibrated CHTS units, which is roughly 3 million pounds in excess of their quota (Figure 1; left). When the rough-calibrated landings were input into the stock assessment, the eastern portion of the spawning stock collapses to less than 7% of the unfished levels prior to the next assessment being completed in 2025. In the worst case, the eastern spawning stock cannot be projected beyond 2022 because the model becomes unstable as landings increase beyond what the stock can support (Figure 1; right). Conversely, impacts to the western stock are minimal as the simple calibration ratios and the total magnitude of landings are smaller in that region. In addition to the region specific impacts, progress towards rebuilding the red snapper stock is stalled under all but the most optimistic recruitment scenario (Figure 2). In all cases, the uncalibrated landings will result in higher fishing mortality rates and slower accumulation of biomass relative to a fully calibrated ACL, potentially threatening rebuilding progress for the entire stock.

## Discussion:

Failure to calibrate between state surveys and their individually assigned quotas has already allowed for significant overages in 2018 and 2019. Our model shows that it is imperative that managers immediately calibrate in order to avoid further damage to the stock. Even under high levels of productivity, the degree of overage that is occurring will likely result in significantly reduced fishing opportunities in the Eastern Gulf and reverse course on progress to restore the stock that has occurred under the rebuilding plan. Private recreational fishers will likely face significant quota reductions and paybacks in the future to account for these overages; calibrating immediately will reduce the scale and scope of those remedial measures. Given the degree of impact we estimate, it is plausible that commercial and for-hire fishermen may also be affected by these overages, given that it may be necessary after the next stock assessment to reduce the overall Acceptable Biological Catch and resulting overall ACL for red snapper.

## What does this mean for the future?

- The private angling component ACLs for each state must be calibrated *now* to ensure that overfishing does not occur. NMFS should apply the calibrations as soon as they become available through temporary rulemaking.
- Applying the calibrations before the 2020 seasons provides the states with accurate management limits, reducing the likelihood of paybacks in the 2021 season. Applying calibrations reduces the risk that when the next stock assessment takes place, there are several years of overfishing from the private angling component. Waiting to calibrate until the next assessment will likely result in a reduction in the stock OFL and ACLs, penalizing every sector.

---

<sup>4</sup> See our previous comment letters, available at <https://www.regulations.gov/docket?D=NOAA-NMFS-2017-0122>

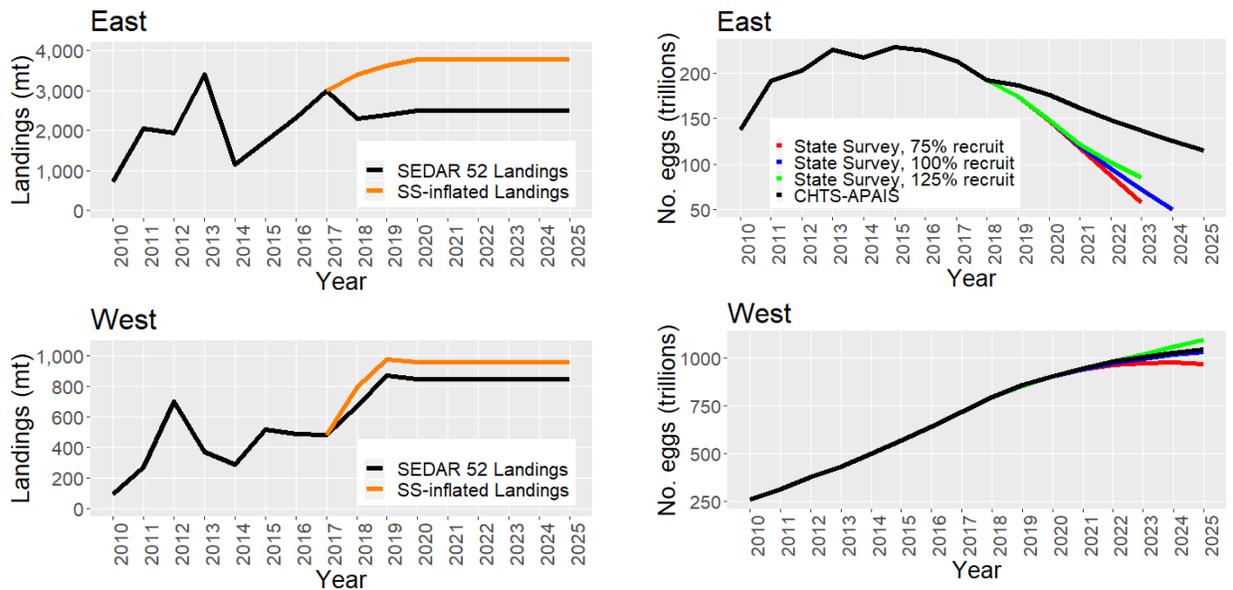


Figure 1. Modeled landings (left) and spawning stock biomass (right) in the eastern (AL, FL, MS) and western (TX, LA) Gulf states if no calibration occurs and states continue to track landings against an uncalibrated ACL until the next stock assessment. The sensitivity of the spawning stock biomass to under (75% recruitment, red line) and over performance (125% recruitment, green line) with respect to production was also evaluated. The model shows that without calibrations, the eastern portion of the stock is expected to precipitously decline over the next five years, much faster than the current trajectory estimated in SEDAR 52 regardless of under/over productivity.

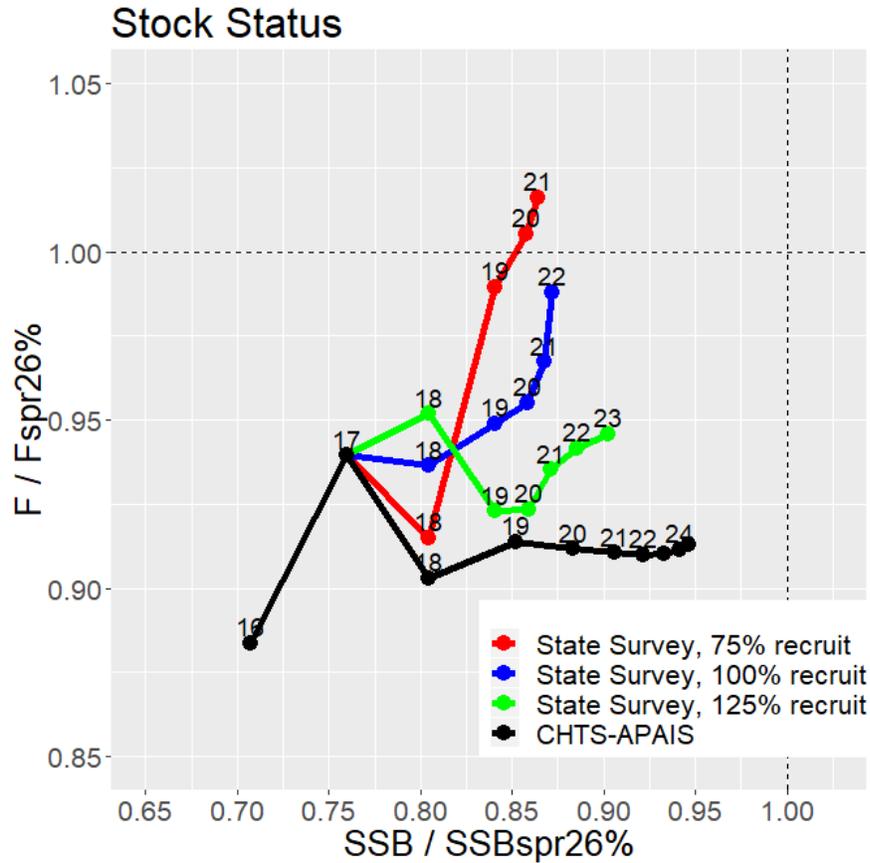


Figure 2. Kobe plot demonstrating the estimated fishing mortality rates (y-axis; F ratio) and spawning stock size (x-axis; SSB ratio) of the uncalibrated, uncalibrated landings for the combined east and west red snapper stock under three future recruitment scenarios for years 2016-2024. The CHTS-AP AIS (black line) scenario shows that under a calibrated scenario the red snapper stock is expected to increase the spawning stock size relative to its target of SSBspr26% and fishing mortality rates remain low. Under all three recruitment scenarios (colored lines) the lack of calibration results in an increase in fishing mortality and a slowing of spawning stock size increases. Missing years are the result of the model becoming unstable due to unrealistically high fishing mortality rates.