

Federal/State Recreational Red Snapper Data Calibration: Alabama's Perspective

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The Magnuson-Stevens Fishery Conservation and Management Act (Act) was created for the purpose of providing sustainable fisheries through sound science.

To achieve this goal the Act requires all groups engaged in the nation's fishery and management process to be accountable. Recreational data needs to be calibrated to obtain a common "currency" for the purpose of ensuring private recreational angler catches remain within defined harvest levels.

Merriam-Webster Dictionary provides two definitions for 'accountable':

1. Subject to giving an account: answerable.

- There are two accounts of recreational catch statistics – Federal and State

- Federal – Coastal Household Telephone Survey (CHTS), Fishing Effort Survey (FES), Access Point Intercept Survey (APAIS), the For-Hire Survey (FHS), and the Southeast Region Headboat Survey (SRHS)
- State – Snapper Check - mandatory reporting for all recreational sectors and a dockside survey

2. Capable of being explained: explainable.

Merriam-Webster provides multiple definitions for 'explain':

1. To make known
2. To make plain or understandable
3. To give reason for or the cause of
4. To show the logical development or relationships of

Which 'account' provides the best description of Alabama's Red Snapper fishery and how does the account 'fit' with the assessment model outputs?

- Alabama contends Snapper Check data more closely aligns with SEDAR 52 Red Snapper assessment outputs compared to Federal private recreational estimates for Alabama.
- The following slides will summarize comparisons of recent annual Federal and Alabama Red Snapper landings estimates to the SEDAR 52 biomass output, the Alabama proportion of Gulf biomass and a fishery-independent estimate of Red Snapper biomass and the estimates will be used to produce a biomass estimate from an Alabama exploitation rate.
- Snapper Check estimates and other data suggest assumptions about Red Snapper productivity are underestimated.
- Discrepancies between the two private recreational data sources suggest more Red Snapper are available than predicted in the model.
- Discrepancies are large enough that the SSC should reassess use of the Federal recreational data in the model or, at the very least, parameters used in the assessment model should be scrutinized to ensure they are appropriate for use.

Data Sources:

To compare biomass estimates landings from recreational and commercial sectors was needed:

Commercial: Query from <https://foss.nmfs.noaa.gov/apexfoss/f?p=215:200:::> on June 11, 2020

Federal recreational data provided by NOAA SERO staff June 10, 2020

Year	Federal Red Snapper Landings Data			Alabama Red Snapper Landings Data ²		
	Private Recreational (Private & State Charter) ¹	For-Hire (Federal Charter and Headboats)	Commercial	Private Recreational (Private & State Charter)	For-Hire (Federal Charter and Headboats) ³	Commercial
2015	CHTS, APAIS	FHS, APAIS, SRHS	Trip Tickets	Snapper Check	Snapper Check	Trip Tickets
2016	CHTS, APAIS	FHS, APAIS, SRHS	Trip Tickets	Snapper Check	Snapper Check	Trip Tickets
2017	CHTS, APAIS	FHS, APAIS, SRHS	Trip Tickets	Snapper Check	Snapper Check	Trip Tickets
2018	FES-CHTS, APAIS	FHS, APAIS, SRHS	Trip Tickets	Snapper Check	Snapper Check	Trip Tickets
2019	NA	NA	NA	Snapper Check	Snapper Check	NA

1 - FES data was calibrated to CHTS data in 2018.

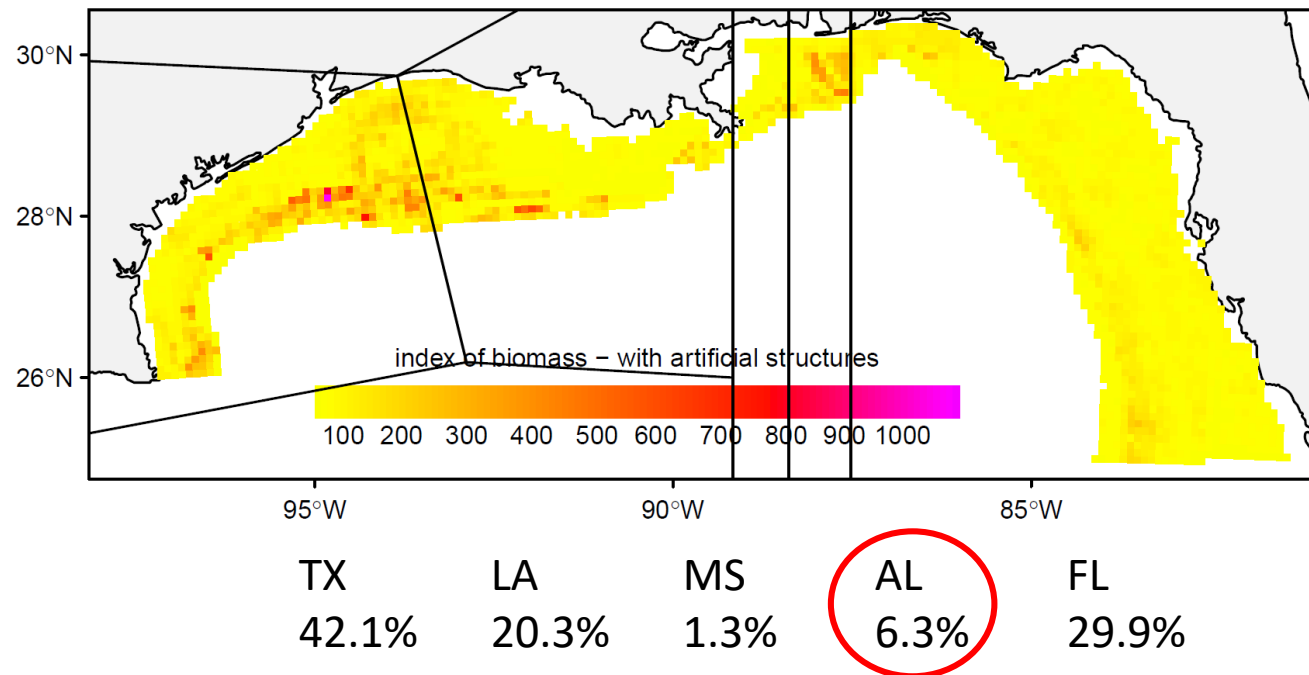
2 - Snapper Check landings were not MRIP certified prior to 2017.

3 - Snapper Check headboat landings were not calculated in 2015-2017.

Snapper Check began in 2014 but the year was removed as Snapper Check and Federal recreational landings were much lower compared to the rest of the time period. Difference between Federal and Snapper Check For-Hire landings ranged between 79,000 and 367,000 pounds.

Comparison of Alabama landings to proportion of Gulf biomass:

- State proportions of Gulf of Mexico biomass provided to Council during the January 2018 Council meeting - Tab B 6(c)*



* - Image from Tab B 6(c): *Using recreational effort or biomass to determine allocation*. N. Farmer and M. Karnauskas. 2018

Comparison of Alabama landings to proportion of SEDAR 52 biomass:

Year	Gulf Biomass (lbs) SEDAR 52	SEDAR 52 AL Biomass	Combined Rec and Comm Federal Landings	Combined Rec and Comm Alabama Landings	Federal LBS % of FI Biomass	Alabama LBS % of FI Biomass
2015	157,245,165	9,906,445	2,824,930	1,388,607	28.5	14.0
2016	166,698,000	10,501,974	3,130,513	1,678,125	29.8	16.0
2017*	177,201,885	11,163,719	4,009,693	1,790,464	35.9	16.0
2018*	187,705,770	11,825,464	3,080,312	2,149,286	26.0	18.2

* - SEDAR Gulf biomass for 2017 and 2018 derived from average annual increase for 2013-2016.

Federal data suggest Red Snapper were removed at two times the rate calculated for Alabama data in 2015 - 2017.

If landings are >30% of Alabama's biomass for 3 years would that be detected by subsequent recreational and fishery-independent surveys off Alabama? If so, in what ways?

If the Federal data series more closely matches actual landings and other surveys cannot measure a significant reduction in Alabama's Red Snapper abundance or average age is Red Snapper more productive than currently believed?

Biomass estimation using an exploitation rate:

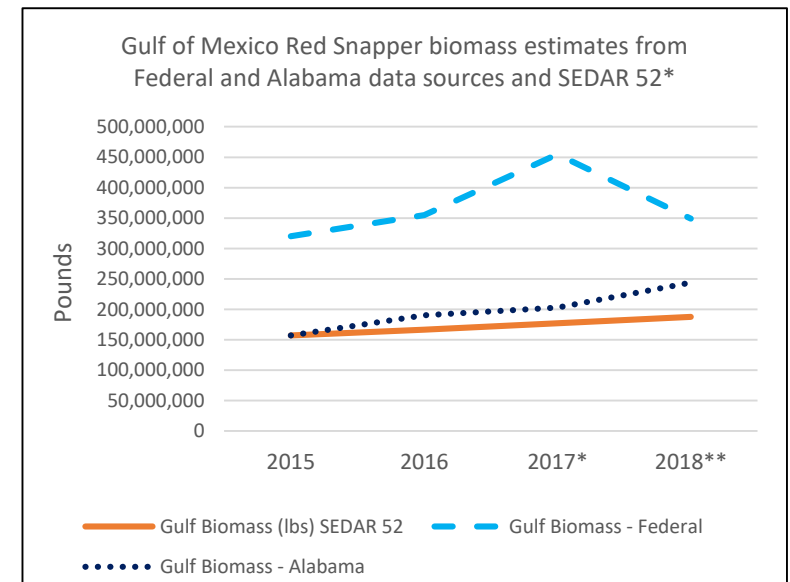
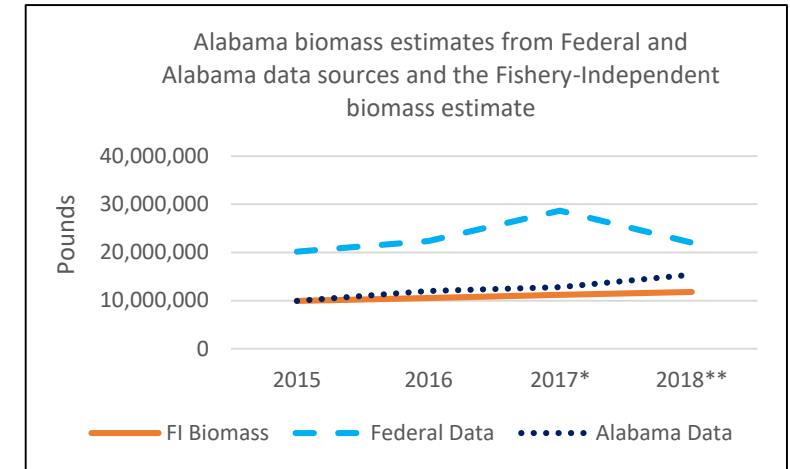
- An extensive tagging study was conducted off Alabama in 2016 (*Estimating Exploitation Rates in the Alabama Red Snapper Fishery Using a High-Reward Tag–Recapture Approach*. 2018. D. Sackett, M. Catalano, M. Drymon, S. Powers, and M. A. Albins. Marine and Coastal Fisheries 10:536-549)
- Biomass can be calculated by dividing removals by the exploitation rate. Off Alabama, Sackett et al. calculated an exploitation rate of **0.14**.

Year	Gulf Biomass (lbs) SEDAR 52*	SEDAR 52 AL Biomass (6.3%)	Exploitation Biomass - Federal Data	Exploitation Biomass - Alabama Data
2015	157,245,165	9,906,445	20,178,071	9,918,621
2016	166,698,000	10,501,974	22,360,807	11,986,607
2017	177,201,885	11,163,719	28,640,664	12,789,029
2018**	187,705,770	11,825,464	22,002,229	15,352,043

Biomass estimates above were divided by 6.3% to obtain Gulf biomass estimates:

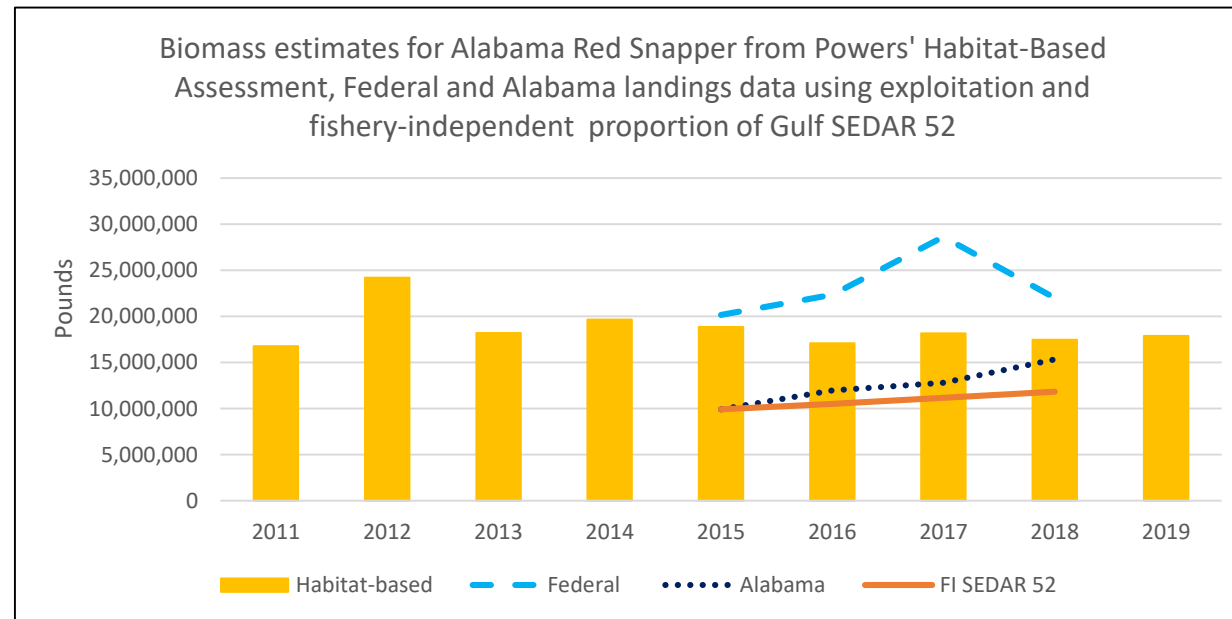
Year	Gulf Biomass (lbs) SEDAR 52*	Gulf Biomass - Federal	Gulf Biomass - Alabama
2015	157,245,165	320,286,848	157,438,435
2016	166,698,000	354,933,447	190,263,605
2017	177,201,885	454,613,719	203,000,454
2018**	187,705,770	349,241,723	243,683,220

*- SEDAR Gulf biomass for 2017 and 2018 derived from average annual increase for 2013-2016.
 **-Headboat landings unavailable for Alabama landings from 2015-2017.



Fishery-independent population estimate:

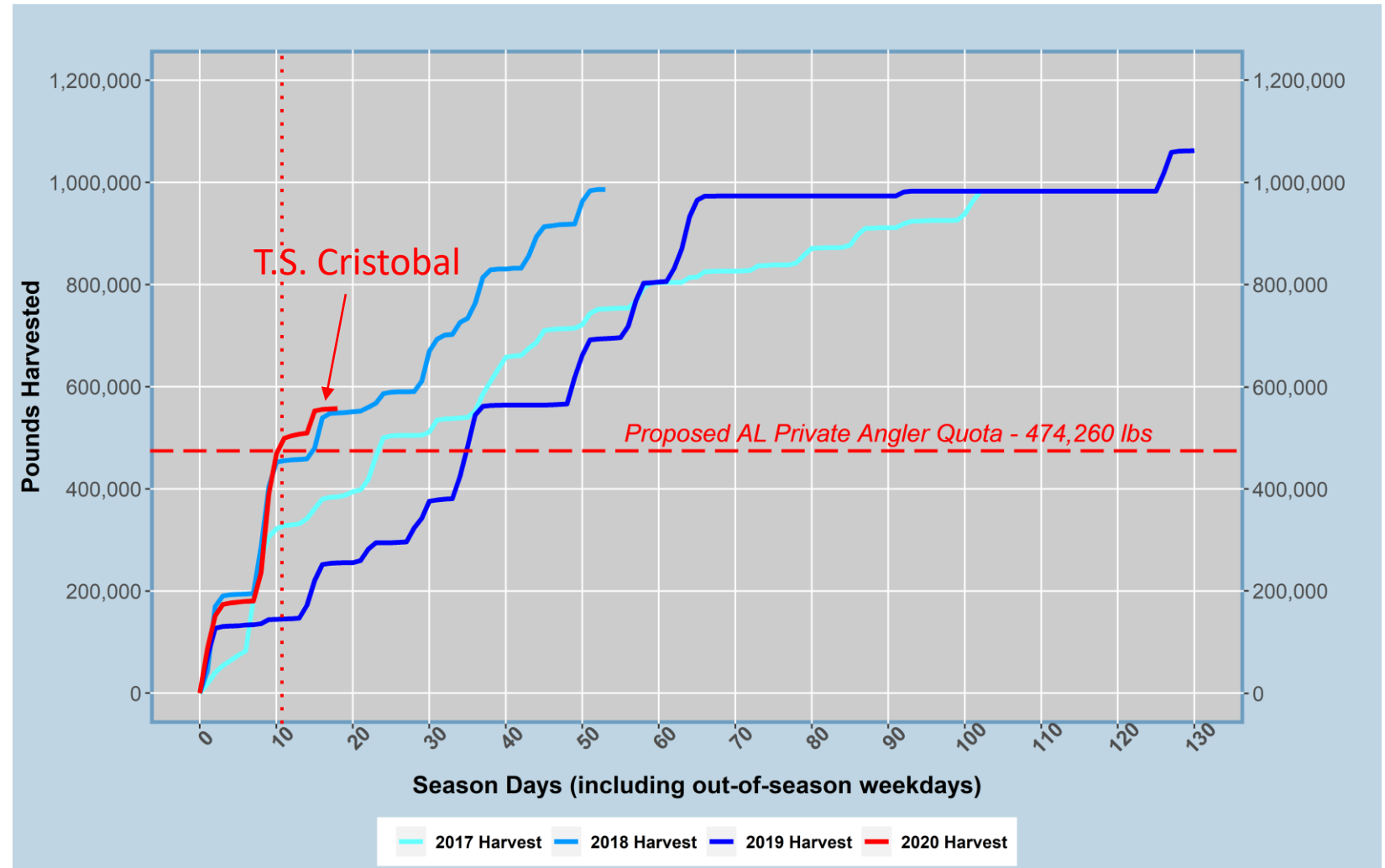
- Beginning in 2011, Alabama has funded fisheries-independent sampling activities to monitor Alabama's offshore habitats to support a habitat-based assessment of reef fish species.
- Reef fish habitat is quantified via side scan surveys and calculating fish abundance via vertical line, ROV and bottom longline. The product of units of habitat and abundance is the biomass. (*Distribution and Age Composition of Red Snapper across the Inner Continental Shelf of the North-Central Gulf of Mexico*. 2018. S. P. Powers, J. M. Drymon, C. L. Hightower, T. Spearman, G. S. Bosarge, and A. Jefferson. Transactions of the American Fisheries Society 147: 791–805. doi: 10.1002/tafs.10081.



Alabama season with proposed calibration:

- Season length is determined by available quota, effort (harvest), and weather.
- Using the proposed AL Private recreational quota to manage the 2020 season Alabama would have met its quota Sunday, May 31st at 3:26 (7th day of 2020 season).

If landings are consistent, considering weather, how is the fishery performing?



Summary:

- Significant differences in Alabama private recreational landings estimates exist between the Federal survey and Alabama Snapper Check program (significant differences also exist in Mississippi).
- The differences have implications for the management of the Red Snapper fishery - short season length for Alabama private recreational anglers or more fish for all sectors.
- Do the federal data collection results meet the “best available science” threshold when compared to other fishery-dependent and -independent data.
- If the federal data meets the best science threshold the SSC should:
 - Explain why the federal recreational data remains the best available data
 - Reevaluate the current level of uncertainty assigned to the recreational data in the model
 - Consider whether it is time to use fishery-independent information in the model runs

Final Thoughts:

- Alabama is invested in sustainable management of the Gulf's resources.
- Alabama, including its private recreational angler, have invested considerable resources to develop and maintain a data collection program that provides timely data used to monitor quotas in-season to prevent overfishing which is comparable to a fishery-independent survey conducted by independent researchers.
- Significant disruptions to season length when data is available to suggest curtailment is not needed could result in losing angler trust in the management process, inconsistent state season, and legal action.
- Alabama has been willing and continues to offer information about its various data collection activities (fishery-dependent and –independent) with NOAA Fisheries, the SSC, and others to better improve everyone's understanding of Red Snapper.