

General Recreational Survey Data for Mutton Snapper in the Southeast

Matthew A. Nuttall and Samantha Binion-Rock

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**NOAA Fisheries
Southeast Fisheries Science Center
Sustainable Fisheries Division
75 Virginia Beach Drive
Miami FL 33149**

Matthew A. Nuttall and Samantha Binion-Rock

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Update to the 05-10-2023 working paper

Additional tables (18-20) added to provide summaries of landings, size, and effort by geographic region (East vs. West), as decided at the August Data Workshop

General recreational catch estimates for Mutton Snapper are compiled from the following separate sampling programs:

1. Marine Recreational Information Program (MRIP) (SEDAR68-DW-13)
 2. Texas Parks and Wildlife Department (TPWD) (SEDAR70-WP-03)
 3. Louisiana Creel survey program (LA Creel; 2014+)
- The Louisiana Biological sampling program (LA BIO) does not prioritize sampling of Mutton Snapper. Size and age data from Louisiana (2014+) are not available for this assessment.

As part of the SEDAR stock assessment process, the data/estimates provided in this working paper may be updated based on discussions and recommendations of the Recreational Working Group. Please refer to the recreational section (#4) of the Data Workshop report for details on those estimates ultimately used in this assessment.

Parameters for data prepared for SEDAR 79 recreational catch data:

- Species: Mutton Snapper
- Year Range: 1981 - 2022
- Geographic Range: Atlantic and Gulf coast states from Texas to Maine.
- Fishing Modes: Charter, Private, Shore, Headboat (1981-1985 from Texas to western Florida and 1981+ from Virginia to Maine)
- MRIP Survey Methodology: Fully calibrated estimates that take into account the change in the Fishing Effort Survey (FES), the redesigned Access Point Angler Intercept Survey (APAIS), and the For Hire Survey (FHS)
- MRIP Data Gaps from COVID: Missing 2020 intercepts were imputed from all APAIS data collected in 2018 and 2019 from the same strata as the 2020 data gap, with original sample weights reduced by a factor of two to account for using two years of data (Cody 2021).
- SEFSC Data QAQC: Size records above an allowable (max size) threshold are excluded from average weight estimation and the summary tables included in this working paper (Tables 8-15). For SEDAR 79 Mutton Snapper, this includes any weights heavier than 36.12 pounds.

Catch and Sample Size Information for Particular Domains:

Domains were selected based on strata-level catch estimates (year-state-mode-wave-area) that have a disproportionately large contribution to those total (annual) catch estimates that appear relatively large/small, as compared to adjacent years. Selected domains are more likely to be high catch estimates given the inherent zero-boundary constraint in all catch/effort data (≥ 0) that complicates identification of low catch estimates.

- 1981 landings estimate: 963,636 fish
 - Strata: FLW, Private, wave 3, and ocean ≤ 10 miles
 - Intercept Records: a total of 1 angler trip that resulted in a landings estimate of 305,775 fish
 - One angler trip harvested 21 Mutton Snapper (seen by interviewer)

- 1982 landings estimate: 747,883 fish
 - Strata: FLE, Shore, wave 4, and ocean <= 3 miles
 - Intercept Records: a total of 5 angler trips that resulted in a landings estimate of 245,199 fish
 - One angler trip harvested 31 Mutton Snapper (seen by interviewer)
 - Two angler trips harvested 2 Mutton Snapper (seen by interviewer)
 - One angler trip harvested 1 Mutton Snapper (*NOT* seen by interviewer)
 - One angler trip released 1 live Mutton Snapper

- 1983 landings estimate: 575,009 fish
 - Strata: FLE, Shore, wave 1, and ocean <= 3 miles
 - Intercept Records: a total of 2 angler trips that resulted in a landings estimate of 305,587 fish
 - One angler trip harvested 4 Mutton Snapper (*NOT* seen by interviewer)
 - One angler trip harvested 3 Mutton Snapper (*NOT* seen by interviewer)

- 2008 landings estimate: 888,659 fish
- 2008 discard estimate: 1,942,823 fish
 - Strata: FLE, Shore, wave 4, and Ocean <= 3 miles
 - Intercept Records: a total of 36 angler trips that resulted in a landings estimate of 567,706 fish and a discard estimate of 1,287,051 fish

<i>Catch Observation</i>	<i>Minimum</i>	<i>Median</i>	<i>Mean</i>	<i>Maximum</i>
<i>Harvest seen by interviewer</i>	0	0	1.06	9
<i>Harvest not seen by interviewer</i>	0	0	0.69	21
<i>Released live fish</i>	0	3	4.08	20

- 2016 discard estimate: 1,710,598 fish
 - Strata: FLE, Shore, wave 1, and inshore
 - Intercept Records: a total of 2 angler trips that resulted in a discard estimate of 354,798 fish
 - One angler trip released 15 live Mutton Snapper
 - One angler trip released 1 live Mutton Snapper
 - Strata: FLE, Shore, wave 5, and ocean <= 3 miles
 - Intercept Records: a total of 4 angler trips that resulted in a discard estimate of 206,546 fish
 - One angler trip released 20 live Mutton Snapper
 - One angler trip released 12 live Mutton Snapper
 - Two angler trips released 1 live Mutton Snapper
- 2017 discard estimate: 2,061,756 fish
 - Strata: FLE, Shore, wave 4, and inshore
 - Intercept Records: a total of 3 angler trips that resulted in a discard estimate of 483,294 fish
 - One angler trip released 3 live Mutton Snapper
 - One angler trip released 2 live Mutton Snapper
 - One angler trip released 1 live Mutton Snapper
 - Strata: FLE, Shore, wave 3, and ocean <= 3 miles
 - Intercept Records: a total of 5 angler trips that resulted in a discard estimate of 314,891 fish
 - One angler trip released 3 live Mutton Snapper and harvested 1 Mutton Snapper (*NOT* seen by interviewer)
 - One angler trip released 2 live Mutton Snapper
 - Three angler trips released 1 live Mutton Snapper

Tables

Table 1. Annual landings (AB1) and discards (B2) of Mutton Snapper in numbers of fish by state and year (MRIP, LACreel 2014+, TPWD).

Table 2. Annual landings (AB1) and discards (B2) of Mutton Snapper in numbers of fish by mode and year (MRIP, LACreel 2014+, TPWD). Note catch from the combined private-shore fishing mode in the LA Creel survey is added to the private mode. MRIP Headboat estimates are included from Texas to western Florida (1981-1985) and Virginia to Maine (1981+).

Table 3. Mutton Snapper landings in numbers of fish (AB1) with associated coefficients of variation (CV; Dettloff et al. 2020) by mode and year (MRIP, LACreel 2014+, TPWD). Sample size is provided both as the total number of primary sampling units (PSU) and angler trips (Trp) intercepted by dockside samplers within a specified strata and, in parentheses, the number of PSUs and angler trips that intercepted Mutton Snapper. MRIP Headboat estimates are included from Texas to western Florida (1981-1985) and Virginia to Maine (1981+).

Table 4. Mutton Snapper discards in numbers of fish (B2) with associated coefficients of variation (CV; Dettloff et al. 2020) by mode and year (MRIP, LACreel 2014+, TPWD). Sample size is provided both as the total number of primary sampling units (PSU) and angler trips (Trp) intercepted by dockside samplers within a specified strata and, in parentheses, the number of PSUs and angler trips that intercepted Mutton Snapper. MRIP Headboat estimates are included from Texas to western Florida (1981-1985) and Virginia to Maine (1981+).

Table 5. Mutton Snapper landings (AB1) and discards (B2), in numbers of fish, with associated coefficients of variation (CV; Dettloff et al. 2020) by year for all modes combined (MRIP, LACreel 2014+, TPWD). Sample size is provided both as the total number of primary sampling units (PSU) and angler trips (Trp) intercepted by dockside samplers within a specified strata and, in parentheses, the number of PSUs and angler trips that intercepted Mutton Snapper.

Table 6. Estimated landings of Mutton Snapper in pounds whole weight by state and year (MRIP, LACreel 2014+, TPWD). Average weight estimates are calculated by strata using the following hierarchy: species, region, year, state, mode, wave, and area (Matter and Rios 2013). The minimum number of weights used at each level of substitution is fifteen fish, except for the final species level where the minimum is one fish (Dettloff and Matter 2019b).

Table 7. Mutton Snapper landings in pounds whole weight (LBS) with associated coefficients of variation (CV; Approach 2 described in Nuttall and Dettloff 2022) by year and mode (MRIP, LACreel 2014+, TPWD). MRIP Headboat estimates are included from Texas to western Florida (1981-1985) and Virginia to Maine (1981+).

Table 8. Summary of length measurements (millimeters fork length) from MRIP-intercepted Mutton Snapper by state and year. Summaries include the number of fish

measured by MRIP and, in parentheses, the number of angler trips from which those fish were measured (N), and the minimum (Min), arithmetic mean (Avg), standard deviation (SD), and maximum (Max) size of fish lengths. LA lengths are available from MRIP only until 2013.

Table 9. Summary of weight measurements (pounds whole weight) from MRIP-intercepted Mutton Snapper by state and year. Summaries include the number of fish weighed by MRIP and, in parentheses, the number of angler trips from which those fish were weighed (N), and the minimum (Min), arithmetic mean (Avg), standard deviation (SD), and maximum (Max) size of fish weights. LA weights are available from MRIP only until 2013.

Table 10. Summary of length measurements (millimeters fork length) from MRIP-intercepted Mutton Snapper by mode and year. Summaries include the number of fish measured by MRIP and, in parentheses, the number of angler trips from which those fish were measured (N), and the minimum (Min), arithmetic mean (Avg), standard deviation (SD), and maximum (Max) size of fish lengths. MRIP Headboat estimates are included from Texas to western Florida (1981-1985) and Virginia to Maine (1981+).

Table 11. Summary of weight measurements (pounds whole weight) from MRIP-intercepted Mutton Snapper by mode and year. Summaries include the number of fish weighed by MRIP and, in parentheses, the number of angler trips from which those fish were weighed (N), and the minimum (Min), arithmetic mean (Avg), standard deviation (SD), and maximum (Max) size of fish weights. MRIP Headboat estimates are included from Texas to western Florida (1981-1985) and Virginia to Maine (1981+).

Table 12. Summary of length (millimeters fork length) and weight measurements (pounds whole weight) from MRIP-intercepted Mutton Snapper by year. Summaries include the number of fish for which size information was collected by MRIP and, in parentheses, the number of angler trips from which those fish were sampled (N), and the minimum (Min), arithmetic mean (Avg), standard deviation (SD), and maximum (Max) size of fish lengths and weights.

Table 13. Summary of length measurements (millimeters total length) from TPWD-intercepted Mutton Snapper by mode and year. Summaries include the number of fish measured by TPWD and, in parentheses, the number of angler trips from which those fish were measured (N), and the minimum (Min), arithmetic mean (Avg), standard deviation (SD), and maximum (Max) size of fish lengths.

Table 14. Estimated average weights of landed Mutton Snapper in pounds whole weight (WGT) with associated coefficients of variation (CV; Approach 2 described in Nuttall and Dettloff 2022) by year and mode (MRIP and TPWD). Average weight estimates are calculated from annual estimates (by-mode) of landings-in-weight (Table 7) divided by estimates of landings-in-number (Table 2). Sample size (N) is provided as the total number of angler trips and, in parentheses, number of fish from which weight information was collected. MRIP Headboat estimates are included from Texas to western Florida (1981-1985) and Virginia to Maine (1981+).

Table 15. Resolution of landings-in-weight estimates (pounds whole weight) for Southeast Mutton Snapper by year and hierarchy level (MRIP, LACreel 2014+, TPWD), defined by species, region, year, state, mode, wave, and area. Average weight estimates are calculated at the finest strata meeting a minimum sample size threshold (Dettloff and Matter 2019b). Larger sample sizes therefore allow average weights to be calculated at finer stratifications, the finest being at the srysmwa level (Matter and Rios 2013). Annual summaries include the number of fish and angler trips from which weight information was collected (N) and the landings-in-weight estimates (AB1.lbs) by hierarchy level. As an example, (srysmw) summarizes those landings-in-weight estimates originating from cells where average weights are specific to a particular species, region, year, state, mode, and wave (i.e., weight observations collapsed across areas).

Table 16. Recreational Fishing Effort (in angler trips) for Southeast anglers by state and year (MRIP, LACreel 2014+, TPWD). These effort estimates depict all (general) recreational fishing activity in the Southeast and are not specific to Mutton Snapper.

Table 17. Recreational Fishing Effort (in angler trips) for Southeast anglers by mode and year (MRIP, LACreel 2014+, TPWD). These effort estimates depict all (general) recreational fishing activity in the Southeast and are not specific to Mutton Snapper. Effort from the combined private-shore fishing mode in the LA Creel survey has been added to the private mode. MRIP Headboat estimates are included from Texas to western Florida (1981-1985) and Virginia to Maine (1981+).

Table 18. Annual landings (AB1) and discards (B2) of Mutton Snapper in numbers of fish by Stock-ID boundary and year (MRIP, LACreel 2014+, TPWD).

Table 19. Summary of fish weights (in pounds whole weight) from intercepted Mutton Snapper by Stock-ID boundary and year (MRIP, LACreel 2014+, TPWD). This table includes both raw measurements of fish weight and weights imputed from TPWD length measurements, using appropriate length-weight conversions. Summaries include the number of fish and, in parentheses, number of angler trips providing information on fish weight (N), and the minimum (Min), arithmetic mean (Avg), standard deviation (SD), and maximum (Max) of these weight records.

Table 20. Recreational Fishing Effort (in angler trips) for Southeast anglers by Stock-ID boundary and year (MRIP, LACreel 2014+, TPWD).

Figures

Figure 1. Comparison of Charterboat landings (AB1) and discard (B2) estimates (with standard error intervals shown) for Mutton Snapper from the Coastal Household Telephone Survey (CHTS) and For-Hire Survey (FHS) from the Southeast between 1981 and 1999 (MRIP). The Charterboat calibration approach is discussed in Dettloff and Matter (2019a).

Figure 2. MRIP Base (BASE), APAIS Calibrated (ACAL), and Fully Calibrated APAIS and FES (FCAL) catch estimates for Mutton Snapper in the Southeast between 1981 and 2017. Landings (AB1) and discard (B2) estimates are in thousands of fish (NMFS).

Figure 3a. Annual Mutton Snapper landings (AB1) and discards (B2), in thousands of fish, by state from 1981 to 2022 (MRIP, LACreel 2014+, TPWD). Mid Atlantic (MATL; VA to NY) states contributed less than ten percent to the total catch (Table1, Fig3a) and were combined for plotting purposes.

Figure 3b. Percent of Mutton Snapper landings (AB1) and discards (B2), in numbers of fish, from each state by year (bar graph) and overall (pie chart) between 1981 and 2022 (MRIP, LACreel 2014+, TPWD). Mid Atlantic (MATL; VA to NY) states were combined for plotting purposes.

Figure 4a. Annual Mutton Snapper landings (AB1) and discards (B2), in thousands of fish, by mode from 1981 to 2022 (MRIP, LACreel 2014+, TPWD). Note catch from the combined Private-Shore fishing mode in the LA Creel survey has been added to the Private mode. MRIP Headboat estimates are included from Texas to western Florida (1981-1985) and Virginia to Maine (1981+).

Figure 4b. Percent of Mutton Snapper landings (AB1) and discards (B2), in numbers of fish, from each mode by year (bar graph) and overall (pie chart) between 1981 and 2022 (MRIP, LACreel 2014+, TPWD). Note catch from the combined Private-Shore fishing mode in the LA Creel survey has been added to the Private mode. MRIP Headboat estimates are included from Texas to western Florida (1981-1985) and Virginia to Maine (1981+).

Figure 5. Estimates of annual landings for Mutton Snapper in the Southeast (MRIP, LACreel 2014+, TPWD): estimated landings in thousands of fish (top), estimated landings in thousands of pounds whole weight (middle), and average weight of landed fish (estimated lbs/estimated fish) (bottom). Average weight estimates are calculated by strata using the following hierarchy: species, region, year, state, mode, wave, and area (Matter and Rios 2013). The minimum number of weights used at each level of substitution is fifteen fish, except for the final species level where the minimum is one fish (Dettloff and Matter 2019b).

Figure 6. Annual landings estimates of Southeast Mutton Snapper in thousands of pounds whole weight by hierarchy level (MRIP, LACreel 2014+, TPWD), defined by **species**, **region**, **year**, **state**, **mode**, **wave**, and **area**. Landings are grouped by the strata at which average weights were estimated, the finest stratification being at the **srysmwa** level (Matter and

Rios 2013). As an example, (srysmw) summarizes those landings-in-weight estimates originating from cells where average weights are specific to a particular species, region, year, state, mode, and wave (i.e., weight observations collapsed across areas). Landings are provided (A) in absolute pounds and (B) as a percentage of total landings-in-weight, which is summarized by year (stacked bar plot) and across all years (pie chart).

Figure 7. COVID data gaps in the MRIP APAIS and associated imputations for (positive) fishing trips that intercepted Southeast Mutton Snapper. No 2020 data were imputed for the FES or FHS. (A) Number of positive intercepts in 2020 from the APAIS (RAW) vs. those imputed from intercepts in adjacent years (IMP). (B) Distribution of APAIS catch observations in years with no imputed catch data (in 2015-2019 and 2021-2022), in raw 2020 APAIS data, and in 2020 imputations. Refer to Cody (2021) for more information on COVID data gaps in MRIP.

Appendices

Appendix A. Additional Details of Survey Data and SEFSC Estimation

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Table 1. Annual landings (AB1) and discards (B2) of Mutton Snapper in numbers of fish by state and year (MRIP, LACreel 2014+, TPWD).

Year	TX		LA		MS		AL		FLW		FLE		GA	
	AB1	B2	AB1	B2	AB1	B2	AB1	B2	AB1	B2	AB1	B2	AB1	B2
1981			0	0	0	0	0	0	582,336	2,318	381,300	0	0	0
1982			0	0	0	0	0	0	307,798	3,925	440,084	7,594	0	0
1983	0	0	0	0	0	0	0	0	118,535	0	456,474	21,758	0	0
1984	0	0	0	0	0	0	0	0	479,238	234,463	225,566	11,959	0	0
1985	0	0	0	0	0	0	0	0	50,548	21,195	65,198	120,106	0	0
1986	0	0	0	0	0	0	0	0	328,714	5,774	74,428	86,742	0	0
1987	0	0	0	0	0	0	0	0	398,490	86,035	192,901	202,822	0	0
1988	47	0	0	0	0	0	0	0	330,307	195,281	80,240	33,764	0	0
1989	0	0	0	0	0	0	0	0	251,151	9,144	122,780	27,034	0	0
1990	0	0	15,064	3,582	0	0	0	0	166,425	48,581	78,954	4,497	0	0
1991	0	0	0	477	0	0	0	0	260,276	586,229	109,913	21,738	0	53
1992	33	0	0	0	0	0	0	0	217,280	138,224	204,608	133,888	0	0
1993	0	0	0	0	0	0	0	0	286,524	671,700	289,306	180,967	0	0
1994	0	0	0	0	0	0	0	0	83,735	142,653	130,078	138,893	0	0
1995	0	0	0	0	0	0	0	0	149,693	187,032	67,029	145,191	51	0
1996	117	0	0	859	0	0	0	0	81,901	162,206	59,639	62,062	0	0
1997	49	0	0	1,564	0	0	0	0	49,652	363,463	50,616	115,562	4,268	0
1998	0	0	0	0	0	4,092	0	0	75,287	410,179	99,390	189,292	0	0
1999	29	0	0	0	0	0	0	0	117,865	81,385	100,181	98,301	0	0
2000	0	0	0	0	0	0	0	0	16,089	23,505	133,094	192,287	0	0
2001	201	0	0	0	0	0	0	0	10,546	13,201	109,855	89,820	0	0
2002	0	0	0	0	0	0	0	0	77,109	15,953	187,565	271,012	0	0
2003	0	0	0	0	0	0	0	0	96,761	104,166	133,637	139,885	0	0

Year	TX		LA		MS		AL		FLW		FLE		GA	
	AB1	B2	AB1	B2	AB1	B2	AB1	B2	AB1	B2	AB1	B2	AB1	B2
2004	0	0	0	0	0	0	0	0	21,241	37,182	147,147	173,087	0	0
2005	0	0	0	0	0	0	0	0	7,808	522,765	174,293	227,220	0	0
2006	0	0	147	0	0	0	0	0	245,276	173,399	204,598	398,727	21	0
2007	36	0	0	0	0	0	0	0	171,537	318,501	234,838	418,405	0	0
2008	36	0	164	0	0	0	0	0	175,617	202,193	712,842	1,740,630	0	0
2009	0	0	0	0	0	0	0	0	45,938	184,600	198,067	330,869	0	0
2010	0	0	0	0	0	0	0	0	50,399	13,455	180,289	118,256	0	0
2011	0	0	0	0	0	0	0	0	22,740	24,159	58,991	39,026	0	0
2012	0	0	0	0	0	0	0	0	116,219	110,051	83,730	320,164	0	54
2013	0	0	0	0	0	0	0	0	123,236	331,809	162,354	313,683	0	0
2014	139	0	0	0	0	0	0	0	114,401	458,375	278,894	610,390	0	0
2015	0	0	34	0	0	0	0	0	122,343	160,224	243,687	751,030	0	0
2016	0	0	0	0	0	0	0	433	121,839	376,980	271,399	1,333,185	0	0
2017	0	0	0	0	0	1,695	0	0	47,247	369,420	162,471	1,690,641	0	0
2018	81	0	0	0	0	0	0	0	61,753	231,252	144,776	741,190	0	0
2019	0	0	0	0	0	0	0	0	94,186	224,979	164,450	608,774	0	0
2020	0	0	0	0	0	0	0	266	234,919	515,147	72,768	586,113	0	0
2021	0	0	0	0	0	0	0	0	140,800	331,475	131,647	865,149	0	0
2022	0	0	282	0	0	0	0	0	63,207	546,463	244,113	1,213,315	0	0

Table 1 continued. Annual landings (AB1) and discards (B2) of Mutton Snapper by state and year.

Year	SC		NC		MD		Total	
	AB1	B2	AB1	B2	AB1	B2	AB1	B2
1981	0	0	0	0	0	0	963,636	2,318
1982	0	0	0	0	0	0	747,883	11,519
1983	0	0	0	0	0	0	575,009	21,758
1984	0	0	0	0	0	0	704,805	246,422
1985	0	0	0	0	0	0	115,746	141,300
1986	0	0	0	0	0	0	403,142	92,517
1987	0	0	0	0	0	0	591,391	288,857
1988	0	0	0	0	0	0	410,593	229,045
1989	0	0	0	0	2,120	0	376,051	36,178
1990	0	0	0	0	0	0	260,444	56,660
1991	0	0	0	0	0	0	370,189	608,497
1992	0	0	0	0	0	0	421,920	272,112
1993	0	0	0	0	0	0	575,829	852,667
1994	0	0	0	0	0	0	213,813	281,547
1995	0	0	0	0	0	0	216,774	332,223
1996	289	0	245	0	0	0	142,191	225,127
1997	0	0	0	0	0	0	104,585	480,590
1998	0	0	0	0	0	0	174,677	603,563
1999	0	0	0	0	0	0	218,074	179,686
2000	0	0	0	0	0	0	149,183	215,791
2001	0	0	0	0	0	0	120,603	103,022
2002	0	0	0	0	0	0	264,674	286,965
2003	0	0	0	0	0	0	230,398	244,051
2004	2,118	0	0	0	0	0	170,506	210,270

Year	SC		NC		MD		Total	
	AB1	B2	AB1	B2	AB1	B2	AB1	B2
2005	0	0	0	0	0	0	182,101	749,985
2006	0	0	0	0	0	0	450,043	572,126
2007	0	0	0	0	0	0	406,411	736,906
2008	0	0	0	0	0	0	888,659	1,942,823
2009	0	0	0	0	0	0	244,005	515,469
2010	0	0	0	0	0	0	230,688	131,712
2011	0	0	0	0	0	0	81,731	63,185
2012	0	0	0	0	0	0	199,948	430,269
2013	0	0	0	0	0	0	285,590	645,492
2014	0	0	0	0	0	0	393,434	1,068,766
2015	0	0	0	0	0	0	366,064	911,254
2016	0	0	0	0	0	0	393,238	1,710,598
2017	0	0	41	0	0	0	209,758	2,061,756
2018	158	0	0	0	0	0	206,768	972,442
2019	0	0	0	0	0	0	258,636	833,754
2020	0	0	0	0	0	0	307,687	1,101,526
2021	0	0	0	0	0	0	272,448	1,196,624
2022	0	0	0	0	0	0	307,602	1,759,779

Table 2. Annual landings (AB1) and discards (B2) of Mutton Snapper in numbers of fish by mode and year (MRIP, LACreel 2014+, TPWD). Note catch from the combined private-shore fishing mode in the LA Creel survey is added to the private mode. MRIP Headboat estimates are included from Texas to western Florida (1981-1985) and Virginia to Maine (1981+).

Year	Cbt		Hbt		Priv		Shore		Total	
	AB1	B2	AB1	B2	AB1	B2	AB1	B2	AB1	B2
1981	16,575	2,318	0	0	619,168	0	327,893	0	963,636	2,318
1982	37,272	0	0	0	365,517	0	345,094	11,519	747,883	11,519
1983	11,045	0	261	0	138,189	21,758	425,513	0	575,009	21,758
1984	32,754	1,514	0	0	644,275	238,849	27,776	6,058	704,805	246,422
1985	11,185	0	0	0	63,913	90,711	40,648	50,589	115,746	141,300
1986	14,419	2,303			375,865	34,941	12,858	55,273	403,142	92,517
1987	10,653	0			471,199	288,857	109,539	0	591,391	288,857
1988	3,126	104			374,793	150,962	32,674	77,979	410,593	229,045
1989	3,536	0			306,656	36,178	65,859	0	376,051	36,178
1990	60,720	0			199,723	56,660	0	0	260,444	56,660
1991	3,268	530			271,707	569,671	95,213	38,295	370,189	608,497
1992	7,748	7,262			290,846	242,152	123,326	22,698	421,920	272,112
1993	12,412	2,196			468,307	803,057	95,111	47,415	575,829	852,667
1994	6,149	1,100			161,891	243,631	45,773	36,815	213,813	281,547
1995	6,434	180			186,877	235,792	23,463	96,250	216,774	332,223
1996	3,283	1,106			129,549	210,965	9,359	13,057	142,191	225,127
1997	8,119	8,449			83,060	467,569	13,406	4,572	104,585	480,590
1998	8,790	3,053			137,316	512,633	28,571	87,877	174,677	603,563
1999	2,876	1,984			151,512	131,888	63,687	45,814	218,074	179,686
2000	6,137	2,684			129,184	159,721	13,861	53,386	149,183	215,791
2001	7,154	1,189			94,013	87,517	19,436	14,316	120,603	103,022
2002	22,233	10,948			222,219	166,640	20,222	109,377	264,674	286,965
2003	16,956	10,584			174,830	168,812	38,611	64,654	230,398	244,051
2004	17,894	6,746	0	0	126,558	145,871	26,053	57,652	170,506	210,270
2005	16,952	7,233	0	0	145,733	613,888	19,416	128,864	182,101	749,985
2006	17,194	11,164	0	0	393,804	338,125	39,044	222,837	450,043	572,126
2007	17,535	13,009	0	0	341,746	533,089	47,130	190,808	406,411	736,906
2008	16,465	39,543	0	0	263,150	512,379	609,044	1,390,901	888,659	1,942,823
2009	23,541	14,164	0	0	191,186	309,341	29,278	191,964	244,005	515,469
2010	18,849	6,831	0	0	183,141	96,140	28,698	28,741	230,688	131,712
2011	16,593	4,341	0	0	53,724	45,181	11,414	13,663	81,731	63,185
2012	31,486	4,502	0	0	166,274	161,617	2,189	264,150	199,948	430,269

Year	Cbt		Hbt		Priv		Shore		Total	
	AB1	B2	AB1	B2	AB1	B2	AB1	B2	AB1	B2
2013	18,409	16,151	0	0	233,493	495,418	33,689	133,923	285,590	645,492
2014	17,491	16,618	0	0	311,549	611,256	64,393	440,891	393,434	1,068,766
2015	34,526	25,725	0	0	228,508	467,863	103,030	417,666	366,064	911,254
2016	29,350	14,599	0	0	295,326	779,872	68,562	916,126	393,238	1,710,598
2017	10,111	52,205	0	0	160,707	567,902	38,940	1,441,648	209,758	2,061,756
2018	16,441	26,439	0	0	178,804	577,192	11,523	368,811	206,768	972,442
2019	32,726	31,587	0	0	192,899	531,164	33,010	271,003	258,636	833,754
2020	44,865	127,432	0	0	258,505	757,185	4,317	216,909	307,687	1,101,526
2021	24,353	39,105	0	0	232,354	914,477	15,740	243,042	272,448	1,196,624
2022	24,519	62,719	0	0	250,588	1,141,356	32,495	555,703	307,602	1,759,779

Table 3. Mutton Snapper landings in numbers of fish (AB1) with associated coefficients of variation (CV; Dettloff et al. 2020) by mode and year (MRIP, LACreel 2014+, TPWD). Sample size is provided both as the total number of primary sampling units (PSU) and angler trips (Trp) intercepted by dockside samplers within a specified strata and, in parentheses, the number of PSUs and angler trips that intercepted Mutton Snapper. MRIP Headboat estimates are included from Texas to western Florida (1981-1985) and Virginia to Maine (1981+).

Year	Cbt				CbtHbt				Hbt				Priv				Shore			
	AB1	CV	PSU	Trp	AB1	CV	PSU	Trp	AB1	CV	PSU	Trp	AB1	CV	PSU	Trp	AB1	CV	PSU	Trp
1981	16,575	0.82	139 (3)	1,193 (6)	0	0.00	395 (0)	3,760 (0)	0	0.00	76 (1)	691 (1)	619,168	0.56	1,084 (9)	8,922 (17)	327,893	0.67	1,422 (5)	8,444 (8)
1982	37,272	0.47	133 (11)	1,117 (16)	0	0.00	210 (0)	2,203 (0)	0	0.00	76 (3)	658 (5)	365,517	0.44	1,630 (24)	13,750 (31)	345,094	0.70	1,973 (6)	13,774 (8)
1983	11,045	0.37	401 (16)	3,446 (29)	0	0.00	368 (0)	4,395 (0)	261	1.00	123 (6)	1,626 (10)	138,189	0.29	1,858 (13)	17,522 (18)	425,513	0.74	2,012 (6)	14,251 (7)
1984	32,754	0.49	416 (24)	4,260 (35)	0	0.00	284 (0)	3,422 (0)	0	0.00	116 (10)	1,776 (13)	644,275	0.46	1,611 (9)	13,009 (14)	27,776	0.71	1,708 (2)	13,007 (2)
1985	11,185	0.45	357 (12)	3,101 (19)	0	0.00	420 (0)	4,713 (0)	0	0.00	89 (6)	1,354 (8)	63,913	0.74	2,312 (3)	18,932 (4)	40,648	0.79	2,490 (2)	16,813 (4)
1986	14,419	0.41	675 (11)	4,932 (19)	0	0.00	638 (0)	6,191 (0)					375,865	0.47	4,064 (29)	32,721 (34)	12,858	1.00	1,484 (1)	8,162 (1)
1987	10,653	0.49	793 (9)	6,101 (9)	0	0.00	427 (0)	3,699 (0)					471,199	0.38	4,018 (31)	34,399 (38)	109,539	0.84	1,612 (2)	9,866 (3)
1988	3,126	0.57	811 (10)	5,572 (10)	0	0.00	580 (0)	5,424 (0)					374,793	0.62	4,435 (33)	36,480 (45)	32,674	0.73	2,457 (2)	15,518 (2)
1989	3,536	0.59	800 (6)	5,929 (7)	0	0.00	907 (0)	9,015 (0)					306,656	0.50	4,621 (27)	37,740 (39)	65,859	0.64	2,711 (3)	18,730 (3)
1990	60,720	0.97	574 (6)	4,659 (6)	0	0.00	798 (0)	6,705 (0)					199,723	0.28	4,711 (30)	40,224 (38)	0	0.00	2,288 (0)	16,043 (0)
1991	3,268	0.51	747 (7)	5,899 (8)	0	0.00	852 (0)	7,264 (0)					271,707	0.31	4,832 (28)	42,936 (41)	95,213	0.65	2,895 (4)	22,887 (4)
1992	7,748	0.32	1,084 (25)	8,410 (37)	0	0.00	805 (0)	6,758 (0)					290,846	0.36	5,995 (64)	56,529 (81)	123,326	0.76	3,266 (4)	25,591 (8)
1993	12,412	0.48	745 (12)	6,165 (15)	0	0.00	695 (0)	5,816 (0)					468,307	0.21	5,303 (64)	49,001 (92)	95,111	0.27	3,973 (26)	32,482 (30)
1994	6,149	0.43	881 (12)	8,233 (15)	0	0.00	708 (0)	5,635 (0)					161,891	0.20	5,620 (57)	54,553 (66)	45,773	0.29	4,263 (15)	37,227 (17)
1995	6,434	0.38	829 (16)	7,457 (17)	0	0.00	653 (0)	5,262 (0)					186,877	0.39	5,127 (34)	49,212 (45)	23,463	0.40	4,024 (8)	36,565 (8)

Year	Cbt				CbtHbt				Hbt				Priv				Shore			
	AB1	CV	PSU	Trp	AB1	CV	PSU	Trp	AB1	CV	PSU	Trp	AB1	CV	PSU	Trp	AB1	CV	PSU	Trp
1996	3,283	0.34	1,085 (15)	10,371 (15)	0	0.00	693 (0)	5,343 (0)					129,549	0.27	5,438 (31)	52,980 (38)	9,359	0.62	3,466 (4)	31,001 (4)
1997	8,119	0.36	1,409 (41)	11,855 (52)	0	0.00	821 (0)	6,318 (0)					83,060	0.29	5,627 (30)	56,110 (35)	13,406	0.63	3,682 (3)	30,854 (3)
1998	8,790	0.42	1,791 (45)	14,794 (52)	0	0.00	950 (0)	6,797 (0)					137,316	0.26	5,713 (45)	57,788 (58)	28,571	0.66	3,732 (4)	31,941 (4)
1999	2,876	0.21	2,155 (56)	17,291 (68)	0	0.00	764 (0)	6,162 (0)					151,512	0.33	6,105 (54)	63,968 (60)	63,687	0.47	4,173 (8)	35,491 (9)
2000	6,137	0.21	2,247 (87)	21,501 (108)	0	0.00	799 (0)	5,739 (0)					129,184	0.19	5,903 (50)	58,984 (64)	13,861	1.00	3,777 (1)	30,953 (1)
2001	7,154	0.16	1,984 (95)	19,952 (149)	0	0.00	932 (0)	7,950 (0)					94,013	0.25	6,405 (39)	69,471 (62)	19,436	0.53	4,089 (4)	35,375 (4)
2002	22,233	0.15	2,035 (145)	19,801 (228)	0	0.00	864 (0)	6,873 (0)					222,219	0.19	6,093 (85)	65,706 (118)	20,222	0.41	4,171 (7)	35,552 (7)
2003	16,956	0.20	2,038 (112)	19,528 (183)	0	0.00	1,452 (0)	12,629 (0)					174,830	0.19	6,629 (58)	64,144 (81)	38,611	0.45	4,592 (10)	34,992 (11)
2004	17,894	0.21	2,432 (87)	22,179 (149)					0	0.00	875 (0)	9,347 (0)	126,558	0.28	5,333 (59)	55,348 (74)	26,053	0.66	2,961 (5)	25,842 (5)
2005	16,952	0.22	2,568 (61)	22,349 (142)					0	0.00	982 (0)	10,969 (0)	145,733	0.19	4,807 (60)	50,072 (95)	19,416	0.45	2,747 (6)	23,846 (7)
2006	17,194	0.25	2,361 (64)	18,917 (97)					0	0.00	890 (0)	8,663 (0)	393,804	0.38	5,508 (87)	57,512 (119)	39,044	0.66	2,707 (6)	23,073 (6)
2007	17,535	0.25	2,425 (73)	19,271 (110)					0	0.00	642 (0)	8,189 (0)	341,746	0.24	5,712 (97)	58,169 (114)	47,130	0.56	2,936 (12)	25,772 (12)
2008	16,465	0.20	2,435 (88)	18,367 (135)					0	0.00	677 (0)	8,788 (0)	263,150	0.27	5,672 (88)	57,451 (114)	609,044	0.74	2,951 (8)	25,719 (17)
2009	23,541	0.20	2,252 (68)	15,878 (100)					0	0.00	656 (0)	7,433 (0)	191,186	0.19	5,652 (57)	56,455 (86)	29,278	0.57	2,888 (6)	23,881 (6)
2010	18,849	0.19	2,411 (80)	17,855 (121)					0	0.00	676 (0)	8,393 (0)	183,141	0.20	6,047 (63)	58,209 (91)	28,698	0.41	3,318 (7)	28,051 (12)
2011	16,593	0.26	2,412 (69)	18,021 (84)					0	0.00	626 (0)	7,624 (0)	53,724	0.24	5,913 (30)	56,023 (34)	11,414	0.62	3,423 (3)	26,963 (4)
2012	31,486	0.39	2,380 (69)	18,963 (108)					0	0.00	477 (0)	5,806 (0)	166,274	0.36	6,185 (45)	58,608 (56)	2,189	1.00	3,653 (1)	28,965 (1)
2013	18,409	0.38	1,368 (47)	8,122 (58)					0	0.00	609 (0)	7,729 (0)	233,493	0.21	5,823 (54)	51,542 (73)	33,689	0.66	2,805 (4)	24,839 (4)
2014	17,491	0.23	2,524 (69)	15,967 (93)					0	0.00	546 (0)	7,301 (0)	311,549	0.26	7,259 (77)	61,724 (100)	64,393	0.51	2,662 (6)	22,632 (10)

Year	Cbt				CbtHbt				Hbt				Priv				Shore			
	AB1	CV	PSU	Trp	AB1	CV	PSU	Trp	AB1	CV	PSU	Trp	AB1	CV	PSU	Trp	AB1	CV	PSU	Trp
2015	34,526	0.23	2,687 (77)	16,446 (115)					0	0.00	532 (0)	7,295 (0)	228,508	0.26	7,579 (71)	63,359 (96)	103,030	0.42	2,693 (9)	21,998 (11)
2016	29,350	0.21	2,870 (69)	16,797 (95)					0	0.00	572 (0)	8,698 (0)	295,326	0.28	7,603 (62)	61,035 (83)	68,562	0.39	3,548 (9)	22,189 (9)
2017	10,111	0.30	2,788 (30)	17,219 (36)					0	0.00	507 (0)	7,349 (0)	160,707	0.24	7,482 (50)	63,387 (59)	38,940	0.94	3,595 (2)	22,842 (2)
2018	16,441	0.24	3,051 (34)	20,618 (43)					0	0.00	512 (0)	8,144 (0)	178,804	0.30	7,348 (45)	60,012 (49)	11,523	0.90	3,618 (2)	24,996 (2)
2019	32,726	0.48	3,144 (26)	19,347 (40)					0	0.00	503 (0)	8,603 (0)	192,899	0.38	7,447 (36)	61,265 (44)	33,010	0.76	3,651 (3)	24,455 (4)
2020	44,865	0.40	3,367 (41)	22,006 (58)					0	0.00	960 (0)	16,265 (0)	258,505	0.64	8,607 (32)	74,042 (33)	4,317	1.00	4,374 (1)	28,732 (1)
2021	24,353	0.26	3,722 (64)	25,765 (79)					0	0.00	631 (0)	10,794 (0)	232,354	0.23	8,371 (59)	64,092 (65)	15,740	0.46	4,420 (5)	29,051 (5)
2022	24,519	0.26	2,971 (51)	19,509 (61)					0	0.00	553 (0)	9,294 (0)	250,588	0.20	7,390 (75)	50,331 (89)	32,495	0.45	3,905 (7)	22,625 (8)

Table 4. Mutton Snapper discards in numbers of fish (B2) with associated coefficients of variation (CV; Dettloff et al. 2020) by mode and year (MRIP, LACreel 2014+, TPWD). Sample size is provided both as the total number of primary sampling units (PSU) and angler trips (Trp) intercepted by dockside samplers within a specified strata and, in parentheses, the number of PSUs and angler trips that intercepted Mutton Snapper. MRIP Headboat estimates are included from Texas to western Florida (1981-1985) and Virginia to Maine (1981+).

Year	Cbt				CbtHbt				Hbt				Priv				Shore			
	B2	CV	PSU	Trp	B2	CV	PSU	Trp	B2	CV	PSU	Trp	B2	CV	PSU	Trp	B2	CV	PSU	Trp
1981	2,318	1.00	139 (1)	1,193 (2)	0	0.00	395 (0)	3,760 (0)	0	0.00	76 (1)	691 (2)	0	0.00	1,084 (0)	8,922 (0)	0	0.00	1,422 (0)	8,444 (0)
1982	0	0.00	133 (0)	1,117 (0)	0	0.00	210 (0)	2,203 (0)	0	0.00	76 (0)	658 (0)	0	0.00	1,630 (0)	13,750 (0)	11,519	0.74	1,973 (2)	13,774 (2)
1983	0	0.00	401 (0)	3,446 (0)	0	0.00	368 (0)	4,395 (0)	0	0.00	123 (0)	1,626 (0)	21,758	1.00	1,858 (1)	17,522 (2)	0	0.00	2,012 (0)	14,251 (0)
1984	1,514	1.00	416 (1)	4,260 (1)	0	0.00	284 (0)	3,422 (0)	0	0.00	116 (0)	1,776 (0)	238,849	0.71	1,611 (3)	13,009 (4)	6,058	1.00	1,708 (1)	13,007 (1)

Year	Cbt				CbtHbt				Hbt				Priv				Shore			
	B2	CV	PSU	Trp	B2	CV	PSU	Trp	B2	CV	PSU	Trp	B2	CV	PSU	Trp	B2	CV	PSU	Trp
1985	0	0.00	357 (0)	3,101 (0)	0	0.00	420 (0)	4,713 (0)	0	0.00	89 (0)	1,354 (0)	90,711	1.00	2,312 (1)	18,932 (3)	50,589	0.72	2,490 (2)	16,813 (2)
1986	2,303	0.80	675 (2)	4,932 (3)	0	0.00	638 (0)	6,191 (0)					34,941	0.46	4,064 (7)	32,721 (8)	55,273	1.00	1,484 (1)	8,162 (2)
1987	0	0.00	793 (0)	6,101 (0)	0	0.00	427 (0)	3,699 (0)					288,857	0.61	4,018 (10)	34,399 (12)	0	0.00	1,612 (0)	9,866 (0)
1988	104	1.00	811 (1)	5,572 (1)	0	0.00	580 (0)	5,424 (0)					150,962	0.73	4,435 (8)	36,480 (10)	77,979	0.57	2,457 (4)	15,518 (4)
1989	0	0.00	800 (0)	5,929 (0)	0	0.00	907 (0)	9,015 (0)					36,178	0.46	4,621 (6)	37,740 (8)	0	0.00	2,711 (0)	18,730 (0)
1990	0	0.00	574 (0)	4,659 (0)	0	0.00	798 (0)	6,705 (0)					56,660	0.73	4,711 (5)	40,224 (6)	0	0.00	2,288 (0)	16,043 (0)
1991	530	0.90	747 (2)	5,899 (2)	0	0.00	852 (0)	7,264 (0)					569,671	0.56	4,832 (18)	42,936 (25)	38,295	0.77	2,895 (2)	22,887 (2)
1992	7,262	0.84	1,084 (6)	8,410 (7)	0	0.00	805 (0)	6,758 (0)					242,152	0.32	5,995 (31)	56,529 (41)	22,698	0.89	3,266 (2)	25,591 (2)
1993	2,196	0.78	745 (3)	6,165 (4)	0	0.00	695 (0)	5,816 (0)					803,057	0.53	5,303 (32)	49,001 (53)	47,415	0.54	3,973 (7)	32,482 (8)
1994	1,100	0.54	881 (5)	8,233 (8)	0	0.00	708 (0)	5,635 (0)					243,631	0.31	5,620 (26)	54,553 (49)	36,815	0.36	4,263 (11)	37,227 (15)
1995	180	0.73	829 (2)	7,457 (2)	0	0.00	653 (0)	5,262 (0)					235,792	0.50	5,127 (19)	49,212 (25)	96,250	0.87	4,024 (6)	36,565 (11)
1996	1,106	0.58	1,085 (4)	10,371 (7)	0	0.00	693 (0)	5,343 (0)					210,965	0.35	5,438 (27)	52,980 (53)	13,057	0.83	3,466 (2)	31,001 (2)
1997	8,449	0.69	1,409 (9)	11,855 (12)	0	0.00	821 (0)	6,318 (0)					467,569	0.38	5,627 (37)	56,110 (68)	4,572	1.00	3,682 (1)	30,854 (1)
1998	3,053	0.42	1,791 (11)	14,794 (16)	0	0.00	950 (0)	6,797 (0)					512,633	0.40	5,713 (45)	57,788 (95)	87,877	0.50	3,732 (9)	31,941 (9)
1999	1,984	0.83	2,155 (10)	17,291 (13)	0	0.00	764 (0)	6,162 (0)					131,888	0.25	6,105 (51)	63,968 (64)	45,814	0.58	4,173 (5)	35,491 (6)
2000	2,684	0.37	2,247 (19)	21,501 (43)	0	0.00	799 (0)	5,739 (0)					159,721	0.26	5,903 (33)	58,984 (44)	53,386	0.75	3,777 (3)	30,953 (3)
2001	1,189	0.31	1,984 (19)	19,952 (38)	0	0.00	932 (0)	7,950 (0)					87,517	0.23	6,405 (30)	69,471 (44)	14,316	0.81	4,089 (2)	35,375 (4)
2002	10,948	0.49	2,035 (31)	19,801 (54)	0	0.00	864 (0)	6,873 (0)					166,640	0.21	6,093 (54)	65,706 (75)	109,377	0.48	4,171 (13)	35,552 (14)
2003	10,584	0.43	2,038 (26)	19,528 (61)	0	0.00	1,452 (0)	12,629 (0)					168,812	0.30	6,629 (39)	64,144 (62)	64,654	0.31	4,592 (16)	34,992 (18)

Year	Cbt				CbtHbt				Hbt				Priv				Shore			
	B2	CV	PSU	Trp	B2	CV	PSU	Trp	B2	CV	PSU	Trp	B2	CV	PSU	Trp	B2	CV	PSU	Trp
2004	6,746	0.42	2,432 (23)	22,179 (39)					0	0.00	875 (0)	9,347 (0)	145,871	0.21	5,333 (39)	55,348 (64)	57,652	0.62	2,961 (4)	25,842 (5)
2005	7,233	0.27	2,568 (25)	22,349 (99)					0	0.00	982 (0)	10,969 (0)	613,888	0.73	4,807 (59)	50,072 (97)	128,864	0.49	2,747 (9)	23,846 (12)
2006	11,164	0.31	2,361 (23)	18,917 (72)					0	0.00	890 (0)	8,663 (0)	338,125	0.19	5,508 (86)	57,512 (135)	222,837	0.59	2,707 (9)	23,073 (12)
2007	13,009	0.34	2,425 (37)	19,271 (102)					0	0.00	642 (0)	8,189 (0)	533,089	0.22	5,712 (92)	58,169 (161)	190,808	0.42	2,936 (16)	25,772 (24)
2008	39,543	0.33	2,435 (55)	18,367 (192)					0	0.00	677 (0)	8,788 (0)	512,379	0.21	5,672 (82)	57,451 (177)	1,390,901	0.58	2,951 (25)	25,719 (58)
2009	14,164	0.33	2,252 (32)	15,878 (92)					0	0.00	656 (0)	7,433 (0)	309,341	0.21	5,652 (64)	56,455 (116)	191,964	0.50	2,888 (16)	23,881 (24)
2010	6,831	0.30	2,411 (25)	17,855 (77)					0	0.00	676 (0)	8,393 (0)	96,140	0.21	6,047 (42)	58,209 (60)	28,741	0.58	3,318 (3)	28,051 (5)
2011	4,341	0.57	2,412 (12)	18,021 (21)					0	0.00	626 (0)	7,624 (0)	45,181	0.30	5,913 (22)	56,023 (28)	13,663	0.89	3,423 (2)	26,963 (2)
2012	4,502	0.33	2,380 (15)	18,963 (34)					0	0.00	477 (0)	5,806 (0)	161,617	0.40	6,185 (40)	58,608 (53)	264,150	0.45	3,653 (13)	28,965 (19)
2013	16,151	0.28	1,368 (29)	8,122 (75)					0	0.00	609 (0)	7,729 (0)	495,418	0.29	5,823 (56)	51,542 (84)	133,923	0.63	2,805 (8)	24,839 (10)
2014	16,618	0.31	2,524 (40)	15,967 (88)					0	0.00	546 (0)	7,301 (0)	611,256	0.28	7,259 (72)	61,724 (129)	440,891	0.59	2,662 (11)	22,632 (18)
2015	25,725	0.25	2,687 (55)	16,446 (172)					0	0.00	532 (0)	7,295 (0)	467,863	0.20	7,579 (84)	63,359 (144)	417,666	0.34	2,693 (17)	21,998 (29)
2016	14,599	0.22	2,870 (41)	16,797 (115)					0	0.00	572 (0)	8,698 (0)	779,872	0.28	7,603 (66)	61,035 (121)	916,126	0.45	3,548 (18)	22,189 (30)
2017	52,205	0.33	2,788 (43)	17,219 (125)					0	0.00	507 (0)	7,349 (0)	567,902	0.17	7,482 (89)	63,387 (156)	1,441,648	0.41	3,595 (18)	22,842 (32)
2018	26,439	0.33	3,051 (26)	20,618 (86)					0	0.00	512 (0)	8,144 (0)	577,192	0.24	7,348 (68)	60,012 (121)	368,811	0.41	3,618 (10)	24,996 (17)
2019	31,587	0.40	3,144 (27)	19,347 (78)					0	0.00	503 (0)	8,603 (0)	531,164	0.16	7,447 (90)	61,265 (152)	271,003	0.45	3,651 (14)	24,455 (21)
2020	127,432	0.56	3,367 (38)	22,006 (110)					0	0.00	960 (0)	16,265 (0)	757,185	0.23	8,607 (83)	74,042 (128)	216,909	0.44	4,374 (15)	28,732 (22)
2021	39,105	0.26	3,722 (41)	25,765 (82)					0	0.00	631 (0)	10,794 (0)	914,477	0.18	8,371 (103)	64,092 (182)	243,042	0.27	4,420 (23)	29,051 (43)
2022	62,719	0.29	2,971 (53)	19,509 (103)					0	0.00	553 (0)	9,294 (0)	1,141,356	0.19	7,390 (128)	50,331 (204)	555,703	0.33	3,905 (25)	22,625 (52)

Table 5. Mutton Snapper landings (AB1) and discards (B2), in numbers of fish, with associated coefficients of variation (CV; Dettloff et al. 2020) by year for all modes combined (MRIP, LACreel 2014+, TPWD). Sample size is provided both as the total number of primary sampling units (PSU) and angler trips (Trp) intercepted by dockside samplers within a specified strata and, in parentheses, the number of PSUs and angler trips that intercepted Mutton Snapper.

Year	AB1				B2			
	Total	CV	PSU	Trp	Total	CV	PSU	Trp
1981	963,636	0.45	3,040 (17)	22,319 (31)	2,318	1.00	3,040 (1)	22,319 (2)
1982	747,883	0.39	3,946 (41)	30,842 (55)	11,519	0.74	3,946 (2)	30,842 (2)
1983	575,009	0.55	4,538 (35)	39,614 (54)	21,758	1.00	4,538 (1)	39,614 (2)
1984	704,805	0.42	3,953 (35)	33,698 (51)	246,422	0.69	3,953 (5)	33,698 (6)
1985	115,746	0.47	5,479 (17)	43,559 (27)	141,300	0.69	5,479 (3)	43,559 (5)
1986	403,142	0.44	6,749 (41)	52,006 (54)	92,517	0.62	6,749 (10)	52,006 (13)
1987	591,391	0.32	6,724 (42)	54,065 (50)	288,857	0.61	6,724 (10)	54,065 (12)
1988	410,593	0.56	8,156 (45)	62,994 (57)	229,045	0.52	8,156 (13)	62,994 (15)
1989	376,051	0.43	8,900 (36)	71,412 (49)	36,178	0.46	8,900 (6)	71,412 (8)
1990	260,444	0.31	8,266 (36)	67,631 (44)	56,660	0.73	8,266 (5)	67,631 (6)
1991	370,189	0.28	9,181 (39)	78,986 (53)	608,497	0.53	9,181 (22)	78,986 (29)
1992	421,920	0.34	10,990 (93)	97,288 (126)	272,112	0.30	10,990 (39)	97,288 (50)
1993	575,829	0.18	10,561 (102)	93,464 (137)	852,667	0.50	10,561 (42)	93,464 (65)
1994	213,813	0.16	11,283 (84)	105,648 (98)	281,547	0.27	11,283 (42)	105,648 (72)
1995	216,774	0.34	10,449 (58)	98,496 (70)	332,223	0.43	10,449 (27)	98,496 (38)
1996	142,191	0.25	10,463 (50)	99,695 (57)	225,127	0.33	10,463 (33)	99,695 (62)
1997	104,585	0.24	11,316 (74)	105,137 (90)	480,590	0.37	11,316 (47)	105,137 (81)
1998	174,677	0.23	11,948 (94)	111,320 (114)	603,563	0.34	11,948 (65)	111,320 (120)
1999	218,074	0.26	12,908 (118)	122,912 (137)	179,686	0.23	12,908 (66)	122,912 (83)
2000	149,183	0.19	12,435 (138)	117,166 (173)	215,791	0.26	12,435 (55)	117,166 (90)
2001	120,603	0.21	13,118 (137)	132,748 (215)	103,022	0.22	13,118 (51)	132,748 (86)
2002	264,674	0.16	12,897 (237)	127,932 (353)	286,965	0.22	12,897 (98)	127,932 (143)
2003	230,398	0.16	14,434 (180)	131,293 (275)	244,051	0.22	14,434 (81)	131,293 (141)
2004	170,506	0.23	11,306 (151)	112,663 (228)	210,270	0.23	11,306 (66)	112,663 (108)
2005	182,101	0.16	10,813 (127)	107,178 (244)	749,985	0.60	10,813 (93)	107,178 (208)
2006	450,043	0.34	11,132 (157)	108,035 (222)	572,126	0.26	11,132 (118)	108,035 (219)
2007	406,411	0.21	11,395 (182)	111,247 (236)	736,906	0.19	11,395 (145)	111,247 (287)
2008	888,659	0.51	11,426 (184)	110,149 (266)	1,942,823	0.40	11,426 (162)	110,149 (427)
2009	244,005	0.16	11,148 (131)	103,484 (192)	515,469	0.22	11,148 (112)	103,484 (232)
2010	230,688	0.17	12,142 (150)	112,353 (224)	131,712	0.20	12,142 (70)	112,353 (142)

Year	AB1				B2			
	Total	CV	PSU	Trp	Total	CV	PSU	Trp
2011	81,731	0.19	12,039 (102)	108,520 (122)	63,185	0.29	12,039 (36)	108,520 (51)
2012	199,948	0.31	12,350 (115)	112,234 (165)	430,269	0.31	12,350 (68)	112,234 (106)
2013	285,590	0.18	10,291 (105)	92,232 (135)	645,492	0.25	10,291 (93)	92,232 (169)
2014	393,434	0.22	12,058 (152)	107,624 (203)	1,068,766	0.29	12,058 (123)	107,624 (235)
2015	366,064	0.20	12,569 (157)	109,098 (222)	911,254	0.19	12,569 (156)	109,098 (345)
2016	393,238	0.21	13,652 (140)	108,627 (187)	1,710,598	0.26	13,652 (125)	108,627 (266)
2017	209,758	0.25	13,417 (82)	110,729 (97)	2,061,756	0.29	13,417 (150)	110,729 (313)
2018	206,768	0.24	13,544 (81)	113,689 (94)	972,442	0.20	13,544 (104)	113,689 (224)
2019	258,636	0.31	13,720 (65)	113,604 (88)	833,754	0.17	13,720 (131)	113,604 (251)
2020	307,687	0.52	16,374 (74)	140,989 (92)	1,101,526	0.19	16,374 (136)	140,989 (260)
2021	272,448	0.19	16,187 (128)	129,643 (149)	1,196,624	0.15	16,187 (167)	129,643 (307)
2022	307,602	0.17	14,241 (133)	101,696 (158)	1,759,779	0.16	14,241 (206)	101,696 (359)

Table 6. Estimated landings of Mutton Snapper in pounds whole weight by state and year (MRIP, LACreel 2014+, TPWD). Average weight estimates are calculated by strata using the following hierarchy: species, region, year, state, mode, wave, and area (Matter and Rios 2013). The minimum number of weights used at each level of substitution is fifteen fish, except for the final species level where the minimum is one fish (Dettloff and Matter 2019b).

Year	TX	LA	MS	AL	FLW	FLE	GA	SC	NC	MD	Total
1981		0	0	0	1,115,706	888,430	0	0	0	0	2,004,137
1982		0	0	0	2,168,376	261,834	0	0	0	0	2,430,210
1983	0	0	0	0	1,180,012	1,240,664	0	0	0	0	2,420,675
1984	0	0	0	0	2,564,339	602,809	0	0	0	0	3,167,148
1985	0	0	0	0	263,256	210,056	0	0	0	0	473,312
1986	0	0	0	0	1,806,928	204,224	0	0	0	0	2,011,152
1987	0	0	0	0	890,450	541,061	0	0	0	0	1,431,511
1988	286	0	0	0	2,008,995	258,519	0	0	0	0	2,267,800
1989	0	0	0	0	734,617	394,827	0	0	0	9,188	1,138,632
1990	0	48,907	0	0	412,637	253,915	0	0	0	0	715,459
1991	0	0	0	0	1,272,087	392,233	0	0	0	0	1,664,320
1992	231	0	0	0	885,536	544,675	0	0	0	0	1,430,442
1993	0	0	0	0	765,180	537,449	0	0	0	0	1,302,629
1994	0	0	0	0	246,557	343,197	0	0	0	0	589,754
1995	0	0	0	0	803,628	341,116	223	0	0	0	1,144,968
1996	639	0	0	0	370,351	292,274	0	1,275	1,078	0	665,618
1997	310	0	0	0	319,591	227,436	24,261	0	0	0	571,598
1998	0	0	0	0	460,661	395,943	0	0	0	0	856,603
1999	242	0	0	0	791,478	380,697	0	0	0	0	1,172,418
2000	0	0	0	0	122,596	567,658	0	0	0	0	690,254
2001	1,793	0	0	0	94,091	410,817	0	0	0	0	506,700
2002	0	0	0	0	314,213	591,806	0	0	0	0	906,019

Year	TX	LA	MS	AL	FLW	FLE	GA	SC	NC	MD	Total
2003	0	0	0	0	413,641	522,679	0	0	0	0	936,320
2004	0	0	0	0	137,972	507,323	0	7,132	0	0	652,427
2005	0	0	0	0	43,385	515,034	0	0	0	0	558,419
2006	0	698	0	0	1,014,861	641,134	64	0	0	0	1,656,757
2007	212	0	0	0	782,323	890,354	0	0	0	0	1,672,889
2008	203	922	0	0	997,141	1,525,552	0	0	0	0	2,523,818
2009	0	0	0	0	298,854	506,160	0	0	0	0	805,014
2010	0	0	0	0	274,082	597,833	0	0	0	0	871,915
2011	0	0	0	0	134,081	200,090	0	0	0	0	334,172
2012	0	0	0	0	929,267	343,341	0	0	0	0	1,272,608
2013	0	0	0	0	866,658	550,518	0	0	0	0	1,417,177
2014	594	0	0	0	487,116	736,298	0	0	0	0	1,224,007
2015	0	172	0	0	569,688	768,867	0	0	0	0	1,338,726
2016	0	0	0	0	646,948	963,808	0	0	0	0	1,610,756
2017	0	0	0	0	368,519	670,931	0	0	155	0	1,039,604
2018	469	0	0	0	287,628	617,377	0	564	0	0	906,037
2019	0	0	0	0	454,717	542,971	0	0	0	0	997,689
2020	0	0	0	0	1,528,672	325,618	0	0	0	0	1,854,291
2021	0	0	0	0	748,245	587,315	0	0	0	0	1,335,560
2022	0	1,608	0	0	371,522	1,036,147	0	0	0	0	1,409,276

Table 7. Mutton Snapper landings in pounds whole weight (LBS) with associated coefficients of variation (CV; Approach 2 described in Nuttall and Dettloff 2022) by year and mode (MRIP, LACreel 2014+, TPWD). MRIP Headboat estimates are included from Texas to western Florida (1981-1985) and Virginia to Maine (1981+).

Year	Cbt		CbtHbt		Hbt		Priv		Shore		Total	
	LBS	CV	LBS	CV	LBS	CV	LBS	CV	LBS	CV	LBS	CV
1981	65,543	0.82	0	0.00	0	0.00	1,002,137	0.58	936,457	0.72	2,004,137	0.47
1982	172,891	0.50	0	0.00	0	0.00	2,117,973	0.46	139,345	0.77	2,430,210	0.41
1983	53,113	0.41	0	0.00	2,597	1.00	647,706	0.37	1,717,258	0.77	2,420,675	0.57
1984	219,072	0.52	0	0.00	0	0.00	2,811,842	0.48	136,234	0.74	3,167,148	0.44
1985	65,500	0.47	0	0.00	0	0.00	205,917	0.75	201,895	0.81	473,312	0.49
1986	92,512	0.43	0	0.00			1,843,828	0.49	74,812	1.00	2,011,152	0.45
1987	90,160	0.51	0	0.00			916,132	0.40	425,219	0.91	1,431,511	0.34
1988	13,901	0.57	0	0.00			2,113,353	0.64	140,546	0.73	2,267,800	0.58
1989	11,156	0.63	0	0.00			919,235	0.51	208,241	0.64	1,138,632	0.44
1990	187,337	0.97	0	0.00			528,122	0.30	0	0.00	715,459	0.32
1991	21,920	0.53	0	0.00			1,206,301	0.33	436,099	0.67	1,664,320	0.30
1992	54,930	0.34	0	0.00			1,037,395	0.37	338,117	0.76	1,430,442	0.35
1993	74,875	0.50	0	0.00			1,114,074	0.22	113,680	0.28	1,302,629	0.19
1994	20,224	0.48	0	0.00			435,794	0.21	133,736	0.40	589,754	0.19
1995	32,856	0.39	0	0.00			1,000,936	0.40	111,176	0.52	1,144,968	0.35
1996	17,209	0.38	0	0.00			602,101	0.28	46,309	0.72	665,618	0.26
1997	49,097	0.37	0	0.00			444,392	0.30	78,109	0.66	571,598	0.25
1998	54,344	0.43	0	0.00			675,146	0.28	127,114	0.68	856,603	0.24
1999	26,678	0.22	0	0.00			780,997	0.34	364,743	0.48	1,172,418	0.26
2000	32,138	0.22	0	0.00			602,101	0.20	56,015	1.00	690,254	0.19
2001	40,743	0.16	0	0.00			371,157	0.26	94,800	0.61	506,700	0.21
2002	97,298	0.15	0	0.00			729,824	0.20	78,897	0.44	906,019	0.16
2003	87,188	0.20	0	0.00			619,340	0.21	229,792	0.47	936,320	0.16
2004	98,706	0.21			0	0.00	466,315	0.29	87,406	0.67	652,427	0.23
2005	54,214	0.22			0	0.00	438,306	0.20	65,899	0.47	558,419	0.16
2006	63,094	0.25			0	0.00	1,435,628	0.38	158,034	0.68	1,656,757	0.34
2007	83,606	0.26			0	0.00	1,367,771	0.25	221,513	0.58	1,672,889	0.21
2008	75,610	0.21			0	0.00	1,069,096	0.27	1,379,113	0.74	2,523,818	0.51
2009	90,824	0.21			0	0.00	637,760	0.20	76,429	0.58	805,014	0.16
2010	73,226	0.19			0	0.00	703,870	0.21	94,819	0.43	871,915	0.17
2011	75,841	0.26			0	0.00	220,418	0.25	37,913	0.62	334,172	0.19
2012	186,238	0.39			0	0.00	1,077,899	0.37	8,470	1.00	1,272,608	0.31

Year	Cbt		CbtHbt		Hbt		Priv		Shore		Total	
	LBS	CV	LBS	CV	LBS	CV	LBS	CV	LBS	CV	LBS	CV
2013	105,897	0.39			0	0.00	1,146,527	0.23	164,753	0.71	1,417,177	0.19
2014	57,003	0.24			0	0.00	897,497	0.27	269,508	0.57	1,224,007	0.22
2015	145,415	0.24			0	0.00	779,477	0.27	413,834	0.46	1,338,726	0.20
2016	145,394	0.22			0	0.00	1,143,662	0.29	321,701	0.53	1,610,756	0.22
2017	43,067	0.31			0	0.00	849,408	0.26	147,128	0.95	1,039,604	0.26
2018	98,171	0.24			0	0.00	740,682	0.31	67,184	0.90	906,037	0.24
2019	194,318	0.48			0	0.00	624,943	0.39	178,427	0.77	997,689	0.31
2020	260,047	0.40			0	0.00	1,575,584	0.64	18,659	1.00	1,854,291	0.52
2021	144,986	0.27			0	0.00	1,094,140	0.24	96,434	0.56	1,335,560	0.20
2022	147,412	0.26			0	0.00	1,095,371	0.21	166,492	0.48	1,409,276	0.17

Table 8. Summary of length measurements (millimeters fork length) from MRIP-intercepted Mutton Snapper by state and year. Summaries include the number of fish measured by MRIP and, in parentheses, the number of angler trips from which those fish were measured (N), and the minimum (Min), arithmetic mean (Avg), standard deviation (SD), and maximum (Max) size of fish lengths. LA lengths are available from MRIP only until 2013.

Year	LA					FLW					FLE					GA				
	N	Min	Avg	SD	Max	N	Min	Avg	SD	Max	N	Min	Avg	SD	Max	N	Min	Avg	SD	Max
1981	0 (0)	0	0	0	0	31 (15)	220	339	126	750	15 (11)	250	346	83	510	0 (0)	0	0	0	0
1982	0 (0)	0	0	0	0	44 (16)	220	505	181	800	75 (28)	120	293	120	650	0 (0)	0	0	0	0
1983	0 (0)	0	0	0	0	17 (12)	145	581	207	850	34 (21)	180	340	146	650	0 (0)	0	0	0	0
1984	0 (0)	0	0	0	0	42 (18)	235	474	164	770	32 (11)	280	389	100	620	0 (0)	0	0	0	0
1985	0 (0)	0	0	0	0	27 (14)	235	466	155	730	6 (4)	500	535	66	670	0 (0)	0	0	0	0
1986	0 (0)	0	0	0	0	63 (29)	270	478	151	750	36 (25)	240	408	103	585	0 (0)	0	0	0	0
1987	0 (0)	0	0	0	0	77 (30)	230	413	135	732	46 (20)	240	401	153	745	0 (0)	0	0	0	0
1988	0 (0)	0	0	0	0	43 (19)	265	393	103	680	51 (37)	329	449	94	655	0 (0)	0	0	0	0
1989	0 (0)	0	0	0	0	26 (13)	206	403	98	625	48 (35)	200	435	91	652	0 (0)	0	0	0	0
1990	6 (2)	380	449	118	686	30 (11)	206	384	104	686	41 (31)	200	439	93	652	0 (0)	0	0	0	0
1991	0 (0)	0	0	0	0	44 (18)	248	462	167	740	51 (35)	249	413	123	687	0 (0)	0	0	0	0
1992	0 (0)	0	0	0	0	91 (45)	270	519	146	781	110 (80)	155	380	112	687	0 (0)	0	0	0	0
1993	0 (0)	0	0	0	0	84 (46)	249	424	134	796	160 (91)	135	365	102	573	0 (0)	0	0	0	0
1994	0 (0)	0	0	0	0	45 (40)	240	411	123	736	85 (58)	155	372	91	605	0 (0)	0	0	0	0
1995	0 (0)	0	0	0	0	57 (35)	246	480	117	751	57 (34)	213	455	137	720	1 (1)	280	280	0	280
1996	0 (0)	0	0	0	0	42 (23)	268	494	112	770	39 (29)	270	491	125	725	0 (0)	0	0	0	0
1997	0 (0)	0	0	0	0	76 (51)	235	464	130	830	45 (31)	272	475	145	910	17 (5)	231	497	176	910
1998	0 (0)	0	0	0	0	82 (52)	250	500	121	780	104 (62)	231	423	127	715	0 (0)	0	0	0	0
1999	0 (0)	0	0	0	0	153 (73)	240	560	120	820	96 (63)	215	410	115	680	0 (0)	0	0	0	0
2000	0 (0)	0	0	0	0	132 (81)	325	550	104	815	169 (92)	263	444	92	720	0 (0)	0	0	0	0
2001	0 (0)	0	0	0	0	122 (80)	245	579	115	781	279 (130)	246	431	74	741	0 (0)	0	0	0	0

Year	LA					FLW					FLE					GA				
	N	Min	Avg	SD	Max	N	Min	Avg	SD	Max	N	Min	Avg	SD	Max	N	Min	Avg	SD	Max
2002	0 (0)	0	0	0	0	200 (124)	275	516	110	775	449 (229)	270	423	71	770	0 (0)	0	0	0	0
2003	0 (0)	0	0	0	0	217 (108)	259	529	130	829	341 (167)	270	428	75	858	0 (0)	0	0	0	0
2004	0 (0)	0	0	0	0	140 (87)	284	511	122	750	260 (140)	225	424	78	799	0 (0)	0	0	0	0
2005	0 (0)	0	0	0	0	65 (45)	390	513	88	665	425 (199)	218	406	58	752	0 (0)	0	0	0	0
2006	2 (1)	423	428	7	433	120 (64)	297	484	91	676	280 (156)	209	413	68	679	1 (1)	374	374	0	374
2007	0 (0)	0	0	0	0	160 (86)	297	510	116	813	282 (149)	233	425	81	709	0 (0)	0	0	0	0
2008	1 (1)	406	406	0	406	231 (112)	297	500	114	757	324 (152)	235	389	68	651	0 (0)	0	0	0	0
2009	0 (0)	0	0	0	0	87 (59)	308	521	114	725	301 (133)	261	402	52	648	0 (0)	0	0	0	0
2010	0 (0)	0	0	0	0	104 (71)	308	502	88	679	346 (153)	200	416	62	638	0 (0)	0	0	0	0
2011	0 (0)	0	0	0	0	116 (63)	380	519	103	750	136 (59)	214	432	61	586	0 (0)	0	0	0	0
2012	0 (0)	0	0	0	0	151 (77)	267	565	97	744	150 (88)	226	455	77	657	0 (0)	0	0	0	0
2013	0 (0)	0	0	0	0	115 (58)	267	544	139	804	109 (77)	206	416	89	684	0 (0)	0	0	0	0
2014						115 (75)	207	445	118	766	257 (127)	231	395	64	685	0 (0)	0	0	0	0
2015						135 (71)	204	472	131	795	268 (150)	239	407	74	720	0 (0)	0	0	0	0
2016						103 (63)	204	495	134	751	231 (123)	245	410	73	669	0 (0)	0	0	0	0
2017						50 (34)	256	540	117	718	98 (62)	233	431	113	748	0 (0)	0	0	0	0
2018						127 (47)	235	504	114	724	54 (39)	256	442	79	720	0 (0)	0	0	0	0
2019						101 (46)	229	501	105	759	61 (40)	296	437	86	720	0 (0)	0	0	0	0
2020						127 (45)	351	541	97	759	69 (40)	256	467	96	670	0 (0)	0	0	0	0
2021						138 (78)	256	514	124	783	91 (71)	290	473	83	670	0 (0)	0	0	0	0
2022						79 (47)	273	507	101	776	179 (110)	240	465	94	693	0 (0)	0	0	0	0

Table 8 continued. Summary of length measurements (millimeters fork length) from MRIP-intercepted Mutton Snapper by state and year.

Year	SC					NC				
	N	Min	Avg	SD	Max	N	Min	Avg	SD	Max
1981	0 (0)	0	0	0	0	0 (0)	0	0	0	0
1982	0 (0)	0	0	0	0	0 (0)	0	0	0	0
1983	0 (0)	0	0	0	0	0 (0)	0	0	0	0
1984	0 (0)	0	0	0	0	0 (0)	0	0	0	0
1985	0 (0)	0	0	0	0	0 (0)	0	0	0	0
1986	0 (0)	0	0	0	0	0 (0)	0	0	0	0
1987	0 (0)	0	0	0	0	0 (0)	0	0	0	0
1988	0 (0)	0	0	0	0	0 (0)	0	0	0	0
1989	0 (0)	0	0	0	0	0 (0)	0	0	0	0
1990	0 (0)	0	0	0	0	0 (0)	0	0	0	0
1991	0 (0)	0	0	0	0	0 (0)	0	0	0	0
1992	0 (0)	0	0	0	0	0 (0)	0	0	0	0
1993	0 (0)	0	0	0	0	0 (0)	0	0	0	0
1994	0 (0)	0	0	0	0	0 (0)	0	0	0	0
1995	0 (0)	0	0	0	0	0 (0)	0	0	0	0
1996	6 (1)	315	377	101	580	5 (1)	355	482	140	718
1997	0 (0)	0	0	0	0	0 (0)	0	0	0	0
1998	0 (0)	0	0	0	0	0 (0)	0	0	0	0
1999	0 (0)	0	0	0	0	0 (0)	0	0	0	0
2000	0 (0)	0	0	0	0	0 (0)	0	0	0	0
2001	0 (0)	0	0	0	0	0 (0)	0	0	0	0
2002	0 (0)	0	0	0	0	0 (0)	0	0	0	0
2003	0 (0)	0	0	0	0	0 (0)	0	0	0	0

Year	SC					NC				
	N	Min	Avg	SD	Max	N	Min	Avg	SD	Max
2004	1 (1)	538	538	0	538	0 (0)	0	0	0	0
2005	0 (0)	0	0	0	0	0 (0)	0	0	0	0
2006	0 (0)	0	0	0	0	0 (0)	0	0	0	0
2007	0 (0)	0	0	0	0	0 (0)	0	0	0	0
2008	0 (0)	0	0	0	0	0 (0)	0	0	0	0
2009	0 (0)	0	0	0	0	0 (0)	0	0	0	0
2010	0 (0)	0	0	0	0	0 (0)	0	0	0	0
2011	0 (0)	0	0	0	0	0 (0)	0	0	0	0
2012	0 (0)	0	0	0	0	0 (0)	0	0	0	0
2013	0 (0)	0	0	0	0	0 (0)	0	0	0	0
2014	0 (0)	0	0	0	0	0 (0)	0	0	0	0
2015	0 (0)	0	0	0	0	0 (0)	0	0	0	0
2016	0 (0)	0	0	0	0	0 (0)	0	0	0	0
2017	0 (0)	0	0	0	0	1 (1)	385	385	0	385
2018	1 (1)	391	391	0	391	0 (0)	0	0	0	0
2019	0 (0)	0	0	0	0	0 (0)	0	0	0	0
2020	0 (0)	0	0	0	0	0 (0)	0	0	0	0
2021	0 (0)	0	0	0	0	0 (0)	0	0	0	0
2022	0 (0)	0	0	0	0	0 (0)	0	0	0	0

Table 9. Summary of weight measurements (pounds whole weight) from MRIP-intercepted Mutton Snapper by state and year. Summaries include the number of fish weighed by MRIP and, in parentheses, the number of angler trips from which those fish were weighed (N), and the minimum (Min), arithmetic mean (Avg), standard deviation (SD), and maximum (Max) size of fish weights. LA weights are available from MRIP only until 2013.

Year	LA					FLW					FLE					GA				
	N	Min	Avg	SD	Max	N	Min	Avg	SD	Max	N	Min	Avg	SD	Max	N	Min	Avg	SD	Max
1981	0 (0)	0.0	0.0	0.0	0.0	31 (15)	0.4	1.8	2.3	9.8	15 (11)	0.7	1.8	1.5	5.5	0 (0)	0.0	0.0	0.0	0.0
1982	0 (0)	0.0	0.0	0.0	0.0	44 (16)	0.4	6.4	5.7	21.3	75 (28)	0.2	1.9	3.4	19.8	0 (0)	0.0	0.0	0.0	0.0
1983	0 (0)	0.0	0.0	0.0	0.0	17 (12)	0.2	11.1	8.8	26.2	34 (21)	0.2	2.0	2.0	6.6	0 (0)	0.0	0.0	0.0	0.0
1984	0 (0)	0.0	0.0	0.0	0.0	42 (18)	0.5	6.2	6.3	18.1	32 (11)	0.9	2.7	2.1	8.6	0 (0)	0.0	0.0	0.0	0.0
1985	0 (0)	0.0	0.0	0.0	0.0	27 (14)	0.7	5.2	4.8	14.3	6 (4)	4.0	5.1	2.3	9.7	0 (0)	0.0	0.0	0.0	0.0
1986	0 (0)	0.0	0.0	0.0	0.0	63 (29)	0.7	5.8	5.3	18.2	36 (25)	0.4	2.8	1.6	6.8	0 (0)	0.0	0.0	0.0	0.0
1987	0 (0)	0.0	0.0	0.0	0.0	77 (30)	0.7	4.5	5.1	24.3	46 (20)	0.4	3.7	4.7	17.6	0 (0)	0.0	0.0	0.0	0.0
1988	0 (0)	0.0	0.0	0.0	0.0	1 (1)	0.7	0.7	0.0	0.7	13 (9)	1.5	3.5	2.3	9.8	0 (0)	0.0	0.0	0.0	0.0
1989	0 (0)	0.0	0.0	0.0	0.0	26 (13)	0.2	3.0	2.6	11.0	48 (35)	0.2	3.2	2.2	11.6	0 (0)	0.0	0.0	0.0	0.0
1990	6 (2)	2.3	4.1	3.9	12.0	30 (11)	0.2	3.1	3.2	16.0	41 (31)	0.2	3.3	2.0	9.7	0 (0)	0.0	0.0	0.0	0.0
1991	0 (0)	0.0	0.0	0.0	0.0	44 (18)	0.5	5.3	5.1	15.5	51 (35)	0.6	3.5	3.1	12.3	0 (0)	0.0	0.0	0.0	0.0
1992	0 (0)	0.0	0.0	0.0	0.0	67 (36)	0.9	7.1	6.2	19.8	99 (72)	0.2	2.6	2.9	12.5	0 (0)	0.0	0.0	0.0	0.0
1993	0 (0)	0.0	0.0	0.0	0.0	84 (46)	0.4	3.3	3.2	15.0	158 (90)	0.2	2.1	1.7	7.5	0 (0)	0.0	0.0	0.0	0.0
1994	0 (0)	0.0	0.0	0.0	0.0	45 (40)	0.6	3.6	4.2	18.0	85 (58)	0.2	2.3	2.0	8.6	0 (0)	0.0	0.0	0.0	0.0
1995	0 (0)	0.0	0.0	0.0	0.0	57 (35)	0.4	4.8	3.6	15.6	57 (34)	0.4	4.4	3.9	14.8	1 (1)	1.1	1.1	0.0	1.1
1996	0 (0)	0.0	0.0	0.0	0.0	42 (23)	0.9	5.5	4.1	22.0	39 (29)	0.7	4.7	3.3	12.7	0 (0)	0.0	0.0	0.0	0.0
1997	0 (0)	0.0	0.0	0.0	0.0	76 (51)	0.7	6.4	4.7	20.7	45 (31)	0.8	4.7	3.1	11.0	17 (5)	0.6	5.7	3.7	12.1
1998	0 (0)	0.0	0.0	0.0	0.0	82 (52)	0.6	6.9	5.1	22.6	104 (62)	0.4	4.2	4.0	24.6	0 (0)	0.0	0.0	0.0	0.0
1999	0 (0)	0.0	0.0	0.0	0.0	153 (73)	0.6	8.4	4.9	21.4	96 (63)	0.4	4.0	4.2	29.6	0 (0)	0.0	0.0	0.0	0.0
2000	0 (0)	0.0	0.0	0.0	0.0	132 (81)	1.5	7.6	4.5	21.7	169 (92)	0.7	4.0	2.9	16.5	0 (0)	0.0	0.0	0.0	0.0
2001	0 (0)	0.0	0.0	0.0	0.0	122 (80)	0.6	8.9	4.8	19.9	279 (130)	0.6	3.8	2.4	16.7	0 (0)	0.0	0.0	0.0	0.0

Year	LA					FLW					FLE					GA				
	N	Min	Avg	SD	Max	N	Min	Avg	SD	Max	N	Min	Avg	SD	Max	N	Min	Avg	SD	Max
2002	0 (0)	0.0	0.0	0.0	0.0	200 (124)	0.7	6.3	4.4	21.4	449 (229)	0.7	3.3	2.2	16.5	0 (0)	0.0	0.0	0.0	0.0
2003	0 (0)	0.0	0.0	0.0	0.0	217 (108)	0.7	7.2	5.0	21.1	341 (167)	0.7	3.6	2.8	26.7	0 (0)	0.0	0.0	0.0	0.0
2004	0 (0)	0.0	0.0	0.0	0.0	140 (87)	0.9	6.1	4.1	15.7	260 (140)	0.4	3.4	2.5	23.1	0 (0)	0.0	0.0	0.0	0.0
2005	0 (0)	0.0	0.0	0.0	0.0	65 (45)	2.4	5.5	2.6	11.4	425 (199)	0.4	2.8	1.4	14.9	0 (0)	0.0	0.0	0.0	0.0
2006	2 (1)	3.1	3.2	0.2	3.3	120 (64)	0.9	4.8	2.7	12.1	280 (156)	0.4	3.0	1.7	12.1	1 (1)	3.3	3.3	0.0	3.3
2007	0 (0)	0.0	0.0	0.0	0.0	160 (86)	0.9	5.9	4.5	20.3	282 (149)	0.5	3.3	2.2	15.8	0 (0)	0.0	0.0	0.0	0.0
2008	1 (1)	2.9	2.9	0.0	2.9	231 (112)	0.9	5.7	4.1	16.9	324 (152)	0.5	2.4	1.6	11.3	0 (0)	0.0	0.0	0.0	0.0
2009	0 (0)	0.0	0.0	0.0	0.0	87 (59)	1.1	6.4	4.0	15.1	301 (133)	0.7	2.6	1.3	10.8	0 (0)	0.0	0.0	0.0	0.0
2010	0 (0)	0.0	0.0	0.0	0.0	104 (71)	1.1	5.4	2.9	12.7	346 (153)	0.4	3.0	1.6	10.5	0 (0)	0.0	0.0	0.0	0.0
2011	0 (0)	0.0	0.0	0.0	0.0	116 (63)	2.1	5.8	3.7	14.9	136 (59)	0.3	3.3	1.3	7.5	0 (0)	0.0	0.0	0.0	0.0
2012	0 (0)	0.0	0.0	0.0	0.0	151 (77)	0.8	7.9	4.3	20.9	150 (88)	0.5	3.9	1.9	10.6	0 (0)	0.0	0.0	0.0	0.0
2013	0 (0)	0.0	0.0	0.0	0.0	115 (58)	0.7	7.6	4.9	18.7	109 (77)	0.6	3.2	2.3	12.8	0 (0)	0.0	0.0	0.0	0.0
2014						115 (75)	0.3	4.3	3.7	18.4	257 (127)	0.5	2.6	1.6	13.5	0 (0)	0.0	0.0	0.0	0.0
2015						135 (71)	0.4	5.1	4.2	16.6	268 (150)	0.5	2.9	2.2	16.2	0 (0)	0.0	0.0	0.0	0.0
2016						103 (63)	0.4	5.9	4.7	16.7	231 (123)	0.6	2.9	2.0	12.5	0 (0)	0.0	0.0	0.0	0.0
2017						50 (34)	0.6	6.7	4.1	15.9	98 (62)	0.4	3.8	3.5	16.7	0 (0)	0.0	0.0	0.0	0.0
2018						127 (47)	0.4	5.8	3.5	15.3	54 (39)	0.7	3.6	2.3	15.2	0 (0)	0.0	0.0	0.0	0.0
2019						101 (46)	0.4	5.4	3.7	17.9	61 (40)	1.0	3.6	2.6	14.6	0 (0)	0.0	0.0	0.0	0.0
2020						127 (45)	1.8	6.7	3.7	17.9	69 (40)	0.7	4.3	2.8	12.0	0 (0)	0.0	0.0	0.0	0.0
2021						138 (78)	0.7	6.3	4.3	19.0	91 (71)	1.0	4.5	2.6	12.1	0 (0)	0.0	0.0	0.0	0.0
2022						79 (47)	0.8	5.7	3.6	20.3	179 (110)	0.5	4.3	2.5	13.0	0 (0)	0.0	0.0	0.0	0.0

Table 9 continued. Summary of weight measurements (pounds whole weight) from MRIP-intercepted Mutton Snapper by state and year.

Year	SC					NC				
	N	Min	Avg	SD	Max	N	Min	Avg	SD	Max
1981	0 (0)	0.0	0.0	0.0	0.0	0 (0)	0.0	0.0	0.0	0.0
1982	0 (0)	0.0	0.0	0.0	0.0	0 (0)	0.0	0.0	0.0	0.0
1983	0 (0)	0.0	0.0	0.0	0.0	0 (0)	0.0	0.0	0.0	0.0
1984	0 (0)	0.0	0.0	0.0	0.0	0 (0)	0.0	0.0	0.0	0.0
1985	0 (0)	0.0	0.0	0.0	0.0	0 (0)	0.0	0.0	0.0	0.0
1986	0 (0)	0.0	0.0	0.0	0.0	0 (0)	0.0	0.0	0.0	0.0
1987	0 (0)	0.0	0.0	0.0	0.0	0 (0)	0.0	0.0	0.0	0.0
1988	0 (0)	0.0	0.0	0.0	0.0	0 (0)	0.0	0.0	0.0	0.0
1989	0 (0)	0.0	0.0	0.0	0.0	0 (0)	0.0	0.0	0.0	0.0
1990	0 (0)	0.0	0.0	0.0	0.0	0 (0)	0.0	0.0	0.0	0.0
1991	0 (0)	0.0	0.0	0.0	0.0	0 (0)	0.0	0.0	0.0	0.0
1992	0 (0)	0.0	0.0	0.0	0.0	0 (0)	0.0	0.0	0.0	0.0
1993	0 (0)	0.0	0.0	0.0	0.0	0 (0)	0.0	0.0	0.0	0.0
1994	0 (0)	0.0	0.0	0.0	0.0	0 (0)	0.0	0.0	0.0	0.0
1995	0 (0)	0.0	0.0	0.0	0.0	0 (0)	0.0	0.0	0.0	0.0
1996	6 (1)	1.4	3.1	2.7	8.6	5 (1)	1.8	3.5	2.4	7.7
1997	0 (0)	0.0	0.0	0.0	0.0	0 (0)	0.0	0.0	0.0	0.0
1998	0 (0)	0.0	0.0	0.0	0.0	0 (0)	0.0	0.0	0.0	0.0
1999	0 (0)	0.0	0.0	0.0	0.0	0 (0)	0.0	0.0	0.0	0.0
2000	0 (0)	0.0	0.0	0.0	0.0	0 (0)	0.0	0.0	0.0	0.0
2001	0 (0)	0.0	0.0	0.0	0.0	0 (0)	0.0	0.0	0.0	0.0
2002	0 (0)	0.0	0.0	0.0	0.0	0 (0)	0.0	0.0	0.0	0.0
2003	0 (0)	0.0	0.0	0.0	0.0	0 (0)	0.0	0.0	0.0	0.0

Year	SC					NC				
	N	Min	Avg	SD	Max	N	Min	Avg	SD	Max
2004	1 (1)	6.6	6.6	0.0	6.6	0 (0)	0.0	0.0	0.0	0.0
2005	0 (0)	0.0	0.0	0.0	0.0	0 (0)	0.0	0.0	0.0	0.0
2006	0 (0)	0.0	0.0	0.0	0.0	0 (0)	0.0	0.0	0.0	0.0
2007	0 (0)	0.0	0.0	0.0	0.0	0 (0)	0.0	0.0	0.0	0.0
2008	0 (0)	0.0	0.0	0.0	0.0	0 (0)	0.0	0.0	0.0	0.0
2009	0 (0)	0.0	0.0	0.0	0.0	0 (0)	0.0	0.0	0.0	0.0
2010	0 (0)	0.0	0.0	0.0	0.0	0 (0)	0.0	0.0	0.0	0.0
2011	0 (0)	0.0	0.0	0.0	0.0	0 (0)	0.0	0.0	0.0	0.0
2012	0 (0)	0.0	0.0	0.0	0.0	0 (0)	0.0	0.0	0.0	0.0
2013	0 (0)	0.0	0.0	0.0	0.0	0 (0)	0.0	0.0	0.0	0.0
2014	0 (0)	0.0	0.0	0.0	0.0	0 (0)	0.0	0.0	0.0	0.0
2015	0 (0)	0.0	0.0	0.0	0.0	0 (0)	0.0	0.0	0.0	0.0
2016	0 (0)	0.0	0.0	0.0	0.0	0 (0)	0.0	0.0	0.0	0.0
2017	0 (0)	0.0	0.0	0.0	0.0	1 (1)	2.3	2.3	0.0	2.3
2018	1 (1)	2.2	2.2	0.0	2.2	0 (0)	0.0	0.0	0.0	0.0
2019	0 (0)	0.0	0.0	0.0	0.0	0 (0)	0.0	0.0	0.0	0.0
2020	0 (0)	0.0	0.0	0.0	0.0	0 (0)	0.0	0.0	0.0	0.0
2021	0 (0)	0.0	0.0	0.0	0.0	0 (0)	0.0	0.0	0.0	0.0
2022	0 (0)	0.0	0.0	0.0	0.0	0 (0)	0.0	0.0	0.0	0.0

Table 10. Summary of length measurements (millimeters fork length) from MRIP-intercepted Mutton Snapper by mode and year. Summaries include the number of fish measured by MRIP and, in parentheses, the number of angler trips from which those fish were measured (N), and the minimum (Min), arithmetic mean (Avg), standard deviation (SD), and maximum (Max) size of fish lengths. MRIP Headboat estimates are included from Texas to western Florida (1981-1985) and Virginia to Maine (1981+).

Year	Cbt					Hbt					Priv					Shore				
	N	Min	Avg	SD	Max	N	Min	Avg	SD	Max	N	Min	Avg	SD	Max	N	Min	Avg	SD	Max
1981	1 (1)	500	500	0	500	0 (0)	0	0	0	0	34 (17)	220	327	108	750	11 (8)	225	372	119	661
1982	15 (5)	335	477	87	635	0 (0)	0	0	0	0	80 (31)	190	405	176	800	24 (8)	120	192	78	510
1983	10 (6)	365	568	114	750	4 (2)	785	824	32	850	25 (18)	215	347	156	650	12 (7)	145	316	138	521
1984	26 (13)	310	491	161	770	0 (0)	0	0	0	0	45 (14)	235	405	132	750	3 (2)	360	450	84	525
1985	21 (10)	353	515	139	730	0 (0)	0	0	0	0	6 (4)	500	535	66	670	6 (4)	235	298	55	402
1986	40 (19)	270	489	132	730	0 (0)	0	0	0	0	58 (34)	240	428	141	750	1 (1)	394	394	0	394
1987	27 (9)	377	502	110	732	0 (0)	0	0	0	0	93 (38)	230	379	137	745	3 (3)	320	472	183	675
1988	15 (10)	280	465	132	680	0 (0)	0	0	0	0	77 (44)	265	416	94	655	2 (2)	328	376	68	424
1989	8 (7)	361	470	113	622	0 (0)	0	0	0	0	62 (38)	200	422	92	652	4 (3)	336	353	21	381
1990	16 (6)	309	433	99	686	0 (0)	0	0	0	0	61 (38)	200	414	103	686	0 (0)	0	0	0	0
1991	16 (8)	350	542	133	730	0 (0)	0	0	0	0	74 (41)	248	418	144	740	5 (4)	325	361	35	419
1992	58 (37)	344	526	145	781	0 (0)	0	0	0	0	128 (80)	268	421	135	687	15 (8)	155	312	59	421
1993	22 (15)	333	555	130	796	0 (0)	0	0	0	0	177 (92)	197	386	99	610	45 (30)	135	301	81	458
1994	20 (15)	271	467	147	736	0 (0)	0	0	0	0	89 (66)	260	381	80	603	21 (17)	155	327	107	605
1995	27 (17)	280	499	90	720	0 (0)	0	0	0	0	80 (45)	213	463	137	751	8 (8)	280	379	108	604
1996	25 (14)	315	482	136	770	0 (0)	0	0	0	0	64 (37)	268	492	111	725	3 (3)	270	337	107	460
1997	88 (51)	231	479	150	910	0 (0)	0	0	0	0	47 (33)	272	458	125	680	3 (3)	405	462	81	555
1998	88 (52)	286	489	114	758	0 (0)	0	0	0	0	93 (58)	231	434	138	780	5 (4)	250	332	54	385
1999	116 (68)	285	581	108	820	0 (0)	0	0	0	0	118 (59)	215	445	126	754	15 (9)	240	335	60	425
2000	199 (108)	325	508	112	815	0 (0)	0	0	0	0	100 (64)	263	461	98	712	2 (1)	270	286	23	302

Year	Cbt					Hbt					Priv					Shore				
	N	Min	Avg	SD	Max	N	Min	Avg	SD	Max	N	Min	Avg	SD	Max	N	Min	Avg	SD	Max
2001	304 (147)	335	487	113	781	0 (0)	0	0	0	0	93 (59)	245	442	100	741	4 (4)	361	438	90	563
2002	451 (228)	325	467	98	775	0 (0)	0	0	0	0	190 (118)	270	416	77	770	8 (7)	340	409	69	542
2003	416 (183)	275	481	112	829	0 (0)	0	0	0	0	127 (81)	259	426	101	858	15 (11)	304	442	81	600
2004	291 (149)	340	467	107	799	0 (0)	0	0	0	0	105 (74)	225	424	92	643	5 (5)	365	405	44	466
2005	332 (142)	340	423	71	665	0 (0)	0	0	0	0	151 (95)	218	415	76	752	7 (7)	291	437	77	540
2006	198 (97)	330	448	84	676	0 (0)	0	0	0	0	198 (119)	209	422	78	679	7 (6)	295	404	69	526
2007	247 (110)	335	472	108	813	0 (0)	0	0	0	0	180 (113)	233	434	94	709	15 (12)	236	438	91	661
2008	290 (135)	300	474	113	757	0 (0)	0	0	0	0	195 (113)	235	395	83	620	71 (17)	304	383	51	658
2009	230 (100)	278	447	98	725	0 (0)	0	0	0	0	152 (86)	261	404	58	632	6 (6)	337	378	31	431
2010	287 (121)	273	442	79	679	0 (0)	0	0	0	0	151 (91)	200	425	75	638	12 (12)	327	408	62	524
2011	202 (84)	342	482	95	750	0 (0)	0	0	0	0	46 (34)	214	430	81	535	4 (4)	431	439	9	450
2012	222 (108)	366	528	96	744	0 (0)	0	0	0	0	78 (56)	226	460	108	684	1 (1)	445	445	0	445
2013	116 (58)	272	512	133	804	0 (0)	0	0	0	0	102 (73)	206	451	128	720	6 (4)	293	417	116	600
2014	180 (93)	231	415	82	766	0 (0)	0	0	0	0	179 (99)	207	408	89	708	13 (10)	239	384	139	705
2015	251 (115)	274	439	102	795	0 (0)	0	0	0	0	137 (95)	242	418	97	720	15 (11)	204	353	100	495
2016	205 (95)	300	440	101	751	0 (0)	0	0	0	0	120 (82)	245	432	104	709	9 (9)	204	417	162	700
2017	78 (36)	350	466	90	718	0 (0)	0	0	0	0	69 (59)	233	473	157	748	2 (2)	303	336	46	368
2018	113 (40)	385	524	88	724	0 (0)	0	0	0	0	67 (45)	235	423	110	720	2 (2)	392	402	15	413
2019	94 (38)	402	515	96	759	0 (0)	0	0	0	0	63 (44)	229	423	91	720	5 (4)	358	438	55	512
2020	130 (54)	382	529	98	759	0 (0)	0	0	0	0	64 (30)	256	491	105	679	2 (1)	337	338	1	339
2021	122 (79)	370	526	98	783	0 (0)	0	0	0	0	101 (65)	256	463	115	726	6 (5)	312	510	159	720
2022	121 (61)	276	513	93	776	0 (0)	0	0	0	0	129 (88)	240	451	91	684	8 (8)	290	370	73	494

Table 11. Summary of weight measurements (pounds whole weight) from MRIP-intercepted Mutton Snapper by mode and year. Summaries include the number of fish weighed by MRIP and, in parentheses, the number of angler trips from which those fish were weighed (N), and the minimum (Min), arithmetic mean (Avg), standard deviation (SD), and maximum (Max) size of fish weights. MRIP Headboat estimates are included from Texas to western Florida (1981-1985) and Virginia to Maine (1981+).

Year	Cbt					Hbt					Priv					Shore				
	N	Min	Avg	SD	Max	N	Min	Avg	SD	Max	N	Min	Avg	SD	Max	N	Min	Avg	SD	Max
1981	1 (1)	6.0	6.0	0.0	6.0	0 (0)	0.0	0.0	0.0	0.0	34 (17)	0.4	1.6	1.8	9.8	11 (8)	0.4	2.2	2.6	8.9
1982	15 (5)	3.0	6.7	4.8	19.8	0 (0)	0.0	0.0	0.0	0.0	80 (31)	0.2	3.9	5.1	21.3	24 (8)	0.2	0.5	1.1	5.5
1983	10 (6)	2.0	8.3	4.7	17.3	4 (2)	20.1	24.1	2.9	26.2	25 (18)	0.2	2.2	2.7	10.0	12 (7)	0.2	1.8	1.8	5.5
1984	26 (13)	1.3	6.6	6.6	18.1	0 (0)	0.0	0.0	0.0	0.0	45 (14)	0.5	3.6	4.1	16.5	3 (2)	1.6	4.0	2.2	5.8
1985	21 (10)	1.5	6.3	4.8	14.3	0 (0)	0.0	0.0	0.0	0.0	6 (4)	4.0	5.1	2.3	9.7	6 (4)	0.7	1.2	0.8	2.7
1986	40 (19)	0.8	6.0	5.0	18.2	0 (0)	0.0	0.0	0.0	0.0	58 (34)	0.4	3.9	4.2	17.0	1 (1)	3.4	3.4	0.0	3.4
1987	27 (9)	3.1	8.5	6.2	24.3	0 (0)	0.0	0.0	0.0	0.0	93 (38)	0.4	3.0	3.7	17.6	3 (3)	1.3	5.3	6.0	12.1
1988	0 (0)	0.0	0.0	0.0	0.0	0 (0)	0.0	0.0	0.0	0.0	13 (9)	0.7	3.3	2.4	9.8	1 (1)	3.1	3.1	0.0	3.1
1989	8 (7)	1.3	4.7	3.7	11.6	0 (0)	0.0	0.0	0.0	0.0	62 (38)	0.2	3.0	2.1	11.0	4 (3)	1.5	1.7	0.3	2.2
1990	16 (6)	1.5	4.3	3.5	16.0	0 (0)	0.0	0.0	0.0	0.0	61 (38)	0.2	3.0	2.4	12.0	0 (0)	0.0	0.0	0.0	0.0
1991	16 (8)	1.5	6.6	4.1	13.7	0 (0)	0.0	0.0	0.0	0.0	74 (41)	0.5	4.0	4.3	15.5	5 (4)	1.1	1.8	0.8	3.1
1992	50 (32)	1.5	7.8	6.5	19.8	0 (0)	0.0	0.0	0.0	0.0	101 (68)	0.7	3.2	3.4	12.6	15 (8)	0.2	1.2	0.6	2.6
1993	22 (15)	1.5	6.0	4.0	15.0	0 (0)	0.0	0.0	0.0	0.0	177 (92)	0.4	2.4	1.9	9.2	43 (29)	0.2	1.2	0.7	2.6
1994	20 (15)	0.8	5.3	5.6	18.0	0 (0)	0.0	0.0	0.0	0.0	89 (66)	0.6	2.4	1.8	8.6	21 (17)	0.2	1.8	2.3	8.6
1995	27 (17)	1.1	5.3	2.8	14.8	0 (0)	0.0	0.0	0.0	0.0	80 (45)	0.4	4.5	4.0	15.6	8 (8)	0.9	2.6	2.7	8.6
1996	25 (14)	1.4	5.7	5.1	22.0	0 (0)	0.0	0.0	0.0	0.0	64 (37)	0.9	4.7	2.9	12.7	3 (3)	0.7	1.5	1.2	2.9
1997	88 (51)	0.6	6.6	4.6	20.7	0 (0)	0.0	0.0	0.0	0.0	47 (33)	0.8	4.4	3.0	9.9	3 (3)	2.6	3.9	1.8	6.0
1998	88 (52)	0.9	6.6	5.1	24.6	0 (0)	0.0	0.0	0.0	0.0	93 (58)	0.4	4.4	4.1	20.1	5 (4)	0.6	1.5	0.8	2.3
1999	116 (68)	0.9	9.5	5.1	29.6	0 (0)	0.0	0.0	0.0	0.0	118 (59)	0.4	4.5	3.7	18.0	15 (9)	0.6	1.6	0.8	2.8
2000	199 (108)	1.5	6.2	4.4	21.7	0 (0)	0.0	0.0	0.0	0.0	100 (64)	0.7	4.5	3.0	13.5	2 (1)	0.8	1.0	0.2	1.2

Year	Cbt					Hbt					Priv					Shore				
	N	Min	Avg	SD	Max	N	Min	Avg	SD	Max	N	Min	Avg	SD	Max	N	Min	Avg	SD	Max
2001	304 (147)	1.6	5.8	4.2	19.9	0 (0)	0.0	0.0	0.0	0.0	93 (59)	0.6	4.1	3.2	16.7	4 (4)	1.6	3.8	2.7	7.3
2002	451 (228)	1.1	4.8	3.6	21.4	0 (0)	0.0	0.0	0.0	0.0	190 (118)	0.7	3.0	2.2	14.1	8 (7)	1.5	3.0	1.6	6.2
2003	416 (183)	0.8	5.4	4.2	21.1	0 (0)	0.0	0.0	0.0	0.0	127 (81)	0.7	3.6	3.9	26.7	15 (11)	1.1	3.8	2.0	8.5
2004	291 (149)	1.4	4.7	3.7	23.1	0 (0)	0.0	0.0	0.0	0.0	105 (74)	0.4	3.4	2.2	9.5	5 (5)	1.4	2.7	1.0	3.9
2005	332 (142)	1.5	3.1	1.9	11.4	0 (0)	0.0	0.0	0.0	0.0	151 (95)	0.4	3.1	2.0	14.9	7 (7)	1.0	3.6	1.5	6.1
2006	198 (97)	1.4	3.9	2.4	12.1	0 (0)	0.0	0.0	0.0	0.0	198 (119)	0.4	3.2	1.9	12.1	7 (6)	1.0	2.9	1.6	6.2
2007	247 (110)	1.5	4.8	4.0	20.3	0 (0)	0.0	0.0	0.0	0.0	180 (113)	0.5	3.6	2.6	15.8	15 (12)	0.5	3.7	2.4	10.9
2008	290 (135)	0.9	4.9	3.9	16.9	0 (0)	0.0	0.0	0.0	0.0	195 (113)	0.5	2.7	1.9	10.8	71 (17)	1.1	2.3	1.3	10.9
2009	230 (100)	0.8	4.0	3.2	15.1	0 (0)	0.0	0.0	0.0	0.0	152 (86)	0.7	2.7	1.5	8.9	6 (6)	1.2	2.1	0.6	2.9
2010	287 (121)	1.3	3.7	2.3	12.7	0 (0)	0.0	0.0	0.0	0.0	151 (91)	0.4	3.3	2.0	10.5	12 (12)	1.4	2.8	1.3	5.7
2011	202 (84)	1.5	4.7	3.2	14.9	0 (0)	0.0	0.0	0.0	0.0	46 (34)	0.3	3.5	1.5	6.4	4 (4)	3.1	3.4	0.2	3.5
2012	222 (108)	1.5	6.4	4.0	20.9	0 (0)	0.0	0.0	0.0	0.0	78 (56)	0.5	4.3	2.7	13.0	1 (1)	3.9	3.9	0.0	3.9
2013	116 (58)	0.7	6.4	4.9	18.7	0 (0)	0.0	0.0	0.0	0.0	102 (73)	0.6	4.5	3.8	14.3	6 (4)	1.2	3.7	3.3	9.7
2014	180 (93)	0.5	3.1	2.6	18.4	0 (0)	0.0	0.0	0.0	0.0	179 (99)	0.3	3.1	2.4	14.2	13 (10)	0.5	3.2	3.6	13.1
2015	251 (115)	0.8	3.9	3.4	16.6	0 (0)	0.0	0.0	0.0	0.0	137 (95)	0.5	3.3	2.9	16.2	15 (11)	0.4	2.3	1.8	5.4
2016	205 (95)	0.9	3.9	3.5	16.7	0 (0)	0.0	0.0	0.0	0.0	120 (82)	0.6	3.7	3.0	13.9	9 (9)	0.4	4.2	4.9	13.6
2017	78 (36)	1.3	4.2	2.9	15.9	0 (0)	0.0	0.0	0.0	0.0	69 (59)	0.4	5.5	4.8	16.7	2 (2)	1.0	1.5	0.6	1.9
2018	113 (40)	2.0	6.1	3.2	15.3	0 (0)	0.0	0.0	0.0	0.0	67 (45)	0.4	3.6	3.0	15.2	2 (2)	2.5	2.7	0.3	2.9
2019	94 (38)	2.0	5.8	3.8	17.9	0 (0)	0.0	0.0	0.0	0.0	63 (44)	0.4	3.3	2.4	14.6	5 (4)	1.8	3.3	1.0	4.6
2020	130 (54)	1.9	6.2	3.7	17.9	0 (0)	0.0	0.0	0.0	0.0	64 (30)	0.7	5.3	3.4	13.2	2 (1)	1.5	1.7	0.2	1.9
2021	122 (79)	1.5	6.4	3.9	19.0	0 (0)	0.0	0.0	0.0	0.0	101 (65)	0.7	4.5	3.2	14.7	6 (5)	1.3	6.6	5.8	16.3
2022	121 (61)	0.7	5.8	3.3	20.3	0 (0)	0.0	0.0	0.0	0.0	129 (88)	0.5	4.0	2.3	12.2	8 (8)	1.0	2.0	1.1	3.7

Table 12. Summary of length (millimeters fork length) and weight measurements (pounds whole weight) from MRIP-intercepted Mutton Snapper by year. Summaries include the number of fish for which size information was collected by MRIP and, in parentheses, the number of angler trips from which those fish were sampled (N), and the minimum (Min), arithmetic mean (Avg), standard deviation (SD), and maximum (Max) size of fish lengths and weights.

Year	Length					Weight				
	N	Min	Avg	SD	Max	N	Min	Avg	SD	Max
1981	46 (26)	220	341	113	750	46 (26)	0.4	1.8	2.1	9.8
1982	119 (44)	120	371	178	800	119 (44)	0.2	3.6	4.9	21.3
1983	51 (33)	145	420	203	850	51 (33)	0.2	5.0	6.8	26.2
1984	74 (29)	235	437	146	770	74 (29)	0.5	4.7	5.2	18.1
1985	33 (18)	235	479	145	730	33 (18)	0.7	5.2	4.4	14.3
1986	99 (54)	240	453	139	750	99 (54)	0.4	4.7	4.6	18.2
1987	123 (50)	230	408	141	745	123 (50)	0.4	4.2	4.9	24.3
1988	94 (56)	265	423	101	680	14 (10)	0.7	3.3	2.3	9.8
1989	74 (48)	200	424	94	652	74 (48)	0.2	3.2	2.3	11.6
1990	77 (44)	200	418	102	686	77 (44)	0.2	3.3	2.7	16.0
1991	95 (53)	248	436	146	740	95 (53)	0.5	4.3	4.2	15.5
1992	201 (125)	155	443	146	781	166 (108)	0.2	4.4	5.0	19.8
1993	244 (137)	135	385	117	796	242 (136)	0.2	2.5	2.4	15.0
1994	130 (98)	155	386	104	736	130 (98)	0.2	2.7	3.0	18.0
1995	115 (70)	213	466	128	751	115 (70)	0.4	4.6	3.7	15.6
1996	92 (54)	268	484	120	770	92 (54)	0.7	4.9	3.6	22.0
1997	138 (87)	231	471	140	910	138 (87)	0.6	5.8	4.2	20.7
1998	186 (114)	231	457	130	780	186 (114)	0.4	5.4	4.7	24.6
1999	249 (136)	215	502	139	820	249 (136)	0.4	6.7	5.1	29.6
2000	301 (173)	263	491	111	815	301 (173)	0.7	5.6	4.0	21.7
2001	401 (210)	245	476	112	781	401 (210)	0.6	5.3	4.1	19.9
2002	649 (353)	270	452	95	775	649 (353)	0.7	4.2	3.3	21.4
2003	558 (275)	259	467	111	858	558 (275)	0.7	5.0	4.2	26.7
2004	401 (228)	225	455	104	799	401 (228)	0.4	4.3	3.4	23.1
2005	490 (244)	218	421	72	752	490 (244)	0.4	3.1	1.9	14.9
2006	403 (222)	209	434	82	679	403 (222)	0.4	3.5	2.2	12.1
2007	442 (235)	233	455	103	813	442 (235)	0.5	4.3	3.5	20.3
2008	556 (265)	235	435	105	757	556 (265)	0.5	3.8	3.3	16.9
2009	388 (192)	261	429	86	725	388 (192)	0.7	3.5	2.7	15.1
2010	450 (224)	200	436	78	679	450 (224)	0.4	3.5	2.2	12.7

Year	Length					Weight				
	N	Min	Avg	SD	Max	N	Min	Avg	SD	Max
2011	252 (122)	214	472	94	750	252 (122)	0.3	4.5	3.0	14.9
2012	301 (165)	226	510	104	744	301 (165)	0.5	5.9	3.8	20.9
2013	224 (135)	206	482	133	804	224 (135)	0.6	5.5	4.5	18.7
2014	372 (202)	207	410	88	766	372 (202)	0.3	3.1	2.6	18.4
2015	403 (221)	204	429	102	795	403 (221)	0.4	3.6	3.2	16.6
2016	334 (186)	204	437	104	751	334 (186)	0.4	3.9	3.4	16.7
2017	149 (97)	233	467	125	748	149 (97)	0.4	4.8	3.9	16.7
2018	182 (87)	235	485	108	724	182 (87)	0.4	5.1	3.3	15.3
2019	162 (86)	229	477	103	759	162 (86)	0.4	4.7	3.5	17.9
2020	196 (85)	256	515	103	759	196 (85)	0.7	5.9	3.6	17.9
2021	229 (149)	256	498	111	783	229 (149)	0.7	5.6	3.8	19.0
2022	258 (157)	240	478	98	776	258 (157)	0.5	4.8	3.0	20.3

Table 13. Summary of length measurements (millimeters total length) from TPWD-intercepted Mutton Snapper by mode and year. Summaries include the number of fish measured by TPWD and, in parentheses, the number of angler trips from which those fish were measured (N), and the minimum (Min), arithmetic mean (Avg), standard deviation (SD), and maximum (Max) size of fish lengths.

Year	Priv					Total				
	N	Min	Avg	SD	Max	N	Min	Avg	SD	Max
1983	0 (0)	0	0	0	0	0 (0)	0	0	0	0
1984	0 (0)	0	0	0	0	0 (0)	0	0	0	0
1985	0 (0)	0	0	0	0	0 (0)	0	0	0	0
1986	0 (0)	0	0	0	0	0 (0)	0	0	0	0
1987	0 (0)	0	0	0	0	0 (0)	0	0	0	0
1988	1 (1)	334	334	0	334	1 (1)	334	334	0	334
1989	0 (0)	0	0	0	0	0 (0)	0	0	0	0
1990	0 (0)	0	0	0	0	0 (0)	0	0	0	0
1991	0 (0)	0	0	0	0	0 (0)	0	0	0	0
1992	1 (1)	482	482	0	482	1 (1)	482	482	0	482
1993	0 (0)	0	0	0	0	0 (0)	0	0	0	0
1994	0 (0)	0	0	0	0	0 (0)	0	0	0	0
1995	0 (0)	0	0	0	0	0 (0)	0	0	0	0
1996	4 (1)	462	572	77	641	4 (1)	462	572	77	641
1997	2 (2)	440	462	30	483	2 (2)	440	462	30	483
1998	0 (0)	0	0	0	0	0 (0)	0	0	0	0
1999	1 (1)	468	468	0	468	1 (1)	468	468	0	468
2000	0 (0)	0	0	0	0	0 (0)	0	0	0	0
2001	0 (0)	0	0	0	0	0 (0)	0	0	0	0
2002	0 (0)	0	0	0	0	0 (0)	0	0	0	0
2003	0 (0)	0	0	0	0	0 (0)	0	0	0	0
2004	0 (0)	0	0	0	0	0 (0)	0	0	0	0
2005	0 (0)	0	0	0	0	0 (0)	0	0	0	0
2006	0 (0)	0	0	0	0	0 (0)	0	0	0	0
2007	1 (1)	240	240	0	240	1 (1)	240	240	0	240
2008	1 (1)	241	241	0	241	1 (1)	241	241	0	241
2009	0 (0)	0	0	0	0	0 (0)	0	0	0	0
2010	0 (0)	0	0	0	0	0 (0)	0	0	0	0
2011	0 (0)	0	0	0	0	0 (0)	0	0	0	0
2012	0 (0)	0	0	0	0	0 (0)	0	0	0	0
2013	0 (0)	0	0	0	0	0 (0)	0	0	0	0

Year	Priv					Total				
	N	Min	Avg	SD	Max	N	Min	Avg	SD	Max
2014	3 (1)	327	501	180	687	3 (1)	327	501	180	687
2015	0 (0)	0	0	0	0	0 (0)	0	0	0	0
2016	0 (0)	0	0	0	0	0 (0)	0	0	0	0
2017	0 (0)	0	0	0	0	0 (0)	0	0	0	0
2018	5 (1)	510	545	50	630	5 (1)	510	545	50	630
2019	0 (0)	0	0	0	0	0 (0)	0	0	0	0
2020	0 (0)	0	0	0	0	0 (0)	0	0	0	0
2021	0 (0)	0	0	0	0	0 (0)	0	0	0	0
2022	0 (0)	0	0	0	0	0 (0)	0	0	0	0

Table 14. Estimated average weights of landed Mutton Snapper in pounds whole weight (WGT) with associated coefficients of variation (CV; Approach 2 described in Nuttall and Dettloff 2022) by year and mode (MRIP and TPWD). Average weight estimates are calculated from annual estimates (by-mode) of landings-in-weight (Table 7) divided by estimates of landings-in-number (Table 2). Sample size (N) is provided as the total number of angler trips and, in parentheses, number of fish from which weight information was collected. MRIP Headboat estimates are included from Texas to western Florida (1981-1985) and Virginia to Maine (1981+).

Year	Cbt			Hbt			Priv			Shore			Total		
	WGT	CV	N	WGT	CV	N	WGT	CV	N	WGT	CV	N	WGT	CV	N
1981	3.95	0.00	1 (1)				1.62	0.19	17 (34)	2.86	0.36	8 (11)	2.08	0.17	26 (46)
1982	4.64	0.18	5 (15)				5.79	0.15	31 (80)	0.40	0.44	8 (24)	3.25	0.12	44 (119)
1983	4.81	0.18	6 (10)	9.95	0.06	2 (4)	4.69	0.24	18 (25)	4.04	0.30	7 (12)	4.21	0.19	33 (51)
1984	6.69	0.19	13 (26)				4.36	0.17	14 (45)	4.90	0.32	2 (3)	4.49	0.13	29 (74)
1985	5.86	0.17	10 (21)				3.22	0.18	4 (6)	4.97	0.27	4 (6)	4.09	0.15	18 (33)
1986	6.42	0.13	19 (40)				4.91	0.14	34 (58)	5.82	0.00	1 (1)	4.99	0.10	54 (99)
1987	8.46	0.14	9 (27)				1.94	0.13	38 (93)	3.88	0.65	3 (3)	2.42	0.10	50 (123)
1988							5.64	0.21	10 (14)	4.30	0.00	1 (1)	5.52	0.19	11 (15)
1989	3.15	0.28	7 (8)				3.00	0.09	38 (62)	3.16	0.10	3 (4)	3.03	0.08	48 (74)
1990	3.09	0.21	6 (16)				2.64	0.10	38 (61)				2.75	0.09	44 (77)
1991	6.71	0.15	8 (16)				4.44	0.12	41 (74)	4.58	0.19	4 (5)	4.50	0.10	53 (95)
1992	7.09	0.12	32 (50)				3.57	0.10	69 (102)	2.74	0.13	8 (15)	3.39	0.09	109 (167)
1993	6.03	0.14	15 (22)				2.38	0.06	92 (177)	1.20	0.09	29 (43)	2.26	0.06	136 (242)
1994	3.29	0.24	15 (20)				2.69	0.08	66 (89)	2.92	0.28	17 (21)	2.76	0.10	98 (130)
1995	5.11	0.10	17 (27)				5.36	0.10	45 (80)	4.74	0.36	8 (8)	5.28	0.08	70 (115)
1996	5.24	0.18	14 (25)				4.65	0.07	38 (68)	4.95	0.48	3 (3)	4.68	0.07	55 (96)
1997	6.05	0.07	51 (88)				5.35	0.10	35 (49)	5.83	0.27	3 (3)	5.47	0.06	89 (140)
1998	6.18	0.08	52 (88)				4.92	0.10	58 (93)	4.45	0.23	4 (5)	4.90	0.06	114 (186)
1999	9.28	0.05	68 (116)				5.15	0.08	60 (119)	5.73	0.14	9 (15)	5.38	0.05	137 (250)

Year	Cbt			Hbt			Priv			Shore			Total		
	WGT	CV	N	WGT	CV	N	WGT	CV	N	WGT	CV	N	WGT	CV	N
2000	5.24	0.05	108 (199)				4.66	0.07	64 (100)	4.04	0.16	1 (2)	4.63	0.04	173 (301)
2001	5.70	0.04	147 (304)				3.95	0.08	59 (93)	4.88	0.35	4 (4)	4.20	0.04	210 (401)
2002	4.38	0.04	228 (451)				3.28	0.05	118 (190)	3.90	0.19	7 (8)	3.42	0.03	353 (649)
2003	5.14	0.04	183 (416)				3.54	0.10	81 (127)	5.95	0.14	11 (15)	4.06	0.04	275 (558)
2004	5.52	0.05	149 (291)				3.68	0.06	74 (105)	3.35	0.17	5 (5)	3.83	0.04	228 (401)
2005	3.20	0.03	142 (332)				3.01	0.05	95 (151)	3.39	0.16	7 (7)	3.07	0.03	244 (490)
2006	3.67	0.04	97 (198)				3.65	0.04	119 (198)	4.05	0.22	6 (7)	3.68	0.03	222 (403)
2007	4.77	0.05	110 (247)				4.00	0.05	114 (181)	4.70	0.17	12 (15)	4.12	0.04	236 (443)
2008	4.59	0.05	135 (290)				4.06	0.05	114 (196)	2.26	0.07	17 (71)	2.84	0.04	266 (557)
2009	3.86	0.05	100 (230)				3.34	0.05	86 (152)	2.61	0.12	6 (6)	3.30	0.04	192 (388)
2010	3.88	0.04	121 (287)				3.84	0.05	91 (151)	3.30	0.13	12 (12)	3.78	0.03	224 (450)
2011	4.57	0.05	84 (202)				4.10	0.06	34 (46)	3.32	0.02	4 (4)	4.09	0.04	122 (252)
2012	5.91	0.04	108 (222)				6.48	0.07	56 (78)	3.87	0.00	1 (1)	6.36	0.04	165 (301)
2013	5.75	0.07	58 (116)				4.91	0.08	73 (102)	4.89	0.36	4 (6)	4.96	0.05	135 (224)
2014	3.26	0.06	93 (180)				2.88	0.06	100 (182)	4.19	0.31	10 (13)	3.11	0.04	203 (375)
2015	4.21	0.05	115 (251)				3.41	0.08	95 (137)	4.02	0.20	11 (15)	3.66	0.04	221 (403)
2016	4.95	0.06	95 (205)				3.87	0.07	82 (120)	4.69	0.39	9 (9)	4.10	0.05	186 (334)
2017	4.26	0.08	36 (78)				5.29	0.11	59 (69)	3.78	0.30	2 (2)	4.96	0.07	97 (149)
2018	5.97	0.05	43 (113)				4.14	0.09	49 (72)	5.83	0.08	2 (2)	4.38	0.05	94 (187)
2019	5.94	0.07	40 (94)				3.24	0.09	44 (63)	5.41	0.14	4 (5)	3.86	0.06	88 (162)
2020	5.80	0.05	57 (130)				6.09	0.08	33 (64)	4.32	0.10	1 (2)	6.03	0.04	91 (196)
2021	5.95	0.06	79 (122)				4.71	0.07	65 (101)	6.13	0.36	5 (6)	4.90	0.04	149 (229)
2022	6.01	0.05	61 (121)				4.37	0.05	88 (129)	5.12	0.20	8 (8)	4.58	0.04	157 (258)

Table 15. Resolution of landings-in-weight estimates (pounds whole weight) for Southeast Mutton Snapper by year and hierarchy level (MRIP, LACreel 2014+, TPWD), defined by species, region, year, state, mode, wave, and area. Average weight estimates are calculated at the finest strata meeting a minimum sample size threshold (Dettloff and Matter 2019b). Larger sample sizes therefore allow average weights to be calculated at finer stratifications, the finest being at the srysmwa level (Matter and Rios 2013). Annual summaries include the number of fish and angler trips from which weight information was collected (N) and the landings-in-weight estimates (AB1.lbs) by hierarchy level. As an example, (srysmw) summarizes those landings-in-weight estimates originating from cells where average weights are specific to a particular species, region, year, state, mode, and wave (i.e., weight observations collapsed across areas).

Year	N	AB1.lbs						
		s	sr	sry	srys	srysm	srysmw	srysmwa
1981	46 (26)	0	0	0	566,756	794,565	0	0
1982	119 (44)	0	0	0	197,351	2,115,461	13,768	103,630
1983	51 (33)	0	0	0	2,281,729	138,947	0	0
1984	74 (29)	0	0	0	145,995	3,021,153	0	0
1985	33 (18)	0	210,056	0	201,895	15,234	46,127	0
1986	99 (54)	0	0	0	75,431	1,912,319	23,402	0
1987	123 (50)	0	0	0	425,219	309,787	33,182	663,323
1988	15 (11)	0	2,267,800	0	0	0	0	0
1989	74 (48)	9,188	0	0	219,397	844,075	65,972	0
1990	77 (44)	0	0	48,907	187,337	479,216	0	0
1991	95 (53)	0	0	0	436,948	1,104,250	56,316	66,807
1992	167 (109)	0	0	231	341,253	920,127	125,342	43,490
1993	242 (136)	0	0	0	730	1,016,310	140,577	145,012
1994	130 (98)	0	0	0	153,960	253,042	182,752	0
1995	115 (70)	0	0	223	115,040	349,416	196,553	483,734
1996	96 (55)	0	0	2,993	61,164	601,462	0	0
1997	140 (89)	0	0	310	320,971	234,901	459	14,957
1998	186 (114)	0	0	0	127,114	566,797	160,833	1,859
1999	250 (137)	0	0	242	366,508	213,872	401,911	189,884
2000	301 (173)	0	0	0	158,668	315,333	82,503	133,750
2001	401 (210)	0	0	1,793	127,540	150,076	84,590	142,702
2002	649 (353)	0	0	0	78,897	302,249	260,582	264,291
2003	558 (275)	0	0	0	229,792	284,480	298,730	123,318
2004	401 (228)	0	0	7,132	147,625	142,610	173,056	182,004
2005	490 (244)	0	0	0	66,523	72,113	147,320	272,462
2006	403 (222)	0	0	762	158,034	49,062	753,508	695,391

Year	N	AB1.lbs						
		s	sr	sry	srys	srysm	srysmw	srysmwa
2007	443 (236)	0	0	212	221,513	595,298	491,884	363,983
2008	557 (266)	0	0	1,125	936,527	56,662	82,156	1,447,348
2009	388 (192)	0	0	0	325,685	51,083	131,355	296,890
2010	450 (224)	0	0	0	308,129	89,172	102,684	371,930
2011	252 (122)	0	0	0	124,941	88,159	13,086	107,986
2012	301 (165)	0	0	0	813,134	185,725	166,031	107,718
2013	224 (135)	0	0	0	164,753	956,417	193,528	102,479
2014	375 (203)	0	0	594	269,508	283,700	602,774	67,431
2015	403 (221)	0	0	172	413,834	324,253	418,541	181,926
2016	334 (186)	0	0	0	321,701	552,534	430,228	306,294
2017	149 (97)	0	0	155	147,128	751,476	140,845	0
2018	187 (88)	0	0	1,032	67,184	342,442	432,949	62,430
2019	162 (86)	0	0	0	178,427	499,514	313,163	6,585
2020	196 (85)	0	0	0	18,659	382,730	53,049	1,399,852
2021	229 (149)	0	0	0	96,434	774,259	424,237	40,631
2022	258 (157)	0	0	1,608	330,872	143,549	690,372	242,875

Table 16. Recreational Fishing Effort (in angler trips) for Southeast anglers by state and year (MRIP, LACreel 2014+, TPWD). These effort estimates depict all (general) recreational fishing activity in the Southeast and are not specific to Mutton Snapper.

Year	TX	LA	MS	AL	FLW	FLE	GA	SC	NC	VA	Total
1981		5,443,324	1,500,488	1,961,664	17,542,861	31,660,427	1,140,686	3,499,698	6,836,050	4,688,618	112,775,522
1982		6,258,398	1,886,936	2,018,892	22,317,804	42,352,017	1,330,594	3,855,423	6,903,669	5,087,629	132,741,604
1983	555,681	6,727,736	2,065,413	2,034,552	27,384,677	40,631,469	1,393,987	4,392,586	10,203,830	3,728,378	139,153,287
1984	643,796	6,504,247	1,964,113	1,965,413	29,340,428	40,625,068	1,459,467	4,321,818	9,389,910	4,229,606	139,466,300
1985	710,725	6,572,069	1,946,516	2,051,290	28,503,697	39,643,873	1,684,391	4,285,327	8,876,360	4,319,051	138,734,941
1986	704,809	6,124,846	1,969,197	2,094,987	23,871,605	42,317,136	1,766,834	4,217,620	9,249,981	4,581,112	136,727,863
1987	889,371	5,858,078	1,917,560	2,007,343	24,860,626	44,172,997	1,773,450	4,119,771	9,122,728	4,698,205	137,712,888
1988	857,643	5,923,422	2,074,776	2,030,477	29,767,330	39,146,830	1,683,851	3,987,476	10,576,270	4,552,697	139,454,810
1989	791,653	5,959,837	2,176,386	2,050,077	31,638,372	39,253,969	1,801,763	4,321,550	10,754,246	4,238,727	142,120,668
1990	760,711	6,522,225	2,614,859	2,189,778	29,175,885	39,258,351	1,834,320	4,571,431	12,207,378	4,672,294	145,237,798
1991	775,674	6,551,479	2,830,732	2,496,457	36,274,793	41,678,398	1,804,463	4,904,800	11,315,841	5,406,775	156,237,685
1992	865,301	6,811,348	2,652,416	2,534,167	29,967,800	42,875,507	1,753,767	4,830,569	11,965,169	5,119,940	151,662,651
1993	897,527	7,200,313	2,683,955	2,580,832	34,255,631	41,980,014	1,769,651	4,977,833	10,933,941	5,670,076	157,521,866
1994	997,059	7,261,962	2,708,473	2,790,868	33,459,971	41,906,013	1,800,943	4,890,627	10,545,102	6,018,445	157,828,931
1995	982,649	7,272,037	2,720,561	2,811,817	31,249,275	38,928,615	1,743,589	4,643,418	10,020,835	6,204,090	152,936,636
1996	979,300	7,832,054	2,842,940	2,873,857	29,972,391	41,111,552	1,792,198	4,740,103	10,413,771	6,529,084	156,313,022
1997	894,328	8,129,630	3,125,302	3,201,557	30,078,541	42,185,109	1,794,338	5,117,321	11,109,149	6,991,128	162,681,155
1998	924,659	8,272,438	3,272,402	3,242,880	32,302,803	41,282,599	1,897,330	5,062,297	11,115,182	7,053,436	164,343,388
1999	1,098,251	8,751,059	3,568,584	3,418,511	37,211,088	39,870,443	2,061,785	5,368,897	12,669,214	6,720,342	175,418,473
2000	1,119,611	9,835,541	3,791,218	3,744,313	38,312,644	43,809,306	2,365,941	5,969,116	15,358,914	7,097,045	189,151,060
2001	943,350	10,047,817	3,904,563	4,018,024	40,356,323	43,765,525	2,312,729	6,070,604	15,144,269	7,827,638	194,729,956
2002	935,055	9,366,820	3,743,348	4,109,359	36,897,038	44,866,670	2,323,023	6,491,172	15,146,182	7,900,100	190,996,873
2003	968,522	9,770,130	3,760,258	4,397,398	40,094,000	45,044,832	2,500,555	6,499,483	15,539,344	7,696,312	198,691,278
2004	988,042	9,111,752	3,718,305	4,742,003	48,059,682	42,936,332	2,551,027	6,973,606	17,400,870	8,190,341	207,223,009

Year	TX	LA	MS	AL	FLW	FLE	GA	SC	NC	VA	Total
2005	898,897	8,548,931	3,259,936	4,376,978	41,879,648	47,794,997	2,717,106	7,156,559	17,150,375	8,437,457	206,388,504
2006	1,005,097	8,029,154	3,857,950	5,110,383	37,528,052	49,056,377	2,643,209	7,462,121	19,614,943	7,818,271	206,379,372
2007	887,696	8,952,616	4,031,282	5,219,235	40,137,729	48,447,259	2,823,131	7,364,699	18,146,146	7,907,638	208,482,005
2008	873,237	9,805,845	4,353,513	4,977,530	40,894,492	45,921,204	2,855,466	8,062,558	19,328,098	8,497,653	210,988,689
2009	925,446	10,515,738	4,573,165	5,441,596	36,207,467	49,009,618	2,692,566	7,557,887	19,345,187	8,410,827	211,664,368
2010	870,541	11,222,564	4,509,351	5,329,293	39,446,328	48,952,258	2,707,465	8,027,939	20,173,323	8,744,763	220,648,383
2011	989,955	11,453,646	4,503,301	5,737,821	40,063,360	45,795,256	2,902,422	8,507,040	19,468,850	8,876,086	215,907,116
2012	1,000,270	10,889,486	4,492,747	6,150,613	44,997,654	39,677,797	2,989,846	8,110,949	18,555,348	8,287,084	212,531,460
2013	997,827	10,770,452	4,341,700	6,768,525	46,293,290	37,306,011	3,319,694	9,751,329	18,085,862	8,006,784	208,511,672
2014	963,087	2,226,868	4,311,510	6,481,789	38,625,282	43,967,506	3,736,954	8,745,715	18,926,498	7,409,713	198,424,966
2015	920,172	2,425,434	4,593,570	6,829,718	35,730,006	42,395,466	4,108,912	8,962,210	20,322,840	6,727,321	190,917,104
2016	1,071,428	2,241,734	4,717,914	7,319,601	38,936,416	38,695,081	3,880,485	9,335,002	21,158,845	7,247,361	193,197,223
2017	1,002,941	2,308,352	4,847,581	8,493,459	41,840,176	40,403,524	4,624,303	9,388,908	22,452,276	6,748,740	198,116,028
2018	1,120,640	2,275,932	4,554,960	6,680,646	40,996,400	43,986,704	4,592,649	9,897,323	16,624,306	6,386,006	184,863,568
2019	1,227,588	2,108,454	4,226,768	6,676,884	35,644,843	35,930,004	4,020,594	11,838,556	17,539,840	7,237,925	179,398,600
2020	1,212,897	2,501,305	4,297,896	6,623,029	42,197,504	40,436,260	4,890,201	8,733,689	16,399,233	8,164,266	192,430,325
2021	969,227	1,887,859	4,774,808	6,815,020	37,553,580	42,051,994	5,186,277	11,944,761	17,944,614	7,129,056	188,931,655
2022	256,040	1,609,250	4,627,668	7,453,217	40,215,028	35,136,319	5,132,979	10,999,405	19,696,555	6,444,766	190,858,109

Table 16 continued. Recreational Fishing Effort (in angler trips) for Southeast anglers by state and year.

Year	MD	DE	NJ	NY	CT	RI	MA	NH	ME	Total
1981	4,549,773	1,071,797	10,444,221	8,906,444	2,954,427	2,300,146	7,178,372	265,333	831,193	112,775,522
1982	5,131,719	1,117,581	10,219,219	9,267,451	3,624,545	2,376,742	7,739,640	398,632	854,713	132,741,604
1983	5,112,083	1,227,016	10,484,657	9,302,121	2,854,642	2,402,982	7,605,994	297,865	747,618	139,153,287
1984	5,257,368	1,142,085	10,179,264	8,985,779	2,861,108	2,277,784	7,174,314	326,974	817,758	139,466,300
1985	4,611,188	1,068,797	11,863,455	8,487,182	2,868,047	2,680,446	7,483,184	166,322	913,021	138,734,941
1986	5,174,215	1,365,119	11,247,339	8,536,072	2,783,825	2,339,860	7,141,469	360,638	881,199	136,727,863
1987	4,798,420	1,282,065	10,536,884	8,631,274	2,842,968	2,523,175	6,410,706	343,612	923,655	137,712,888
1988	5,367,873	1,482,817	9,804,983	8,638,487	2,995,841	2,403,935	6,726,787	393,777	1,039,538	139,454,810
1989	4,989,597	1,311,046	10,445,872	8,443,049	3,066,939	2,660,656	6,670,771	445,789	1,100,369	142,120,668
1990	5,501,702	1,304,131	10,786,888	8,676,378	3,015,176	2,881,911	7,680,583	406,677	1,177,120	145,237,798
1991	5,510,387	1,324,881	11,153,812	8,865,604	3,056,585	2,682,671	7,867,719	390,620	1,345,994	156,237,685
1992	5,761,255	1,442,484	10,875,782	8,771,443	2,934,464	2,666,256	8,265,920	356,025	1,213,038	151,662,651
1993	5,987,611	1,637,833	11,453,674	9,561,922	2,779,149	2,549,680	8,766,087	456,370	1,379,767	157,521,866
1994	6,041,965	1,587,894	11,664,779	9,422,521	2,763,578	2,642,026	9,393,081	597,307	1,336,317	157,828,931
1995	6,779,568	1,909,148	11,984,418	8,865,924	2,754,332	2,883,069	9,214,765	555,159	1,413,367	152,936,636
1996	6,816,287	1,766,382	12,366,286	9,145,226	2,909,421	2,797,720	9,476,761	586,679	1,361,010	156,313,022
1997	6,997,416	1,785,252	13,293,978	9,659,354	2,947,626	3,379,408	9,914,061	584,294	1,493,363	162,681,155
1998	7,063,743	2,003,360	12,813,743	9,095,417	3,093,446	3,789,827	10,026,868	624,017	1,406,941	164,343,388
1999	7,484,466	2,305,379	14,510,272	10,583,737	3,264,797	4,376,655	10,043,973	612,300	1,498,720	175,418,473
2000	7,628,605	2,465,117	15,697,511	11,502,123	3,152,493	4,326,027	10,652,619	647,212	1,675,704	189,151,060
2001	7,469,154	2,441,331	16,580,861	11,874,473	3,315,755	4,834,180	11,504,708	655,208	1,663,444	194,729,956
2002	7,374,243	2,256,127	15,331,059	12,109,849	3,342,254	4,636,125	11,483,210	843,967	1,841,272	190,996,873
2003	7,760,416	2,406,709	17,044,364	13,258,029	3,260,306	4,636,615	11,084,074	851,155	2,118,776	198,691,278
2004	7,882,066	2,627,772	16,084,727	13,484,450	3,181,184	4,666,310	11,746,505	869,049	2,008,986	207,223,009
2005	8,129,476	2,663,907	16,879,986	14,150,509	3,246,157	4,187,656	11,638,548	947,950	2,323,431	206,388,504

Year	MD	DE	NJ	NY	CT	RI	MA	NH	ME	Total
2006	7,850,750	2,613,204	17,364,972	13,721,918	3,162,606	4,282,997	12,005,419	882,560	2,369,389	206,379,372
2007	8,123,248	2,889,179	17,349,411	14,201,001	3,309,176	3,579,651	12,197,090	863,489	2,052,329	208,482,005
2008	8,115,170	2,665,701	17,744,685	13,791,345	3,568,590	3,658,000	12,605,363	865,157	2,405,082	210,988,689
2009	8,843,232	2,949,624	17,659,358	13,658,548	3,387,779	4,062,597	12,951,528	834,862	2,637,343	211,664,368
2010	9,861,682	3,096,595	18,684,666	14,166,605	3,696,314	4,154,975	14,157,846	787,908	2,057,967	220,648,383
2011	9,721,166	2,878,341	17,532,381	14,206,022	3,478,843	3,749,950	13,461,841	809,873	1,770,962	215,907,116
2012	9,539,266	2,516,422	18,153,443	14,632,547	3,734,050	3,956,500	12,221,447	857,582	1,768,409	212,531,460
2013	9,709,712	2,435,144	15,766,890	15,209,054	3,506,048	3,315,911	10,125,392	906,394	1,895,653	208,511,672
2014	9,394,453	2,491,369	17,012,498	15,401,849	3,640,810	3,350,834	8,807,604	954,392	1,976,235	198,424,966
2015	9,129,467	2,070,558	14,484,669	15,271,283	3,843,978	3,133,628	7,282,289	980,936	1,704,647	190,917,104
2016	9,364,384	2,129,937	13,851,906	15,765,211	4,229,759	2,998,761	7,244,235	1,060,766	1,948,397	193,197,223
2017	8,342,835	1,990,769	12,288,340	16,633,982	3,937,262	2,317,766	7,774,866	972,380	1,747,568	198,116,028
2018	6,761,984	2,147,069	12,493,094	11,242,165	3,542,791	2,553,265	6,705,398	676,086	1,626,150	184,863,568
2019	6,836,036	2,107,651	13,380,242	13,411,743	3,766,030	3,739,018	7,422,488	609,003	1,674,933	179,398,600
2020	7,974,009	2,118,344	16,016,877	14,841,036	4,195,554	2,848,179	5,949,641	920,293	2,110,112	192,430,325
2021	8,090,729	2,406,536	13,210,781	12,006,937	3,712,121	3,507,189	7,284,793	715,094	1,740,279	188,931,655
2022	8,321,929	2,379,074	14,221,007	16,284,044	4,056,270	2,861,142	8,220,261	927,227	2,015,928	190,858,109

Table 17. Recreational Fishing Effort (in angler trips) for Southeast anglers by mode and year (MRIP, LACreel 2014+, TPWD). These effort estimates depict all (general) recreational fishing activity in the Southeast and are not specific to Mutton Snapper. Effort from the combined private-shore fishing mode in the LA Creel survey has been added to the private mode. MRIP Headboat estimates are included from Texas to western Florida (1981-1985) and Virginia to Maine (1981+).

Year	Cbt	Cbt/Hbt	Hbt	Priv	Shore	Total
1981	837,098	2,675,775	184,590	36,032,087	73,045,972	112,775,522
1982	1,067,047	3,948,081	260,912	40,354,306	87,111,260	132,741,606
1983	1,127,267	3,086,778	256,493	42,674,822	92,007,925	139,153,285
1984	1,171,450	2,194,594	242,211	46,556,007	89,302,036	139,466,298
1985	1,236,825	2,199,145	277,516	47,873,387	87,148,071	138,734,944
1986	1,300,708	2,555,264		48,304,091	84,567,800	136,727,863
1987	1,268,181	1,749,097		48,544,713	86,150,897	137,712,888
1988	1,088,129	1,799,234		48,176,120	88,391,324	139,454,807
1989	1,300,476	1,599,779		49,521,468	89,698,944	142,120,667
1990	1,175,786	1,684,311		50,545,093	91,832,607	145,237,797
1991	1,155,851	1,856,123		52,410,861	100,814,851	156,237,686
1992	1,135,689	1,566,647		53,126,412	95,833,903	151,662,651
1993	1,248,492	2,195,281		55,288,252	98,789,844	157,521,869
1994	1,306,201	1,855,960		55,929,346	98,737,422	157,828,929
1995	1,414,663	1,973,135		55,718,956	93,829,881	152,936,635
1996	1,357,817	1,652,562		57,701,666	95,600,977	156,313,022
1997	1,345,114	1,733,223		61,342,043	98,260,777	162,681,157
1998	1,384,364	1,481,991		62,499,213	98,977,817	164,343,385
1999	1,338,538	1,452,480		66,596,924	106,030,530	175,418,472
2000	1,269,025	1,530,369		71,374,809	114,976,856	189,151,059
2001	1,363,970	1,601,931		73,600,451	118,163,604	194,729,956
2002	1,436,889	1,436,232		74,129,622	113,994,132	190,996,875
2003	1,358,799	1,579,900		77,356,466	118,396,114	198,691,279
2004	2,178,907		674,260	81,011,233	123,358,609	207,223,009
2005	2,255,416		767,540	81,041,217	122,324,331	206,388,504
2006	2,158,230		649,374	81,387,006	122,184,762	206,379,372
2007	2,680,922		971,084	83,310,097	121,519,902	208,482,005
2008	2,171,672		871,784	84,235,743	123,709,488	210,988,687
2009	2,141,897		790,333	84,893,339	123,838,798	211,664,367
2010	1,696,707		580,114	89,979,210	128,392,353	220,648,384
2011	2,072,774		600,817	86,280,063	126,953,461	215,907,115
2012	2,202,167		628,596	85,236,841	124,463,856	212,531,460

Year	Cbt	Cbt/Hbt	Hbt	Priv	Shore	Total
2013	2,304,627		968,396	81,737,932	123,500,716	208,511,671
2014	2,347,028		831,745	75,869,693	119,376,496	198,424,962
2015	2,636,239		696,087	71,209,876	116,374,903	190,917,105
2016	2,225,034		470,309	71,593,030	118,908,849	193,197,222
2017	2,271,262		596,982	72,064,321	123,183,464	198,116,029
2018	2,462,122		535,555	67,120,426	114,745,465	184,863,568
2019	2,855,152		598,715	64,481,678	111,463,055	179,398,600
2020	2,340,093		496,200	70,843,448	118,750,583	192,430,324
2021	3,034,825		495,785	66,703,332	118,697,711	188,931,653
2022	2,581,733		477,041	71,935,630	115,863,707	190,858,111

Table 18. Annual landings (AB1) and discards (B2) of Mutton Snapper in numbers of fish by Stock-ID boundary and year (MRIP, LACreel 2014+, TPWD).

Year	East		West		Total	
	AB1	B2	AB1	B2	AB1	B2
1981	381,300	0	582,336	2,318	963,636	2,318
1982	440,084	7,594	307,798	3,925	747,883	11,519
1983	456,474	21,758	118,535	0	575,009	21,758
1984	225,566	11,959	479,238	234,463	704,805	246,422
1985	65,198	120,106	50,548	21,195	115,746	141,300
1986	74,428	86,742	328,714	5,774	403,142	92,517
1987	192,901	202,822	398,490	86,035	591,391	288,857
1988	80,240	33,764	330,354	195,281	410,593	229,045
1989	124,900	27,034	251,151	9,144	376,051	36,178
1990	78,954	4,497	181,489	52,163	260,444	56,660
1991	109,913	21,791	260,276	586,706	370,189	608,497
1992	204,608	133,888	217,313	138,224	421,920	272,112
1993	289,306	180,967	286,524	671,700	575,829	852,667
1994	130,078	138,893	83,735	142,653	213,813	281,547
1995	67,081	145,191	149,693	187,032	216,774	332,223
1996	60,172	62,062	82,018	163,065	142,191	225,127
1997	54,884	115,562	49,701	365,028	104,585	480,590
1998	99,390	189,292	75,287	414,271	174,677	603,563
1999	100,181	98,301	117,894	81,385	218,074	179,686
2000	133,094	192,287	16,089	23,505	149,183	215,791
2001	109,855	89,820	10,747	13,201	120,603	103,022
2002	187,565	271,012	77,109	15,953	264,674	286,965
2003	133,637	139,885	96,761	104,166	230,398	244,051
2004	149,265	173,087	21,241	37,182	170,506	210,270
2005	174,293	227,220	7,808	522,765	182,101	749,985
2006	204,620	398,727	245,423	173,399	450,043	572,126
2007	234,838	418,405	171,573	318,501	406,411	736,906
2008	712,842	1,740,630	175,817	202,193	888,659	1,942,823
2009	198,067	330,869	45,938	184,600	244,005	515,469
2010	180,289	118,256	50,399	13,455	230,688	131,712
2011	58,991	39,026	22,740	24,159	81,731	63,185
2012	83,730	320,218	116,219	110,051	199,948	430,269
2013	162,354	313,683	123,236	331,809	285,590	645,492
2014	278,894	610,390	114,540	458,375	393,434	1,068,766

Year	East		West		Total	
	AB1	B2	AB1	B2	AB1	B2
2015	243,687	751,030	122,377	160,224	366,064	911,254
2016	271,399	1,333,185	121,839	377,413	393,238	1,710,598
2017	162,512	1,690,641	47,247	371,115	209,758	2,061,756
2018	144,934	741,190	61,834	231,252	206,768	972,442
2019	164,450	608,774	94,186	224,979	258,636	833,754
2020	72,768	586,113	234,919	515,413	307,687	1,101,526
2021	131,647	865,149	140,800	331,475	272,448	1,196,624
2022	241,510	1,185,325	63,569	531,143	305,080	1,716,468

Table 19. Summary of fish weights (in pounds whole weight) from intercepted Mutton Snapper by Stock-ID boundary and year (MRIP, LACreel 2014+, TPWD). This table includes both raw measurements of fish weight and weights imputed from TPWD length measurements, using appropriate length-weight conversions. Summaries include the number of fish and, in parentheses, number of angler trips providing information on fish weight (N), and the minimum (Min), arithmetic mean (Avg), standard deviation (SD), and maximum (Max) of these weight records.

Year	East					West				
	N	Min	Avg	SD	Max	N	Min	Avg	SD	Max
1981	15 (11)	0.7	1.8	1.5	5.5	31 (15)	0.4	1.8	2.3	9.8
1982	75 (28)	0.2	1.9	3.4	19.8	44 (16)	0.4	6.4	5.7	21.3
1983	34 (21)	0.2	2.0	2.0	6.6	17 (12)	0.2	11.1	8.8	26.2
1984	32 (11)	0.9	2.7	2.1	8.6	42 (18)	0.5	6.2	6.3	18.1
1985	6 (4)	4.0	5.1	2.3	9.7	27 (14)	0.7	5.2	4.8	14.3
1986	36 (25)	0.4	2.8	1.6	6.8	63 (29)	0.7	5.8	5.3	18.2
1987	46 (20)	0.4	3.7	4.7	17.6	77 (30)	0.7	4.5	5.1	24.3
1988	13 (9)	1.5	3.5	2.3	9.8	2 (2)	0.7	0.8	0.2	1.0
1989	48 (35)	0.2	3.2	2.2	11.6	26 (13)	0.2	3.0	2.6	11.0
1990	41 (31)	0.2	3.3	2.0	9.7	36 (13)	0.2	3.2	3.3	16.0
1991	51 (35)	0.6	3.5	3.1	12.3	44 (18)	0.5	5.3	5.1	15.5
1992	99 (72)	0.2	2.6	2.9	12.5	68 (37)	0.9	7.0	6.2	19.8
1993	158 (90)	0.2	2.1	1.7	7.5	84 (46)	0.4	3.3	3.2	15.0
1994	85 (58)	0.2	2.3	2.0	8.6	45 (40)	0.6	3.6	4.2	18.0
1995	58 (35)	0.4	4.4	3.9	14.8	57 (35)	0.4	4.8	3.6	15.6
1996	50 (31)	0.7	4.4	3.2	12.7	46 (24)	0.9	5.5	4.0	22.0
1997	62 (36)	0.6	5.0	3.3	12.1	78 (53)	0.7	6.3	4.7	20.7
1998	104 (62)	0.4	4.2	4.0	24.6	82 (52)	0.6	6.9	5.1	22.6
1999	96 (63)	0.4	4.0	4.2	29.6	154 (74)	0.6	8.3	4.9	21.4
2000	169 (92)	0.7	4.0	2.9	16.5	132 (81)	1.5	7.6	4.5	21.7
2001	279 (130)	0.6	3.8	2.4	16.7	122 (80)	0.6	8.9	4.8	19.9
2002	449 (229)	0.7	3.3	2.2	16.5	200 (124)	0.7	6.3	4.4	21.4
2003	341 (167)	0.7	3.6	2.8	26.7	217 (108)	0.7	7.2	5.0	21.1
2004	261 (141)	0.4	3.4	2.5	23.1	140 (87)	0.9	6.1	4.1	15.7
2005	425 (199)	0.4	2.8	1.4	14.9	65 (45)	2.4	5.5	2.6	11.4
2006	281 (157)	0.4	3.0	1.7	12.1	122 (65)	0.9	4.8	2.7	12.1
2007	282 (149)	0.5	3.3	2.2	15.8	161 (87)	0.4	5.9	4.5	20.3
2008	324 (152)	0.5	2.4	1.6	11.3	233 (114)	0.4	5.6	4.1	16.9
2009	301 (133)	0.7	2.6	1.3	10.8	87 (59)	1.1	6.4	4.0	15.1
2010	346 (153)	0.4	3.0	1.6	10.5	104 (71)	1.1	5.4	2.9	12.7

Year	East					West				
	N	Min	Avg	SD	Max	N	Min	Avg	SD	Max
2011	136 (59)	0.3	3.3	1.3	7.5	116 (63)	2.1	5.8	3.7	14.9
2012	150 (88)	0.5	3.9	1.9	10.6	151 (77)	0.8	7.9	4.3	20.9
2013	109 (77)	0.6	3.2	2.3	12.8	115 (58)	0.7	7.6	4.9	18.7
2014	257 (127)	0.5	2.6	1.6	13.5	118 (76)	0.3	4.3	3.7	18.4
2015	268 (150)	0.5	2.9	2.2	16.2	135 (71)	0.4	5.1	4.2	16.6
2016	231 (123)	0.6	2.9	2.0	12.5	103 (63)	0.4	5.9	4.7	16.7
2017	99 (63)	0.4	3.8	3.5	16.7	50 (34)	0.6	6.7	4.1	15.9
2018	55 (40)	0.7	3.6	2.2	15.2	132 (48)	0.4	5.8	3.4	15.3
2019	61 (40)	1.0	3.6	2.6	14.6	101 (46)	0.4	5.4	3.7	17.9
2020	69 (40)	0.7	4.3	2.8	12.0	127 (45)	1.8	6.7	3.7	17.9
2021	91 (71)	1.0	4.5	2.6	12.1	138 (78)	0.7	6.3	4.3	19.0
2022	179 (110)	0.5	4.3	2.5	13.0	79 (47)	0.8	5.7	3.6	20.3

Table 20. Recreational Fishing Effort (in angler trips) for Southeast anglers by Stock-ID boundary and year (MRIP, LACreel 2014+, TPWD).

Year	East	West	Total
1981	86,327,184	26,448,338	112,775,522
1982	100,259,576	32,482,030	132,741,606
1983	100,385,227	38,768,059	139,153,286
1984	99,048,301	40,417,996	139,466,297
1985	98,950,644	39,784,298	138,734,942
1986	101,962,419	34,765,445	136,727,864
1987	102,179,909	35,532,978	137,712,887
1988	98,801,160	40,653,647	139,454,807
1989	99,504,342	42,616,325	142,120,667
1990	103,974,340	41,263,458	145,237,798
1991	107,308,551	48,929,135	156,237,686
1992	108,831,618	42,831,033	151,662,651
1993	109,903,610	47,618,259	157,521,869
1994	110,610,596	47,218,334	157,828,930
1995	107,900,297	45,036,339	152,936,636
1996	111,812,481	44,500,541	156,313,022
1997	117,251,798	45,429,358	162,681,156
1998	116,328,204	48,015,181	164,343,385
1999	121,370,980	54,047,492	175,418,472
2000	132,347,732	56,803,327	189,151,059
2001	135,459,880	59,270,076	194,729,956
2002	135,945,254	55,051,621	190,996,875
2003	139,700,971	58,990,308	198,691,279
2004	140,603,226	66,619,784	207,223,010
2005	147,424,114	58,964,390	206,388,504
2006	150,848,735	55,530,636	206,379,371
2007	149,253,447	59,228,557	208,482,004
2008	150,084,071	60,904,616	210,988,687
2009	154,000,955	57,663,411	211,664,366
2010	159,270,307	61,378,077	220,648,384
2011	153,159,034	62,748,082	215,907,116
2012	145,000,691	67,530,769	212,531,460
2013	139,339,878	69,171,794	208,511,672
2014	145,816,428	52,608,535	198,424,963
2015	140,418,206	50,498,899	190,917,105

Year	East	West	Total
2016	138,910,130	54,287,092	193,197,222
2017	139,623,519	58,492,510	198,116,029
2018	129,234,990	55,628,577	184,863,567
2019	129,514,063	49,884,538	179,398,601
2020	135,597,694	56,832,631	192,430,325
2021	136,938,655	52,006,688	188,945,343
2022	137,313,377	55,120,626	192,434,003

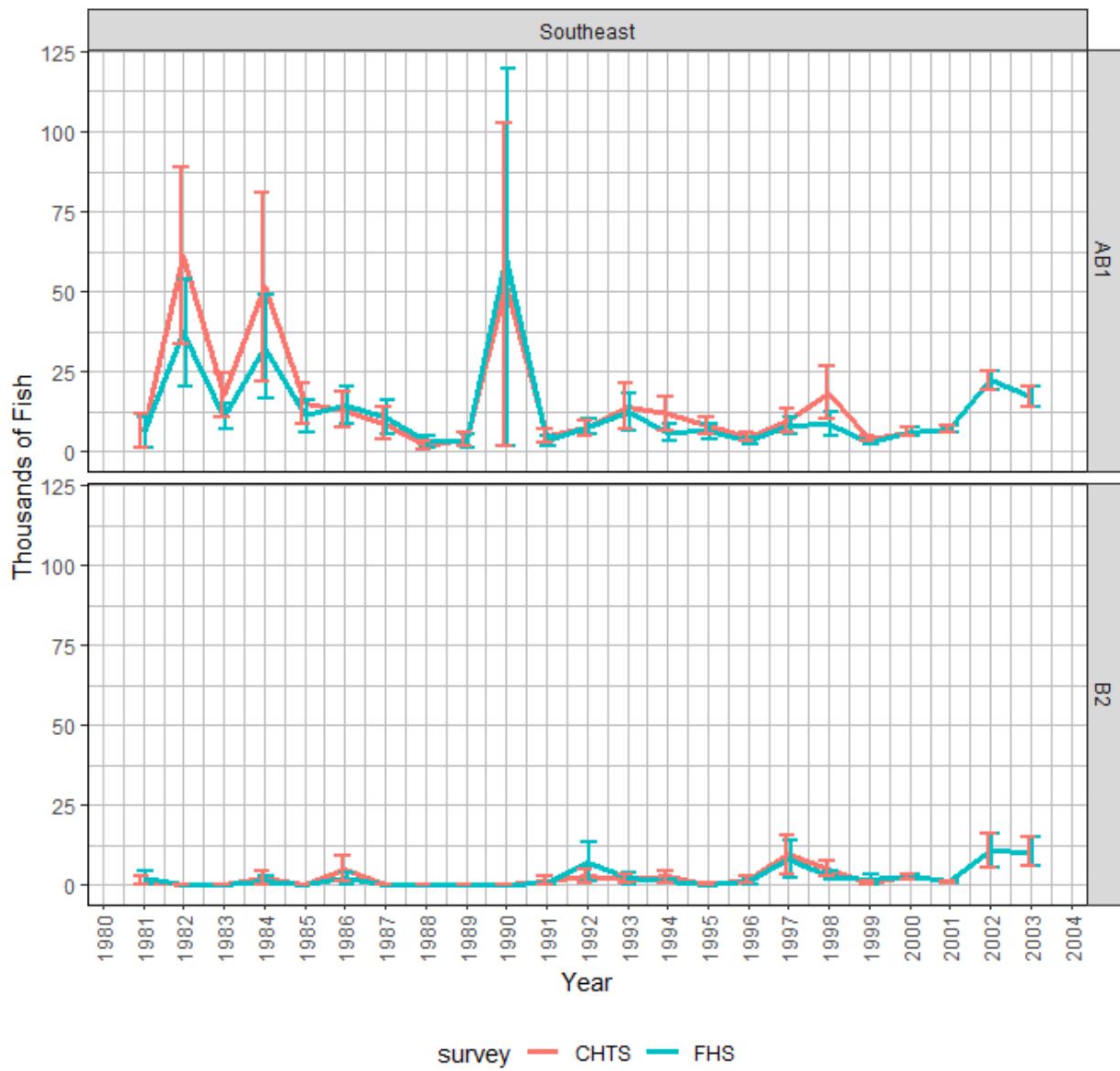


Figure 1. Comparison of Charterboat landings (AB1) and discard (B2) estimates (with standard error intervals shown) for Mutton Snapper from the Coastal Household Telephone Survey (CHTS) and For-Hire Survey (FHS) from the Southeast between 1981 and 1999 (MRIP). The Charterboat calibration approach is discussed in Dettloff and Matter (2019a).

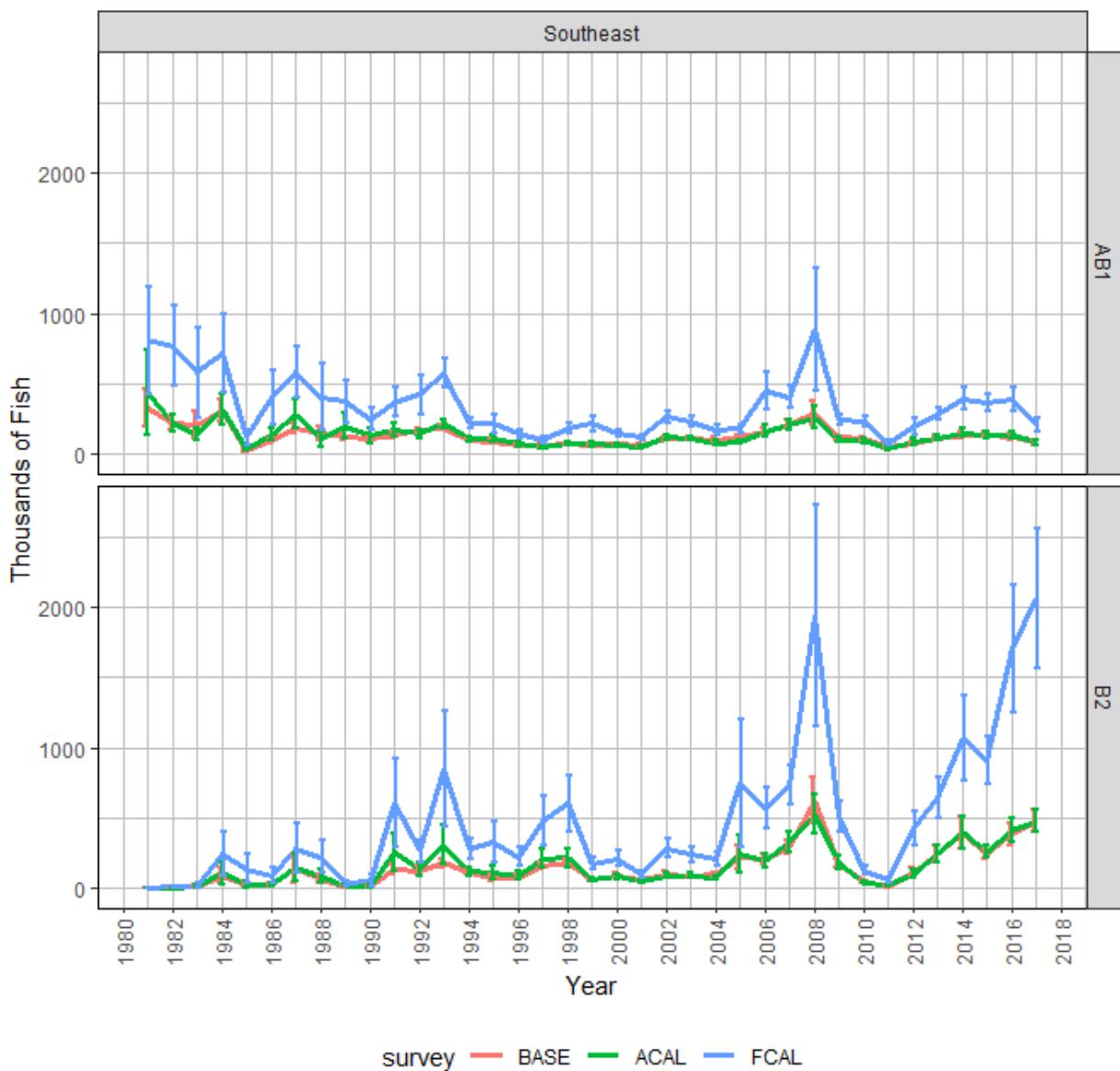


Figure 2. MRIP Base (BASE), APAIS Calibrated (ACAL), and Fully Calibrated APAIS and FES (FCAL) catch estimates for Mutton Snapper in the Southeast between 1981 and 2017. Landings (AB1) and discard (B2) estimates are in thousands of fish (NMFS).

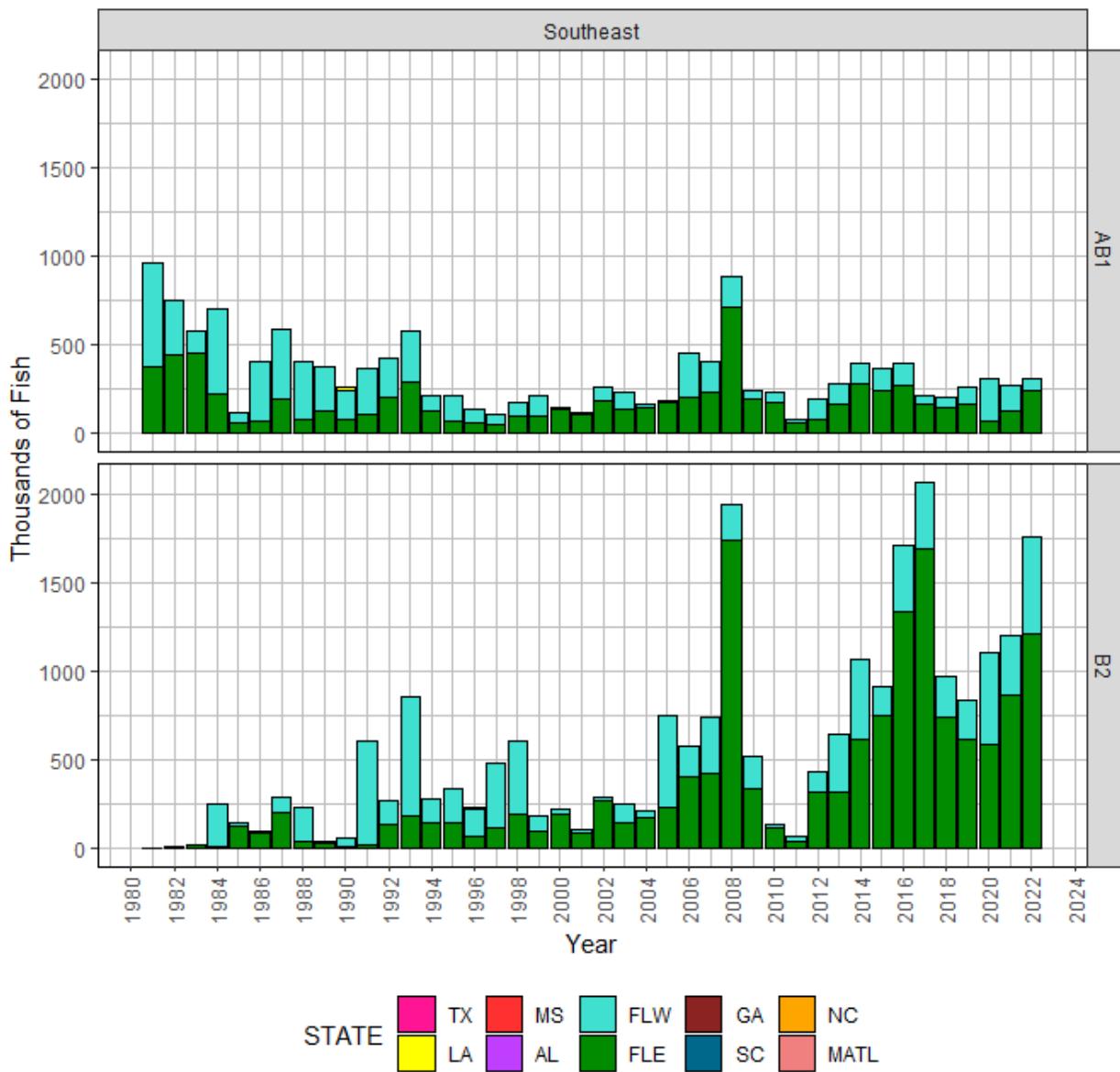


Figure 3a. Annual Mutton Snapper landings (AB1) and discards (B2), in thousands of fish, by state from 1981 to 2022 (MRIP, LACreel 2014+, TPWD). Mid Atlantic (MATL; VA to NY) states contributed less than ten percent to the total catch (Table1, Fig3a) and were combined for plotting purposes.

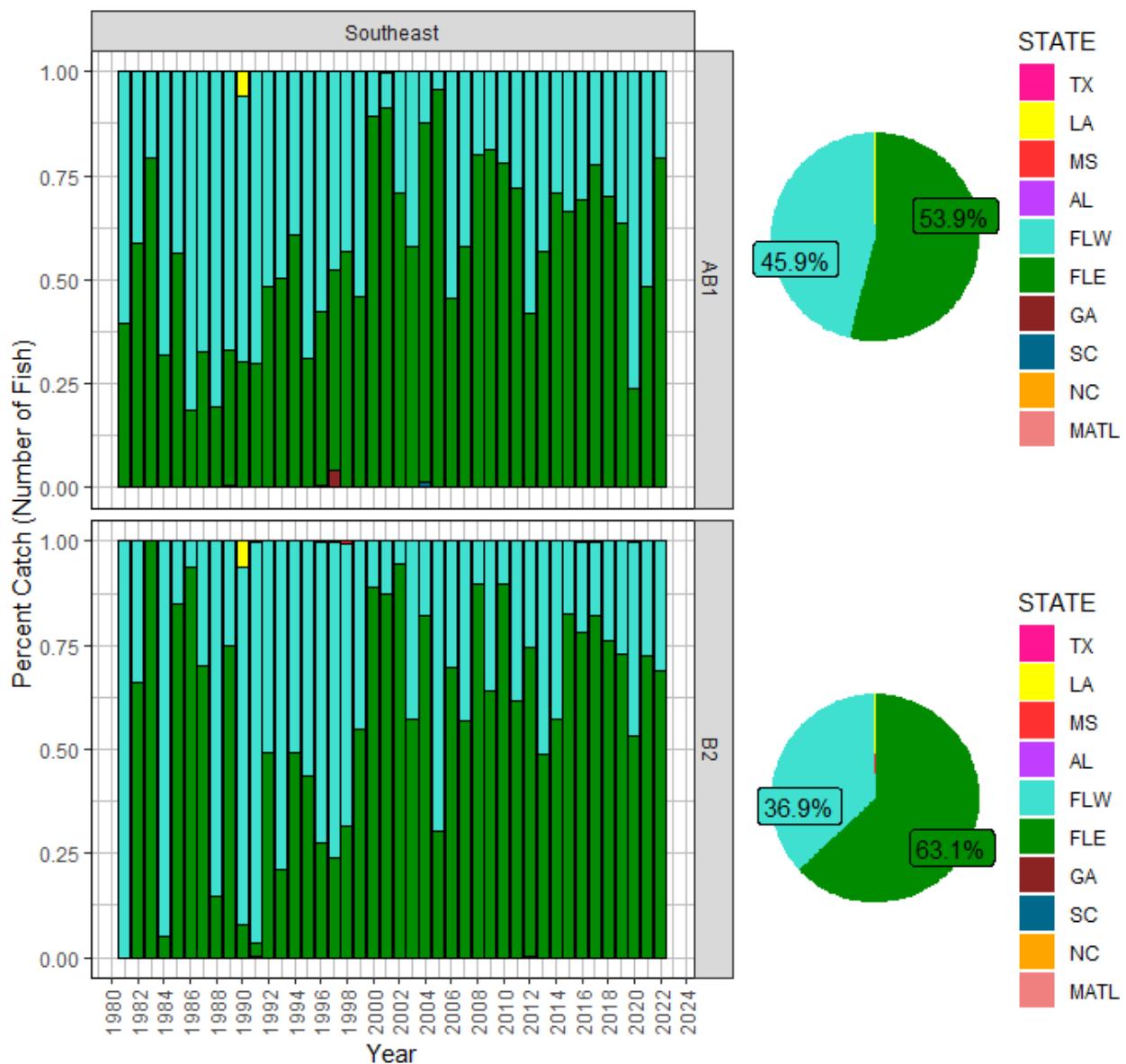


Figure 3b. Percent of Mutton Snapper landings (AB1) and discards (B2), in numbers of fish, from each state by year (bar graph) and overall (pie chart) between 1981 and 2022 (MRIP, LACreel 2014+, TPWD). Mid Atlantic (MATL; VA to NY) states were combined for plotting purposes.

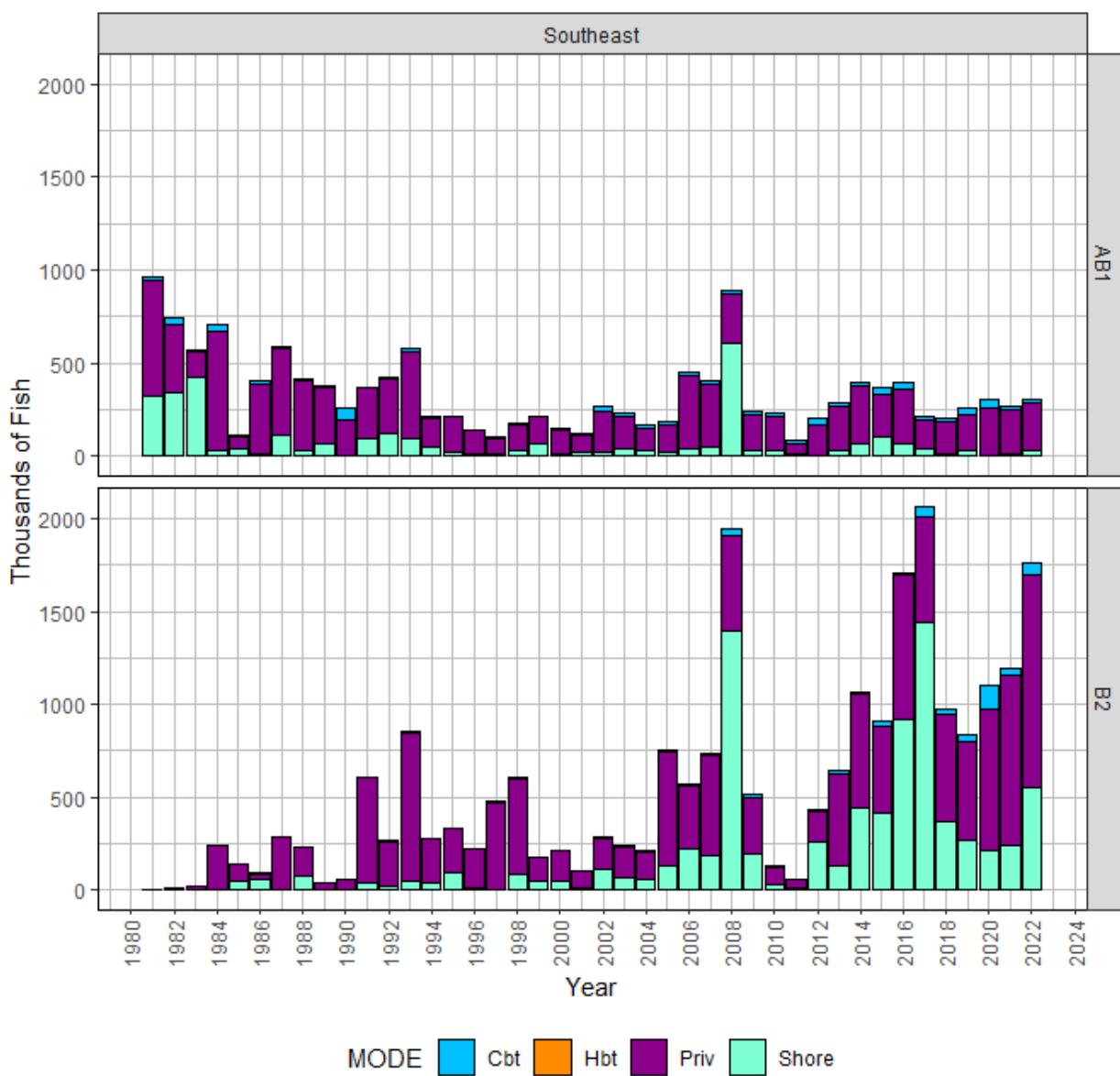


Figure 4a. Annual Mutton Snapper landings (AB1) and discards (B2), in thousands of fish, by mode from 1981 to 2022 (MRIP, LACreel 2014+, TPWD). Note catch from the combined Private-Shore fishing mode in the LA Creel survey has been added to the Private mode. MRIP Headboat estimates are included from Texas to western Florida (1981-1985) and Virginia to Maine (1981+).

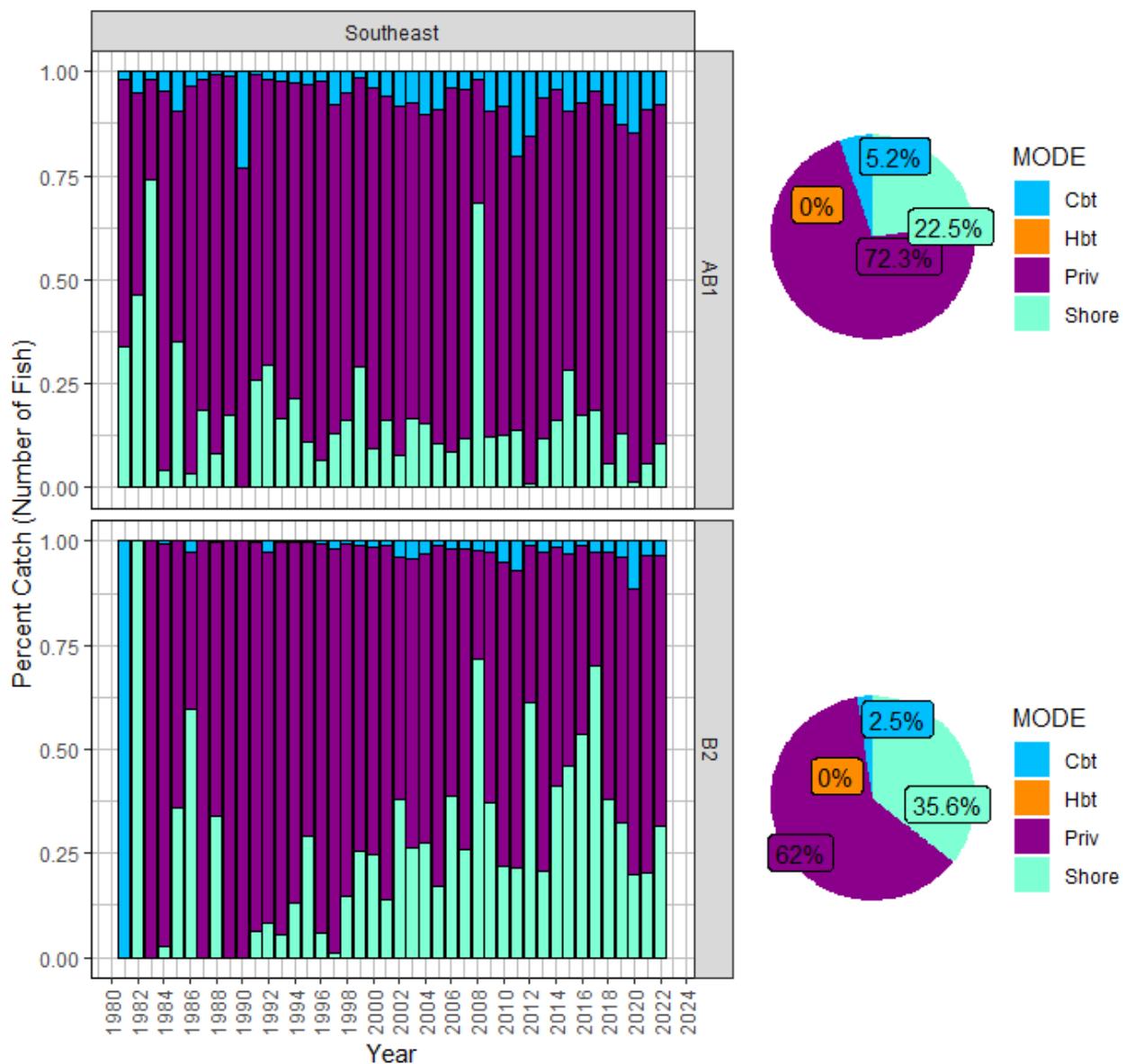


Figure 4b. Percent of Mutton Snapper landings (AB1) and discards (B2), in numbers of fish, from each mode by year (bar graph) and overall (pie chart) between 1981 and 2022 (MRIP, LACreel 2014+, TPWD). Note catch from the combined Private-Shore fishing mode in the LA Creel survey has been added to the Private mode. MRIP Headboat estimates are included from Texas to western Florida (1981-1985) and Virginia to Maine (1981+).

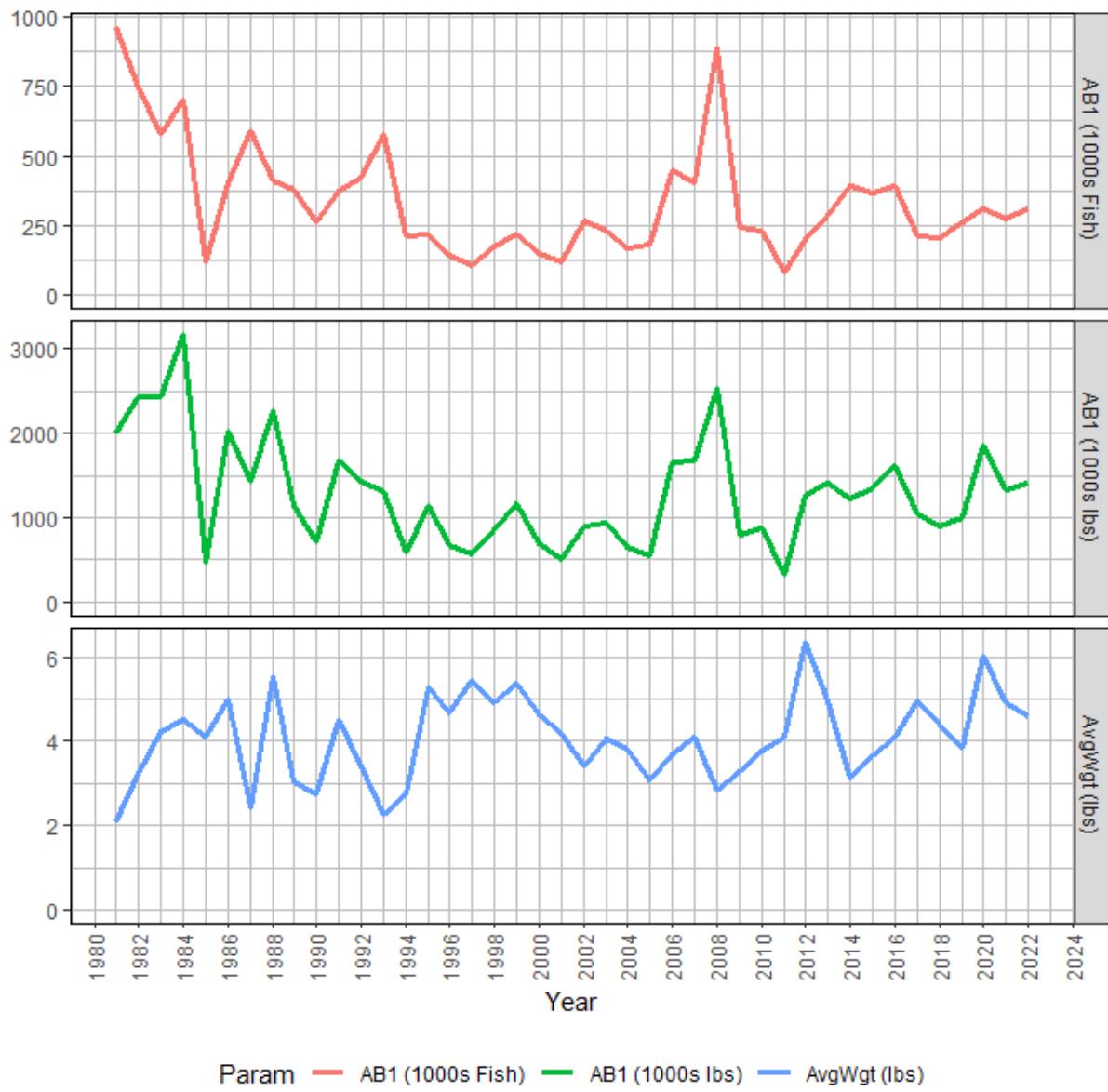


Figure 5. Estimates of annual landings for Mutton Snapper in the Southeast (MRIP, LACreel 2014+, TPWD): estimated landings in thousands of fish (top), estimated landings in thousands of pounds whole weight (middle), and average weight of landed fish (estimated lbs/estimated fish) (bottom). Average weight estimates are calculated by strata using the following hierarchy: species, region, year, state, mode, wave, and area (Matter and Rios 2013). The minimum number of weights used at each level of substitution is fifteen fish, except for the final species level where the minimum is one fish (Dettloff and Matter 2019b).

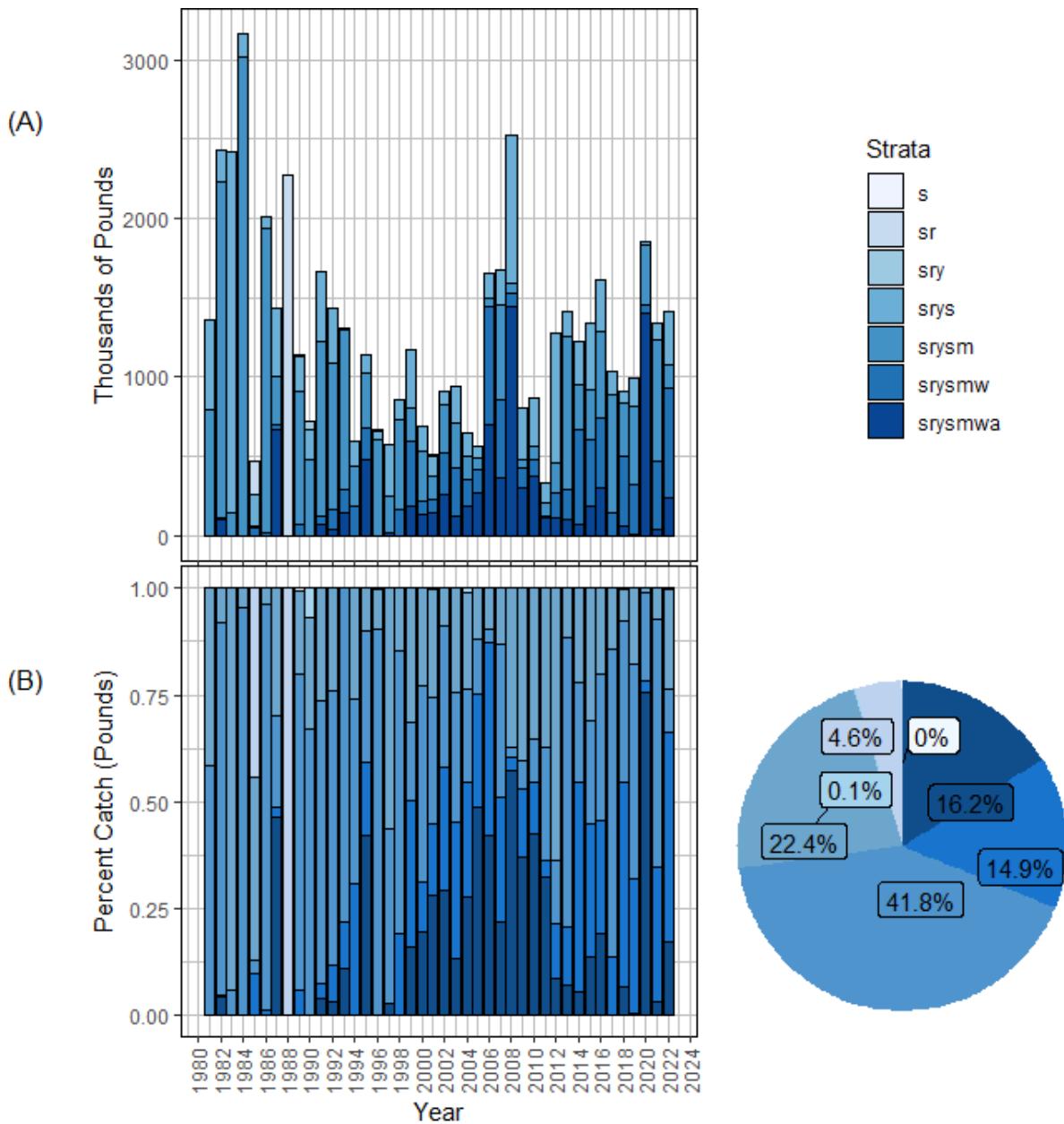


Figure 6. Annual landings estimates of Southeast Mutton Snapper in thousands of pounds whole weight by hierarchy level (MRIP, LACreel 2014+, TPWD), defined by **species**, **region**, **year**, **state**, **mode**, **wave**, and **area**. Landings are grouped by the strata at which average weights were estimated, the finest stratification being at the srysmwa level (Matter and Rios 2013). As an example, (srysmw) summarizes those landings-in-weight estimates originating from cells where average weights are specific to a particular **species**, **region**, **year**, **state**, **mode**, and **wave** (i.e., weight observations collapsed across areas). Landings are provided (A) in absolute pounds and (B) as a percentage of total landings-in-weight, which is summarized by year (stacked bar plot) and across all years (pie chart).

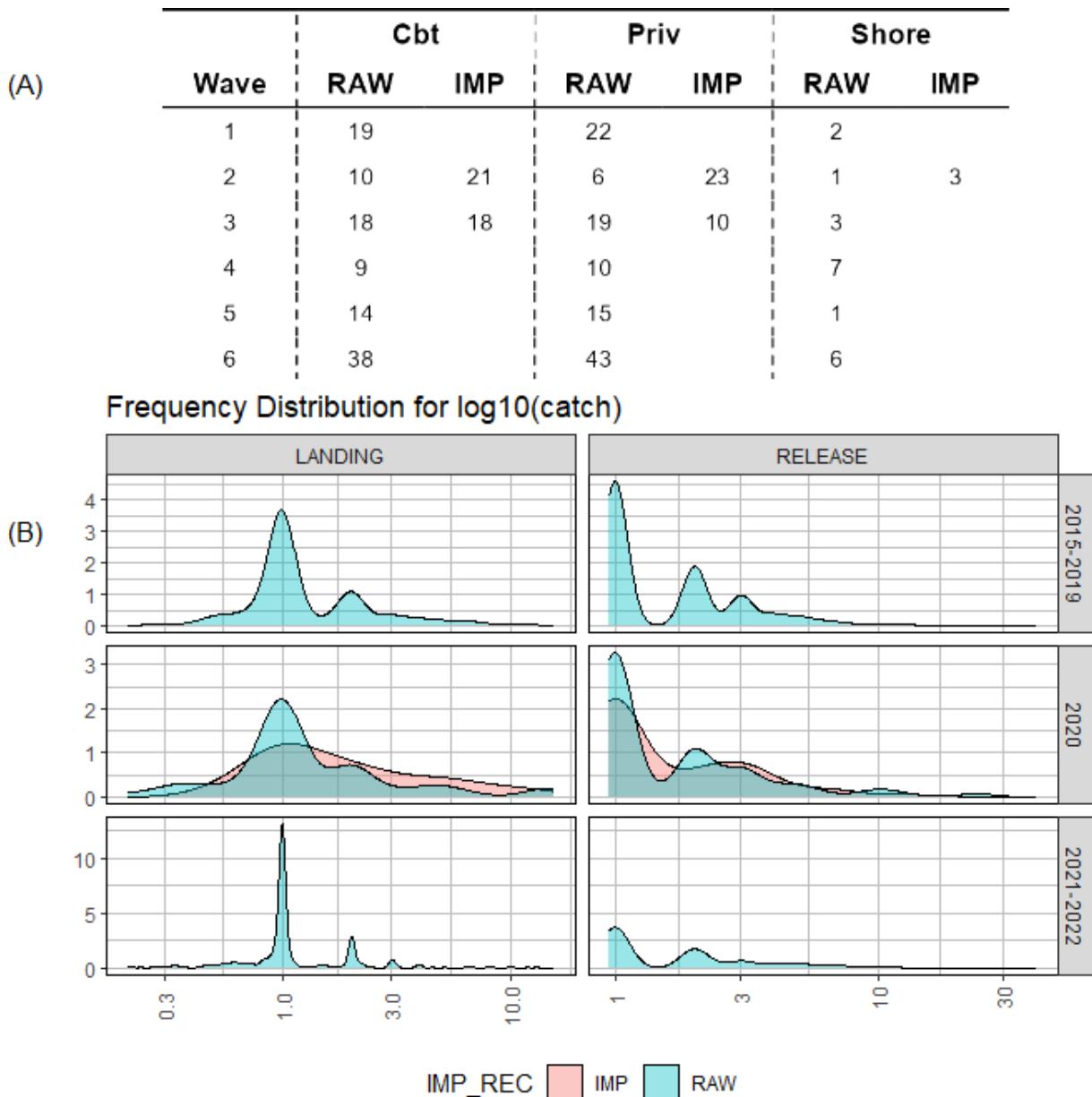


Figure 7. COVID data gaps in the MRIP APAIS and associated imputations for (positive) fishing trips that intercepted Southeast Mutton Snapper. No 2020 data were imputed for the FES or FHS. (A) Number of positive intercepts in 2020 from the APAIS (RAW) vs. those imputed from intercepts in adjacent years (IMP). (B) Distribution of APAIS catch observations in years with no imputed catch data (in 2015-2019 and 2021-2022), in raw 2020 APAIS data, and in 2020 imputations. Refer to Cody (2021) for more information on COVID data gaps in MRIP.

Appendix A

Additional Details of Survey Data and SEFSC Estimation

- **MRIP Survey Methodology:** Fully calibrated estimates that take into account the change in the Fishing Effort Survey (FES; 2018), the redesigned Access Point Angler Intercept Survey (APAIS; 2013), and the For Hire Survey (FHS; 2000 for all Gulf of Mexico states and eastern Florida and 2004 for all Atlantic states north of Florida).
 - Papacostas and Foster (2021) provide descriptions of the approaches used by the Office of Science and Technology to calibrate MRIP (1) effort estimates derived from the legacy Coastal Household Telephone Survey (CHTS) into FES units for the private and shore modes and (2) catch rate estimates between the original and redesigned APAIS for all modes.
 - SEFSC calibrations of catch and effort estimates between CHTS and FHS units are calculated for the For-Hire mode by year, region, state, wave, and area fished according to Dettloff and Matter (2019a). Figure 1 summarizes the resultant scaling of CHTS catch estimates under the FHS calibration ratios.
- **MRIP Data Gap from COVID:** Missing 2020 intercepts were imputed from all APAIS data collected in 2018 and 2019 from the same strata as the 2020 data gap, with original sample weights reduced by a factor of two to account for using two years of data (Cody 2021).
- **SEFSC Weight Estimation:** Average (fish) weight estimates are calculated by strata using the following hierarchy: species, region, year, state, mode, wave, and area (Matter and Rios 2013). The minimum number of weights used at each level of substitution is fifteen fish, except for the final species level where the minimum is one fish (Dettloff and Matter 2019b). Size records above an allowable (max size) threshold are excluded from weight estimation and the summary tables included in this working paper (Tables 8-15). For SEDAR 79 Mutton Snapper, this includes any weights heavier than 36.12 pounds.
- **SEFSC Estimates derived using SEDAR best practices (SEDAR-PW-07):**
 - The MRFSS survey began in wave2 of 1981. To fill-in this (1981 wave1) MRIP data gap, the average wave1 catch in years 1982-1984 was applied to that in 1981. MRIP sampling is not conducted in wave1 north of Florida because fishing effort is generally very low. Wave1 catch in 1981 is therefore assumed negligible in these states and was not imputed.
 - To ensure sampling can support MRIP estimates at finer stratifications than for which the survey was designed, (sub-state) domain estimates are only generated for established geographic domains. For Florida, this includes the sub-state domains of Florida in the FHS (1 = Florida panhandle, Escambia to Dixie; 2 = western Florida, Levy to Collier; 3 = Florida Keys, Monroe; 4 = southeastern Florida, Miami-Dade to Indian River; 5 = northeastern Florida,

Brevard to Nassau). For North Carolina, this includes domains north and south of Cape Hatteras.

- Between 1981 and 1985 in the Gulf of Mexico and South Atlantic, MRIP charter and headboat modes were combined into a single (for-hire) mode for estimation purposes. Since the NMFS Southeast Region Headboat Survey (SRHS) began in 1986 in the Gulf and 1981 in the South Atlantic, the MRIP combined for-hire mode must be split in these early years (1981-1985) to provide headboat landings estimates in the Gulf and to avoid double counting of headboat landings in the South Atlantic. Estimates for the MRIP for-hire mode (1981-1985) were split using a ratio of SRHS headboat angler trip estimates to MRIP charterboat angler trip estimates for 1986-1990, calculated by state (or state equivalent to match SRHS areas to MRIP states).