

General Recreational Survey Data for Red Snapper in the South Atlantic

Matthew A. Nuttall and Vivian M. Matter

SEDAR 73-WP-09

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General Recreational Survey Data for Red Snapper in the South Atlantic

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

Matthew A. Nuttall and Vivian M. Matter

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General recreational catch estimates for Red Snapper are compiled from the following separate survey programs (SEDAR 73-WP-10):

1. Marine Recreational Information Program (MRIP) (SEDAR68-DW-13).
 2. Florida Fish and Wildlife Conservation Commission (FWC) Red Snapper Monitoring Program (Sauls et al. 2017, SEDAR 73-RD-05, SEDAR 73-RD-06, SEDAR 73-RD-07)
 3. Georgia Department of Natural Resources (GADNR) For-Hire Telephone Survey and Marine Sportfish Carcass Recovery Project (Harrell 2013, SEDAR 41-DW-02, SEDAR 73-WP-03)
 4. South Carolina Department of Natural Resources (SCDNR) Charterboat Logbook Program and Carcass Collection Program (SEDAR 41-DW-18, SEDAR 41-DW-32)
 5. North Carolina Department of Marine Fisheries (NCDMF) Carcass Collection Program (SEDAR 41-DW-21)
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Parameters for data prepared for SEDAR 73 recreational catch data:

- Species: Red Snapper
- Year Range: 1981 - 2019
- Geographic Range: South Atlantic states from eastern Florida to Maine, however catches of red snapper were only observed as far north as North Carolina.
- Fishing Modes: Charter, Private, Headboat (Virginia to Maine; only tabulated for effort)
- MRIP Survey Methodology: Fully calibrated estimates that take into account the change in the Fishing Effort Survey, the redesigned Access Point Angler Intercept Survey, and the For Hire Survey

Catch and Sample Size Information for Particular Domains:

- 1985 landings estimate: 557,006 fish
 - Strata: eastern Florida, private mode, wave 1, and ocean greater than 3 miles
 - Intercept Records: a total of 4 angler trips that resulted in a landings estimate of 223,445 fish
 - One angler trip that harvested 16 red snapper (not seen by interviewer) and released 4 live red snapper
 - One angler trip that harvested 6 red snapper (not seen by interviewer)
 - Two angler trips that released 3 live red snapper
- 2009 landings estimates: 421,979 fish
 - Strata: eastern Florida, private mode, wave 1, and ocean greater than 3 miles
 - Intercept Records: a total of 31 angler trips that resulted in a landings estimate of 126,211 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	0.58	4
<i>Harvest not seen by interviewer</i>	0	0	0.85	10
<i>Released live fish</i>	0	1	1.90	6

- Strata: eastern Florida, private mode, wave 2, and ocean greater than 3 miles
 - Intercept Records: a total of 45 angler trips that resulted in a landings estimate of 155,236 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	0.18	3
<i>Harvest not seen by interviewer</i>	0	0	0.99	8
<i>Released live fish</i>	1	2	2.64	8

- 2018 discard estimate: 3,226,233 fish
 - Strata: eastern Florida, private mode, wave 4, and ocean greater than 3 miles
 - Intercept Records: a total of 192 angler trips resulted in a discard estimate of 1,671,594 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	0.19	1
<i>Harvest not seen by interviewer</i>	0	0	0.87	5
<i>Released live fish</i>	0	1	1.77	20

Tables

Table 1. Annual landings (AB1) and discards (B2) of Red Snapper in numbers of fish by state and year (MRIP, FWC, GADNR, SCDNR, NCDMF).

Table 2. Annual landings (AB1) and discards (B2) of Red Snapper in numbers of fish by mode and year (MRIP, FWC, GADNR, SCDNR, NCDMF).

Table 3. Annual landings (AB1) and discards (B2) of Red Snapper in numbers of fish by data source and year (MRIP, FWC, GADNR, SCDNR, NCDMF).

Table 4. Red Snapper landings in numbers of fish (AB1) with associated coefficients of variation (CV; Dettloff et al. 2020) by mode and year (MRIP, FWC). CV estimates are not available from GADNR, SCDNR, or NCDMF. Sample size is provided both as the total number of primary sampling units (PSU) and angler trips (Trp) intercepted by MRIP samplers within a specified strata and, in parentheses, the number of PSUs and angler trips that intercepted Red Snapper. Sample sizes are not provided for years where MRIP and FWC estimates are combined given differences in effort units between surveys.

Table 5. Red Snapper discards in numbers of fish (B2) with associated coefficients of variation (CV; Dettloff et al. 2020) by mode and year (MRIP, FWC). CV estimates are not available from GADNR, SCDNR, or NCDMF. Sample size is provided both as the total number of primary sampling units (PSU) and angler trips (Trp) intercepted by MRIP samplers within a specified strata and, in parentheses, the number of PSUs and angler trips that intercepted Red Snapper. Sample sizes are not provided for years where MRIP and FWC estimates are combined given differences in effort units between surveys.

Table 6. Total Red Snapper landings (AB1) and discards (B2), in numbers of fish, with associated coefficients of variation (CV; Dettloff et al. 2020) by year (MRIP, FWC). CV estimates are not available from GADNR, SCDNR, or NCDMF. Sample size is provided both as the total number of primary sampling units (PSU) and angler trips (Trp) intercepted by MRIP samplers within a specified strata and, in parentheses, the number of PSUs and angler trips that intercepted Red Snapper. Sample sizes are not provided for years where MRIP and FWC estimates are combined given differences in effort units between surveys.

Table 7. Estimated landings of Red Snapper in pounds whole weight by state and year (MRIP, FWC, GADNR, SCDNR, NCDMF). Average weight estimates for MRIP, GADNR, SCDNR, and NCDMF catch estimates (in numbers) 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 2019). Weight estimates for FWC catch are provided by the survey.

Table 8. Summary of length measurements (millimeters fork length) from MRIP-intercepted Red Snapper by state and year. Summaries include the number of fish measured by MRIP (Fish), the number of angler trips from which those fish were measured (Trp), and the minimum (Min), geometric mean (Avg), and maximum (Max) size of fish lengths.

Table 9. Summary of weight measurements (pounds whole weight) from MRIP-intercepted Red Snapper by state and year. Summaries include the number of fish weighed by MRIP (Fish), the number of angler trips from which those fish were weighed (Trp), and the minimum (Min), geometric mean (Avg), and maximum (Max) size of fish weights.

Table 10. Summary of length measurements (millimeters fork length) from MRIP-intercepted Red Snapper by mode and year. Summaries include the number of fish measured by MRIP (Fish), the number of angler trips from which those fish were measured (Trp), and the minimum (Min), geometric mean (Avg), and maximum (Max) size of fish lengths.

Table 11. Summary of weight measurements (pounds whole weight) from MRIP-intercepted Red Snapper by mode and year. Summaries include the number of fish weighed by MRIP (Fish), the number of angler trips from which those fish were weighed (Trp), and the minimum (Min), geometric mean (Avg), and maximum (Max) size of fish weights.

Table 12. Summary of length (millimeters fork length) and weight measurements (pounds whole weight) from MRIP-intercepted Red Snapper by year. Summaries include the number of fish weighed by MRIP (Fish), the number of angler trips from which those fish were weighed (Trp), and the minimum (Min), geometric mean (Avg), and maximum (Max) size of fish weights.

Table 13. Recreational Fishing Effort (in angler trips) for South Atlantic anglers by state and year (MRIP). Red Snapper catch was not observed from any angler trips north of North Carolina (see Table 1).

Table 14. Recreational Fishing Effort (in angler trips) for South Atlantic anglers by mode and year (MRIP). MRIP Headboat estimates are included from Virginia to Maine, though no Red Snapper catch was not observed from any angler trips north of North Carolina (see Table 1).

Figures

Figure 1. Comparison of charterboat landings (AB1) and discard (B2) estimates (with standard error intervals shown) for Red Snapper from the Coastal Household Telephone Survey (CHTS) and For-Hire Survey (FHS) from the South Atlantic between 1981 to 2003. The charterboat calibration approach is discussed in Dettloff and Matter (2019; SEDAR64-RD-12).

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

Figure 3. Annual Red Snapper landings (AB1) and discards (B2), in thousands of fish, by state from 1981 to 2019 (MRIP, FWC, GADNR, SCDNR, NCDMF).

Figure 3a. Percent of Red Snapper landings (AB1) and discards (B2), in numbers of fish, from each state by year (bar graph) and overall (pie chart) between 1981 and 2019 (MRIP, FWC, GADNR, SCDNR, NCDMF).

Figure 4. Annual Red Snapper landings (AB1) and discards (B2), in thousands of fish, by mode from 1981 to 2019 (MRIP, FWC, GADNR, SCDNR, NCDMF).

Figure 4a. Percent of Red Snapper landings (AB1) and discards (B2), in numbers of fish, from each mode by year (bar graph) and overall (pie chart) between 1981 and 2019 (MRIP, FWC, GADNR, SCDNR, NCDMF).

Figure 5. Estimates of annual landings for Red Snapper in the South Atlantic, as estimated from MRIP, FWC, GADNR, SCDNR, NCDMF: 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 for MRIP, GADNR, SCDNR, and NCDMF catch estimates (in numbers) 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 2019). Weight estimates for FWC catch are provided by the survey.

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Table 1. Annual landings (AB1) and discards (B2) of Red Snapper in numbers of fish by state and year (MRIP, FWC, GADNR, SCDNR, NCDMF).

Year	FLE		GA		SC		NC		Total	
	AB1	B2	AB1	B2	AB1	B2	AB1	B2	AB1	B2
1981	366,613	842	0	0	13,701	0	0	0	380,314	842
1982	94,453	0	0	0	1,603	0	0	0	96,056	0
1983	99,651	21,042	2,917	0	12,872	0	0	0	115,439	21,042
1984	467,340	121,057	1,674	95	5,989	0	12,306	0	487,310	121,152
1985	447,571	128,174	10,049	0	11,163	0	88,222	11,324	557,006	139,498
1986	149,743	0	2,895	0	2,530	0	1,498	0	156,665	0
1987	61,481	162,180	1,498	0	364	9	59,190	0	122,532	162,190
1988	174,626	61,695	7,409	0	998	0	14,138	0	197,170	61,695
1989	239,156	57,047	2,067	0	4,367	0	5,705	0	251,295	57,047
1990	23,227	0	0	0	0	0	6,533	0	29,760	0
1991	52,375	44,765	1,112	916	495	45	18,504	0	72,485	45,726
1992	71,733	27,128	3,077	10,265	0	0	1,296	1,313	76,105	38,706
1993	26,534	170,612	2,749	3,215	0	1,376	884	2,810	30,167	178,013
1994	24,839	119,120	4,305	4,228	146	0	3,418	537	32,708	123,886
1995	8,290	81,744	1,204	5,721	0	0	7,746	400	17,240	87,866
1996	27,712	37,867	1,084	321	231	0	951	466	29,977	38,653
1997	9,942	15,049	139	0	6,653	1,859	0	0	16,734	16,909
1998	22,134	100,302	17,240	6,869	999	1,448	1,557	79	41,929	108,698
1999	68,168	307,035	18,872	11,076	9,290	6,659	2,872	0	99,202	324,770
2000	122,151	467,387	1,591	13,070	16,944	72,568	1,336	2,034	142,022	555,058
2001	129,448	531,247	1,104	2,264	346	219	4,166	1,570	135,065	535,301
2002	141,617	338,462	1,927	1,108	1,356	108	7,618	641	152,517	340,320
2003	48,881	397,993	674	1,989	7,437	4,751	3,698	0	60,691	404,733
2004	89,468	686,651	10,222	24,655	563	229	2,947	0	103,201	711,535
2005	38,225	125,480	7,501	3,126	155	1,227	7,492	0	53,373	129,834
2006	43,300	399,440	9,371	52,499	5,289	81	4,271	499	62,230	452,519
2007	55,754	911,600	2,121	51,309	1,984	666	227	0	60,086	963,575
2008	311,209	1,376,641	13,386	38,714	3,124	6,556	1,003	572	328,723	1,422,482
2009	413,297	944,404	5,055	14,992	1,324	1,251	2,303	249	421,979	960,896
2010	0	445,989	0	169	58	16,135	0	3,702	58	465,996
2011	0	248,488	0	445	0	192	0	2,118	0	251,243
2012	13,075	359,238	2,684	1,127	68	9,891	2,358	12,302	18,185	382,558
2013	7,349	186,875	69	20,126	57	2,820	5	956	7,480	210,777
2014	28,932	652,372	8,720	68,853	132	13,109	213	9,080	37,997	743,415
2015	2,035	1,295,026	0	2,515	0	6,924	0	4,295	2,035	1,308,760
2016	77	2,353,964	0	7,846	0	10,285	0	20,467	77	2,392,562
2017	23,894	1,497,878	84	85,909	1,897	31,234	24	3,270	25,900	1,618,291
2018	36,419	3,174,288	23,453	33,646	140	17,852	400	447	60,411	3,226,233
2019	41,009	1,798,505	15,859	51,520	15,060	107,670	28	7,827	71,955	1,965,522

Table 2. Annual landings (AB1) and discards (B2) of Red Snapper in numbers of fish by mode and year (MRIP, FWC, GADNR, SCDNR, NCDMF).

Year	Cbt		Priv		Total	
	AB1	B2	AB1	B2	AB1	B2
1981	56,577	842	323,737	0	380,314	842
1982	4,073	0	91,983	0	96,056	0
1983	80,450	21,042	34,990	0	115,439	21,042
1984	116,403	90,286	370,907	30,866	487,310	121,152
1985	149,926	29,174	407,079	110,324	557,006	139,498
1986	54,435	0	102,231	0	156,665	0
1987	41,535	9	80,997	162,180	122,532	162,190
1988	22,664	0	174,506	61,695	197,170	61,695
1989	25,797	0	225,497	57,047	251,295	57,047
1990	6,366	0	23,394	0	29,760	0
1991	36,705	45	35,780	45,681	72,485	45,726
1992	34,412	11,192	41,693	27,514	76,105	38,706
1993	3,633	17,052	26,534	160,961	30,167	178,013
1994	11,123	4,766	21,585	119,120	32,708	123,886
1995	13,200	6,121	4,040	81,744	17,240	87,866
1996	1,913	605	28,064	38,048	29,977	38,653
1997	11,831	1,859	4,903	15,049	16,734	16,909
1998	21,714	7,450	20,215	101,248	41,929	108,698
1999	32,748	39,019	66,455	285,751	99,202	324,770
2000	12,102	30,557	129,920	524,502	142,022	555,058
2001	13,056	26,832	122,008	508,469	135,065	535,301
2002	57,511	69,207	95,005	271,113	152,517	340,320
2003	20,299	22,731	40,391	382,002	60,691	404,733
2004	13,592	41,562	89,609	669,974	103,201	711,535
2005	15,676	35,428	37,697	94,405	53,373	129,834
2006	16,065	21,696	46,165	430,823	62,230	452,519
2007	6,570	72,859	53,516	890,716	60,086	963,575
2008	11,423	33,507	317,299	1,388,975	328,723	1,422,482
2009	19,418	24,816	402,561	936,080	421,979	960,896
2010	58	20,859	0	445,137	58	465,996
2011	0	13,430	0	237,813	0	251,243
2012	3,416	25,348	14,769	357,210	18,185	382,558
2013	1,077	7,239	6,403	203,538	7,480	210,777
2014	2,782	36,646	35,215	706,769	37,997	743,415
2015	738	77,501	1,297	1,231,259	2,035	1,308,760
2016	77	121,427	0	2,271,135	77	2,392,562
2017	1,022	218,012	24,878	1,400,278	25,900	1,618,291
2018	4,335	105,841	56,076	3,120,392	60,411	3,226,233
2019	4,088	81,476	67,868	1,884,046	71,955	1,965,522

Table 3. Annual landings (AB1) and discards (B2) of Red Snapper in numbers of fish by data source and year (MRIP, FWC, GADNR, SCDNR, NCDMF).

Year	MRIP		FWC		GADNR		SCDNR		NCDMF		Total	
	AB1	B2	AB1	B2	AB1	B2	AB1	B2	AB1	B2	AB1	B2
1981	380,314	842									380,314	842
1982	96,056	0									96,056	0
1983	115,439	21,042									115,439	21,042
1984	487,310	121,152									487,310	121,152
1985	557,006	139,498									557,006	139,498
1986	156,665	0									156,665	0
1987	122,532	162,190									122,532	162,190
1988	197,170	61,695									197,170	61,695
1989	251,295	57,047									251,295	57,047
1990	29,760	0									29,760	0
1991	72,485	45,726									72,485	45,726
1992	76,105	38,706									76,105	38,706
1993	30,167	178,013									30,167	178,013
1994	32,708	123,886									32,708	123,886
1995	17,240	87,866									17,240	87,866
1996	29,977	38,653									29,977	38,653
1997	16,734	16,909									16,734	16,909
1998	41,929	108,698									41,929	108,698
1999	99,202	324,770									99,202	324,770
2000	142,022	555,058									142,022	555,058
2001	135,065	535,301									135,065	535,301
2002	152,517	340,320									152,517	340,320
2003	60,691	404,733									60,691	404,733
2004	103,201	711,535									103,201	711,535
2005	53,373	129,834									53,373	129,834
2006	62,230	452,519									62,230	452,519
2007	60,086	963,575									60,086	963,575
2008	328,723	1,422,482									328,723	1,422,482
2009	421,979	960,896									421,979	960,896
2010	58	465,996									58	465,996

Year	MRIP		FWC		GADNR		SCDNR		NCDMF		Total	
	AB1	B2	AB1	B2	AB1	B2	AB1	B2	AB1	B2	AB1	B2
2011	0	251,243									0	251,243
2012	5,942	381,893	12,120	0	52	0	68	665	3	0	18,185	382,558
2013	58	210,275	7,291	0	69	13	57	489	5	0	7,480	210,777
2014	14,090	742,770	23,611	0	150	75	132	570	14	0	37,997	743,415
2015	2,035	1,308,760									2,035	1,308,760
2016	77	2,392,562									77	2,392,562
2017	19,422	1,615,934	6,288	0	84	24	82	2,333	24	0	25,900	1,618,291
2018	27,030	3,223,557	33,234	0	0	0	140	2,676	7	0	60,411	3,226,233
2019	30,648	1,961,617	40,977	0	0	0	302	3,905	28	0	71,955	1,965,522

Table 4. Red Snapper landings in numbers of fish (AB1) with associated coefficients of variation (CV; Dettloff et al. 2020) by mode and year (MRIP, FWC). CV estimates are not available from GADNR, SCDNR, or NCDMF. Sample size is provided both as the total number of primary sampling units (PSU) and angler trips (Trp) intercepted by MRIP samplers within a specified strata and, in parentheses, the number of PSUs and angler trips that intercepted Red Snapper. Sample sizes are not provided for years where MRIP and FWC estimates are combined given differences in effort units between surveys.

Year	Cbt				Hbt				Priv			
	AB1	CV	PSU	Trp	AB1	CV	PSU	Trp	AB1	CV	PSU	Trp
1981	56,577	0.59	54 (6)	487 (24)					323,737	0.46	840 (8)	6,948 (11)
1982	4,073	0.70	45 (3)	444 (5)					91,983	0.57	1,121 (11)	9,601 (14)
1983	80,450	0.34	143 (20)	1,617 (79)					34,990	0.92	1,100 (3)	10,271 (4)
1984	116,403	0.50	185 (29)	2,269 (116)					370,907	0.44	837 (11)	7,298 (15)
1985	149,926	0.61	140 (19)	1,505 (91)					407,079	0.58	1,400 (15)	11,225 (23)
1986	54,435	0.47	220 (15)	2,105 (80)					102,231	0.51	2,264 (12)	18,258 (17)
1987	41,535	0.45	360 (16)	3,450 (22)					80,997	0.31	2,137 (20)	18,785 (21)
1988	22,664	0.40	382 (24)	3,335 (32)					174,506	0.52	2,525 (19)	20,957 (21)
1989	25,797	0.58	412 (30)	4,072 (35)					225,497	0.35	3,175 (22)	26,349 (29)
1990	6,366	0.64	297 (15)	3,289 (16)					23,394	0.55	3,484 (6)	31,280 (8)
1991	36,705	0.49	349 (13)	3,793 (18)					35,780	0.64	3,483 (6)	32,082 (6)
1992	34,412	0.56	483 (26)	4,671 (50)					41,693	0.37	3,929 (13)	35,810 (13)
1993	3,633	0.33	332 (13)	3,871 (17)					26,534	0.40	3,523 (9)	31,532 (10)
1994	11,123	0.40	427 (23)	5,822 (29)					21,585	0.51	3,813 (8)	34,366 (10)
1995	13,200	0.48	396 (17)	5,172 (20)					4,040	0.60	3,490 (3)	31,020 (3)
1996	1,913	0.45	572 (7)	7,783 (9)					28,064	0.61	3,462 (8)	32,285 (9)
1997	11,831	0.58	648 (9)	8,024 (10)					4,903	0.62	3,752 (3)	35,011 (3)
1998	21,714	0.55	698 (16)	7,827 (23)					20,215	0.48	3,718 (10)	34,649 (10)
1999	32,748	0.33	670 (38)	5,717 (57)					66,455	0.31	3,551 (20)	35,131 (25)
2000	12,102	0.32	681 (34)	7,071 (55)					129,920	0.24	3,597 (32)	34,429 (38)
2001	13,056	0.28	685 (35)	7,438 (50)					122,008	0.29	4,259 (26)	44,355 (37)
2002	57,511	0.32	741 (44)	7,412 (61)					95,005	0.27	3,884 (25)	39,503 (31)
2003	20,299	0.27	655 (48)	6,329 (64)					40,391	0.34	4,247 (18)	38,004 (21)
2004	13,592	0.27	1,112 (38)	9,060 (49)	0	0.00	875 (0)	9,302 (0)	89,609	0.27	3,172 (21)	30,278 (31)
2005	15,676	0.35	1,449 (26)	11,381 (36)	0	0.00	982 (0)	10,925 (0)	37,697	0.33	2,798 (13)	27,192 (15)
2006	16,065	0.37	1,343 (30)	9,908 (40)	0	0.00	890 (0)	8,582 (0)	46,165	0.35	3,188 (12)	32,054 (15)
2007	6,570	0.33	1,322 (18)	9,979 (20)	0	0.00	642 (0)	8,107 (0)	53,516	0.36	3,411 (15)	32,992 (22)
2008	11,423	0.39	1,357 (26)	9,844 (30)	0	0.00	677 (0)	8,688 (0)	317,299	0.29	3,208 (32)	31,426 (50)
2009	19,418	0.53	1,284 (26)	8,566 (29)	0	0.00	656 (0)	7,337 (0)	402,561	0.28	3,183 (30)	29,517 (49)

Year	Cbt				Hbt				Priv			
	AB1	CV	PSU	Trp	AB1	CV	PSU	Trp	AB1	CV	PSU	Trp
2010	58	1.00	1,438 (1)	10,359 (-1)	0	0.00	676 (0)	8,301 (0)	0	0.00	3,615 (0)	33,361 (0)
2011	0	0.00	1,254 (0)	8,842 (0)	0	0.00	626 (0)	7,555 (0)	0	0.00	3,347 (0)	29,733 (0)
2012	3,416	0.36			0	0.00	477 (0)	5,742 (0)	14,769	0.23		
2013	1,077	0.18			0	0.00	609 (0)	7,729 (0)	6,403	0.23		
2014	2,782	0.36			0	0.00	546 (0)	7,301 (0)	35,215	0.21		
2015	738	1.00	1,132 (1)	7,867 (-1)	0	0.00	532 (0)	7,295 (0)	1,297	1.00	3,907 (1)	31,859 (-1)
2016	77	1.00	1,284 (1)	8,925 (-1)	0	0.00	572 (0)	8,638 (0)	0	0.00	3,814 (0)	29,027 (0)
2017	1,022	0.09			0	0.00	507 (0)	7,314 (0)	24,878	0.71		
2018	4,335	0.12			0	0.00	512 (0)	8,098 (0)	56,076	0.43		
2019	4,088	0.15			0	0.00	503 (0)	8,567 (0)	67,868	0.27		

Table 5. Red Snapper discards in numbers of fish (B2) with associated coefficients of variation (CV; Dettloff et al. 2020) by mode and year (MRIP, FWC). CV estimates are not available from GADNR, SCDNR, or NCDMF. Sample size is provided both as the total number of primary sampling units (PSU) and angler trips (Trp) intercepted by MRIP samplers within a specified strata and, in parentheses, the number of PSUs and angler trips that intercepted Red Snapper. Sample sizes are not provided for years where MRIP and FWC estimates are combined given differences in effort units between surveys.

Year	Cbt				Hbt				Priv			
	B2	CV	PSU	Trp	B2	CV	PSU	Trp	B2	CV	PSU	Trp
1981	842	1.00	54 (1)	487 (-1)					0	0.00	840 (0)	6,948 (0)
1982	0	0.00	45 (0)	444 (0)					0	0.00	1,121 (0)	9,601 (0)
1983	21,042	0.71	143 (6)	1,617 (26)					0	0.00	1,100 (0)	10,271 (0)
1984	90,286	0.95	185 (8)	2,269 (32)					30,866	1.00	837 (1)	7,298 (4)
1985	29,174	0.65	140 (4)	1,505 (12)					110,324	0.92	1,400 (2)	11,225 (5)
1986	0	0.00	220 (0)	2,105 (0)					0	0.00	2,264 (0)	18,258 (0)
1987	9	1.00	360 (1)	3,450 (-1)					162,180	0.83	2,137 (3)	18,785 (7)
1988	0	0.00	382 (0)	3,335 (0)					61,695	0.44	2,525 (6)	20,957 (7)

Year	Cbt				Hbt				Priv			
	B2	CV	PSU	Trp	B2	CV	PSU	Trp	B2	CV	PSU	Trp
1989	0	0.00	412 (0)	4,072 (0)					57,047	0.52	3,175 (5)	26,349 (8)
1990	0	0.00	297 (0)	3,289 (0)					0	0.00	3,484 (0)	31,280 (0)
1991	45	1.00	349 (1)	3,793 (2)					45,681	0.53	3,483 (6)	32,082 (7)
1992	11,192	0.63	483 (9)	4,671 (42)					27,514	0.43	3,929 (9)	35,810 (10)
1993	17,052	0.82	332 (4)	3,871 (16)					160,961	0.75	3,523 (14)	31,532 (20)
1994	4,766	0.89	427 (6)	5,822 (14)					119,120	0.41	3,813 (12)	34,366 (20)
1995	6,121	0.50	396 (10)	5,172 (20)					81,744	0.43	3,490 (13)	31,020 (22)
1996	605	0.56	572 (4)	7,783 (8)					38,048	0.72	3,462 (5)	32,285 (9)
1997	1,859	1.00	648 (1)	8,024 (8)					15,049	0.42	3,752 (7)	35,011 (9)
1998	7,450	0.79	698 (8)	7,827 (16)					101,248	0.52	3,718 (15)	34,649 (20)
1999	39,019	0.49	670 (19)	5,717 (56)					285,751	0.26	3,551 (31)	35,131 (77)
2000	30,557	0.32	681 (32)	7,071 (93)					524,502	0.25	3,597 (47)	34,429 (90)
2001	26,832	0.25	685 (29)	7,438 (113)					508,469	0.31	4,259 (44)	44,355 (103)
2002	69,207	0.31	741 (33)	7,412 (138)					271,113	0.28	3,884 (43)	39,503 (80)
2003	22,731	0.25	655 (40)	6,329 (114)					382,002	0.36	4,247 (34)	38,004 (72)
2004	41,562	0.28	1,112 (37)	9,060 (119)	0	0.00	875 (0)	9,302 (0)	669,974	0.25	3,172 (33)	30,278 (93)
2005	35,428	0.37	1,449 (32)	11,381 (120)	0	0.00	982 (0)	10,925 (0)	94,405	0.28	2,798 (20)	27,192 (44)
2006	21,696	0.31	1,343 (28)	9,908 (111)	0	0.00	890 (0)	8,582 (0)	430,823	0.38	3,188 (28)	32,054 (69)
2007	72,859	0.54	1,322 (25)	9,979 (71)	0	0.00	642 (0)	8,107 (0)	890,716	0.26	3,411 (39)	32,992 (110)
2008	33,507	0.65	1,357 (26)	9,844 (92)	0	0.00	677 (0)	8,688 (0)	1,388,975	0.26	3,208 (41)	31,426 (140)
2009	24,816	0.63	1,284 (24)	8,566 (49)	0	0.00	656 (0)	7,337 (0)	936,080	0.26	3,183 (35)	29,517 (122)
2010	20,859	0.64	1,438 (28)	10,359 (53)	0	0.00	676 (0)	8,301 (0)	445,137	0.38	3,615 (26)	33,361 (52)
2011	13,430	0.73	1,254 (22)	8,842 (49)	0	0.00	626 (0)	7,555 (0)	237,813	0.49	3,347 (13)	29,733 (21)
2012	25,348	0.51			0	0.00	477 (0)	5,742 (0)	357,210	0.33		
2013	7,239	0.44			0	0.00	609 (0)	7,729 (0)	203,538	0.33		
2014	36,646	0.30			0	0.00	546 (0)	7,301 (0)	706,769	0.23	3,712 (56)	30,019 (156)
2015	77,501	0.35	1,132 (36)	7,867 (123)	0	0.00	532 (0)	7,295 (0)	1,231,259	0.38	3,907 (45)	31,859 (124)
2016	121,427	0.63	1,284 (25)	8,925 (70)	0	0.00	572 (0)	8,638 (0)	2,271,135	0.28	3,814 (58)	29,027 (179)
2017	218,012	0.61			0	0.00	507 (0)	7,314 (0)	1,400,278	0.28	4,039 (53)	33,713 (179)
2018	105,841	0.34			0	0.00	512 (0)	8,098 (0)	3,120,392	0.29	4,007 (54)	34,147 (212)
2019	81,476	0.30			0	0.00	503 (0)	8,567 (0)	1,884,046	0.25	4,056 (53)	34,530 (154)

Table 6. Total Red Snapper landings (AB1) and discards (B2), in numbers of fish, with associated coefficients of variation (CV; Dettloff et al. 2020) by year (MRIP, FWC). CV estimates are not available from GADNR, SCDNR, or NCDMF. Sample size is provided both as the total number of primary sampling units (PSU) and angler trips (Trp) intercepted by MRIP samplers within a specified strata and, in parentheses, the number of PSUs and angler trips that intercepted Red Snapper. Sample sizes are not provided for years where MRIP and FWC estimates are combined given differences in effort units between surveys.

Year	AB1				B2			
	Total	CV	PSU	Trp	Total	CV	PSU	Trp
1981	380,314	0.40	1,289 (14)	11,195 (35)	842	1.00	1,289 (1)	11,195 (1)
1982	96,056	0.55	1,376 (14)	12,246 (19)	0	0.00	1,376 (0)	12,246 (0)
1983	115,439	0.37	1,611 (23)	16,283 (83)	21,042	0.71	1,611 (6)	16,283 (26)
1984	487,310	0.36	1,306 (40)	12,989 (131)	121,152	0.75	1,306 (9)	12,989 (36)
1985	557,006	0.46	1,960 (34)	17,443 (114)	139,498	0.74	1,960 (6)	17,443 (17)
1986	156,665	0.37	3,122 (27)	26,554 (97)	0	0.00	3,122 (0)	26,554 (0)
1987	122,532	0.25	2,924 (36)	25,934 (43)	162,190	0.83	2,924 (4)	25,934 (8)
1988	197,170	0.46	3,487 (43)	29,716 (53)	61,695	0.44	3,487 (6)	29,716 (7)
1989	251,295	0.32	4,494 (52)	39,436 (64)	57,047	0.52	4,494 (5)	39,436 (8)
1990	29,760	0.45	4,579 (21)	41,274 (24)	0	0.00	4,579 (0)	41,274 (0)
1991	72,485	0.40	4,684 (19)	43,139 (24)	45,726	0.53	4,684 (7)	43,139 (9)
1992	76,105	0.33	5,217 (39)	47,239 (63)	38,706	0.36	5,217 (18)	47,239 (52)
1993	30,167	0.35	4,550 (22)	41,222 (27)	178,013	0.69	4,550 (18)	41,222 (36)
1994	32,708	0.36	4,948 (31)	45,823 (39)	123,886	0.39	4,948 (18)	45,823 (34)
1995	17,240	0.39	4,539 (20)	41,454 (23)	87,866	0.40	4,539 (23)	41,454 (42)
1996	29,977	0.57	4,727 (15)	45,411 (18)	38,653	0.71	4,727 (9)	45,411 (17)
1997	16,734	0.45	5,221 (12)	49,353 (13)	16,909	0.39	5,221 (8)	49,353 (17)
1998	41,929	0.37	5,366 (26)	49,273 (33)	108,698	0.49	5,366 (23)	49,273 (36)
1999	99,202	0.23	4,985 (58)	47,010 (82)	324,770	0.23	4,985 (50)	47,010 (133)
2000	142,022	0.22	5,077 (66)	47,239 (93)	555,058	0.24	5,077 (79)	47,239 (183)
2001	135,065	0.27	5,876 (61)	59,743 (87)	535,301	0.29	5,876 (73)	59,743 (216)
2002	152,517	0.21	5,489 (69)	53,788 (92)	340,320	0.23	5,489 (76)	53,788 (218)
2003	60,691	0.24	6,354 (66)	56,962 (85)	404,733	0.34	6,354 (74)	56,962 (186)
2004	103,201	0.24	5,159 (59)	48,640 (80)	711,535	0.23	5,159 (70)	48,640 (212)
2005	53,373	0.26	5,229 (39)	49,498 (51)	129,834	0.23	5,229 (52)	49,498 (164)
2006	62,230	0.28	5,421 (42)	50,544 (55)	452,519	0.36	5,421 (56)	50,544 (180)
2007	60,086	0.33	5,375 (33)	51,078 (42)	963,575	0.24	5,375 (64)	51,078 (181)
2008	328,723	0.28	5,242 (58)	49,958 (80)	1,422,482	0.25	5,242 (67)	49,958 (232)
2009	421,979	0.27	5,123 (56)	45,420 (78)	960,896	0.25	5,123 (59)	45,420 (171)
2010	58	1.00	5,729 (1)	52,021 (1)	465,996	0.36	5,729 (54)	52,021 (105)
2011	0	0.00	5,227 (0)	46,130 (0)	251,243	0.47	5,227 (35)	46,130 (70)
2012	18,185	0.20			382,558	0.32		
2013	7,480	0.20			210,777	0.32		
2014	37,997	0.20			743,415	0.22		
2015	2,035	0.73	5,571 (2)	47,021 (2)	1,308,760	0.36	5,571 (81)	47,021 (247)
2016	77	1.00	5,670 (1)	46,590 (1)	2,392,562	0.26	5,670 (83)	46,590 (249)
2017	25,900	0.69			1,618,291	0.26		
2018	60,411	0.40			3,226,233	0.28		
2019	71,955	0.26			1,965,522	0.24		

Table 7. Estimated landings of Red Snapper in pounds whole weight by state and year (MRIP, FWC, GADNR, SCDNR, NCDMF). Average weight estimates for MRIP, GADNR, SCDNR, and NCDMF catch estimates (in numbers) 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 2019). Weight estimates for FWC catch are provided by the survey.

Year	FLE	GA	SC	NC	Total
1981	858,714	0	38,067	0	896,782
1982	379,402	0	5,338	0	384,740
1983	113,970	4,485	32,231	0	150,686
1984	426,638	1,865	48,010	18,209	494,722
1985	1,413,264	22,214	56,133	83,625	1,575,236
1986	127,000	1,668	1,458	863	130,990
1987	74,775	3,681	894	165,468	244,818
1988	946,811	40,169	5,410	76,655	1,069,045
1989	269,402	6,185	15,722	21,910	313,219
1990	74,949	0	0	11,341	86,290
1991	229,570	3,672	1,634	50,768	285,643
1992	330,554	19,682	0	4,637	354,873
1993	178,968	22,807	0	7,649	209,424
1994	67,043	42,620	1,064	22,033	132,760
1995	33,890	10,592	0	16,716	61,198
1996	168,499	6,592	1,402	5,780	182,272
1997	30,453	425	13,185	0	44,063
1998	152,337	106,563	5,590	8,713	273,203
1999	283,006	53,103	10,881	8,642	355,633
2000	818,324	14,629	41,983	8,088	883,025
2001	929,099	8,418	2,636	23,521	963,674
2002	1,060,449	14,297	10,061	65,039	1,149,846
2003	467,381	8,800	36,458	11,112	523,751
2004	614,294	88,349	4,272	22,343	729,257
2005	226,673	77,611	1,213	58,567	364,064
2006	373,956	86,559	44,912	14,352	519,779
2007	510,790	13,684	16,292	1,867	542,632
2008	2,143,450	93,487	21,745	6,980	2,265,662
2009	2,928,779	35,512	9,395	16,343	2,990,028
2010	0	0	316	0	316
2011	0	0	0	0	0
2012	119,737	27,039	685	24,561	172,023
2013	85,365	693	572	50	86,680
2014	342,349	110,714	1,676	2,704	457,444
2015	11,034	0	0	0	11,034
2016	417	0	0	0	417
2017	150,554	513	11,591	147	162,804
2018	317,259	197,400	1,178	3,361	519,198
2019	381,904	193,971	164,427	306	740,608

Table 8. Summary of length measurements (millimeters fork length) from MRIP-intercepted Red Snapper by state and year. Summaries include the number of fish measured by MRIP (Fish), the number of angler trips from which those fish were measured (Trp), and the minimum (Min), geometric mean (Avg), and maximum (Max) size of fish lengths.

Year	FLE					GA					SC					NC				
	Fish	Trp	Min	Avg	Max	Fish	Trp	Min	Avg	Max	Fish	Trp	Min	Avg	Max	Fish	Trp	Min	Avg	Max
1981	36	12	230	364	587	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1982	39	14	47	409	750	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1983	18	5	190	331	590	3	2	330	508	853	5	2	520	608	660	0	0	0	0	0
1984	101	20	187	299	510	19	2	260	292	410	4	2	560	615	780	7	2	329	387	414
1985	51	16	200	397	558	32	8	260	374	428	2	1	288	379	470	0	0	0	0	0
1986	241	86	197	225	432	10	6	198	312	490	3	3	260	377	440	5	2	338	442	560
1987	27	10	204	285	467	11	4	335	356	383	1	1	396	396	396	139	28	278	387	599
1988	68	21	93	242	595	5	3	253	290	383	2	2	322	492	662	105	27	322	442	680
1989	76	27	192	309	615	9	2	253	339	483	30	10	304	445	760	72	25	325	435	560
1990	9	6	198	369	760	0	0	0	0	0	3	1	245	335	460	67	17	225	353	862
1991	20	7	310	444	760	6	2	361	534	700	6	2	260	361	500	48	13	265	369	515
1992	169	44	238	439	756	30	9	361	496	880	0	0	0	0	0	17	10	265	429	532
1993	15	10	238	515	711	39	13	310	575	880	0	0	0	0	0	5	4	270	497	610
1994	23	11	238	414	705	47	12	404	562	850	1	1	290	290	290	20	15	270	527	825
1995	7	4	466	528	612	15	7	460	544	666	0	0	0	0	0	43	12	270	364	518
1996	13	8	528	574	672	6	5	505	615	777	3	2	282	301	332	12	3	270	356	499
1997	6	4	320	605	825	3	2	557	586	630	42	7	230	295	641	0	0	0	0	0
1998	19	11	294	502	825	42	17	262	527	921	14	4	246	314	710	5	1	360	400	460
1999	82	35	276	463	855	89	27	265	364	737	99	15	238	310	550	18	5	360	422	762
2000	143	58	323	525	818	17	8	270	523	840	59	23	265	352	660	11	4	360	483	762
2001	171	70	295	527	825	9	5	375	626	840	10	2	313	504	580	17	10	450	505	578
2002	289	73	426	538	847	12	3	451	631	840	6	4	350	471	614	36	12	498	570	716
2003	177	59	291	562	844	23	12	451	674	903	17	6	350	465	591	29	8	298	387	658
2004	143	51	385	548	771	51	20	465	592	876	9	7	513	583	634	2	2	671	688	705
2005	90	34	330	540	754	28	12	465	635	874	7	2	513	608	701	4	3	487	604	796
2006	81	32	468	594	839	36	15	468	584	1,006	7	4	308	527	792	21	4	202	362	704
2007	55	29	332	573	819	21	9	352	531	664	9	3	488	634	919	5	1	211	350	542
2008	145	54	432	540	848	70	18	354	543	949	4	3	488	674	949	10	5	475	529	760
2009	188	49	462	551	843	72	17	445	551	725	8	6	501	585	716	9	6	467	597	833
2010	0	0	0	0	0	0	0	0	0	0	1	1	370	370	370	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	4	4	341	513	690	13	3	384	607	929	0	0	0	0	0	36	7	411	645	899

Year	FLE					GA					SC					NC				
	Fish	Trp	Min	Avg	Max	Fish	Trp	Min	Avg	Max	Fish	Trp	Min	Avg	Max	Fish	Trp	Min	Avg	Max
2013	16	12	331	606	746	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	256	86	348	672	814	11	4	348	497	794	4	1	621	758	881	3	3	460	631	723
2015	4	2	701	728	777	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	1	1	331	331	331	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	91	41	331	532	744	0	0	0	0	0	1	1	420	420	420	0	0	0	0	0
2018	280	137	240	572	837	30	6	221	544	844	0	0	0	0	0	8	3	380	521	741
2019	79	26	261	622	818	17	4	451	661	820	4	1	471	658	788	0	0	0	0	0

Table 9. Summary of weight measurements (pounds whole weight) from MRIP-intercepted Red Snapper by state and year. Summaries include the number of fish weighed by MRIP (Fish), the number of angler trips from which those fish were weighed (Trp), and the minimum (Min), geometric mean (Avg), and maximum (Max) size of fish weights.

Year	FLE					GA					SC					NC				
	Fish	Trp	Min	Avg	Max	Fish	Trp	Min	Avg	Max	Fish	Trp	Min	Avg	Max	Fish	Trp	Min	Avg	Max
1981	36	12	0.4	2.5	9.0	0	0	0.0	0.0	0.0	0	0	0.0	0.0	0.0	0	0	0.0	0.0	0.0
1982	39	14	0.2	3.8	21.9	0	0	0.0	0.0	0.0	0	0	0.0	0.0	0.0	0	0	0.0	0.0	0.0
1983	18	5	0.2	1.9	8.5	3	2	1.4	13.6	38.0	5	2	5.6	9.1	11.7	0	0	0.0	0.0	0.0
1984	101	20	0.2	1.1	3.3	19	2	0.7	1.1	2.6	4	2	10.7	15.2	28.8	7	2	0.9	2.1	3.3
1985	51	16	0.7	2.9	5.7	32	8	0.7	2.1	3.3	2	1	1.4	2.3	3.3	0	0	0.0	0.0	0.0
1986	241	86	0.2	0.4	2.7	10	6	0.2	1.7	4.6	3	3	0.7	2.3	3.3	5	2	0.7	3.5	6.7
1987	27	10	0.4	1.2	5.1	11	4	1.1	1.6	2.2	1	1	2.5	2.5	2.5	139	28	0.5	2.8	10.9
1988	10	21	0.4	1.0	2.1	0	3	0.0	0.0	0.0	1	2	1.2	1.2	1.2	2	27	1.3	1.3	1.3
1989	76	27	0.2	1.6	9.7	9	2	0.4	1.2	3.1	30	10	1.8	5.2	38.1	72	25	0.7	3.9	8.6
1990	9	6	0.4	4.0	17.8	0	0	0.0	0.0	0.0	0	1	0.0	0.0	0.0	67	17	0.5	3.1	23.7
1991	20	7	1.3	4.4	17.6	6	2	1.8	6.4	14.6	6	2	1.2	4.0	8.2	48	13	0.7	2.4	5.1
1992	160	44	1.1	4.2	18.6	30	9	2.5	6.6	40.6	0	0	0.0	0.0	0.0	17	10	0.7	3.5	6.2
1993	15	10	0.4	6.7	14.6	39	13	1.2	10.1	28.4	0	0	0.0	0.0	0.0	5	4	0.7	4.3	6.8
1994	23	11	0.4	4.3	15.0	47	12	2.4	9.2	29.0	1	1	0.7	0.7	0.7	20	15	0.7	6.8	25.1

Year	FLE					GA					SC					NC				
	Fish	Trp	Min	Avg	Max	Fish	Trp	Min	Avg	Max	Fish	Trp	Min	Avg	Max	Fish	Trp	Min	Avg	Max
1995	7	4	3.7	5.9	10.6	15	7	4.6	8.8	20.6	0	0	0.0	0.0	0.0	43	12	0.4	2.2	5.8
1996	13	8	5.6	8.3	13.2	6	5	7.7	11.9	19.0	3	2	0.7	1.0	1.2	12	3	0.4	2.0	4.9
1997	6	4	1.2	11.6	23.4	3	2	7.5	9.6	13.4	42	7	0.5	1.4	12.0	0	0	0.0	0.0	0.0
1998	19	11	1.0	6.9	25.1	42	17	0.7	6.7	27.6	14	4	0.7	1.7	12.6	5	1	1.2	2.1	3.4
1999	82	35	1.0	6.1	26.3	89	27	0.4	2.7	16.5	99	15	0.5	1.4	8.8	18	5	1.1	3.0	15.7
2000	143	58	1.6	7.1	23.5	17	8	0.6	9.2	21.7	59	23	0.7	2.8	15.3	11	4	1.1	4.9	14.6
2001	171	70	1.1	7.3	28.2	9	5	2.3	18.2	38.9	8	2	7.9	8.3	8.8	17	10	3.5	5.6	8.0
2002	289	73	2.6	7.0	26.2	12	3	4.4	12.5	27.2	6	4	4.2	7.6	9.9	36	12	4.5	8.7	15.0
2003	177	59	0.9	9.3	29.5	23	12	6.5	20.0	70.6	17	6	2.1	5.2	11.3	28	8	1.2	3.0	11.4
2004	143	51	2.1	7.1	21.1	51	20	3.7	8.7	25.1	9	7	5.3	8.6	11.0	2	2	10.2	10.4	10.5
2005	90	34	0.9	6.8	18.3	28	12	4.4	10.4	25.1	7	2	5.3	10.0	16.5	4	3	3.9	9.6	19.5
2006	81	32	3.6	9.3	27.2	36	15	4.0	9.6	41.9	7	4	1.1	7.9	19.8	21	4	0.2	3.5	14.4
2007	55	29	1.3	8.6	23.1	21	9	3.0	6.4	11.9	9	3	4.9	12.7	30.7	5	1	0.2	3.0	8.6
2008	145	54	3.4	6.8	24.8	70	18	1.8	6.9	32.8	4	3	4.9	14.3	32.8	10	5	4.7	6.8	18.0
2009	188	49	3.5	7.0	24.8	72	17	3.3	7.1	13.7	8	6	4.9	8.4	15.4	9	6	4.4	9.2	22.0
2010	0	0	0.0	0.0	0.0	0	0	0.0	0.0	0.0	1	1	2.3	2.3	2.3	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	0.0	0.0	0	0	0.0	0.0	0.0
2012	4	4	1.3	6.9	13.2	13	3	2.1	10.1	26.0	0	0	0.0	0.0	0.0	36	7	2.8	10.4	25.9
2013	16	12	1.4	10.0	15.1	0	0	0.0	0.0	0.0	0	0	0.0	0.0	0.0	0	0	0.0	0.0	0.0
2014	256	86	1.3	13.0	22.0	11	4	1.5	6.5	20.3	4	1	8.6	14.0	19.0	3	3	4.1	11.2	15.5
2015	4	2	14.2	15.8	19.8	0	0	0.0	0.0	0.0	0	0	0.0	0.0	0.0	0	0	0.0	0.0	0.0
2016	1	1	1.3	1.3	1.3	0	0	0.0	0.0	0.0	0	0	0.0	0.0	0.0	0	0	0.0	0.0	0.0
2017	91	41	1.3	6.1	15.0	0	0	0.0	0.0	0.0	1	1	2.9	2.9	2.9	0	0	0.0	0.0	0.0
2018	280	137	0.4	8.5	22.6	30	6	0.4	8.4	24.0	0	0	0.0	0.0	0.0	8	3	2.2	6.8	16.3
2019	79	26	0.7	10.6	21.6	17	4	3.5	12.2	24.3	4	1	4.0	12.3	19.6	0	0	0.0	0.0	0.0

Table 10. Summary of length measurements (millimeters fork length) from MRIP-intercepted Red Snapper by mode and year. Summaries include the number of fish measured by MRIP (Fish), the number of angler trips from which those fish were measured (Trp), and the minimum (Min), geometric mean (Avg), and maximum (Max) size of fish lengths.

Year	Cbt					Priv				
	Fish	Trp	Min	Avg	Max	Fish	Trp	Min	Avg	Max
1981	1	1	240	240	240	35	11	230	367	587
1982	0	0	0	0	0	39	14	47	409	750
1983	12	5	214	408	660	14	4	190	402	853
1984	64	11	187	300	780	67	15	232	325	447
1985	10	2	260	364	400	75	23	200	391	558
1986	220	80	197	223	560	39	17	228	301	440
1987	110	22	278	379	599	68	21	204	355	508
1988	107	32	251	437	680	73	21	93	254	662
1989	103	35	253	435	615	84	29	192	314	760
1990	68	16	225	339	625	11	8	198	446	862
1991	66	18	260	388	700	14	6	268	454	760
1992	182	50	265	446	880	34	13	238	450	638
1993	44	17	270	566	880	15	10	238	515	711
1994	72	29	270	550	850	19	10	238	378	825
1995	62	20	270	416	666	3	3	530	582	612
1996	19	9	270	422	720	15	9	346	554	777
1997	47	10	230	328	666	4	3	320	590	825
1998	65	23	246	474	921	15	10	294	485	825
1999	227	57	238	362	762	61	25	276	434	855
2000	144	55	265	453	840	86	38	270	521	698
2001	126	50	313	532	840	81	37	295	522	825
2002	264	61	350	536	847	79	31	475	566	700
2003	217	64	298	538	903	29	21	291	599	733
2004	152	49	430	567	876	53	31	385	549	710
2005	101	36	422	577	874	28	15	330	527	796
2006	119	40	202	543	839	26	15	308	607	1,006
2007	56	20	211	535	819	34	22	332	592	919
2008	103	30	449	548	949	126	50	354	538	949
2009	110	29	445	556	833	167	49	462	551	843
2010	1	1	370	370	370	0	0	0	0	0
2011	0	0	0	0	0	0	0	0	0	0
2012	45	9	384	633	929	8	5	341	586	690
2013	4	3	401	538	690	12	9	331	629	746
2014	136	34	431	693	807	138	60	348	640	881
2015	3	1	701	711	726	1	1	777	777	777
2016	1	1	331	331	331	0	0	0	0	0
2017	18	10	331	541	725	74	32	371	529	744
2018	59	12	221	583	844	259	134	240	564	837
2019	48	10	261	641	782	52	21	275	620	820

Table 11. Summary of weight measurements (pounds whole weight) from MRIP-intercepted Red Snapper by mode and year. Summaries include the number of fish weighed by MRIP (Fish), the number of angler trips from which those fish were weighed (Trp), and the minimum (Min), geometric mean (Avg), and maximum (Max) size of fish weights.

Year	Cbt					Priv				
	Fish	Trp	Min	Avg	Max	Fish	Trp	Min	Avg	Max
1981	1	1	0.7	0.7	0.7	35	11	0.4	2.5	9.0
1982	0	0	0.0	0.0	0.0	39	14	0.2	3.8	21.9
1983	12	5	0.2	4.3	11.7	14	4	0.2	4.9	38.0
1984	64	11	0.2	1.9	28.8	67	15	0.4	1.4	2.7
1985	10	2	0.9	1.9	2.4	75	23	0.7	2.7	5.7
1986	220	80	0.2	0.5	6.7	39	17	0.4	1.1	3.3
1987	110	22	0.5	2.6	10.9	68	21	0.4	2.2	5.6
1988	2	32	1.6	1.9	2.1	11	21	0.4	0.9	1.6
1989	103	35	0.4	3.8	8.6	84	29	0.2	2.2	38.1
1990	65	16	0.5	2.6	12.1	11	8	0.4	6.8	23.7
1991	66	18	0.7	2.9	14.6	14	6	0.9	5.1	17.6
1992	177	50	0.7	4.4	40.6	30	13	1.1	5.1	12.3
1993	44	17	0.7	9.4	28.4	15	10	0.4	6.7	14.6
1994	72	29	0.7	8.2	29.0	19	10	0.4	3.9	25.1
1995	62	20	0.4	3.9	20.6	3	3	5.5	8.0	10.6
1996	19	9	0.4	4.7	14.6	15	9	1.4	7.8	19.0
1997	47	10	0.5	2.4	14.9	4	3	1.2	10.8	23.4
1998	65	23	0.7	5.5	27.6	15	10	1.0	6.1	23.4
1999	227	57	0.4	2.9	23.5	61	25	1.0	4.6	26.3
2000	144	55	0.6	5.6	23.5	86	38	0.7	6.9	16.2
2001	124	50	2.3	8.2	38.9	81	37	1.1	6.7	26.1
2002	264	61	2.6	7.2	27.2	79	31	4.3	8.1	13.5
2003	216	64	1.2	9.2	70.6	29	21	0.9	9.9	15.3
2004	152	49	3.2	7.8	25.1	53	31	2.1	6.9	16.0
2005	101	36	2.9	8.1	25.1	28	15	0.9	6.8	19.5
2006	119	40	0.2	7.9	27.2	26	15	1.1	11.1	41.9
2007	56	20	0.2	7.2	23.1	34	22	1.3	9.8	30.7
2008	103	30	3.9	7.2	32.8	126	50	1.8	6.8	32.8
2009	110	29	3.3	7.2	24.8	167	49	3.8	7.1	24.8
2010	1	1	2.3	2.3	2.3	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
2012	45	9	2.1	10.2	26.0	8	5	1.3	9.6	14.1
2013	4	3	3.5	7.1	12.3	12	9	1.4	11.0	15.1
2014	136	34	2.7	13.8	22.0	138	60	1.3	11.6	21.2
2015	3	1	14.2	14.5	14.9	1	1	19.8	19.8	19.8
2016	1	1	1.3	1.3	1.3	0	0	0.0	0.0	0.0
2017	18	10	1.3	7.0	15.0	74	32	1.7	5.9	14.4
2018	59	12	0.4	9.4	24.0	259	134	0.4	8.2	22.6
2019	48	10	0.7	11.2	18.6	52	21	0.8	10.7	24.3

Table 12. Summary of length (millimeters fork length) and weight measurements (pounds whole weight) from MRIP-intercepted Red Snapper by year. Summaries include the number of fish weighed by MRIP (Fish), the number of angler trips from which those fish were weighed

(Trp), and the minimum (Min), geometric mean (Avg), and maximum (Max) size of fish weights.

Year	Length					Weight				
	Fish	Trp	Min	Avg	Max	Fish	Trp	Min	Avg	Max
1981	36	12	230	364	587	36	12	0.4	2.5	9.0
1982	39	14	47	409	750	39	14	0.2	3.8	21.9
1983	26	9	190	405	853	26	9	0.2	4.7	38.0
1984	131	26	187	313	780	131	26	0.2	1.6	28.8
1985	85	25	200	388	558	85	25	0.7	2.6	5.7
1986	259	97	197	235	560	259	97	0.2	0.6	6.7
1987	178	43	204	370	599	178	43	0.4	2.5	10.9
1988	180	53	93	363	680	13	53	0.4	1.0	2.1
1989	187	64	192	381	760	187	64	0.2	3.1	38.1
1990	79	24	198	354	862	76	24	0.4	3.2	23.7
1991	80	24	260	400	760	80	24	0.7	3.3	17.6
1992	216	63	238	446	880	207	63	0.7	4.5	40.6
1993	59	27	238	553	880	59	27	0.4	8.8	28.4
1994	91	39	238	514	850	91	39	0.4	7.3	29.0
1995	65	23	270	423	666	65	23	0.4	4.1	20.6
1996	34	18	270	480	777	34	18	0.4	6.1	19.0
1997	51	13	230	349	825	51	13	0.5	3.1	23.4
1998	80	33	246	476	921	80	33	0.7	5.6	27.6
1999	288	82	238	378	855	288	82	0.4	3.2	26.3
2000	230	93	265	478	840	230	93	0.6	6.1	23.5
2001	207	87	295	528	840	205	87	1.1	7.6	38.9
2002	343	92	350	543	847	343	92	2.6	7.4	27.2
2003	246	85	291	545	903	245	85	0.9	9.3	70.6
2004	205	80	385	562	876	205	80	2.1	7.6	25.1
2005	129	51	330	566	874	129	51	0.9	7.8	25.1
2006	145	55	202	554	1,006	145	55	0.2	8.5	41.9
2007	90	42	211	557	919	90	42	0.2	8.2	30.7
2008	229	80	354	543	949	229	80	1.8	7.0	32.8
2009	277	78	445	553	843	277	78	3.3	7.1	24.8
2010	1	1	370	370	370	1	1	2.3	2.3	2.3
2011	0	0	0	0	0	0	0	0.0	0.0	0.0
2012	53	14	341	626	929	53	14	1.3	10.1	26.0
2013	16	12	331	606	746	16	12	1.4	10.0	15.1
2014	274	94	348	666	881	274	94	1.3	12.7	22.0
2015	4	2	701	728	777	4	2	14.2	15.8	19.8
2016	1	1	331	331	331	1	1	1.3	1.3	1.3
2017	92	42	331	531	744	92	42	1.3	6.1	15.0
2018	318	146	221	568	844	318	146	0.4	8.4	24.0
2019	100	31	261	630	820	100	31	0.7	10.9	24.3

Table 13. Recreational Fishing Effort (in angler trips) for South Atlantic anglers by state and year (MRIP). Red Snapper catch was not observed from any angler trips north of North Carolina (see Table 1).

Year	FLE	GA	SC	NC	VA	MD	DE	NJ	NY	CT	Total
1981	6,277,154	334,352	958,178	1,509,705	1,832,397	1,900,593	362,825	4,732,048	3,960,338	1,156,562	26,936,909
1982	8,362,364	452,867	1,029,421	1,860,255	2,701,551	1,893,730	420,333	4,413,577	3,990,753	1,681,873	30,781,569
1983	7,863,121	467,737	1,072,004	1,926,892	1,714,933	2,392,238	426,554	4,651,301	4,404,842	1,219,910	30,151,154
1984	8,776,686	493,904	1,157,296	2,026,886	2,010,820	2,616,983	444,077	4,553,879	4,197,272	1,362,963	31,319,471
1985	9,237,607	607,066	1,251,245	1,983,178	2,151,815	2,453,970	339,590	6,059,743	4,026,759	1,361,098	34,256,910
1986	10,414,189	645,387	1,229,688	2,255,934	2,447,664	2,826,089	626,318	5,392,763	4,281,589	1,351,577	35,694,576
1987	10,426,294	652,719	1,260,245	2,046,250	2,482,549	2,510,455	390,548	4,825,723	4,230,595	1,367,588	34,013,253
1988	8,740,959	640,280	1,270,568	2,170,959	2,270,769	2,889,709	570,207	4,485,928	4,076,326	1,396,716	32,256,586
1989	9,278,269	696,901	1,298,394	2,313,067	2,159,462	2,888,240	478,457	4,635,364	3,943,238	1,351,520	32,776,750
1990	8,601,245	660,117	1,357,469	2,342,212	2,231,706	3,121,011	575,764	5,033,157	4,056,780	1,329,924	33,203,617
1991	9,068,498	675,055	1,409,231	2,411,796	2,379,508	3,044,646	516,550	5,220,589	4,040,213	1,299,901	33,899,158
1992	9,681,272	693,196	1,385,280	2,464,364	2,468,791	3,142,630	543,506	5,174,834	3,931,867	1,321,251	34,599,446
1993	10,202,708	707,259	1,404,830	2,423,200	2,662,607	3,077,597	605,204	5,587,445	4,313,513	1,269,822	36,219,798
1994	10,492,040	718,023	1,386,978	2,423,380	2,937,006	3,080,074	579,836	5,381,758	4,143,481	1,216,399	36,691,230
1995	9,284,055	727,609	1,362,563	2,419,498	3,038,408	2,981,720	659,135	5,897,345	3,955,849	1,238,545	35,817,887
1996	9,810,992	738,294	1,390,116	2,666,916	3,332,838	3,231,503	635,461	5,749,456	3,985,138	1,289,747	37,344,009
1997	9,918,568	751,325	1,479,293	2,938,210	3,602,367	3,494,757	694,826	6,111,210	4,327,740	1,316,567	39,701,162
1998	10,135,070	770,506	1,464,931	3,002,959	3,527,371	3,436,357	752,084	5,943,279	4,280,455	1,403,577	40,097,320
1999	10,397,584	816,972	1,531,984	3,340,567	3,563,525	3,584,086	799,279	6,316,458	4,575,187	1,444,311	42,071,041
2000	12,935,144	881,153	1,649,601	3,583,602	3,694,794	3,962,587	908,342	7,078,827	4,826,064	1,492,872	47,202,001
2001	12,077,972	904,282	1,697,486	3,559,426	4,167,837	3,923,923	894,716	7,135,048	4,902,188	1,588,420	47,443,786
2002	13,380,043	916,566	1,704,911	3,731,089	4,333,117	3,873,783	859,527	6,693,498	5,097,231	1,624,226	49,084,121
2003	14,242,195	982,375	1,826,542	3,941,640	4,005,898	4,195,848	936,210	7,171,044	5,742,278	1,642,035	51,182,115
2004	12,514,239	1,026,636	2,010,314	4,459,434	4,216,504	4,192,224	969,034	7,441,400	5,748,815	1,667,993	50,826,634
2005	14,171,121	1,079,925	1,997,328	4,574,402	4,314,591	4,265,334	943,316	7,691,938	6,034,068	1,722,644	53,322,293
2006	15,712,135	1,115,094	2,055,379	4,744,000	4,147,033	4,408,751	932,782	7,704,241	5,735,465	1,549,881	54,783,348
2007	16,130,127	1,182,980	2,228,070	4,857,474	4,167,180	4,700,121	1,134,685	7,986,521	6,270,021	1,661,661	56,708,168
2008	13,637,658	1,217,909	2,332,665	4,770,328	4,500,568	4,448,516	1,028,958	7,939,338	5,764,628	1,835,587	54,189,515
2009	15,539,525	1,167,841	2,277,639	4,951,707	4,754,269	4,534,011	1,078,645	7,808,914	5,686,119	1,610,331	56,619,415
2010	17,134,743	1,171,479	2,337,303	5,121,309	4,862,446	5,032,446	1,084,112	8,456,976	5,708,080	1,848,933	60,213,505
2011	14,911,916	1,252,030	2,244,802	5,342,048	4,286,508	4,861,838	1,046,012	7,499,678	5,985,357	1,733,034	56,698,002

Year	FLE	GA	SC	NC	VA	MD	DE	NJ	NY	CT	Total
2012	12,484,575	1,203,499	2,246,289	5,213,798	3,691,229	5,305,747	993,915	7,494,545	6,025,864	1,803,043	53,379,850
2013	12,392,125	1,248,779	2,235,958	4,959,320	3,458,022	5,014,405	987,054	7,007,958	6,540,914	1,794,144	52,322,028
2014	13,951,616	1,293,328	2,370,957	4,992,389	3,132,458	4,356,191	897,871	6,753,250	6,890,827	1,755,323	52,678,563
2015	13,257,830	1,394,376	2,467,917	5,106,963	2,517,421	4,542,983	781,210	5,463,404	6,969,176	1,652,464	49,866,129
2016	12,649,234	1,400,927	2,701,373	5,000,966	2,698,605	4,291,495	650,404	4,975,293	7,185,055	1,666,999	48,415,684
2017	12,005,535	1,596,787	3,223,680	5,194,169	2,591,256	3,625,706	693,878	5,063,715	7,631,055	1,372,396	48,567,893
2018	14,943,936	1,632,333	2,410,254	4,427,392	2,239,368	2,837,506	707,659	4,721,397	4,955,873	1,460,023	45,096,292
2019	11,965,016	1,481,619	3,078,192	4,807,211	2,688,098	2,978,857	616,979	4,648,557	6,217,830	1,493,884	45,042,192

Table 13 continued. Recreational Fishing Effort (in angler trips) for South Atlantic anglers by state and year (MRIP). Red Snapper catch was not observed from any angler trips north of North Carolina (see Table 1).

Year	RI	MA	NH	ME	Total
1981	660,208	2,699,940	134,048	418,561	26,936,909
1982	707,765	2,646,333	233,137	387,610	30,781,569
1983	745,435	2,804,542	144,397	317,248	30,151,154
1984	651,900	2,523,576	153,961	349,268	31,319,471
1985	1,025,308	3,204,396	110,424	444,711	34,256,910
1986	814,735	2,717,288	191,556	499,799	35,694,576
1987	688,080	2,424,424	200,687	507,096	34,013,253
1988	726,884	2,287,266	213,279	516,736	32,256,586
1989	740,847	2,163,958	208,039	620,994	32,776,750
1990	800,406	2,267,444	207,333	619,049	33,203,617
1991	729,243	2,319,146	197,872	586,910	33,899,158
1992	687,569	2,428,291	198,848	477,747	34,599,446

Year	RI	MA	NH	ME	Total
1993	648,739	2,572,893	220,257	523,724	36,219,798
1994	702,663	2,854,343	243,041	532,208	36,691,230
1995	717,750	2,680,035	266,527	588,848	35,817,887
1996	822,256	2,879,541	258,169	553,582	37,344,009
1997	892,239	3,221,396	270,364	682,300	39,701,162
1998	1,012,130	3,453,204	271,789	643,608	40,097,320
1999	1,125,057	3,591,954	305,425	678,652	42,071,041
2000	1,180,660	3,901,669	303,374	803,312	47,202,001
2001	1,257,371	4,197,246	325,434	812,437	47,443,786
2002	1,241,231	4,376,576	339,112	913,211	49,084,121
2003	1,181,489	4,037,046	353,664	923,851	51,182,115
2004	1,345,309	3,941,771	357,671	935,290	50,826,634
2005	1,245,128	4,005,472	375,148	901,878	53,322,293
2006	1,086,261	4,136,062	370,856	1,085,408	54,783,348
2007	1,025,835	4,030,180	438,425	894,888	56,708,168
2008	1,085,944	4,152,323	410,439	1,064,654	54,189,515
2009	1,116,000	4,698,839	420,988	974,587	56,619,415
2010	1,019,169	5,178,071	377,864	880,574	60,213,505
2011	1,285,468	4,917,900	416,518	914,893	56,698,002
2012	1,068,894	4,607,092	430,669	810,691	53,379,850
2013	1,156,599	4,157,945	517,833	850,972	52,322,028
2014	1,109,409	3,932,508	504,895	737,541	52,678,563
2015	1,359,793	3,180,748	489,357	682,487	49,866,129
2016	874,458	3,164,117	476,109	680,649	48,415,684
2017	809,753	3,613,874	480,634	665,455	48,567,893
2018	1,016,816	2,802,586	337,039	604,110	45,096,292
2019	1,418,502	2,709,987	349,477	587,983	45,042,192

Table 14. Recreational Fishing Effort (in angler trips) for South Atlantic anglers by mode and year (MRIP). MRIP Headboat estimates are included from Virginia to Maine, though no Red Snapper catch was not observed from any angler trips north of North Carolina (see Table 1).

Year	Cbt	Cbt/Hbt	Hbt	Priv	Total
1981	415,994	2,675,775		23,845,140	26,936,909
1982	438,618	3,948,081		26,394,869	30,781,568
1983	490,020	3,086,778		26,574,356	30,151,154
1984	569,709	2,194,594		28,555,168	31,319,471
1985	585,830	2,199,145		31,471,934	34,256,909
1986	665,307	2,555,264		32,474,004	35,694,575
1987	573,922	1,749,097		31,690,235	34,013,254
1988	526,844	1,799,234		29,930,508	32,256,586
1989	584,673	1,599,779		30,592,299	32,776,751
1990	505,299	1,684,311		31,014,006	33,203,616
1991	418,189	1,856,123		31,624,846	33,899,158
1992	451,955	1,566,647		32,580,845	34,599,447
1993	463,765	2,195,281		33,560,753	36,219,799
1994	479,332	1,855,960		34,355,938	36,691,230
1995	473,223	1,973,135		33,371,527	35,817,885
1996	474,841	1,652,562		35,216,605	37,344,008
1997	476,893	1,733,223		37,491,047	39,701,163
1998	473,875	1,481,991		38,141,454	40,097,320
1999	462,059	1,452,480		40,156,499	42,071,038
2000	394,486	1,530,369		45,277,147	47,202,002
2001	444,747	1,601,931		45,397,107	47,443,785
2002	510,894	1,436,232		47,136,997	49,084,123
2003	498,200	1,579,900		49,104,015	51,182,115
2004	1,222,739		674,260	48,929,635	50,826,634
2005	1,436,443		767,540	51,118,309	53,322,292
2006	1,200,111		649,374	52,933,863	54,783,348
2007	1,666,194		971,084	54,070,891	56,708,169
2008	1,207,701		871,784	52,110,029	54,189,514
2009	1,212,634		790,333	54,616,449	56,619,416
2010	963,387		580,114	58,670,006	60,213,507
2011	1,169,790		600,817	54,927,395	56,698,002
2012	1,090,742		628,596	51,660,512	53,379,850
2013	1,249,327		968,396	50,104,303	52,322,026
2014	1,279,877		831,745	50,566,939	52,678,561
2015	1,425,231		696,087	47,744,811	49,866,129
2016	955,223		470,309	46,990,152	48,415,684
2017	1,022,546		596,982	46,948,363	48,567,891
2018	1,034,747		535,555	43,525,991	45,096,293
2019	1,167,626		598,715	43,275,850	45,042,191

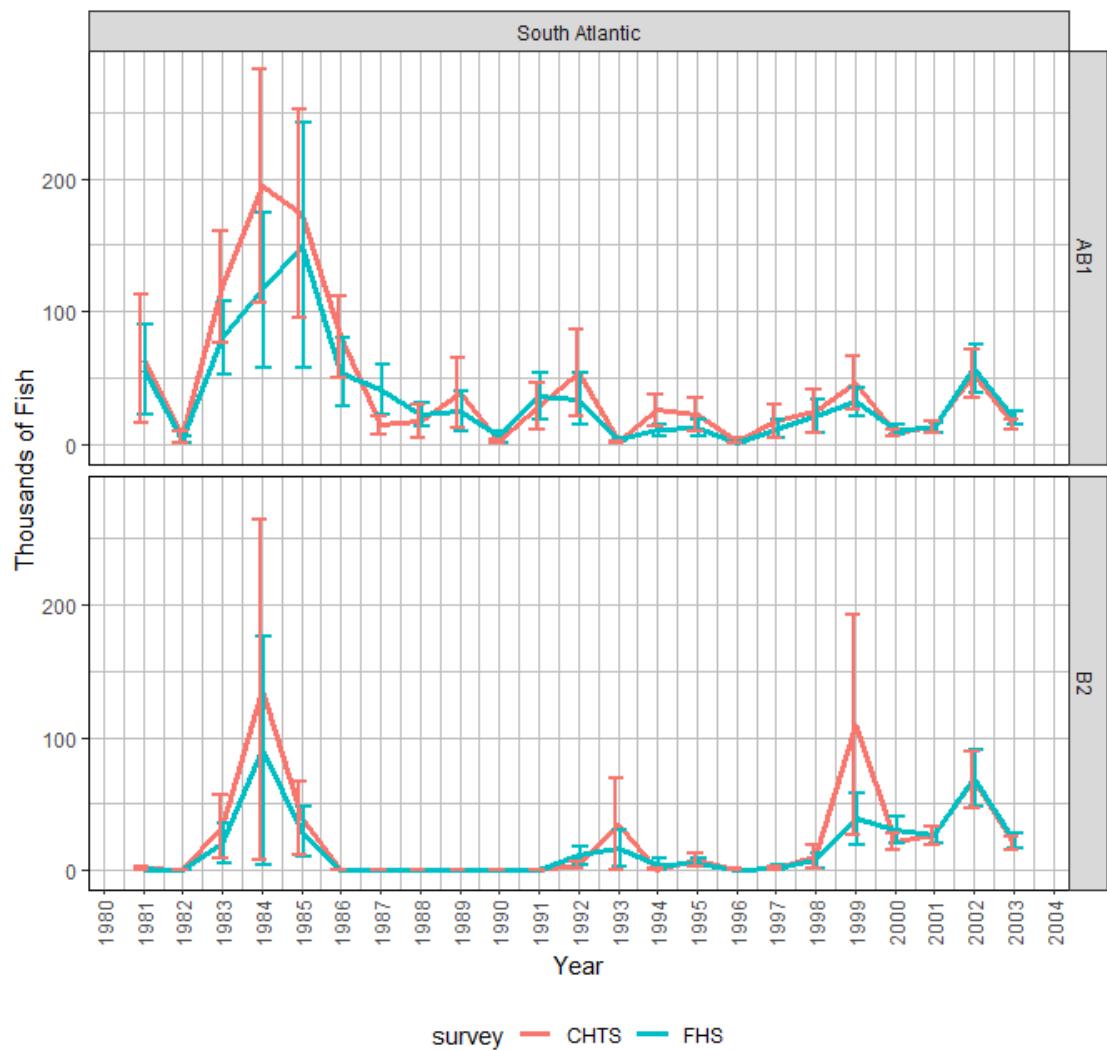


Figure 1. Comparison of charterboat landings (AB1) and discard (B2) estimates (with standard error intervals shown) for Red Snapper from the Coastal Household Telephone Survey (CHTS) and For-Hire Survey (FHS) from the South Atlantic between 1981 to 2003. The charterboat calibration approach is discussed in Dettloff and Matter (2019; SEDAR64-RD-12).

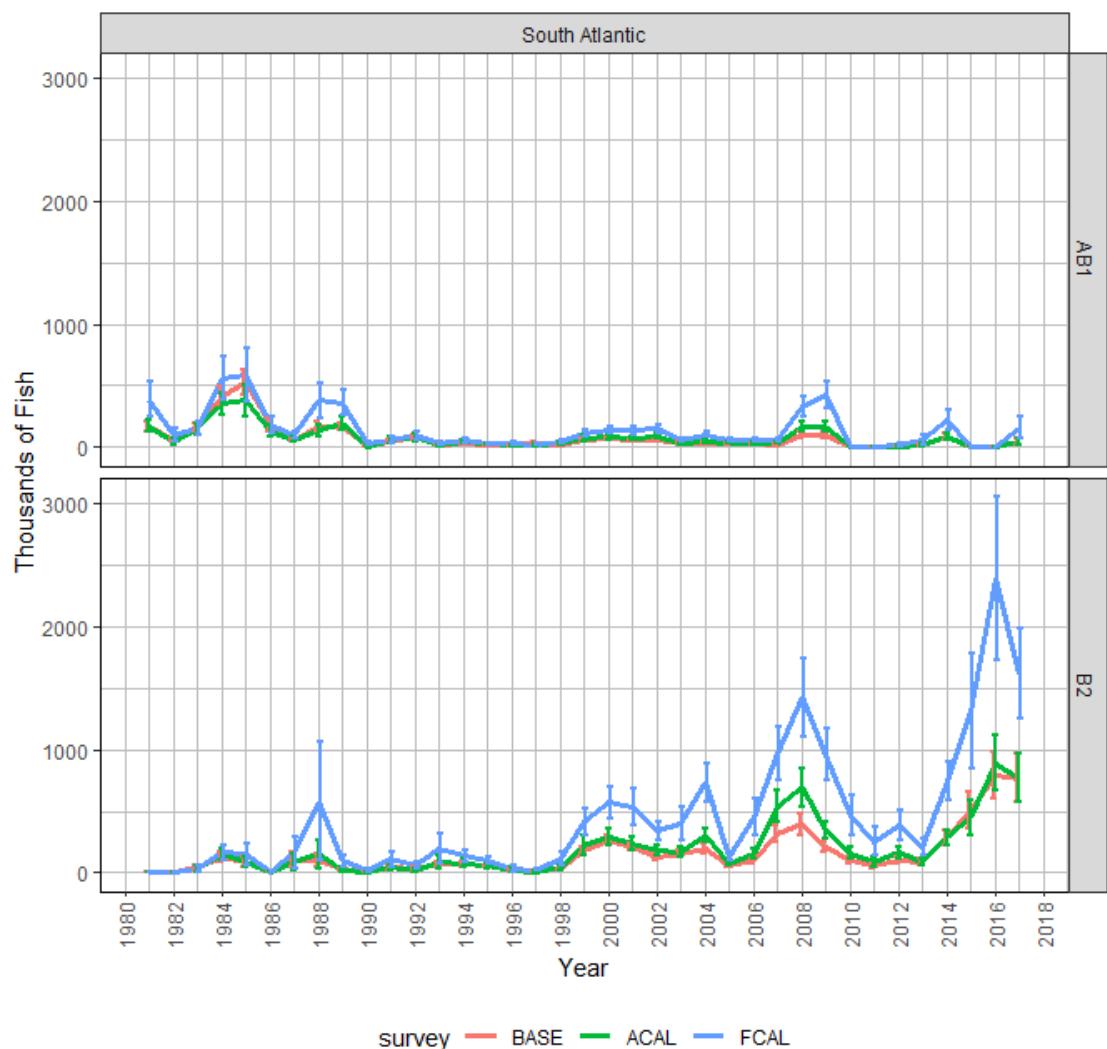


Figure 2. MRIP Base (BASE), APAIS Calibrated (ACAL), and Fully Calibrated APAIS and FES (FCAL) catch estimates for Red Snapper in the Atlantic. Landings (AB1) and discard (B2) estimates are in thousands of fish (NMFS).

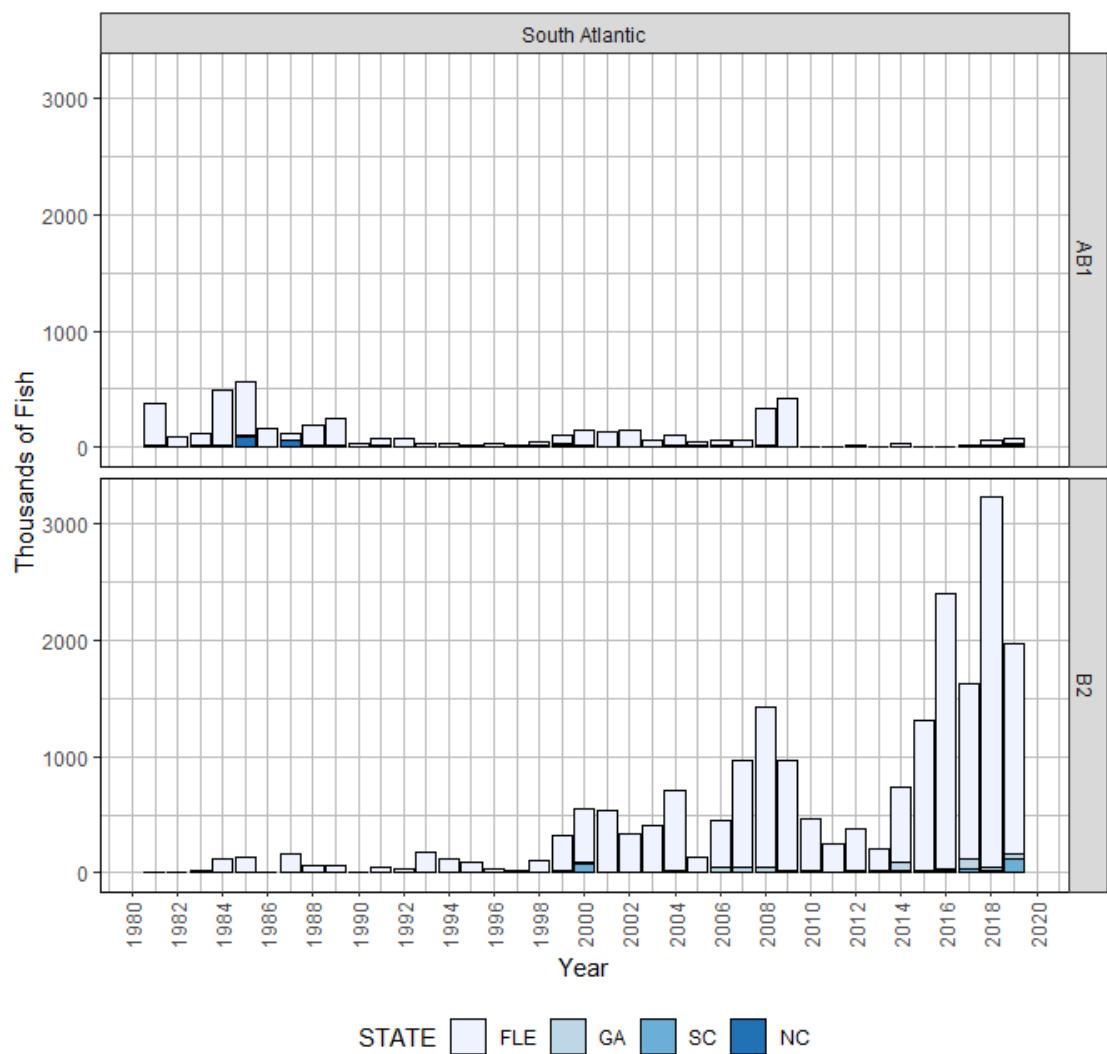


Figure 3. Annual Red Snapper landings (AB1) and discards (B2), in thousands of fish, by state from 1981 to 2019 (MRIP, FWC, GADNR, SCDNR, NCDMF).

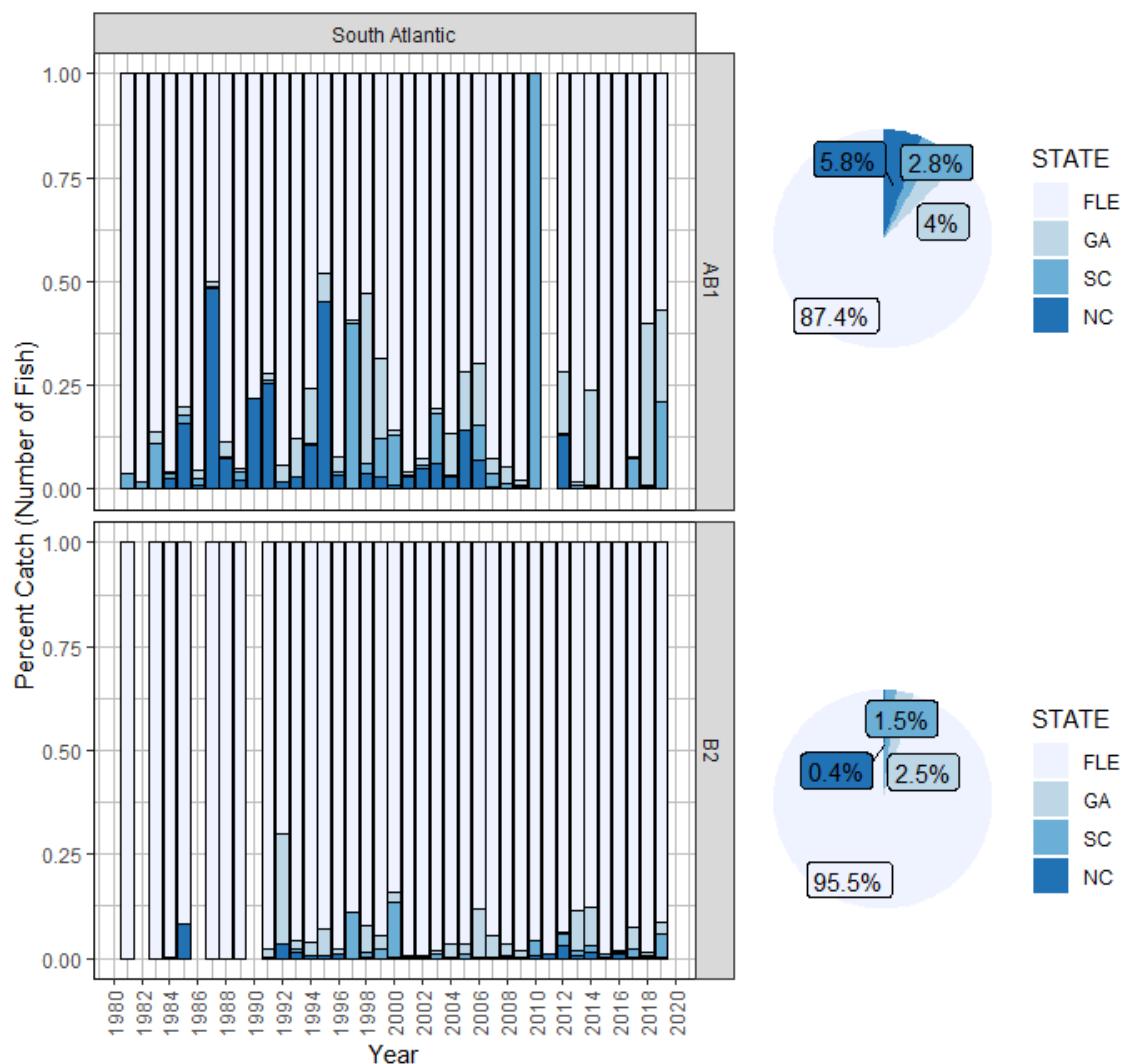


Figure 3a. Percent of Red Snapper landings (AB1) and discards (B2), in numbers of fish, from each state by year (bar graph) and overall (pie chart) between 1981 and 2019 (MRIP, FWC, GADNR, SCDNR, NCDMF).

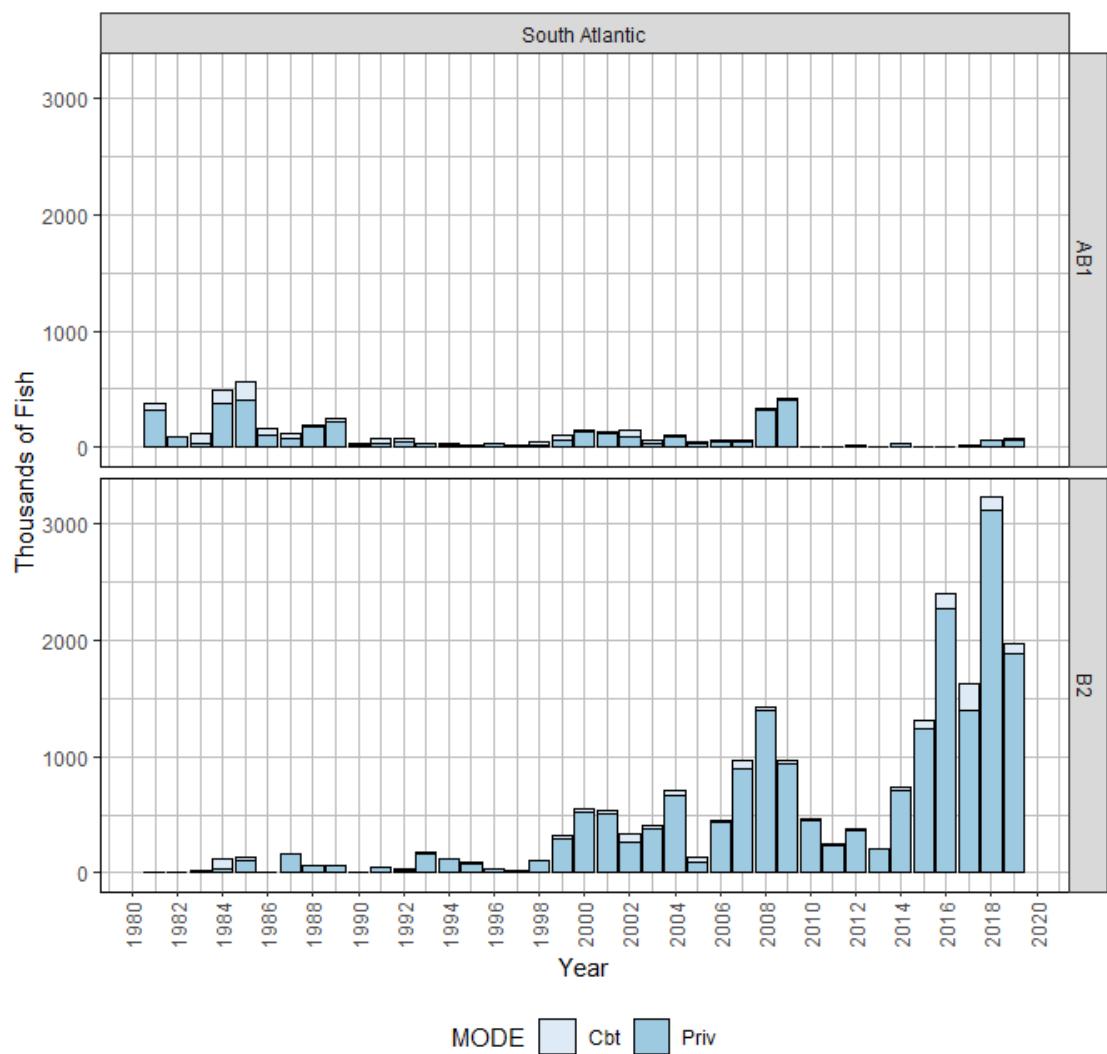


Figure 4. Annual Red Snapper landings (AB1) and discards (B2), in thousands of fish, by mode from 1981 to 2019 (MRIP, FWC, GADNR, SCDNR, NCDMF).

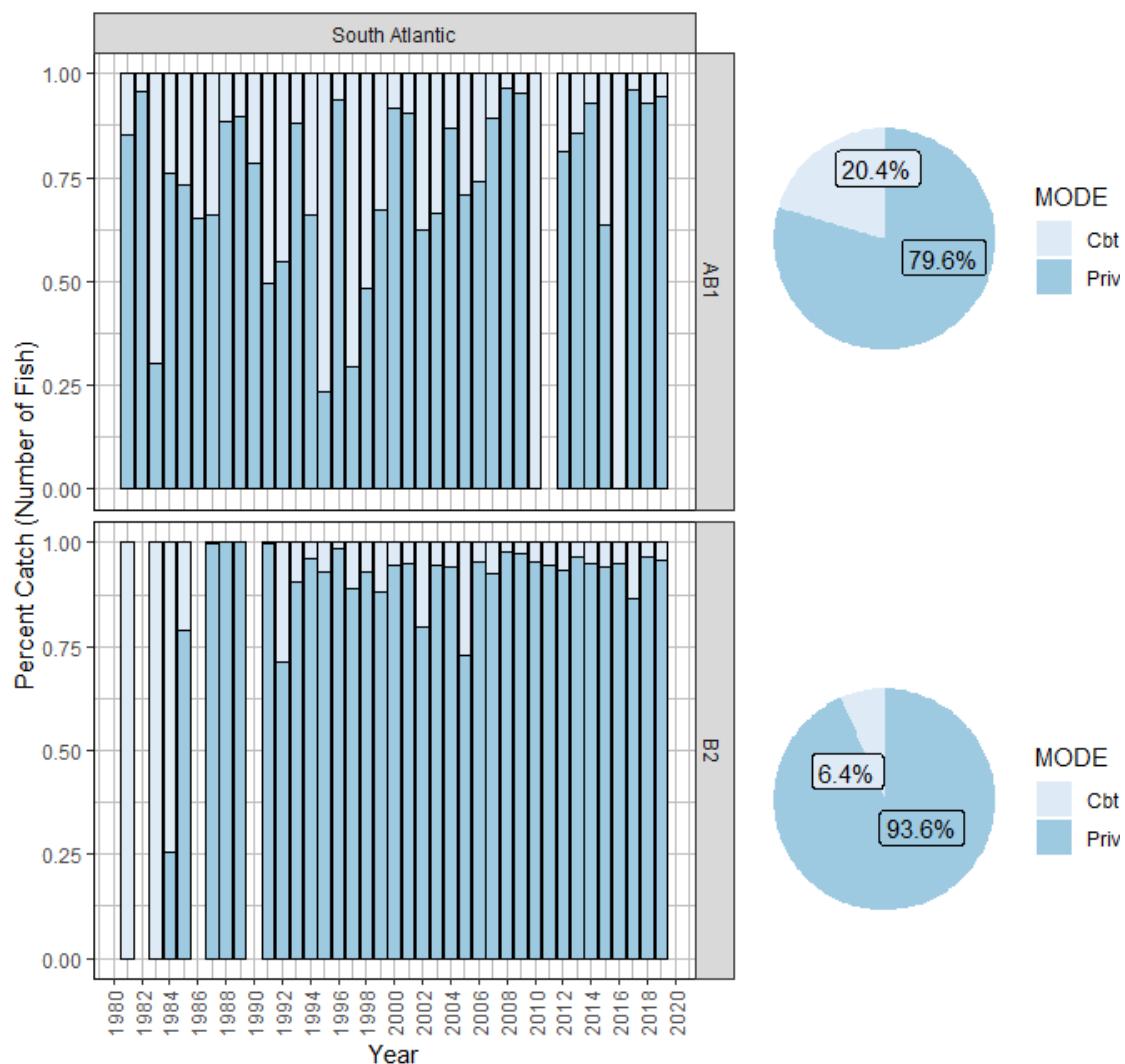


Figure 4a. Percent of Red Snapper landings (AB1) and discards (B2), in numbers of fish, from each mode by year (bar graph) and overall (pie chart) between 1981 and 2019 (MRIP, FWC, GADNR, SCDNR, NCDMF).

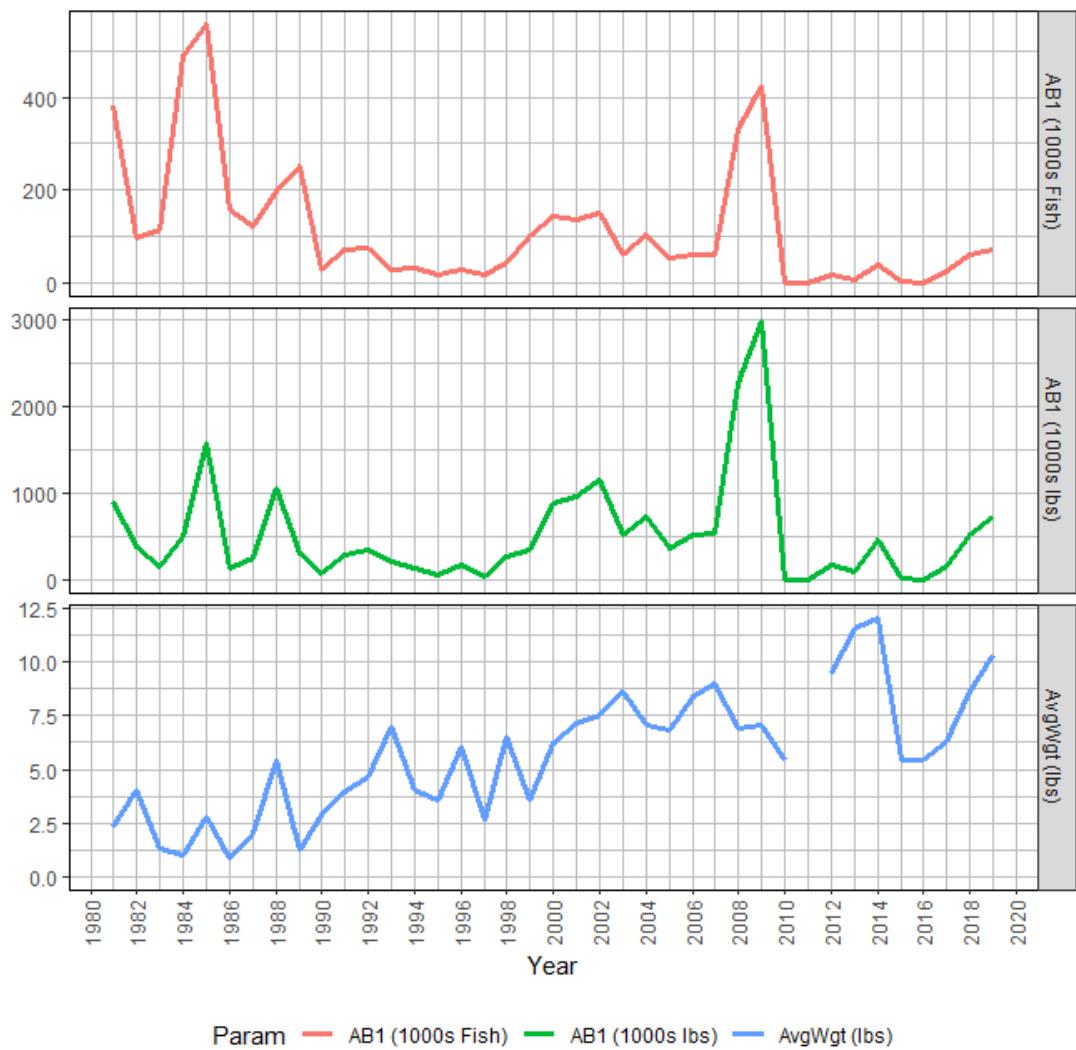


Figure 5. Estimates of annual landings for Red Snapper in the South Atlantic, as estimated from MRIP, FWC, GADNR, SCDNR, NCDMF: estimated landings in thousands of fish (top), estimated landings in thousands of pounds whole weight (middle), and average weight of landed fish (estimated lbs/estimated fish) (bottom). Average weight estimates for MRIP, GADNR, SCDNR, and NCDMF catch estimates (in numbers) 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 2019). Weight estimates for FWC catch are provided by the survey.