

# Recreational Survey Data for Southeast Yellowtail Snapper

Vivian M. Matter and Richard C. Jones

SEDAR64-DW-12

26 June 2019

Updated: 15 August 2019

Updated: 28 August 2019



*This information is distributed solely for the purpose of pre-dissemination peer review. It does not represent and should not be construed to represent any agency determination or policy.*

Please cite this document as:

Matter, Vivian M. and Richard C. Jones. 2019. Recreational Survey Data for Southeast Yellowtail Snapper. SEDAR64-DW-12. SEDAR, North Charleston, SC. 23 pp.

**Recreational Survey Data for Southeast Yellowtail Snapper**

by Vivian M. Matter and Richard C. Jones

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

June 26, 2019

Updated August 28, 2019

Recreational catch estimates for Yellowtail Snapper are presented from the following separate sampling programs:

1. Marine Recreational Information Program (MRIP)
2. Texas Parks and Wildlife Department (TPWD)
3. Louisiana Creel survey program (LA Creel)

**Marine Recreational Information Program**

*Introduction*

The Marine Recreational Information Program (MRIP), formerly the Marine Recreational Fisheries Statistics Survey, conducted by the NOAA Marine Fisheries Service (NMFS) provides estimated catch per unit effort, total effort, landings, and discards for six two-month periods (waves) per year. MRIP provides estimates for three main recreational fishing modes: shore-based fishing (SH), private and rental boat fishing (PR), and for-hire charter and guide fishing (CH). MRIP also provides estimates for headboat mode (HB) in the mid and north Atlantic regions. When the survey first began in Wave 2 (Mar/Apr), 1981, headboats were included in a combined for-hire mode in the South Atlantic and Gulf of Mexico. , but were excluded from the survey after 1985 to avoid overlap with the Southeast Region Headboat Survey (SRHS) conducted by the NMFS Beaufort, NC lab. MRIP covers coastal Atlantic states from Maine to Florida and Gulf of Mexico states from Florida to Louisiana. MRIP coverage of Louisiana in MRIP ceased in 2014. Sampling is not conducted in Wave 1 (Jan/Feb) north of Florida because fishing effort is very low or non-existent, with the exception of NC, where wave 1 has been sampled since 2006.

Catch data are collected through dockside angler interviews in the Access Point Angler Intercept Survey (APAIS), which samples recreational fishing trips after they have been completed. Catch rates from dockside intercept surveys are combined with estimates of effort from telephone interviews to estimate

total landings and discards by wave, mode, and area fished (inland, state, and federal waters). Catch estimates from the early years of the survey are highly variable with high proportional standard errors (PSE's), and sample sizes in the dockside intercept portion have been increased over time to improve precision of catch estimation.

Discarded live fish are reported by the anglers interviewed by the MRIP. Consequently, neither the identity nor the quantities reported are verified. Discarded fish size is unknown for all modes of fishing covered by MRIP. Consequently, size or weight of discarded fish is not estimated by the MRIP.

#### *Survey methodology changes*

Until 2013, recreational catch, effort, and participation were estimated through a suite of independent but complementary surveys. Effort data were collected using two telephone surveys: (1) the Coastal Household Telephone Survey (CHTS) which used random digit dialing of coastal households to obtain detailed information about the previous two months of recreational fishing trips from the anglers and (2) the weekly For-Hire Survey (FHS) which interviews charterboat operators (captains or owners) to obtain the trip information with only one-week recall period.

In the Atlantic coast charter effort estimation changed in 2004 from the CHTS to the FHS. In order to maintain a consistent time series of charter estimates, charter estimates were calibrated for the Gulf of Mexico prior to 2000 and on the Atlantic coast prior to 2004 (Detloff and Matter, 2019). Figure 1 shows the CHTS and calibrated FHS charter catch estimates for Yellowtail Snapper from 1981 to 1999 for the Gulf of Mexico and 1981 to 2003 for the South Atlantic.

In 2013, MRIP implemented a new Access Point Angler Intercept Survey to remove sources of potential bias from the sampling process. Then, in 2015, MRIP launched a new household Fishing Effort Survey to improve efficiency and minimize the risk of error in private boat and shore effort estimates (NOAA Fisheries 2018). Figures 2 and 3 show the calibrated APAIS and FES catch estimates for Gulf of Mexico and South Atlantic Yellowtail Snapper from 1981 to 2017. Full documentation on improved survey methods and calibrations are available on the MRIP website at:

<https://www.fisheries.noaa.gov/topic/recreational-fishing-data>.

#### *Domain estimation*

Separate estimates for the five FHS regions in Florida are obtained using domain estimation. Each domain includes only intercepted trips returning to that FHS region as identified in the intercept survey data. Estimates are then calculated within this domain using standard design-based estimation which incorporates the MRIP design stratification, clustering, and sample weights.

#### *Variances*

Estimate variances are calculated at the SEFSC on a case-by-case basis reflecting the nature of the data being queried. Calculations appropriate survey variance from raw intercept data depending on the

strata and/or domain aggregation of interest. By this method, coefficients of variance (CVs) are applied to specific estimates as a result of their respective parameters.

### **Texas Parks and Wildlife Department**

The TPWD Sport-boat Angling Survey was implemented in May 1983 and samples fishing trips made by sport-boat anglers fishing in Texas marine waters. All sampling takes place at recreational boat access sites. The raw data include information on catch, effort and length composition of the catch for sampled boat-trips. These data are used by TPWD to generate recreational catch and effort estimates. The survey is designed to estimate landings and effort by high-use (May 15-November 20) and low-use seasons (November 21-May 14). In SEDAR 16 TPWD seasonal data was disaggregated into months. Since then SEFSC personnel has disaggregated the TPWD seasonal estimates into waves (2 month periods) using the TPWD intercept data. This was done to make the TPWD time series compatible with the MRIP time series. TPWD surveys private and charterboat fishing trips. While TPWD samples all trips (private, charterboat, ocean, bay/pass), most of the sampled trips are associated with private boats fishing in bay/pass, as these trips represent most of the fishing effort. Charterboat trips in ocean waters are the least encountered in the survey.

The TPWD survey does not estimate discards. Due to extremely low catches of Yellowtail Snapper in the Texas region (469 landed fish between 1983 and 2018), TPWD discards were assumed to be zero for charter and private Yellowtail Snapper in Texas.

### **Louisiana Creel Survey**

The Louisiana Department of Wildlife and Fisheries (LDWF) began conducting the Louisiana Creel (LA Creel) survey program for monitoring marine recreational fishery catch and effort on January 1, 2014. Private and charter modes of fishing are sampled. The program is comprised of three separate surveys: a shoreside intercept survey, a private telephone survey, and a for-hire telephone survey. The shoreside survey is used to collect data needed to estimate the mean numbers of fish landed by species for each of five different inshore basins and one offshore area. The private telephone survey samples from a list of people who possess either a LA fishing license or a LA offshore fishing permit and provided a valid telephone number. The for-hire telephone survey samples from a list of Louisiana's registered for-hire captains who provided a valid telephone number. Both telephone surveys are conducted weekly.

LA Creel landings estimates were used starting in 2014 due to the lack of MRIP survey coverage in LA beginning in that year. Yellowtail Snapper landings are extremely low in the LA Creel survey (308 fish between 2014 and 2017). LA Creel began collecting data on discards as of 2016, though no discarded Yellowtail Snapper appear in the survey since 2016.

### **Recreational Survey Integration**

#### *Coverage overlap with the Southeast Region Headboat Survey*

In the South Atlantic and Gulf of Mexico, 1981-1985 MRIP charter and headboat modes were combined into one single mode for estimation purposes. This combined charter/headboat mode can be split in these years by using a ratio of SRHS headboat angler trip estimates to MRIP charterboat angler trip estimates for 1986-1990. The mean ratio was calculated by state (or state equivalent to match SRHS areas to MRIP states) and then applied to the 1981-1985 estimates to separate out the headboat component.

Since the NMFS Southeast Region Headboat Survey (SRHS) began in the South Atlantic in 1981, the headboat component is excluded in the South Atlantic to avoid duplicating coverage of the headboat mode for these years. The MRIP headboat component in the Gulf of Mexico is retained in the dataset since the SRHS did not begin in this region until 1986.

#### *Weight estimation*

The Southeast Fisheries Science Center used the MRIP sample data to obtain an average weight by strata using the following hierarchy: species, region, year, state, mode, wave, and area (SEDAR32-DW-02). The minimum number of weights used at each level of substitution is 30 fish, except for the final species level, where the minimum is 1 fish. Average weights are then multiplied by the landings estimates from all general recreational surveys (MRIP, TPWD, and LA Creel) in numbers to obtain estimates of landings in weight. These estimates are provided in pounds whole weight.

#### *Yellowtail Snapper regions*

Yellowtail Snapper regions are unique geographic areas delineating proportional trends in historically observed landings of Yellowtail Snapper, as defined by the data compilation guidelines for SEDAR 64. There are a total of 7 of these regions ranging from YS0 to YS6. YS0 includes all states west of Florida (Alabama, Mississippi, Louisiana, and Texas). YS1 contains the Florida panhandle, from Escambia south to Dixie County, and includes FHS survey area 1. YS2 is southwestern Florida, from Levy to Collier County, and includes FHS survey area 2. YS3 contains most of the Florida Keys and Monroe County (with the exception of the Dry Tortugas) and FHS survey area 3. YS4 is southeastern Florida, from Miami-Dade north to Indian River County, and includes FHS survey area 4. YS5 is northeastern Florida, from Brevard north to Nassau County, and includes FHS survey area 5. The final region, YS6, includes all states north of Florida with recorded landings of Yellowtail Snapper (Georgia, South Carolina, and North Carolina).

#### *Catch Estimates*

Catch estimates presented use the fully calibrated MRIP estimates, which account for the changes in the survey previously described (FES/APAIS/FHS). Southeast Yellowtail Snapper catch estimates from MRIP, TPWD, and LA Creel were combined and are presented below by Yellowtail Snapper region. Table 1 and Figure 4 show the landings and discards for Yellowtail Snapper by Yellowtail Snapper regions. Table 2 and Figure 5 show the landings and discards by fishing mode. CVs for Yellowtail Snapper landing and discard estimates by Yellowtail Snapper region are shown in Tables 3 and 4, respectively. Table 5 shows the landings for Yellowtail Snapper in whole weight, pounds.

Private mode fishing accounts for the largest portion of Yellowtail Snapper catch across all regions. By far, the region with the greatest recreational Yellowtail Snapper catch estimates is the Florida Keys (YS region 3; see Figure 4). Figure 6 removes the Florida Keys in order to more easily see the trends in the other Yellowtail Snapper regions. Figure 7 shows the landings estimates by number and weight and the yearly average weight of estimated landed Yellowtail Snapper in pounds.

In 1991 there is a large estimate of Yellowtail Snapper discards from the Florida Keys. This is mainly coming from the private mode. The large estimates, however, do not come from a single wave or area fished. This suggests that the spike in discards is not the result of one or two unusual intercepts which show many discards. In addition, effort estimates from the Florida Keys greatly increased in 1991.

#### *Size Data*

Summary statistics, including sample size, mean, minimum, and maximum values for MRIP Yellowtail Snapper lengths and weights are shown in Tables 6 and 7, respectively. These tables cover Yellowtail Snapper regions 1 through 5, which covers the state of Florida. The same is shown for the regions to the West and North of Florida in Table 8. The longest Yellowtail Snapper lengths and greatest weights were intercepted in the Florida Keys.

#### *Effort Estimates*

MRIP effort estimates are presented by Yellowtail Snapper region and mode in Tables 9 and 10, respectively. Effort estimates are shown in angler trips and are not specific to Yellowtail Snapper. An angler-trip is a single day of fishing in the specified mode, not to exceed 24 hours.

## **Literature Cited**

Matter, V.M. and A. Rios 2013. SEDAR 32-DW02 MRFSS to MRIP Adjustment Ratios and Weight Estimation Procedures for South Atlantic and Gulf of Mexico Managed Species. National Marine Fisheries Service Southeast Fisheries Science Center, Fisheries Statistics Division, Miami, FL., National Marine Fisheries Service Southeast Fisheries Science Center, Sustainable Fisheries Division, Miami, FL.

Dettloff, K. and V.M. Matter 2019. SEDAR61-WP19: Model-estimated conversion factors for calibrating Coastal Household Telephone Survey (CHTS) charterboat catch and effort estimates with For-Hire Survey estimates in the Atlantic and Gulf of Mexico with application to red grouper and greater amberjack. National Marine Fisheries Service Southeast Fisheries Science Center, Fisheries Statistics Division, Miami, FL., National Marine Fisheries Service Southeast Fisheries Science Center, Sustainable Fisheries Division, Miami, FL.

**Table 1.** Number of Yellowtail Snapper landings (AB1) and discards (B2) by year and Yellowtail Snapper (YS) region in numbers of whole fish (MRIP, LACreel, TPWD)

YEAR	W of FL YS Reg 0		NW FL YS Reg 1		SW FL YS Reg 2		FL Keys YS Reg 3		SE FL YS Reg 4		NE FL YS Reg 5		N of FL YS Reg 6			
	AB1	B2	AB1	B2	AB1	B2	AB1	B2	AB1	B2	AB1	B2	AB1	B2		
1981	1,074	0			0	20,827	4,074,180	269,959	1,299,899	643,003			0	33,661		
1982					252	0	4,560,184	962,218	1,624,554	76,493	6,187	83,500	24,715	43,549		
1983					15,073	4,952	1,199,459	461,700	393,075	111,274	15,670	3,105				
1984					12,801	766	3,910,848	3,715,130	173,474	82,512	72	0				
1985	5,766	0	77,869	28,955	1,069	0	905,235	200,450	794,865	92,205	203	0				
1986	29	634	1,753	3,445			967,944	526,285	505,415	520,925						
1987			18,307	88,405	22,568	7,874	1,036,488	1,686,591	85,024	320,463						
1988					3,322	0	944,308	1,107,183	190,309	9,620						
1989	41				0	1,530	7,454	809	4,545,713	2,996,331	132,506	108,860	18	0		
1990	42						0	3,817	3,244,008	1,573,892	196,752	402,542	109	0		
1991					22,627	17,064	4,002,139	13,067,494	185,442	476,222						
1992					52,760	93,220	697,081	2,468,041	216,960	844,919	2,781	0	501	0		
1993					36,247	87,134	1,413,803	4,054,449	514,001	635,846	898	2,358	363	0		
1994					11,092	45,390	1,054,567	2,384,552	225,731	385,565	10,299	0				
1995					0	8,545	1,714,527	2,897,975	145,419	405,278						
1996					0	27,104	760,415	2,918,254	110,943	336,919			0	4,233		
1997	87	0			1,122	148,972	703,325	3,110,494	77,412	225,634	4,115	0				
1998	114				1,445	63,403	714,747	2,099,948	151,564	272,419	10,817	0	12,336	0		
1999					48,023	175,776	475,459	1,490,951	122,797	401,442	13,265	12,770				
2000					4,070	13,951	524,983	1,337,014	182,505	415,831	10,884	14,514	195	550		
2001					10,357	99,127	413,637	782,475	88,335	215,046	9,274	3,517				
2002					8,905	72,851	841,618	937,609	90,988	243,234	10,474	5,479	254	0		
2003	54	0			9,017	15,990	1,356,296	1,449,880	120,454	332,172	5,800	1,508	4,581	0		
2004			26	0	30,725	10,993	1,080,375	2,005,649	348,007	489,058	636	0	102	0		
2005	184	0	25	0	36,684	259,438	230,070	971,304	328,372	417,565	14,484	0				
2006	299	0			69,711	120,415	919,036	1,944,655	525,740	596,674	12,602	2,701				
2007				0	6,299	16,068	45,747	925,816	2,757,224	597,207	659,141	41,260	13,119			
2008	164	0				4,242	22,136	1,993,374	2,662,844	353,699	550,141	199	0	115	0	
2009						27,485	13,632	555,846	1,441,073	341,873	938,950	280	720	293	0	
2010						10,448	5,185	560,700	1,217,365	274,958	300,529	3,428	3,421			
2011	34				28,963	19,166	409,552	1,451,390	181,000	195,052						
2012						93	7,424	681,903	1,422,206	228,910	246,003					
2013						3,634	5,114	1,270,448	3,645,258	449,502	1,236,829	46	98			
2014						9,159	34,460	681,226	3,010,249	1,215,990	1,044,952	350	2,613	251	0	
2015						47,869	31,010	659,207	1,403,570	614,965	1,274,690	0	2,277			
2016	104	0				14,809	14,417	813,370	1,001,077	695,874	523,481	538	546			
2017	204	0				305,114	114,511	839,252	1,670,375	400,484	487,968	5,447	1,968			
2018						0	74,051	50,630	658,794	1,513,459	960,244	1,151,028	3,462	45,240		
<b>TOTALS</b>	8,196	634	97,980	129,090	947,261	1,661,851	52,339,932	80,616,570	15,145,247	17,670,484	183,469	199,454	43,833	81,993		

**Table 2.** Yearly landings (AB1) and discards (B2) of Yellowtail Snapper (in numbers of fish) by fishing mode (MRIP, LACreel, TPWD).

YEAR	Charter Boat		Headboat		Private		Shore		YEARLY AB1 TOTALS	YEARLY B2 TOTALS
	AB1	B2	AB1	B2	AB1	B2	AB1	B2		
1981	47,753	2,291	17,339	1,433	4,193,973	370,439	1,116,088	593,287	5,375,153	967,450
1982	199,621	3,584	92,465	1,911	5,651,822	1,088,936	271,984	71,330	6,215,893	1,165,760
1983	126,671	28,154	56,988	17,609	1,113,853	467,036	325,765	68,230	1,623,277	581,030
1984	66,713	17,045	29,331	10,514	3,815,675	3,536,617	185,474	234,233	4,097,195	3,798,408
1985	49,751	519	24,973	0	1,570,766	215,981	139,517	105,110	1,785,007	321,611
1986	33,653	2,293			1,047,117	767,829	394,372	281,165	1,475,141	1,051,287
1987	58,040	44,491			1,088,170	1,612,069	16,177	446,772	1,162,387	2,103,332
1988	38,417	33,492			1,060,088	892,739	39,435	190,572	1,137,940	1,116,803
1989	24,823	5,439			4,591,482	2,372,095	69,426	729,995	4,685,731	3,107,529
1990	36,867	29,690			3,273,871	1,564,316	130,174	386,246	3,440,911	1,980,252
1991	67,906	272,343			4,036,275	11,691,255	106,028	1,597,182	4,210,209	13,560,780
1992	138,983	95,361			775,816	2,570,452	55,283	740,366	970,082	3,406,179
1993	82,836	18,722			1,795,887	3,675,978	86,590	1,085,088	1,965,313	4,779,787
1994	81,612	23,286			1,182,063	2,385,943	38,012	406,278	1,301,688	2,815,507
1995	36,696	13,648			1,758,399	2,879,031	64,851	419,119	1,859,946	3,311,798
1996	46,423	17,977			792,490	2,870,471	32,444	398,062	871,358	3,286,510
1997	29,015	16,680			743,325	3,175,409	13,721	293,010	786,061	3,485,100
1998	46,577	26,784			844,445	1,770,389	0	638,597	891,023	2,435,771
1999	35,249	15,224			613,354	1,868,764	10,942	196,951	659,544	2,080,940
2000	33,251	14,420			640,956	1,485,846	48,429	281,595	722,636	1,781,860
2001	70,234	56,729			448,160	736,512	3,209	306,923	521,603	1,100,164
2002	103,174	34,654			841,307	1,093,559	7,759	130,960	952,240	1,259,174
2003	108,190	59,385			1,372,642	1,408,416	15,369	331,750	1,496,200	1,799,551
2004	142,735	41,908			1,294,750	1,329,118	22,386	1,134,673	1,459,871	2,505,699
2005	141,520	45,697			424,258	1,133,593	44,043	469,017	609,821	1,648,308
2006	99,977	37,412			1,401,335	2,519,821	26,076	107,211	1,527,388	2,664,445
2007	191,167	69,574			1,367,273	2,864,653	21,911	547,303	1,580,351	3,481,530
2008	119,690	68,273			2,221,232	2,521,214	10,870	645,634	2,351,792	3,235,121
2009	105,873	55,092			814,183	1,535,050	5,721	804,233	925,777	2,394,375
2010	151,636	59,053			688,166	1,442,850	9,731	24,596	849,533	1,526,499
2011	113,308	78,621			506,240	768,575	0	818,412	619,549	1,665,608
2012	244,333	90,840			662,937	1,217,864	3,636	366,928	910,906	1,675,632
2013	329,207	124,702			1,354,854	3,896,488	39,569	866,107	1,723,631	4,887,298
2014	236,650	106,206			1,264,804	3,229,733	405,522	756,336	1,906,977	4,092,275
2015	354,653	111,562			941,561	1,787,122	25,826	812,863	1,322,040	2,711,547
2016	284,707	91,095			1,188,881	1,243,011	51,108	205,414	1,524,696	1,539,521
2017	249,458	70,578			1,263,261	1,168,905	37,781	1,035,340	1,550,500	2,274,822
2018	191,511	108,902			1,457,173	2,234,347	47,867	417,565	1,696,551	2,760,814
TOTALS	4,518,881	1,991,727	221,096	31,466	60,102,845	79,392,426	3,923,097	18,944,455	68,765,919	100,360,075

**Table 3.** Yellowtail Snapper landings (AB1) by numbers of fish per year with coefficients of variance (CV) for Yellowtail Snapper regions (MRIP).

Year	West of FL YS Region 0 AB1	West of FL YS Region 0 CV	NW FL YS Region 1 AB1	NW FL YS Region 1 CV	SW FL YS Region 2 AB1	SW FL YS Region 2 CV	FL Keys YS Region 3 AB1	FL Keys YS Region 3 CV	SE FL YS Region 4 AB1	SE FL YS Region 4 CV	NE FL YS Region 5 AB1	NE FL YS Region 5 CV	North of FL YS Region 6 AB1	North of FL YS Region 6 CV	Yearly Totals
1981	1,074	0.00	0	0.00	0	0.00	4,074,180	0.30	1,299,899	0.13	0	0.00	0	0.00	5,375,153
1982	0	0.00	0	0.00	252	1.00	4,560,184	0.29	1,624,554	0.02	6,187	1.00	24,715	0.00	6,215,892
1983	0	0.00	0	0.00	15,073	1.00	1,199,459	0.22	393,075	0.22	15,670	0.81	0	0.00	1,623,277
1984	0	0.00	0	0.00	12,801	0.64	3,910,848	0.45	173,474	0.10	72	1.00	0	0.00	4,097,195
1985	5,557	0.00	77,869	0.00	1,069	0.40	905,235	0.05	794,865	0.89	203	0.00	0	0.00	1,784,798
1986	0	0.00	1,753	1.00	0	0.00	967,944	0.51	505,415	0.71	0	0.00	0	0.00	1,475,112
1987	0	0.00	18,307	0.00	22,568	0.00	1,036,488	0.26	85,024	0.22	0	0.00	0	0.00	1,162,387
1988	0	0.00	0	0.00	3,322	0.78	944,308	0.17	190,309	0.23	0	0.00	0	0.00	1,137,939
1989	0	0.00	0	0.00	7,454	0.00	4,545,713	0.25	132,506	0.21	0	0.00	18	0.00	4,685,691
1990	0	0.00	0	0.00	0	0.00	3,244,008	0.46	196,752	0.11	0	0.00	109	0.00	3,440,869
1991	0	0.00	0	0.00	22,627	0.78	4,002,139	0.51	185,442	0.20	0	0.00	0	0.00	4,210,208
1992	0	0.00	0	0.00	52,760	0.70	697,081	0.25	216,960	0.25	2,781	1.00	501	0.00	970,083
1993	0	0.00	0	0.00	36,247	0.50	1,413,803	0.19	514,001	0.19	898	1.00	363	0.00	1,965,312
1994	0	0.00	0	0.00	11,092	0.81	1,054,567	0.16	225,731	0.17	10,299	0.44	0	0.00	1,301,689
1995	0	0.00	0	0.00	0	0.00	1,714,527	0.19	145,419	0.21	0	0.00	0	0.00	1,859,946
1996	0	0.00	0	0.00	0	0.00	760,415	0.19	110,943	0.23	0	0.00	0	0.00	871,358
1997	87	0.00	0	0.00	1,122	1.00	703,325	0.22	77,412	0.31	4,115	0.00	0	0.00	786,061
1998	0	0.00	0	0.00	1,445	0.56	714,747	0.29	151,564	0.24	10,817	0.00	12,336	0.34	890,909
1999	0	0.00	0	0.00	48,023	0.21	475,459	0.20	122,797	0.26	13,265	0.81	0	0.00	659,544
2000	0	0.00	0	0.00	4,070	0.83	524,983	0.41	182,505	0.22	10,884	0.57	195	0.00	722,637
2001	0	0.00	0	0.00	10,357	0.30	413,637	0.46	88,335	0.24	9,274	0.54	0	0.00	521,603
2002	0	0.00	0	0.00	8,905	0.01	841,618	0.16	90,988	0.17	10,474	0.31	254	0.00	952,239
2003	54	0.00	0	0.00	9,017	0.65	1,356,296	0.15	120,454	0.14	5,800	0.99	4,581	0.00	1,496,202
2004	0	0.00	26	0.00	30,725	0.46	1,080,375	0.46	348,007	0.22	636	0.00	102	0.00	1,459,871
2005	184	0.00	25	0.00	36,684	0.39	230,070	0.40	328,372	0.11	14,484	0.96	0	0.00	609,819
2006	299	0.00	0	0.00	69,711	0.21	919,036	0.36	525,740	0.11	12,602	0.94	0	0.00	1,527,388
2007	0	0.00	0	0.00	16,068	0.53	925,816	0.40	597,207	0.13	41,260	1.00	0	0.00	1,580,351
2008	164	0.00	0	0.00	4,242	0.25	1,993,374	0.31	353,699	0.21	199	0.00	115	0.00	2,351,793
2009	0	0.00	0	0.00	27,485	0.58	555,846	0.23	341,873	0.20	280	0.00	293	0.00	925,777
2010	0	0.00	0	0.00	10,448	1.00	560,700	0.18	274,958	0.16	3,428	1.00	0	0.00	849,534
2011	0	0.00	0	0.00	28,963	0.00	409,552	0.24	181,000	0.26	0	0.00	0	0.00	619,515
2012	0	0.00	0	0.00	93	0.00	681,903	0.38	228,910	0.18	0	0.00	0	0.00	910,906
2013	0	0.00	0	0.00	3,634	0.00	1,270,448	0.12	449,502	0.07	46	0.00	0	0.00	1,723,630
2014	0	0.00	0	0.00	9,159	0.26	681,226	0.12	1,215,990	0.12	350	0.76	251	0.00	1,906,976
2015	0	0.00	0	0.00	47,869	0.10	659,207	0.13	614,965	0.16	0	0.00	0	0.00	1,322,041
2016	0	0.00	0	0.00	14,809	0.07	813,370	0.16	695,874	0.13	538	0.00	0	0.00	1,524,591
2017	0	0.00	0	0.00	305,114	0.11	839,252	0.19	400,484	0.16	5,447	0.00	0	0.00	1,550,297
2018	0	0.00	0	0.00	74,051	0.03	658,794	0.21	960,244	0.19	3,462	0.97	0	0.00	1,696,551
<b>TOTALS</b>	<b>7,419</b>		<b>97,980</b>		<b>947,259</b>		<b>52,339,933</b>		<b>15,145,249</b>		<b>183,471</b>		<b>43,833</b>		<b>68,765,144</b>

**Table 4.** Yellowtail Snapper discards (B2) by numbers of fish per year with coefficients of variance (CV) for Yellowtail Snapper regions (MRIP).

Year	West of FL YS Region 0 B2	West of FL YS Region 0 CV	NW FL YS Region 1 B2	NW FL YS Region 1 CV	SW FL YS Region 2 B2	SW FL YS Region 2 CV	FL Keys YS Region 3 B2	FL Keys YS Region 3 CV	SE FL YS Region 4 B2	SE FL YS Region 4 CV	NE FL YS Region 5 B2	NE FL YS Region 5 CV	North of FL YS Region 6 B2	North of FL YS Region 6 CV	Yearly Totals
1981	0	0.00	0	0.00	20,827	0.82	269,959	0.24	643,003	0.22	0	0.00	33,661	0.36	967,450
1982	0	0.00	0	0.00	0	0.00	962,218	0.26	76,493	0.07	83,500	0.62	43,549	0.00	1,165,760
1983	0	0.00	0	0.00	4,952	0.00	461,700	0.72	111,274	0.20	3,105	0.00	0	0.00	581,031
1984	0	0.00	0	0.00	766	1.00	3,715,130	0.39	82,512	0.24	0	0.00	0	0.00	3,798,408
1985	0	0.00	28,955	0.00	0	0.00	200,450	0.00	92,205	0.26	0	0.00	0	0.00	321,610
1986	634	0.00	3,445	1.00	0	0.00	526,285	0.50	520,925	0.32	0	0.00	0	0.00	1,051,289
1987	0	0.00	88,405	0.59	7,874	0.00	1,686,591	0.25	320,463	0.34	0	0.00	0	0.00	2,103,333
1988	0	0.00	0	0.00	0	0.00	1,107,183	0.27	9,620	0.41	0	0.00	0	0.00	1,116,803
1989	0	0.00	1,530	1.00	809	1.00	2,996,331	0.30	108,860	0.14	0	0.00	0	0.00	3,107,530
1990	0	0.00	0	0.00	3,817	0.00	1,573,892	0.17	402,542	0.18	0	0.00	0	0.00	1,980,251
1991	0	0.00	0	0.00	17,064	0.71	13,067,494	0.21	476,222	0.16	0	0.00	0	0.00	13,560,780
1992	0	0.00	0	0.00	93,220	0.69	2,468,041	0.15	844,919	0.11	0	0.00	0	0.00	3,406,180
1993	0	0.00	0	0.00	87,134	0.66	4,054,449	0.12	635,846	0.23	2,358	0.73	0	0.00	4,779,787
1994	0	0.00	0	0.00	45,390	0.90	2,384,552	0.19	385,565	0.21	0	0.00	0	0.00	2,815,507
1995	0	0.00	0	0.00	8,545	1.00	2,897,975	0.17	405,278	0.16	0	0.00	0	0.00	3,311,798
1996	0	0.00	0	0.00	27,104	0.62	2,918,254	0.08	336,919	0.16	0	0.00	4,233	0.00	3,286,510
1997	0	0.00	0	0.00	148,972	0.85	3,110,494	0.16	225,634	0.20	0	0.00	0	0.00	3,485,100
1998	0	0.00	0	0.00	63,403	0.35	2,099,948	0.16	272,419	0.26	0	0.00	0	0.00	2,435,770
1999	0	0.00	0	0.00	175,776	0.10	1,490,951	0.26	401,442	0.16	12,770	0.76	0	0.00	2,080,939
2000	0	0.00	0	0.00	13,951	0.31	1,337,014	0.21	415,831	0.19	14,514	0.60	550	0.00	1,781,860
2001	0	0.00	0	0.00	99,127	0.09	782,475	0.19	215,046	0.15	3,517	0.81	0	0.00	1,100,165
2002	0	0.00	0	0.00	72,851	0.39	937,609	0.19	243,234	0.18	5,479	0.74	0	0.00	1,259,173
2003	0	0.00	0	0.00	15,990	0.52	1,449,880	0.08	332,172	0.13	1,508	1.00	0	0.00	1,799,550
2004	0	0.00	0	0.00	10,993	0.46	2,005,649	0.09	489,058	0.25	0	0.00	0	0.00	2,505,700
2005	0	0.00	0	0.00	259,438	0.12	971,304	0.19	417,565	0.40	0	0.00	0	0.00	1,648,307
2006	0	0.00	0	0.00	120,415	0.16	1,944,655	0.13	596,674	0.17	2,701	0.73	0	0.00	2,664,445
2007	0	0.00	6,299	1.00	45,747	0.22	2,757,224	0.16	659,141	0.19	13,119	0.85	0	0.00	3,481,530
2008	0	0.00	0	0.00	22,136	0.31	2,662,844	0.16	550,141	0.08	0	0.00	0	0.00	3,235,121
2009	0	0.00	0	0.00	13,632	0.56	1,441,073	0.15	938,950	0.19	720	1.00	0	0.00	2,394,375
2010	0	0.00	0	0.00	5,185	0.00	1,217,365	0.24	300,529	0.27	3,421	1.00	0	0.00	1,526,500
2011	0	0.00	0	0.00	19,166	0.00	1,451,390	0.14	195,052	0.35	0	0.00	0	0.00	1,665,608
2012	0	0.00	0	0.00	7,424	0.00	1,422,206	0.19	246,003	0.14	0	0.00	0	0.00	1,675,633
2013	0	0.00	0	0.00	5,114	0.00	3,645,258	0.17	1,236,829	0.38	98	0.00	0	0.00	4,887,299
2014	0	0.00	0	0.00	34,460	0.11	3,010,249	0.14	1,044,952	0.22	2,613	0.10	0	0.00	4,092,274
2015	0	0.00	0	0.00	31,010	0.11	1,403,570	0.14	1,274,690	0.15	2,277	0.00	0	0.00	2,711,547
2016	0	0.00	0	0.00	14,417	0.05	1,001,077	0.22	523,481	0.14	546	0.00	0	0.00	1,539,521
2017	0	0.00	0	0.00	114,511	0.02	1,670,375	0.09	487,968	0.23	1,968	0.62	0	0.00	2,274,822
2018	0	0.00	456	1.00	50,630	0.14	1,513,459	0.28	1,151,028	0.13	45,240	0.00	0	0.00	2,760,813
<b>TOTALS</b>	<b>634</b>		<b>129,090</b>		<b>1,661,850</b>		<b>80,616,573</b>		<b>17,670,485</b>		<b>199,454</b>		<b>81,993</b>		<b>100,360,079</b>

**Table 5.** Estimated weight of yearly landings (in pounds) by Yellowtail Snapper region (MRIP, LACreel, TPWD).

YEAR	West of FL YS Region 0	NW FL YS Region 1	SW FL YS Region 2	FL Keys YS Region 3	SE FL YS Region 4	NE FL YS Region 5	North of FL YS Region 6	YEARLY TOTALS
1981	883		0	2,621,719	1,130,089		0	3,752,691
1982			534	5,624,353	1,715,232	6,524	26,470	7,373,114
1983			15,691	629,526	465,850	21,478		1,132,545
1984			19,108	2,606,751	158,797	99		2,784,755
1985	9,572	129,368	2,006	1,240,771	960,857	270		2,342,843
1986	57	4,686		1,651,379	722,446			2,378,569
1987		17,106	35,758	1,489,724	122,555			1,665,143
1988			5,903	1,677,753	200,942			1,884,597
1989	73	0	9,583	9,617,164	254,387		33	9,881,240
1990	64		0	4,936,730	311,248		179	5,248,221
1991			45,686	8,025,535	297,976			8,369,197
1992			132,357	1,033,040	232,572	2,681	530	1,401,180
1993			35,104	1,547,927	750,447	1,243	496	2,335,218
1994			13,408	1,392,581	239,523	11,426		1,656,938
1995			0	1,691,315	288,949			1,980,264
1996			0	972,727	115,169		0	1,087,896
1997	160		1,525	936,909	66,953	3,557		1,009,105
1998	171		2,127	900,729	148,208	10,480	12,751	1,074,466
1999			56,721	600,809	132,170	14,573		804,273
2000			3,759	476,875	234,387	14,790	237	730,049
2001			12,771	451,410	123,309	12,830		600,319
2002			10,319	771,743	78,913	9,864	267	871,106
2003	73		9,666	1,486,414	114,179	5,256	5,017	1,620,606
2004		33	37,428	1,311,222	319,563	586	94	1,668,926
2005	234		30	39,589	264,012	305,104	13,735	622,705
2006	331		94,291	1,152,048	443,771	11,006		1,701,446
2007		0	21,986	1,269,426	561,790	36,494		1,889,696
2008	202		5,411	2,356,920	335,391	204	110	2,698,238
2009			26,839	541,849	380,374	310	335	949,707
2010			12,704	670,582	291,471	3,676		978,432
2011	44		52,163	687,193	204,455			943,856
2012			156	717,296	255,325			972,776
2013			3,116	1,121,916	407,033	38		1,532,103
2014			9,595	726,305	1,262,092	322	259	1,998,573
2015			55,067	758,548	578,319	0		1,391,933
2016	114		15,961	800,335	705,232	626		1,522,268
2017	255		373,286	1,073,255	428,159	5,306		1,880,260
2018		0	69,922	663,617	800,242	3,444		1,537,225
<b>TOTALS</b>	<b>12,232</b>	<b>151,223</b>	<b>1,229,538</b>	<b>66,498,407</b>	<b>16,143,477</b>	<b>190,820</b>	<b>46,779</b>	<b>84,272,477</b>

**Table 6.** Summary statistics for MRIP intercepted Yellowtail Snapper fork lengths (mm) by YS regions 1 through 5 and year.

YEAR	Fork Length (mm)																			
	YS_1 NW_FL				YS_2 SW_FL				YS_3 FL_Keys				YS_4 SE_FL				YS_5 NE_FL			
	N	Min	Mean	Max	N	Min	Mean	Max	N	Min	Mean	Max	N	Min	Mean	Max	N	Min	Mean	Max
1981					1	350	350	350	251	150	274	490	89	150	248	480	4	275	330	390
1982					6	240	312	390	352	120	309	500	57	190	286	480	2	160	345	530
1983					19	205	311	465	351	107	278	490	76	156	303	530				
1984					5	350	413	473	192	107	284	480	50	160	302	450				
1985	5	210	219	238	5	350	413	473	90	155	346	495	42	176	315	450				
1986	5	440	451	465					117	180	369	520	56	170	338	430				
1987	5	220	274	370	6	262	289	320	227	180	330	511	42	280	364	430				
1988					10	279	386	495	178	230	346	583	134	177	369	634				
1989					1	290	290	290	198	180	351	532	43	217	372	427				
1990									221	200	327	500	80	194	358	432				
1991					8	242	296	332	301	220	371	527	104	230	336	451				
1992					83	238	371	513	399	209	357	568	211	230	295	450	3	240	247	260
1993					24	225	283	384	374	173	301	531	260	170	330	478	1	354	354	354
1994					6	243	287	329	421	157	327	742	134	243	315	416	9	291	321	395
1995									328	157	305	790	78	242	360	450				
1996									252	219	321	450	105	200	301	435				
1997					1	317	317	317	459	238	326	545	58	230	283	338	4	230	259	320
1998					11	215	274	327	776	201	312	560	131	240	304	400	5	247	292	338
1999					58	227	299	415	1,024	155	319	495	139	227	298	455	16	227	322	380
2000					7	258	298	379	940	213	319	792	157	220	310	477	16	249	319	375
2001					5	294	346	386	715	240	331	506	370	240	299	381	20	284	339	396
2002					26	247	307	360	1,062	225	320	555	307	242	294	435	28	250	313	394
2003					13	251	313	452	1,218	230	321	720	592	232	295	490	3	275	323	368
2004	1	287	287	287	41	251	318	390	960	244	317	491	775	240	290	412	4	308	337	406
2005	1	311	311	311	64	244	315	429	913	235	316	618	718	146	290	401	5	279	307	370
2006					24	271	338	456	697	242	300	512	960	212	286	515	4	275	316	377
2007					23	255	297	398	1,054	235	316	509	842	200	298	769	5	240	292	323
2008					10	266	296	355	1,098	218	312	519	574	200	291	431	1	258	258	258
2009					21	255	305	440	531	238	289	440	446	221	312	432	1	331	331	331
2010					8	321	360	409	1,067	240	302	502	428	226	300	403	1	300	300	300
2011					26	273	326	429	822	238	318	555	326	245	322	431				
2012					1	369	369	369	1,355	186	313	578	278	229	305	410				
2013					4	267	306	377	948	186	297	466	428	209	287	406	2	253	282	311
2014					17	245	319	475	1,077	212	304	500	574	200	299	411	6	271	291	311
2015					57	249	315	404	970	230	308	488	677	230	293	465				
2016					58	250	334	462	743	210	299	495	440	236	299	445	1	261	261	261
2017					136	228	313	480	843	228	318	510	182	204	296	465	9	249	288	364
2018					72	210	320	492	831	200	315	495	382	198	286	423	6	275	295	324
<b>All years</b>	<b>17</b>	<b>210</b>	<b>313</b>	<b>465</b>	<b>852</b>	<b>205</b>	<b>321</b>	<b>513</b>	<b>24,355</b>	<b>107</b>	<b>314</b>	<b>792</b>	<b>11,345</b>	<b>146</b>	<b>299</b>	<b>769</b>	<b>156</b>	<b>160</b>	<b>312</b>	<b>530</b>

**Table 7.** Summary statistics for MRIP intercepted Yellowtail Snapper weights (whole pounds) by YS regions 1 through 5 and year.

YEAR	Whole Weight in Pounds																			
	NW FL YS Region 1				SW FL YS Region 2				FL Keys YS Region 3				SE FL YS Region 4				NE FL YS Region 5			
	N	Min	Mean	Max	N	Min	Mean	Max	N	Min	Mean	Max	N	Min	Mean	Max	N	Min	Mean	Max
1981					1	1.98	1.98	1.98	251	0.22	0.81	3.62	89	0.22	0.75	5.26				
1982					6	0.47	1.03	1.76	351	0.22	1.21	6.61	57	0.22	1.03	3.97	4	0.71	1.24	1.89
1983					19	0.66	1.45	2.98	348	0.22	0.88	4.19	76	0.22	1.23	5.95	2	0.23	3.13	6.03
1984									192	0.22	1.01	3.22	50	0.22	1.15	2.66				
1985	5	0.45	0.49	0.67	5	1.56	2.63	3.34	90	0.22	1.67	4.09	42	0.22	1.23	2.68				
1986	5	2.20	2.43	2.87					117	0.23	1.97	4.16	56	0.22	1.43	2.43				
1987	5	0.44	0.82	1.54	6	0.77	1.07	2.06	227	0.22	1.89	7.84	42	0.71	1.45	1.98				
1988									43	0.66	1.78	4.63	16	1.54	1.72	2.00				
1989					1	1.31	1.31	1.31	198	0.43	1.79	5.93	43	0.44	1.90	3.31				
1990									221	0.24	1.53	4.59	80	0.28	1.64	3.30				
1991					8	0.45	1.08	1.88	301	0.22	2.13	7.04	104	0.44	1.51	3.31				
1992					82	0.46	2.83	7.26	303	0.44	1.82	8.30	207	0.44	1.06	3.53	3	0.66	0.73	0.88
1993					24	0.42	0.92	2.43	374	0.22	1.19	4.93	260	0.22	1.37	3.09	1	1.11	1.11	1.11
1994					6	0.44	0.87	1.24	421	0.22	1.51	16.09	134	0.44	1.17	2.65	9	0.88	1.25	1.98
1995									328	0.11	1.18	8.60	78	0.55	1.92	3.53				
1996									252	0.44	1.38	2.66	105	0.44	1.13	2.88				
1997					1	1.10	1.10	1.10	459	0.66	1.88	12.41	58	0.44	0.87	1.43	4	0.44	0.66	1.32
1998					11	0.47	0.95	2.00	775	0.47	1.51	6.84	131	0.44	1.13	4.16	5	0.45	0.74	1.32
1999					58	0.59	1.15	3.03	1,024	0.18	1.46	4.80	139	0.46	1.18	4.56	16	0.48	1.17	2.63
2000					7	0.72	1.17	2.17	940	0.51	1.42	15.29	157	0.44	1.18	3.59	16	0.73	1.43	2.64
2001					5	0.91	1.90	2.65	715	0.53	1.64	4.83	370	0.56	1.16	2.55	20	0.96	1.77	3.31
2002					26	0.54	1.37	2.13	1,062	0.31	1.40	5.77	307	0.44	1.03	3.84	28	0.44	1.22	2.57
2003					13	0.67	1.33	3.37	1,218	0.37	1.40	16.07	592	0.47	1.10	4.65	3	0.91	1.37	1.87
2004	1	0.95	0.95	0.95	41	0.57	1.22	2.43	960	0.53	1.28	4.50	775	0.44	0.91	2.54	4	1.08	1.60	2.82
2005	1	0.79	0.79	0.79	64	0.53	1.21	3.09	913	0.40	1.27	6.22	718	0.13	0.94	2.29	5	0.77	1.27	2.69
2006					24	0.71	1.47	3.31	697	0.44	1.08	5.42	960	0.38	0.89	5.17	4	0.73	1.24	2.16
2007					23	0.57	1.03	2.29	1,054	0.44	1.24	4.10	842	0.29	1.01	13.43	5	0.55	0.97	1.23
2008					10	0.55	0.77	0.93	1,098	0.44	1.24	4.98	574	0.31	0.96	3.17	1	0.68	0.68	0.68
2009					21	0.53	1.15	2.65	531	0.53	0.96	2.78	446	0.44	1.14	2.73	1	1.27	1.27	1.27
2010					8	0.93	1.44	1.98	1,067	0.40	1.13	4.89	428	0.35	1.03	2.47	1	0.84	0.84	0.84
2011					26	0.79	1.41	2.78	822	0.49	1.29	4.32	326	0.40	1.28	2.95				
2012					1	1.94	1.94	1.94	1,355	0.22	1.20	4.09	278	0.40	1.12	2.47				
2013					4	0.77	1.21	2.07	948	0.22	1.02	3.79	428	0.31	0.90	2.47	2	0.49	0.75	1.01
2014					17	0.53	1.30	3.53	1,077	0.35	1.11	4.14	574	0.22	1.03	2.51	6	0.79	0.99	1.19
2015					57	0.55	1.23	2.43	970	0.33	1.17	4.01	677	0.31	0.95	3.62				
2016					58	0.53	1.46	3.79	743	0.49	1.07	4.50	440	0.44	1.05	3.26	1	0.66	0.66	0.66
2017					136	0.53	1.21	4.10	843	0.48	1.25	4.63	182	0.35	1.00	3.62	9	0.57	0.95	1.94
2018					72	0.38	1.21	3.70	831	0.31	1.27	4.10	382	0.31	0.92	2.51	6	0.75	0.96	1.23
All years	17	0.44	1.20	2.87	841	0.38	1.40	7.26	24,119	0.11	1.30	16.09	11,223	0.13	1.05	13.43	156	0.23	1.25	6.03

**Table 8.** Summary statistics for MRIP intercepted Yellowtail Snapper fork lengths (mm) and weights (whole pounds) for YS regions 0 and 6 by year.

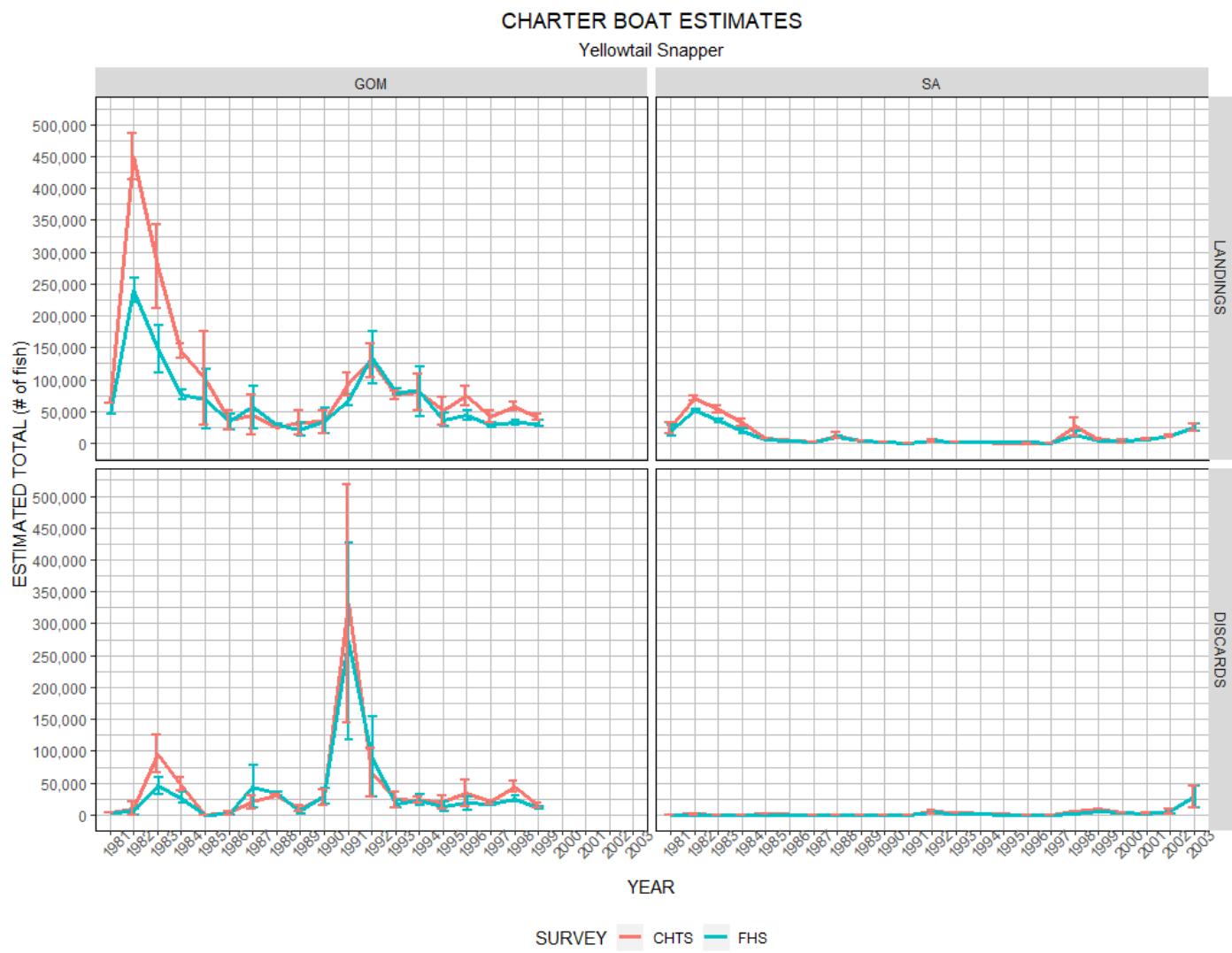
YEAR	West of FL (YS Region 0)								North of FL (YS Region 6)							
	FL (in mm)				Weight (in pounds)				FL (in mm)				Weight (in pounds)			
	N	Min	Mean	Max	N	Min	Mean	Max	N	Min	Mean	Max	N	Min	Mean	Max
1981	1	535	535	535	1	3.89	3.89	3.89	6	165	242	330	6	0.25	0.74	1.32
1982																
1983																
1984																
1985	3	310	354	425	3	1.47	2.16	3.23								
1986																
1987																
1988																
1989									1	330	330	330	1	1.32	1.32	1.32
1990									1	296	296	296	1	1.34	1.34	1.34
1991																
1992									5	260	300	343	5	0.67	1.07	1.56
1993									3	301	338	376	3	0.88	1.47	1.98
1994																
1995																
1996																
1997	1	270	270	270	1	1.27	1.27	1.27	219	227	299	455	219	0.42	0.99	2.76
1998																
1999									1	395	395	395	1	3.32	3.32	3.32
2000																
2001									2	300	315	330	2	1.27	1.34	1.41
2002									1	203	203	203	1	0.36	0.36	0.36
2003	1	343	343	343	1	2.05	2.05	2.05	1	494	494	494	1	4.41	4.41	4.41
2004																
2005	1	408	408	408	1	2.98	2.98	2.98								
2006	4	346	434	481	4	1.63	3.55	4.96								
2007																
2008									1	311	311	311	1	0.99	0.99	0.99
2009									1	315	315	315	1	1.15	1.15	1.15
2010																
2011																
2012																
2013																
2014									5	251	400	862	5	0.57	5.99	26.46
2015																
2016																
2017																
2018																
All years	12	270	393	535	12	1.27	2.78	4.96	247	165	301	862	247	0.25	1.12	26.46

**Table 9.** Recreational fishing effort (in angler trips) by Yellowtail Snapper region and year.

YEAR	W of FL YS Region 0	NW FL YS Region 1	SW FL YS Region 2	FL Keys YS Region 3	SE FL YS Region 4	NE FL YS Region 5	N of FL YS Region 6	YEARLY TOTALS
1981	8,905,476	3,558,383	9,897,122	4,104,524	16,873,843	14,786,584	11,476,433	69,602,366
1982	10,164,226	6,129,982	12,061,751	4,191,571	18,274,127	24,077,890	12,089,686	86,989,233
1983	10,827,701	5,597,088	17,251,044	4,573,988	17,412,029	23,219,439	15,990,402	94,871,691
1984	10,433,772	8,797,773	13,945,476	6,635,975	13,926,458	26,698,610	15,171,194	95,609,259
1985	10,569,876	9,780,574	15,378,967	3,382,594	15,992,534	23,651,339	14,846,079	93,601,963
1986	10,189,030	8,458,188	13,368,256	2,045,161	16,187,439	26,129,697	15,234,435	91,612,207
1987	9,782,981	6,583,005	13,459,037	4,818,584	14,332,922	29,840,075	15,015,949	93,832,552
1988	10,028,675	8,683,579	17,655,733	3,428,017	19,442,559	19,704,270	16,247,596	95,190,430
1989	10,186,300	9,491,841	17,411,274	4,735,258	18,889,002	20,364,967	16,877,559	97,956,199
1990	11,326,862	4,462,055	20,523,311	4,190,519	20,648,625	18,609,727	18,613,128	98,374,227
1991	11,878,667	8,961,584	17,516,307	9,796,902	19,446,323	22,232,074	18,025,104	107,856,962
1992	11,997,932	6,126,647	18,468,724	5,372,429	23,748,797	19,126,710	18,549,505	103,390,743
1993	12,465,101	7,254,871	20,763,007	6,237,753	13,333,205	28,646,809	17,681,425	106,382,172
1994	12,761,303	9,138,930	19,206,683	5,114,358	10,725,452	31,180,560	17,236,671	105,363,958
1995	12,804,415	5,886,430	19,643,375	5,719,470	10,759,588	28,169,027	16,407,843	99,390,147
1996	13,548,850	5,421,858	17,955,242	6,595,290	13,412,323	27,699,228	16,946,072	101,578,865
1997	14,456,489	3,702,778	21,348,179	5,027,584	10,694,424	31,490,685	18,020,808	104,740,947
1998	14,787,720	4,351,924	23,875,839	4,075,040	12,514,452	28,768,147	18,074,809	106,447,931
1999	15,738,153	7,142,040	26,407,935	3,661,112	11,604,408	28,266,035	20,099,897	112,919,581
2000	17,371,072	9,878,211	25,494,094	2,940,339	14,773,328	29,035,977	23,693,971	123,186,993
2001	17,970,403	12,249,256	24,856,175	3,250,891	14,456,449	29,309,077	23,527,602	125,619,853
2002	17,219,527	9,274,874	25,617,672	2,004,492	18,184,814	26,681,857	23,960,377	122,943,613
2003	17,927,786	9,060,049	28,206,722	2,827,229	22,816,794	22,228,038	24,539,383	127,606,001
2004	17,572,060	12,175,778	31,196,577	4,687,327	21,980,735	20,955,597	26,925,503	135,493,577
2005	16,185,845	9,369,409	30,115,714	2,394,525	17,382,732	30,412,264	27,024,039	132,884,529
2006	16,997,486	11,226,470	24,189,255	2,112,327	21,548,052	27,508,325	29,720,272	133,302,188
2007	18,203,133	12,826,779	24,048,884	3,262,066	20,203,946	28,243,312	28,333,977	135,122,097
2008	19,136,888	11,053,617	25,276,944	4,563,931	16,774,656	29,146,548	30,246,121	136,198,705
2009	20,530,498	9,810,703	24,145,570	2,251,195	22,053,313	26,956,305	29,595,640	135,343,223
2010	21,061,208	9,895,790	27,627,736	1,922,802	20,667,041	28,285,217	30,908,727	140,368,521
2011	21,694,767	12,019,788	25,704,025	2,339,547	14,965,589	30,829,667	30,878,312	138,431,695
2012	21,532,846	14,912,353	26,635,209	3,450,091	12,052,944	27,624,852	29,656,144	135,864,440
2013	21,880,677	12,838,615	29,656,888	3,797,787	12,769,243	24,536,768	31,156,884	136,636,863
2014	10,793,298	9,140,574	25,940,081	3,544,628	13,134,793	30,832,713	31,409,167	124,795,253
2015	11,423,288	10,361,043	22,087,989	3,280,973	14,628,719	27,766,747	33,393,963	122,942,722
2016	12,037,514	11,336,665	24,894,489	2,705,262	12,484,080	26,211,001	34,374,332	124,043,343
2017	13,345,084	15,019,646	24,317,972	2,502,559	15,291,103	25,112,421	36,465,487	132,054,272
2018	11,235,605	14,655,270	23,612,106	2,729,023	14,555,470	29,431,234	31,114,278	127,332,987
<b>TOTALS</b>	<b>546,972,516</b>	<b>346,634,421</b>	<b>829,761,365</b>	<b>150,273,123</b>	<b>618,942,314</b>	<b>993,769,795</b>	<b>869,528,776</b>	<b>4,355,882,309</b>

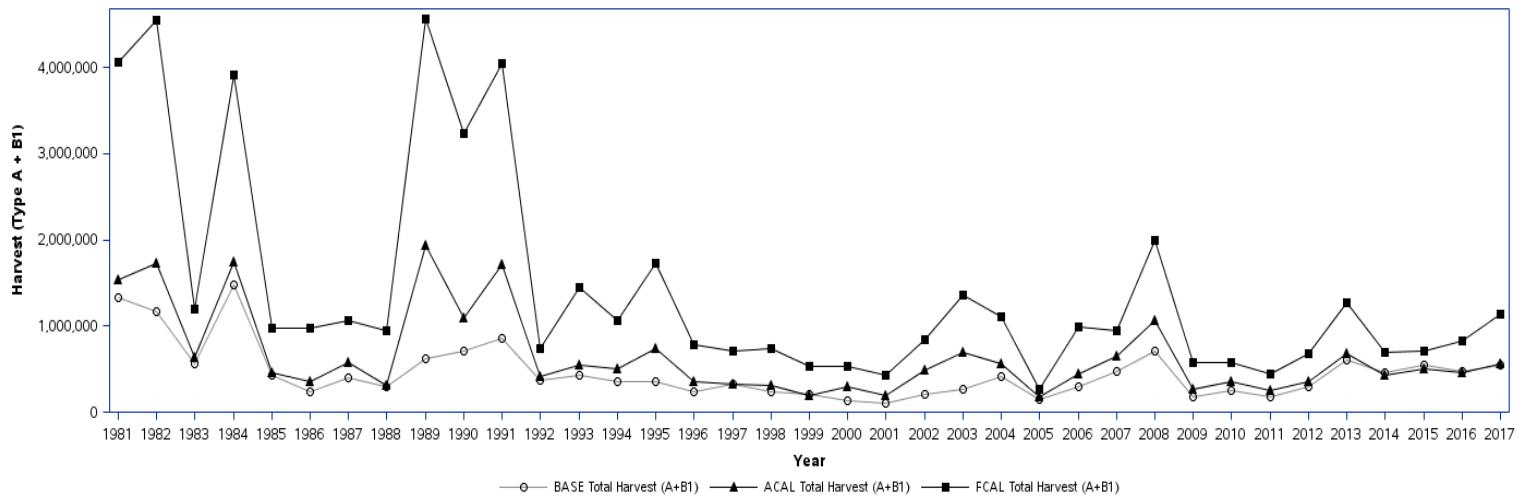
**Table 10.** Recreational fishing effort (in angler trips) by fishing mode over all Yellowtail Snapper regions (Louisiana to North Carolina).

YEAR	Cbt	Hbt	Priv	Shore	YEARLY TOTALS
1981	837,098	201,758	20,850,341	47,713,169	69,602,366
1982	1,067,047	326,411	25,225,726	60,370,049	86,989,233
1983	1,096,157	293,935	26,415,628	67,065,970	94,871,691
1984	1,147,274	281,008	29,266,282	64,914,695	95,609,259
1985	1,206,072	315,954	28,214,746	63,865,191	93,601,963
1986	1,274,188		29,031,689	61,306,329	91,612,207
1987	1,237,072		29,807,802	62,787,677	93,832,552
1988	1,060,252		29,711,769	64,418,409	95,190,430
1989	1,257,243		31,182,707	65,516,250	97,956,199
1990	1,141,032		31,260,873	65,972,321	98,374,227
1991	1,106,003		33,206,581	73,544,378	107,856,962
1992	1,087,337		33,500,775	68,802,631	103,390,743
1993	1,193,973		35,158,724	70,029,474	106,382,172
1994	1,215,409		35,208,230	68,940,319	105,363,958
1995	1,340,612		34,759,332	63,290,203	99,390,147
1996	1,282,282		35,712,774	64,583,810	101,578,865
1997	1,250,083		37,662,203	65,828,662	104,740,947
1998	1,274,803		38,442,252	66,730,876	106,447,931
1999	1,222,588		41,083,171	70,613,822	112,919,581
2000	1,112,859		43,789,231	78,284,903	123,186,993
2001	1,223,175		45,195,207	79,201,471	125,619,853
2002	1,299,937		45,416,237	76,227,439	122,943,613
2003	1,240,320		47,896,960	78,468,721	127,606,001
2004	1,325,275		50,735,072	83,433,229	135,493,577
2005	1,194,682		50,471,078	81,218,770	132,884,529
2006	1,254,836		50,777,937	81,269,414	133,302,188
2007	1,343,619		52,421,270	81,357,208	135,122,097
2008	1,210,501		52,964,507	82,023,697	136,198,705
2009	1,215,168		53,002,251	81,125,805	135,343,223
2010	956,874		55,979,944	83,431,703	140,368,521
2011	1,104,896		53,911,598	83,415,201	138,431,695
2012	1,256,184		53,579,461	81,028,794	135,864,440
2013	1,250,443		51,276,840	84,109,579	136,636,863
2014	1,211,932		44,576,308	79,007,012	124,795,253
2015	1,380,598		42,176,955	79,385,169	122,942,722
2016	1,433,456		42,878,572	79,731,315	124,043,343
2017	1,400,719		43,676,875	86,976,678	132,054,272
2018	1,462,574		43,576,580	82,293,834	127,332,987
<b>TOTALS</b>	<b>46,174,576</b>	<b>1,419,066</b>	<b>1,530,004,489</b>	<b>2,778,284,178</b>	<b>4,355,882,309</b>

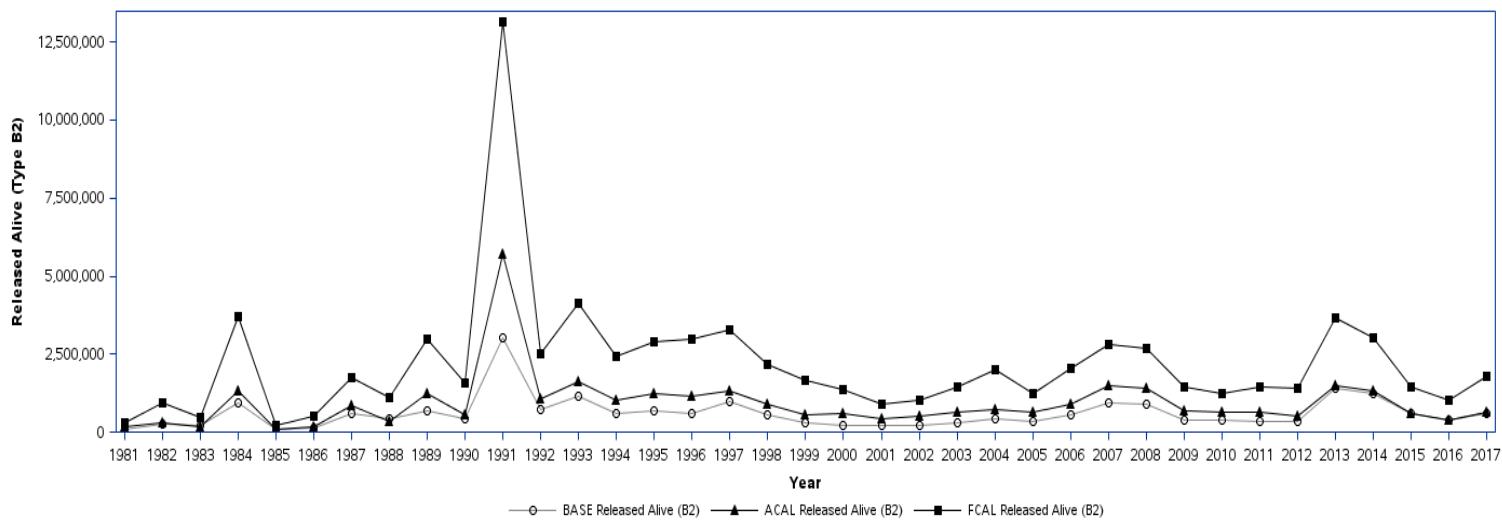


**Figure 1.** Yellowtail Snapper landing and discard estimates (with standard error intervals shown) from the Coastal Household Telephone Survey (CHTS) and the For-Hire Survey (FHS) from both the Gulf of Mexico (GOM; left-hand side) and the South Atlantic (SA; right-hand side) between years 1981 and 1999 (for GOM) and 1981 to 2003 (for SA).

a)

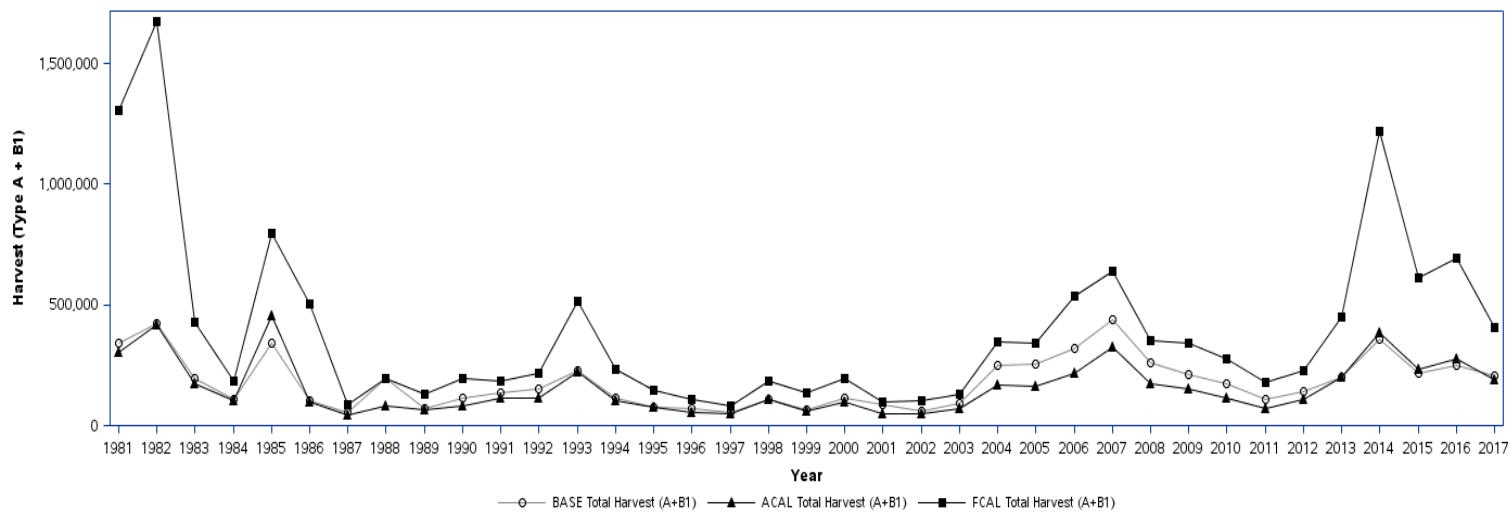


b)

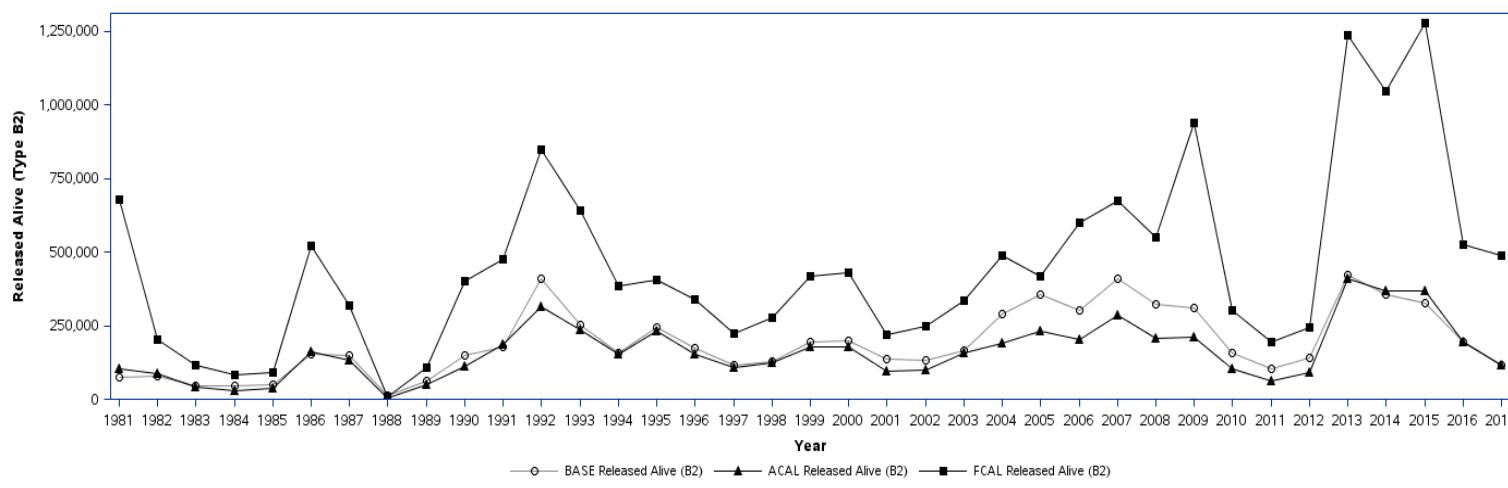


**Figure 2.** MRIP base (circle), APAIS calibrated (triangle), and fully calibrated APAIS and FES (square) catch estimates for Gulf of Mexico Yellowtail Snapper from 1981 to 2017. Catch estimates are shown in numbers of fish: (a) landings and (b) discards. These calibration graphs include sub-region 7, which includes the Florida Keys.

a)

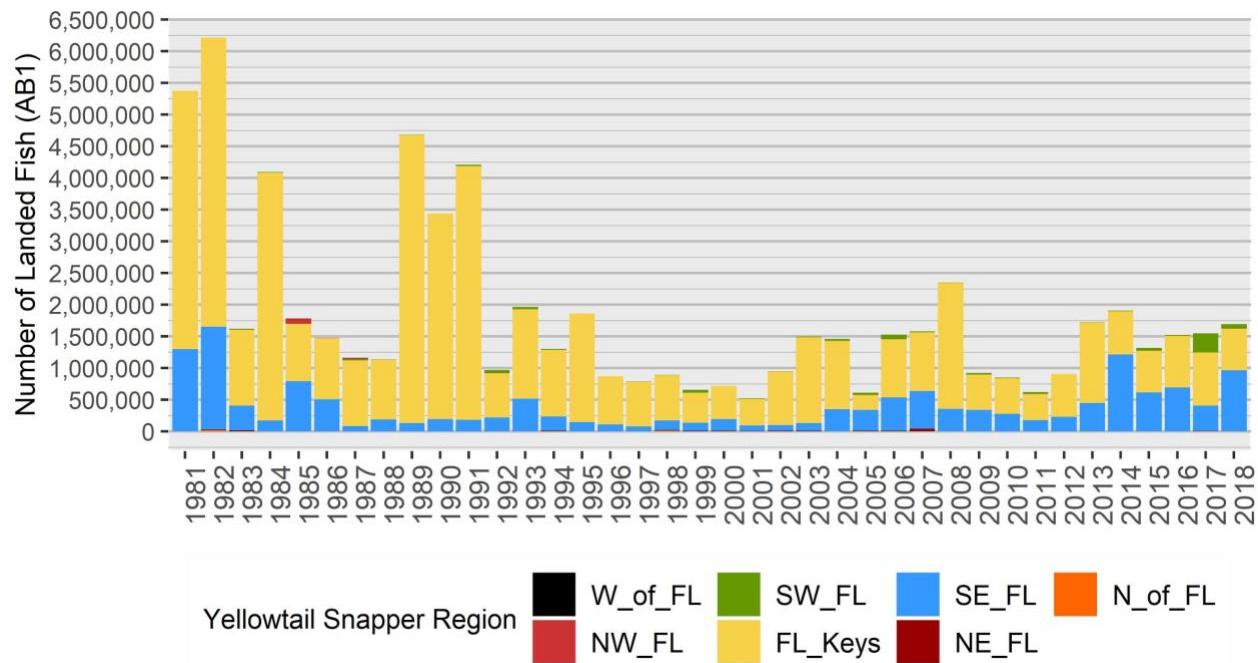


b)

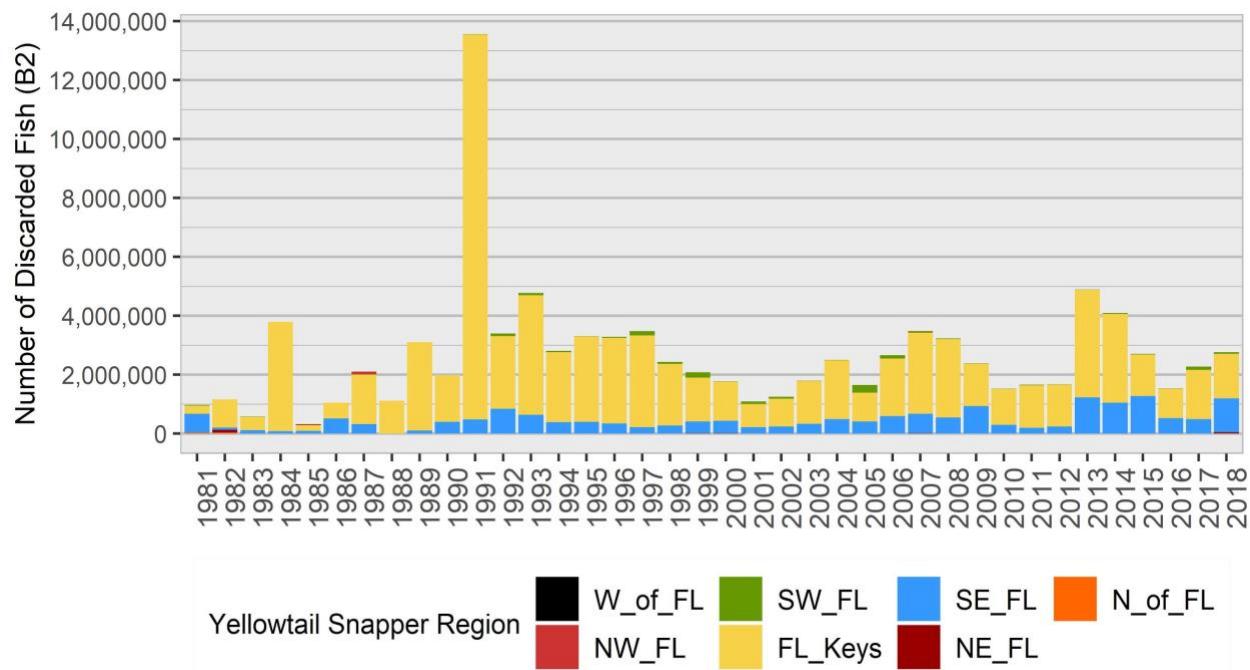


**Figure 3.** MRIP base (circle), APAIS calibrated (triangle), and fully calibrated APAIS and FES (square) catch estimates for South Atlantic Yellowtail Snapper from 1981 to 2017. Catch estimates are shown in numbers of fish: (a) landings and (b) discards. These calibration graphs include sub-region 6, from North Carolina to Southeast Florida.

a)

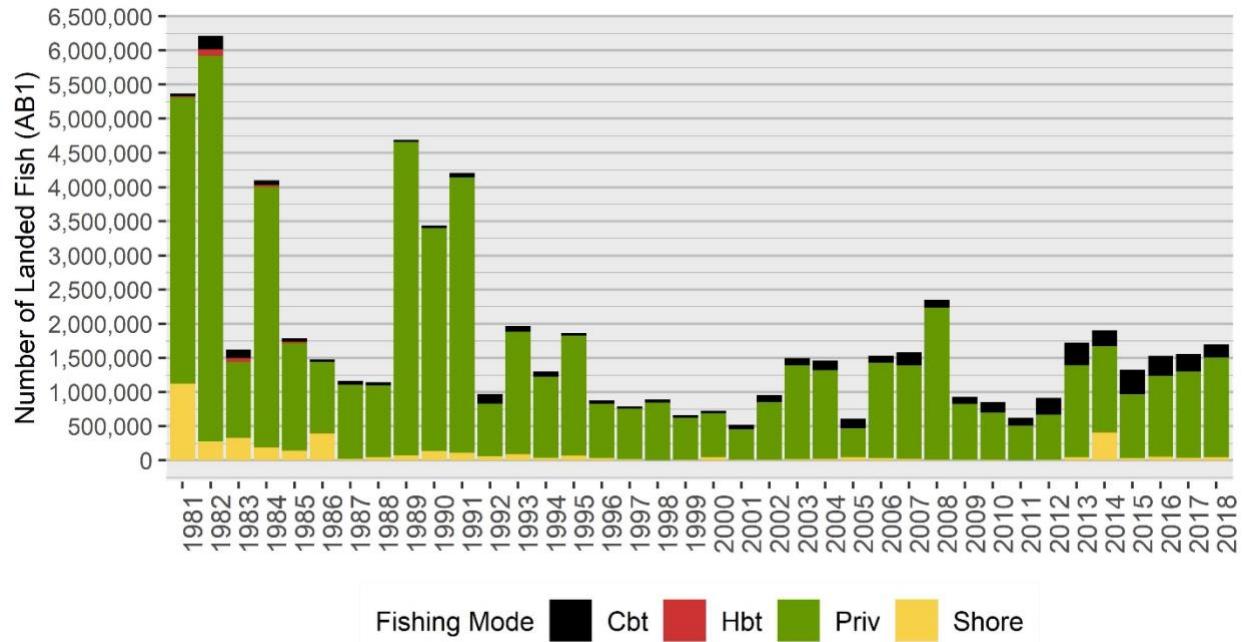


b)

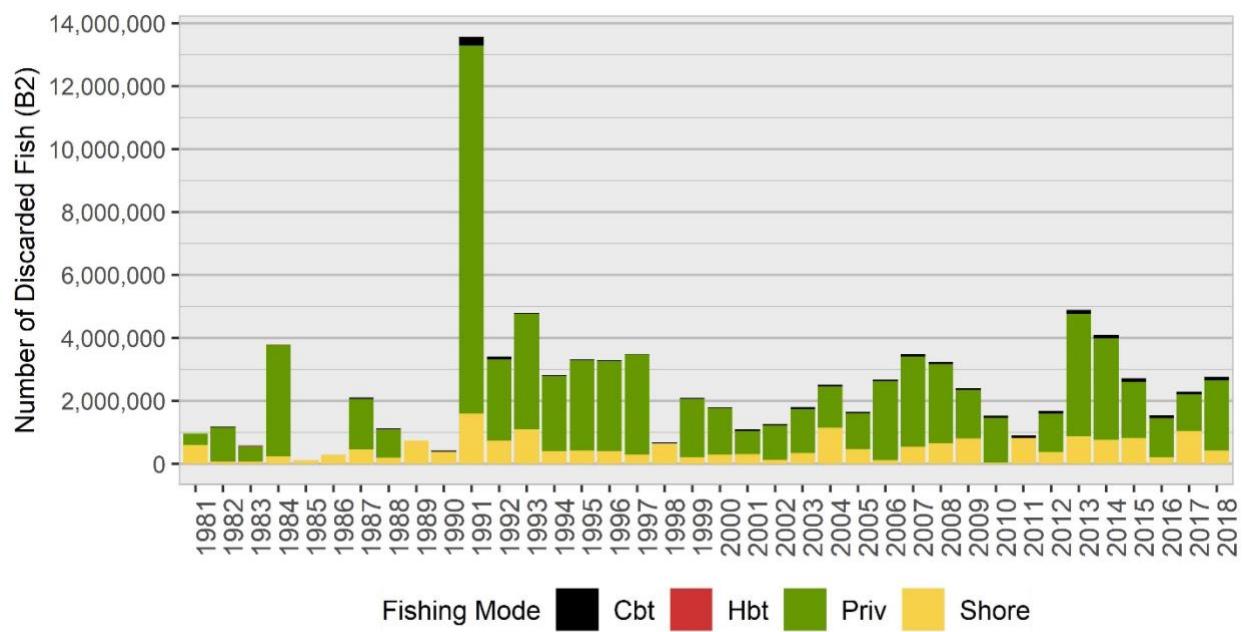


**Figure 4.** Number of Yellowtail Snapper a) landings and b) discards by YS region and year from 1981 – 2018 (MRIP, LACreel, TPWD).

a)

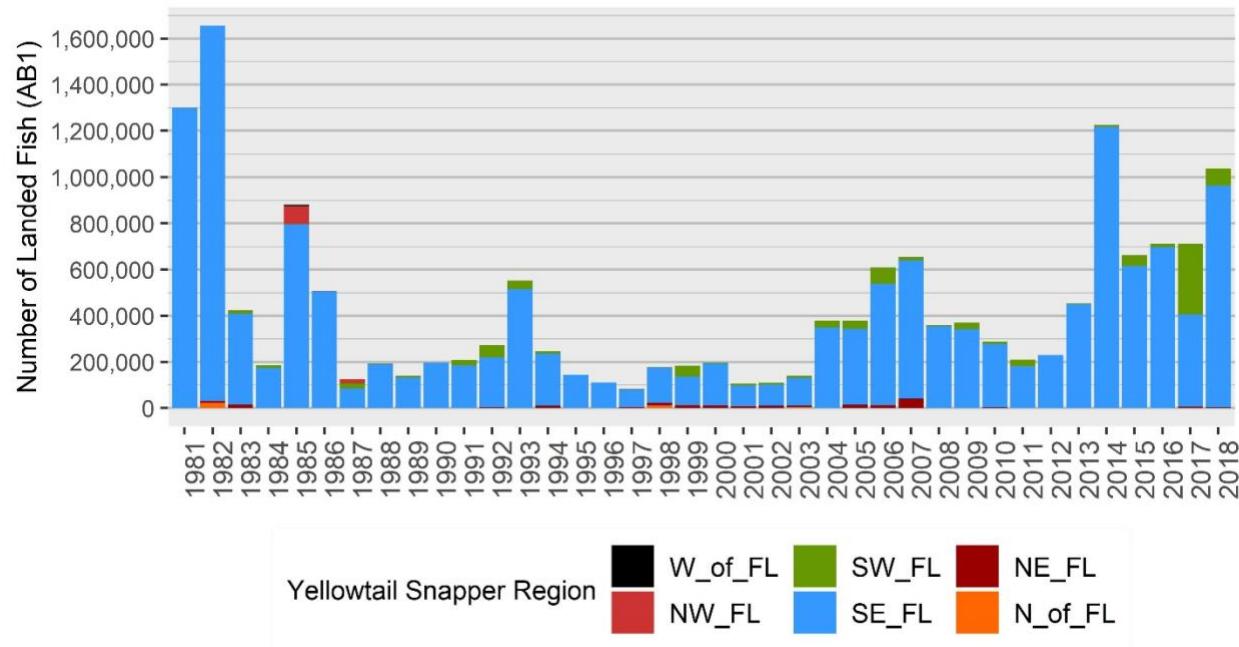


b)

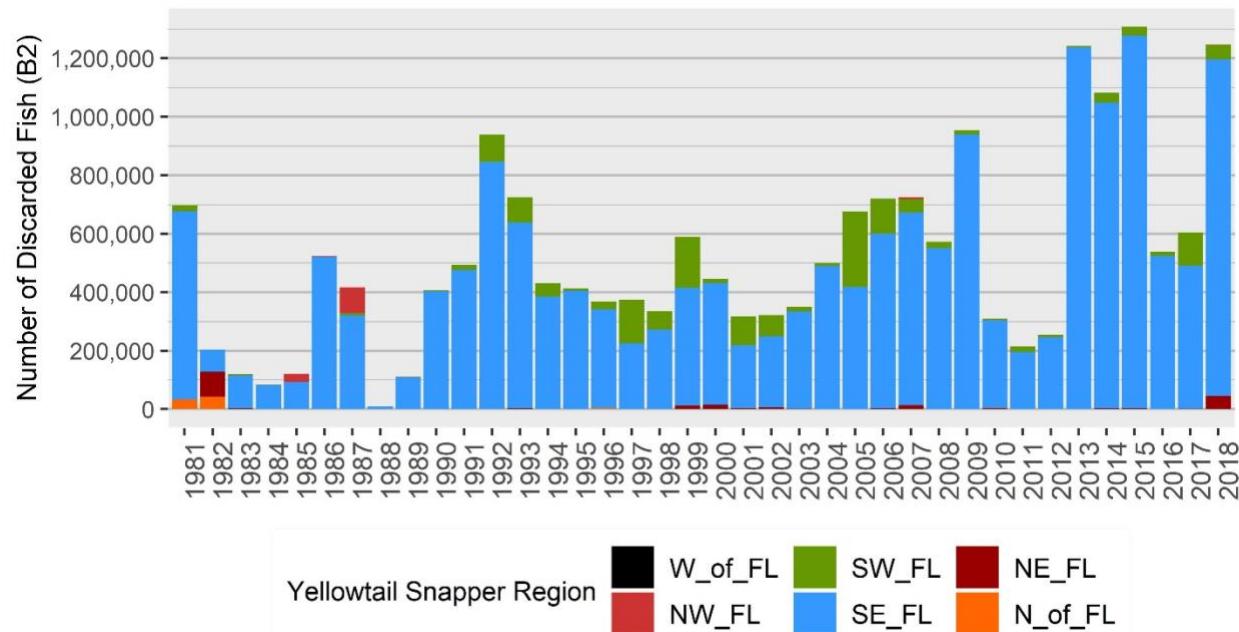


**Figure 5.** Number of Yellowtail Snapper a) landings and b) discards by fishing mode and year from 1981 – 2018 (MRIP, LACreel, TPWD).

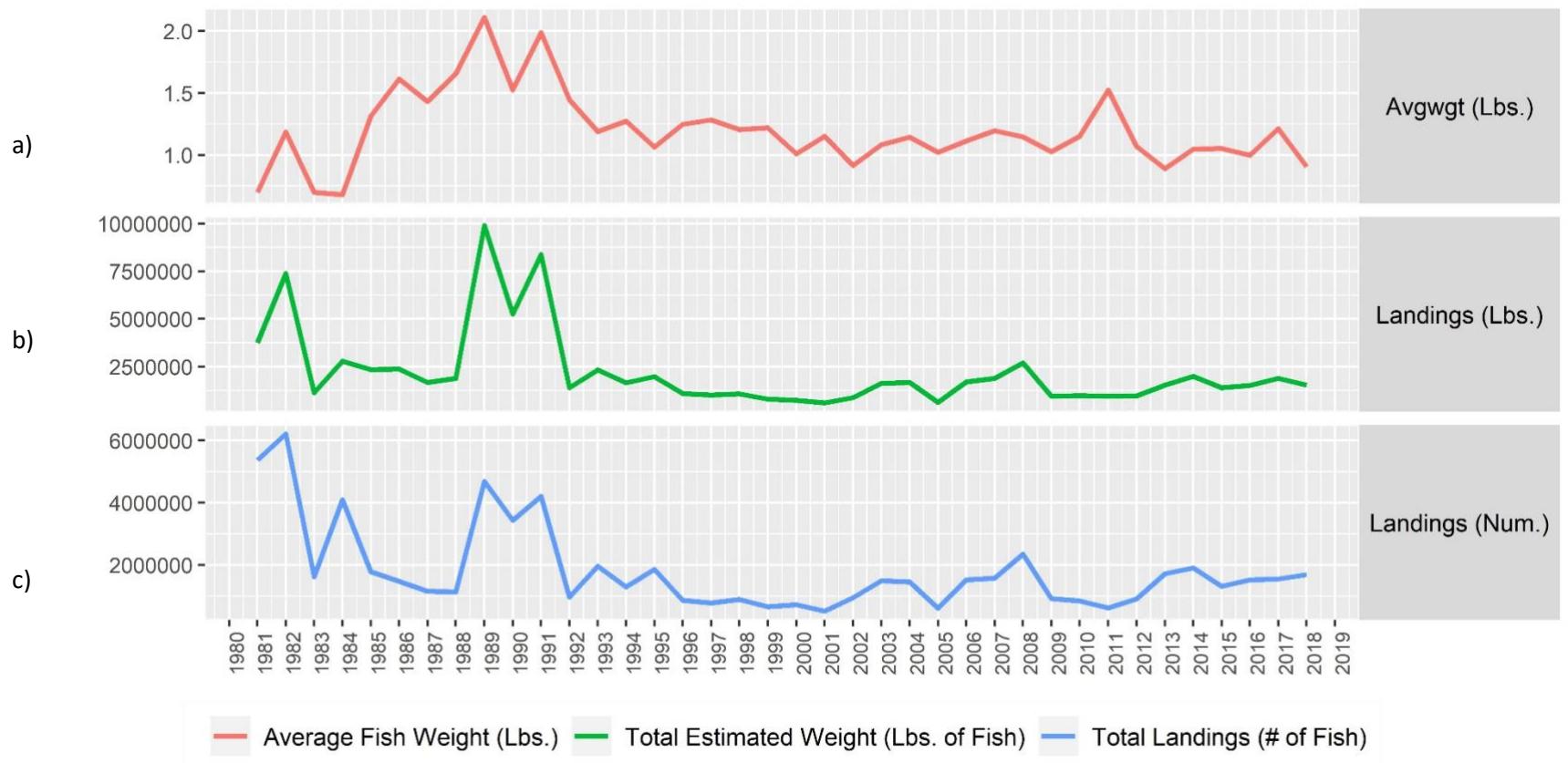
a)



b)



**Figure 6.** Number of Yellowtail Snapper a) landed and b) discarded yearly in all other regions (outside of the Florida Keys) from 1981 – 2018 (MRIP, LACreel, TPWD).



**Figure 7.** Landings estimates of Yellowtail Snapper by year: a) yearly average weight (lbs./#) of estimated landed Yellowtail Snapper (in pounds); b) estimated landings in number (whole fish) by year; c) estimated landings in weight (pounds) by year.