Discard length compositions for South Atlantic Red Snapper (Lutjanus campechanus) from the headboat fishery from North Carolina to Florida

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SEDAR90-DW-13

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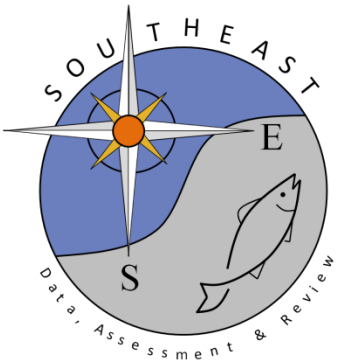

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Introduction

Detailed information on harvested catch, including species composition, number, and size are collected during the dockside intercepts of surveys that estimate recreational landings (e.g. MRIP, SRHS). These surveys only collect self-reported information about species composition and number of discarded fish. No information about the size composition of the discards is reported. In 2005, At-Sea Observer sampling began in North Carolina (NC), South Carolina (SC), Georgia (GA), and Florida (FL) to allow biologists to board headboat vessels to collect data on discarded fish. The At-Sea Observer program is divided into six regions: NC, SC, GA, northeast FL (Nassau to Brevard County), southeast FL (Indian River to Dade County), and the FL Keys (Monroe County). Headboat vessels that participate in the At-Sea Observer Program are randomly selected each month from each sample region. State biologists contact the operators from the selected headboats to schedule a trip. During the observed trip, the captain and mates make sure the biologist is able to observe the fish before it is either stored in the fish hold or released. Biologists are allowed to assist with de-hooking the fish but are not allowed to provide guidance on whether to harvest or discard the fish. The biologist records the species, disposition (e.g. harvest, discard), and length (fork length in mm) for each fish. In FL, the biologist also records the condition of the discarded fish and the depth at which the fish was caught (SEDAR 73-DW-12). This document summarizes the numbers of Red Snapper (*Lutjanus campechanus*) observed during At-Sea Observer sampling from 2005-2024 and annual nominal length distributions of discarded Red Snapper in the South Atlantic headboat fishery. These numbers and analyses are preliminary. Data from NC, SC, and GA for 2024 will not be available until May. Final sample sizes and discard length compositions will be presented in the data workshop report.

Discard Length Compositions

For GA, all data are combined with FL to ensure confidentiality. Seven hundred and thirty-one harvested fish and 15,150 discarded fish were measured during At-Sea Observer sampling. The majority of the measured Red Snapper were sampled in GAFL, with the bulk of those coming from FL (Table 1). For most years, the length compositions of discarded Red Snapper in GAFL are smaller than those in NC and SC (Fig. 1).

There is a differnce in the length distribution between harvested and discarded Red Snapper. Generally, discarded Red Snapper are smaller than Red Snapper that were harvested. From 2005-2009 there were rarely any discarded fish larger than 20 inches maximum total length (max TL). Discards over 20 inches max TL became more common beginning in 2010, however, the majority of discarded Red Snapper are < 20 inches max TL (Fig. 2).

In SEDAR 73, sample weights were calculated by dividing the proportion of total fishing effort in sampling region *i* by the proportion of At-Sea Observer sampling effort for sampling region *i*. These sample weights were then used to weight the final discard length compositions so that sample weights < 1 would down-weight a sample to account for oversampling while sample weights > 1 up-weighted the sample to account for undersampling (SEDAR 73-DW-12). For SEDAR 90, FL-only weighted discard length comps were produced by generating sample weights based on headboat trip duration instead of sampling region. Trips were assigned to one of four categories based on trip duration: half-day (< 6 hours), three-quarter day (6-8 hours), full day (9-24 hours), and multi-day trips (> 24 hours; SEDAR 90-DW-20). A comparison between FL-only nominal and weighted discard length compositions are shown in Figure 3. For SEDAR 90, if weighted discard length compositions are needed, then a decision will need to be made during the data workshop about whether to use a sample weighting based on sampling region effort, as in SEDAR 73 or a sample weighting based on headboat trip duration as done for FL-only data for SEDAR 90.

Preliminary nominal discard nominal length compositions for the entire South Atlantic are presented in Fig. 4.

References

Corbett, E. 2025. SEDAR 90-WP-20. A Summary of South Atlantic Red Snapper Discard Length Data Collected from At-Sea Observers in For-Hire Fishery Surveys in Florida 2005-2024.

Lazarre, D., A. Cathey, C. Wilson, and K. Fitzpatrick. 2020. SEDAR 73-WP-12. Red Snapper Length Frequency Distribution from At-Sea Headboat and Observer Surveys in the South Atlantic, 2005 to 2019.

Tables

Table 1. Number fish (nfish) and trips (ntrip) where discarded (Discard) or harvested (Harvest) Red Snapper were measured for length during the At-Sea Observer Survey sampling the Headboat fishery in the South Atlantic.

Year	nfish_Discard	nfish_Harvest	ntrip_Discard	ntrip_Harvest
2005	492	137	42	34
2006	672	51	31	17
2007	1,498	65	72	31
2008	1,678	242	77	45
2009	436	187	68	39
2010	346	0	58	0
2011	315	0	53	0
2012	657	16	76	6
2013	502	12	97	5
2014	613	3	71	2
2015	819	0	87	0
2016	727	1	86	1
2017	679	1	83	1
2018	788	0	99	0
2019	902	8	89	5
2020	318	0	34	0
2021	1,334	0	121	0
2022	1,016	0	100	0
2023	795	8	141	8
2024	563	0	93	0

Figures

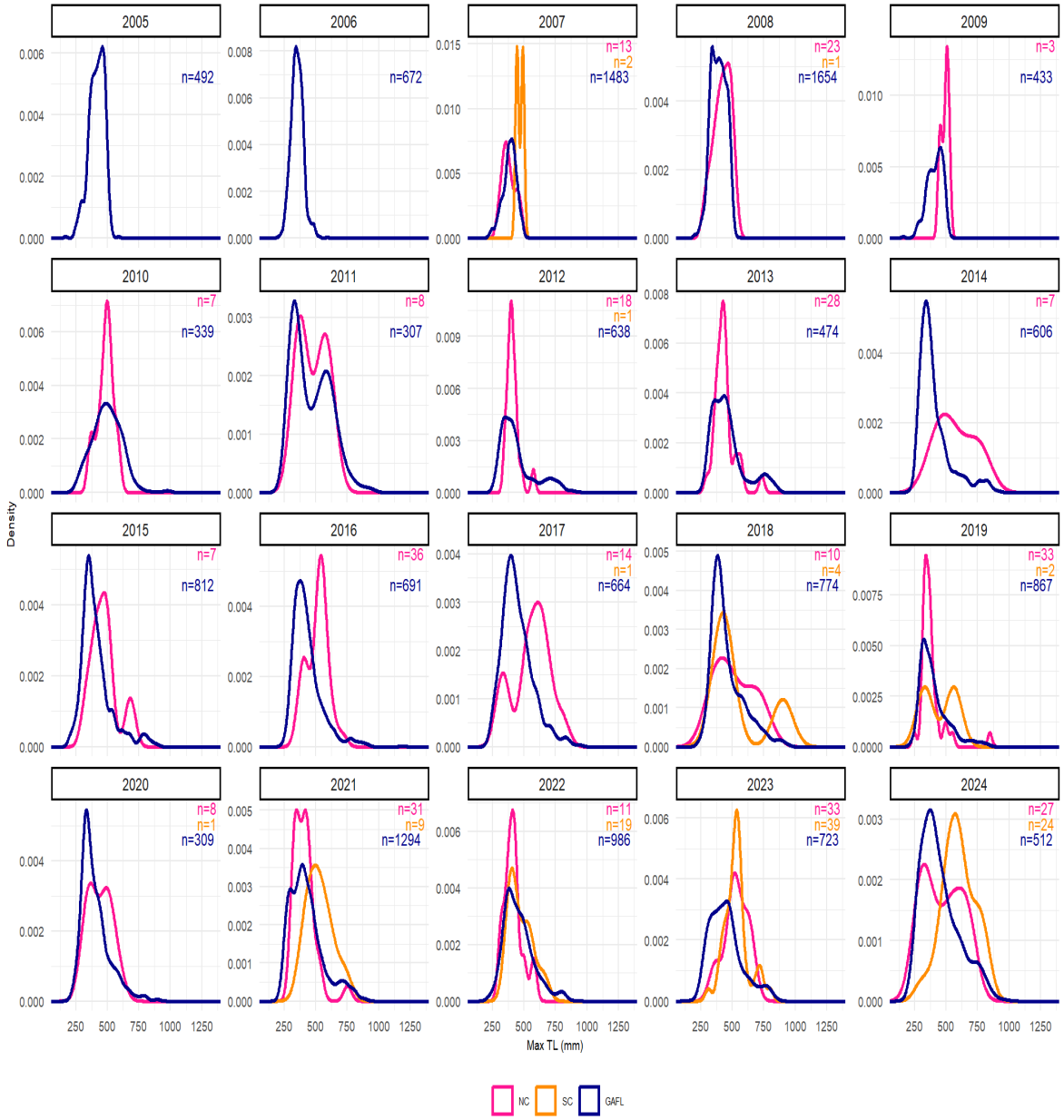

Figure 1. Annual nominal discard length compositions for Red Snapper sampled in the At-Sea Observer program from the headboat fishery from NC-FL. The number of fish sampled (n) for each state is provided in the top right corner of each panel.

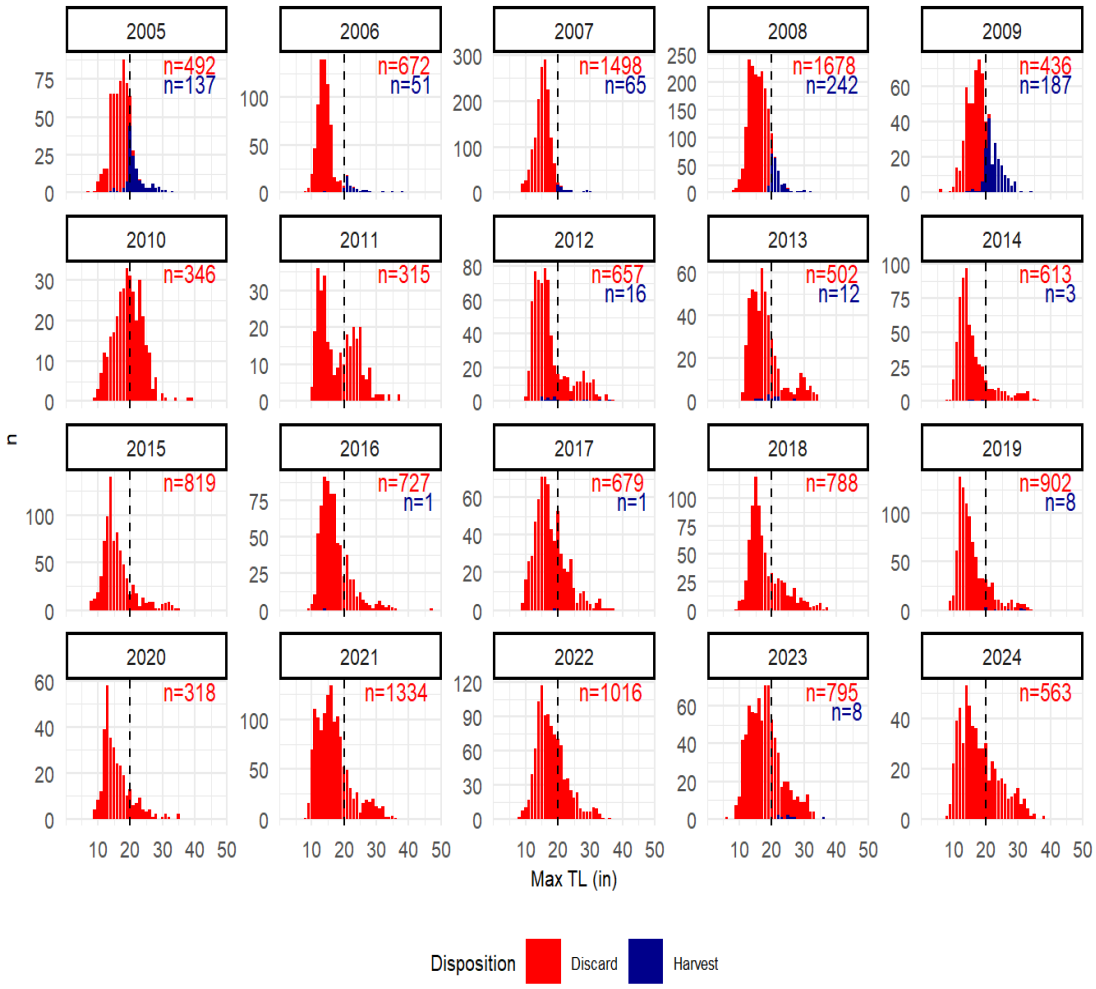

Figure 2. Annual nominal length compositions from harvested and discarded fish sampled in the At-Sea Observer program from the headboat fishery in NC-FL. The number of fish sampled (n) by disposition is provided in the top right corner of each panel.

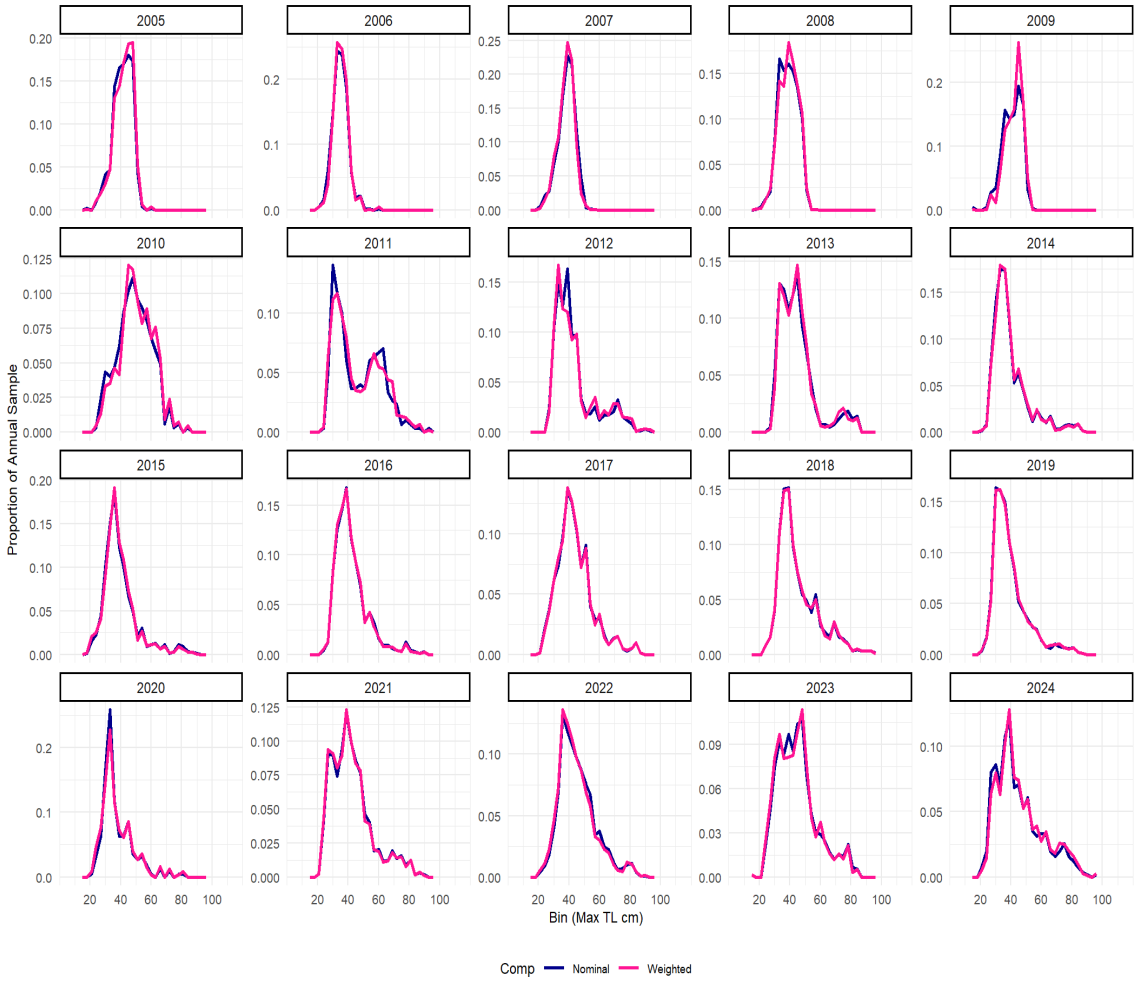

Figure 3. Nominal vs weighted discard length compositions for Red Snapper sampled by the At-Sea Observer program from the headboat fishery in FL.

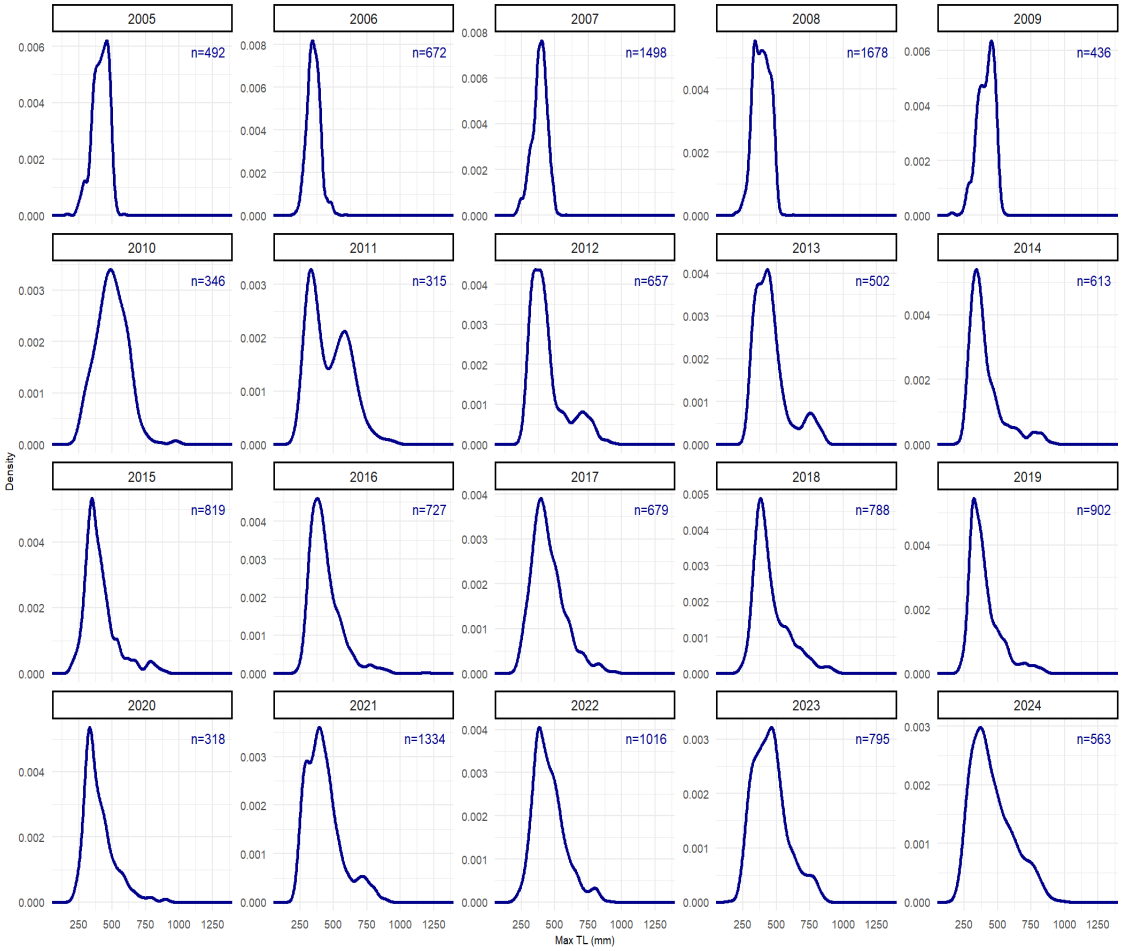

Figure 4. Nominal discard length composition for Red Snapper sampled by the At-Sea Observer program from the headboat fishery in NC-FL. The number of fish sampled (n) sampled each year is provided in the top right corner of each panel.