

Size frequency distribution of greater amberjack from dockside sampling of recreational landings in the Gulf of Mexico 1986-2003 (MRFSS, Headboat, and TXPW size data)

by

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Sustainable Fisheries Division Contribution No. SFD 2005 - 015

Size frequency distributions of Gulf of Mexico greater amberjack were analyzed for the Texas Parks and Wildlife (TXPW), Marine Recreational Fisheries Statistical Survey (MRFSS) and the Headboat survey size data sets from 1986 through 2003.

HEADBOAT SURVEY

Size data for all Gulf areas are available starting in 1986. Table 1 shows the number of greater amberjack sampled (measured) from head boat landings by area and year. The largest number of sampled fish occurred in 1989 with 1,258 greater amberjack measured and the lowest was in year 2000 (101 fish). All years combined, the largest number of sampled fish occurred in TX, while the lowest in the Southwest and Central FL. The percentage of the total landings sampled by year (all areas combined) ranged from 0.64 in 1986 to 3.04 in 1995. Table 2 shows the percentage of the landings sampled by year and area headboat survey. The overall percentage of the landings sampled was 1.45%. Sampling across areas was not homogeneous. Generally, the SW and Central FL region registered the lowest percentages of sampled landings. This region reported the largest landings in 12 of the 18 years of the time series and it accounted for 48% of the total headboat landings (in numbers) for the entire period 1986-2003. Figures 1-4 shows histograms of relative size frequency distribution of headboat sampled landings by area. In general, sample sizes are small so it is difficult to draw any robust conclusions. However, TXPW landings seem to have a somewhat larger proportion of larger fish in the mid-90's than NW FL-AL and LA. Figure 5 shows the relative size frequency distribution all areas combined.

MRFSS

Size data for all Gulf areas are available starting in 1986. Table 3 shows the number of greater amberjack sampled (measured) by MRFSS by area and state. The larger number of sampled fish occurred in 2003 with 1,068 greater amberjack measured and the lowest was in year 1990 (32 fish). Most of the sampling occurred in FL (64% of total samples all years combined) followed by AL. Table 4 shows the number of fish sampled by MRFSS by year and mode. In each year, most samples were obtained from

Charterboat landings and with all years combined they corresponded to 91 % of all samples. A total of 17 fish were sampled from the ‘shore’ mode (FL=5, LA=12) and were not included in the table. Without including samples from the shore mode (17 fish) and from MS (6 fish), approximately 60% of all measurements from fish landed by Charterboats were taken in FL. The private boat fishery was sampled more sparsely when compared with the Charterboat fishery. Private boat estimated landings are generally lower than charterboat landings. More detailed statistics by state and mode are presented in Table 5. Table 6 shows the number of fish sampled by MRFSS in the state of FL by county and mode. Almost 63% of all fish measured in FL from Charterboat landings were sampled in Okaloosa County, which corresponded to approximately 41% of all fish sampled by MRFSS from Charterboat landings. Overall, 60% of all charterboat landings sampled occurred in FL while at the same time 75% of all charterboat estimated landings are from the same State.

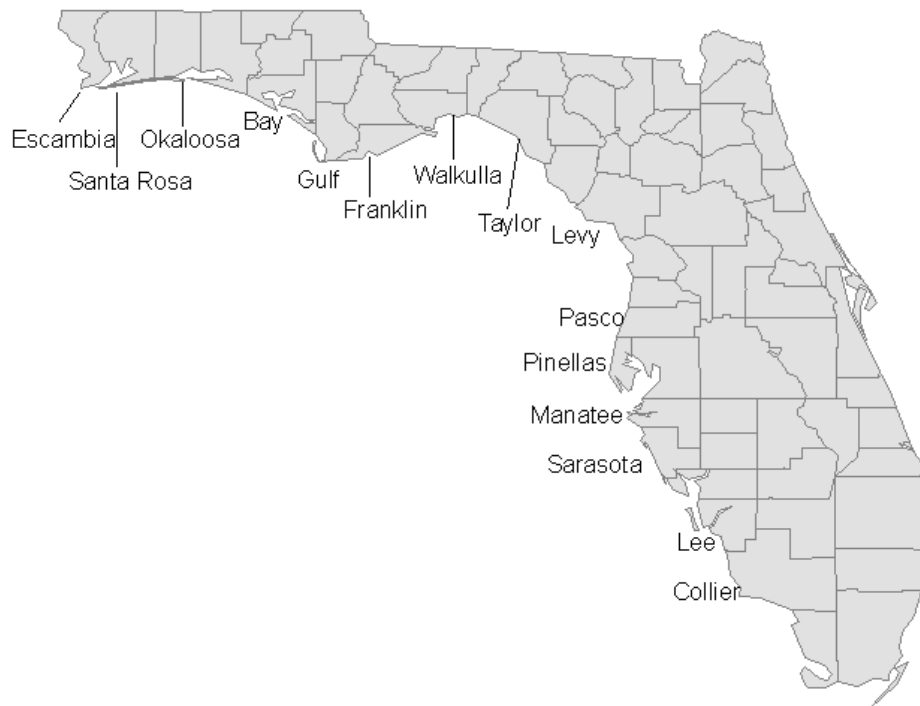


Figure 6 shows the relative size frequency distribution for the charterboat and private boat modes. Given the low number of fish sampled from private boat landings it is very difficult to draw any conclusions regarding potential differences in size structure of landings for this mode of fishing. In general, charterboat landings seemed to have a larger proportion of larger fish, but this trend sometimes is reversed. Figure 7 shows the relative size frequency distribution of fish sampled by TXPW.

TXPD

Table 7 shows the total number of greater amberjack measured and the percentage of the estimated landings sampled. In general, sampling effort was higher post 1993. The percentages increased after 1994 due not to an increase in sampling effort but to a reduction in the estimated landings. For the period 2001-2003 the number of fish measured more than doubled compared to the three previous years, estimated landings also increased in this period.

Table 1: Number of greater amberjack sampled from Headboat landings by year and area

Year	SW-C FL	NW FL, AL	LA	TX	Total
1986	283	69		200	552
1987	198	66		253	517
1988	69	86	15	184	354
1989	227	669	87	275	1,258
1990	93	33		105	231
1991	7	59	50	67	183
1992	18	55	218	94	385
1993	6	38	92	103	239
1994	12	72	24	138	246
1995	3	43	74	144	264
1996		33	72	45	150
1997		29	59	18	106
1998		28	67	27	122
1999		15	96	5	116
2000		71	27	3	101
2001	7	44	117	13	181
2002	2	22	104	14	142
2003	39	53	117	69	278
2004	4	17	0	44	65
Total	968	1,485	1,219	1,757	5,425

Table 2: Percentage of the landings sampled by area and year by the Headboat survey.

Year	SW-C FL	NW FL, AL	LA	TX	Total
1986	0.51	0.33		2.11	0.64
1987	0.87	0.32		2.76	0.98
1988	0.44	1.78	1.20	2.32	1.19
1989	1.33	2.60	40.28	2.88	2.40
1990	0.45	5.31		3.88	0.95
1991	0.14	3.96	4.56	2.76	1.86
1992	0.21	3.61	5.54	1.59	1.95
1993	0.11	4.99	3.08	2.20	1.70
1994	0.20	7.27	1.41	3.04	1.88
1995	0.14	7.18	5.08	3.21	3.04
1996		3.19	1.87	1.31	1.43
1997		4.20	6.24	0.61	1.41
1998		5.96	10.11	1.42	2.39
1999		1.57	9.70	0.57	2.19
2000		4.48	18.37	0.18	1.68
2001	0.44	5.46	5.46	0.88	3.01
2002	0.06	1.61	4.80	0.38	1.33
2003	1.23	2.96	4.33	1.60	2.32
Total	0.54	1.71	4.41	2.16	1.45

Table 3: Number of greater amberjack measured (sampled) and percentage of the estimated landings sampled (%) by MRFSS by state and year

Year	FL		AL		MS		LA		Total
	Sampled	%	Sampled	%	Sampled	%	Sampled	%	
1986	159	0.05	15	0.20			56	1.12	230
1987	554	0.13	129	0.43			100	0.35	783
1988	120	0.06	78	0.31			3	0.12	201
1989	37	0.01	66	0.13			19	0.14	122
1990	6	0.01	26	0.12					32
1991	85	0.04	84	0.76	3	0.96	63	0.25	235
1992	166	0.11	423	0.96			73	0.69	662
1993	55	0.07	44	0.07			10	0.28	109
1994	12	0.02	47	0.14	1	0.95	7	0.22	67
1995	11	0.07	7	0.04	1	0.12	4	0.05	23
1996	15	0.04	16	0.05			14	0.11	45
1997	54	0.15	28	0.32	1	0.18	8	0.17	91
1998	129	1.62	25	0.75			15	0.11	169
1999	428	4.78	89	0.80			10	0.41	527
2000	561	1.33	145	1.49			11	0.17	717
2001	307	0.92	107	0.46			22	0.21	436
2002	732	0.93	153	0.64			84	0.66	969
2003	697	0.84	273	0.54			98	0.80	1,068
2004	463	0.73	90	0.42			85	0.46	638
Total	4,591	0.20	1,845	0.38	6	0.23	682	0.35	7,124

Table 4: Total number of greater amberjack sampled by MRFSS by mode and year.

Year	Charterboat		Private boat		Total
	Sampled	%	Sampled	%	
1986	225	0.09	5	0.01	230
1987	621	0.21	161	0.08	782
1988	174	0.12	26	0.03	200
1989	108	0.07	14	0.01	122
1990	23	0.10	9	0.02	32
1991	226	0.10	9	0.08	235
1992	629	0.51	30	0.09	659
1993	98	0.09	11	0.03	109
1994	56	0.07	11	0.06	67
1995	21	0.12	2	0.01	23
1996	34	0.07	11	0.03	45
1997	85	0.24	6	0.05	91
1998	150	0.78	7	0.08	157
1999	489	1.75	38	0.21	527
2000	695	1.89	22	0.12	717
2001	397	1.37	39	0.10	436
2002	921	1.25	48	0.12	969
2003	992	1.54	76	0.09	1,068
2004	604	1.11	34	0.07	638
Total	6,548	0.36	559	0.05	7,107

Table 5: Number of fish sampled by mode, state and year. CB and PB correspond to modes 'Charterboat' and 'Private boat', respectively. Samples from the state of MS and from the 'shore' mode were not included in the table (total of 17 fish).

Year	Florida		Alabama		Louisiana		Total
	CB	PB	CB	PB	CB	PB	
1986	156	3	13	2	56		230
1987	403	150	118	11	100		782
1988	96	23	78			3	200
1989	29	8	66		13	6	122
1990	2	4	21	5			32
1991	81	4	79	5	63		232
1992	159	4	398	25	72	1	659
1993	48	7	40	4	10		109
1994	7	5	45	2	3	4	66
1995	11		6	1	4		22
1996	14	1	10	6	10	4	45
1997	53	1	27	1	5	3	90
1998	122	7	25		3		157
1999	415	13	64	25	10		527
2000	553	8	132	13	10	1	717
2001	298	9	77	30	22		436
2002	717	15	120	33	84		969
2003	676	21	218	55	98		1068
2004	451	12	70	20	83	2	638
Total	4,291	295	1,607	238	646	24	7,101

Table 6: Number of fish and percentage measured in the state of FL by county and mode.

County	Charterboat # samples	Charterboat % of total	Private boat # samples	Private boat % of total
Okaloosa	2,685	62.6%	34	11.5%
Bay	676	15.8%	32	10.8%
Pinellas	384	8.9%	38	12.9%
Escambia	178	4.1%	102	34.6%
Walkulla	123	2.9%	11	3.7%
Sarasota	80	1.9%	27	9.2%
Manatee	71	1.7%	1	0.3%
Lee	53	1.2%	4	1.4%
Franklin	21	0.5%	20	6.8%
Pasco	9	0.2%	9	3.1%
Taylor	5	0.1%		
Gulf	5	0.1%	3	1.0%
Collier	1			
Santa Rosa			12	4.1%
Levy			2	0.7%
Total	4,291		295	

Table 7: Number of greater amberjack measured by TXPW and percentage of the estimated landings sampled by year.

Year	Sampled	% sampled
1986	50	0.78
1987	22	0.50
1988	14	0.80
1989	11	0.55
1990	7	0.84
1991	20	1.10
1992	13	0.27
1993	12	0.07
1994	17	7.11
1995	27	6.54
1996	33	4.20
1997	38	2.64
1998	12	2.66
1999	15	4.52
2000	15	2.58
2001	43	3.57
2002	66	1.82
2003	70	2.44
Total	485	0.29

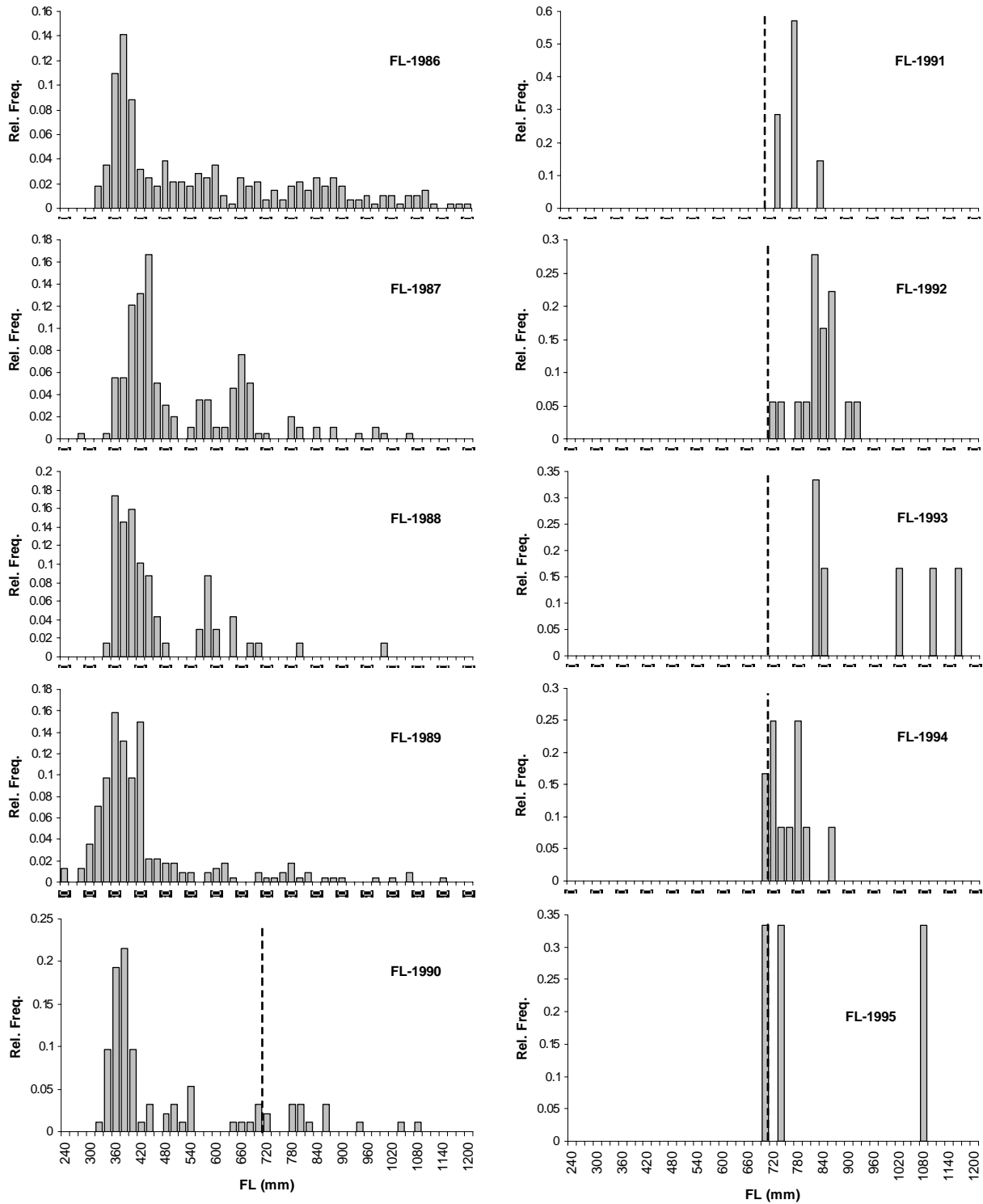
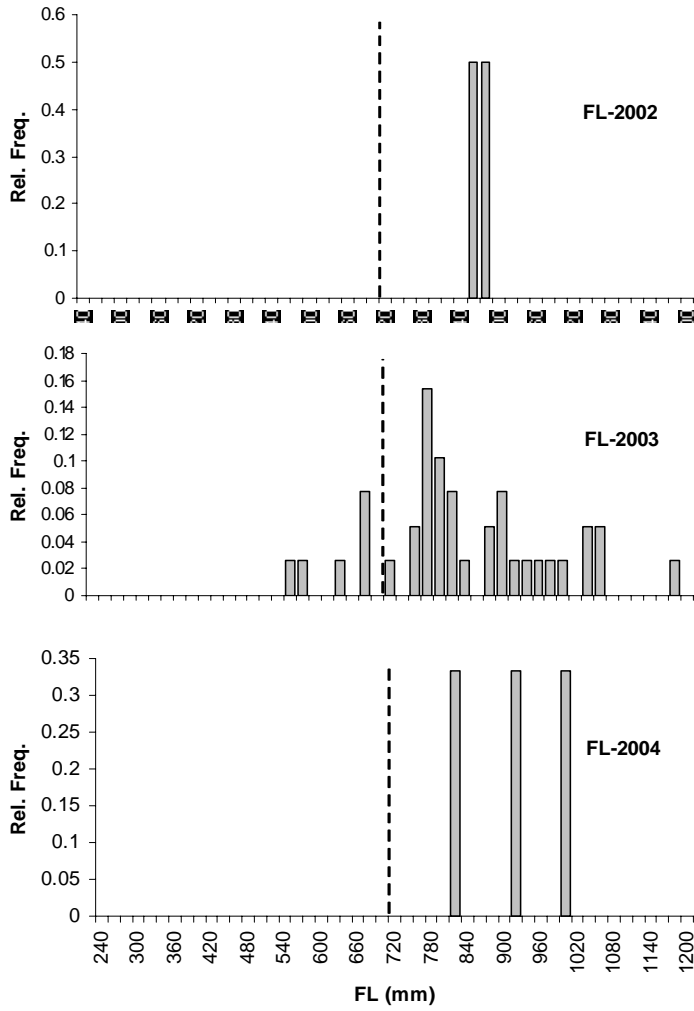


Figure 1: Relative size frequency distribution of greater amberjack from Headboat sampled landings in the SW-Central FL area. Vertical dashed line indicates minimum size limit (710 mm) established in 1990.

Fig. 1 (continued)



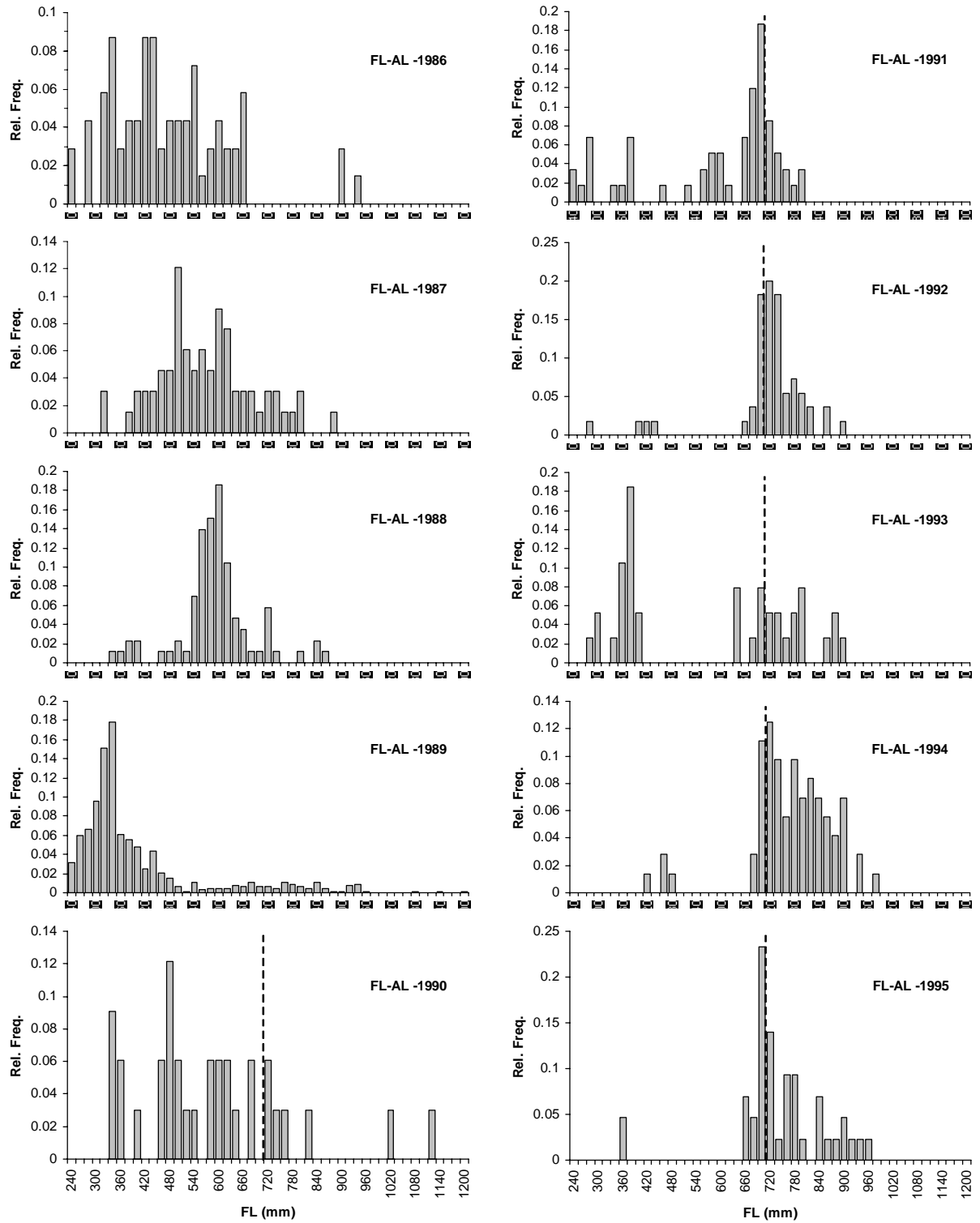
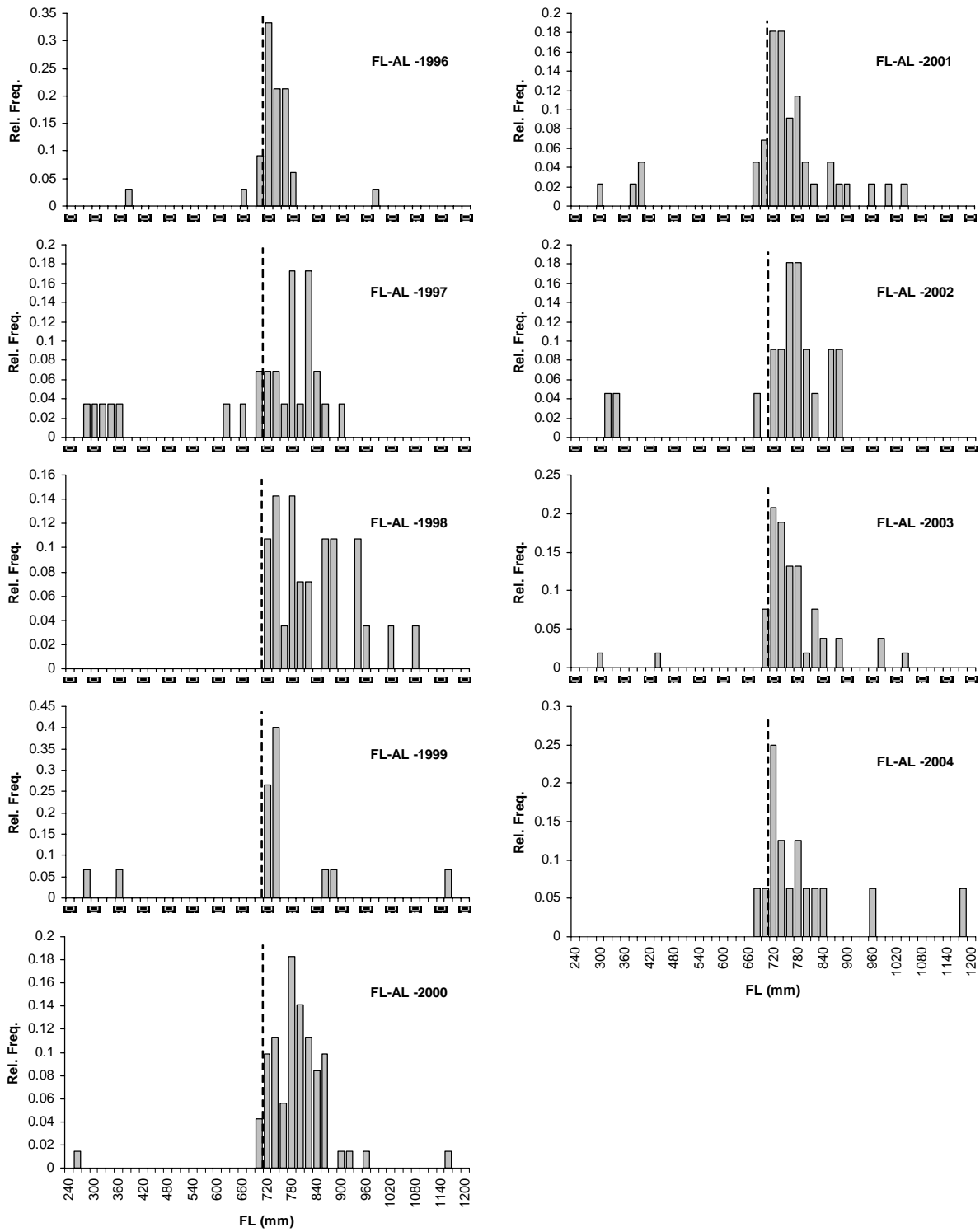


Figure 2: Relative size frequency distribution of greater amberjack from Headboat sampled landings in the NW FL - AL area. Vertical dashed line indicates minimum size limit (710 mm) established in 1990.

Fig. 2 (continued)



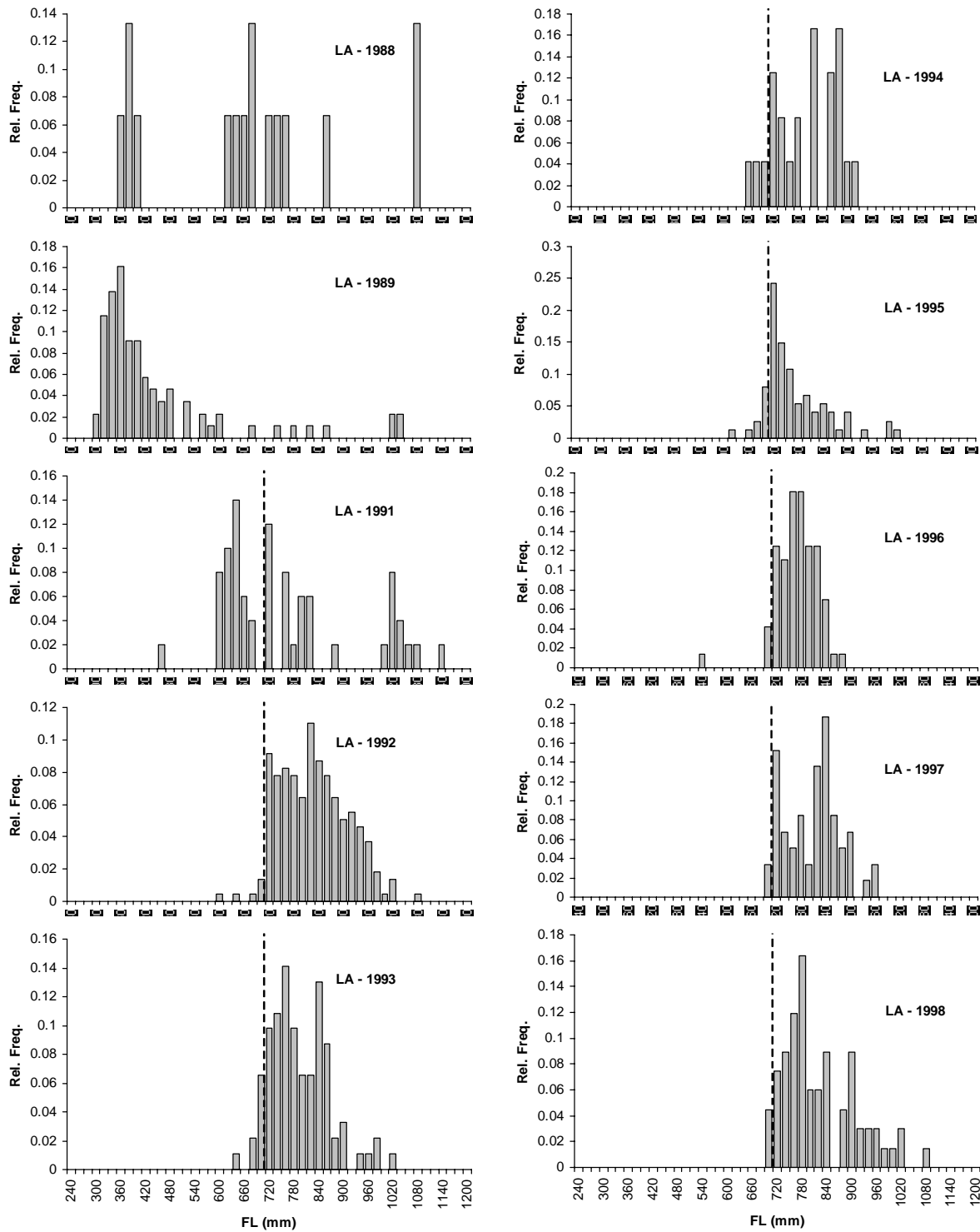
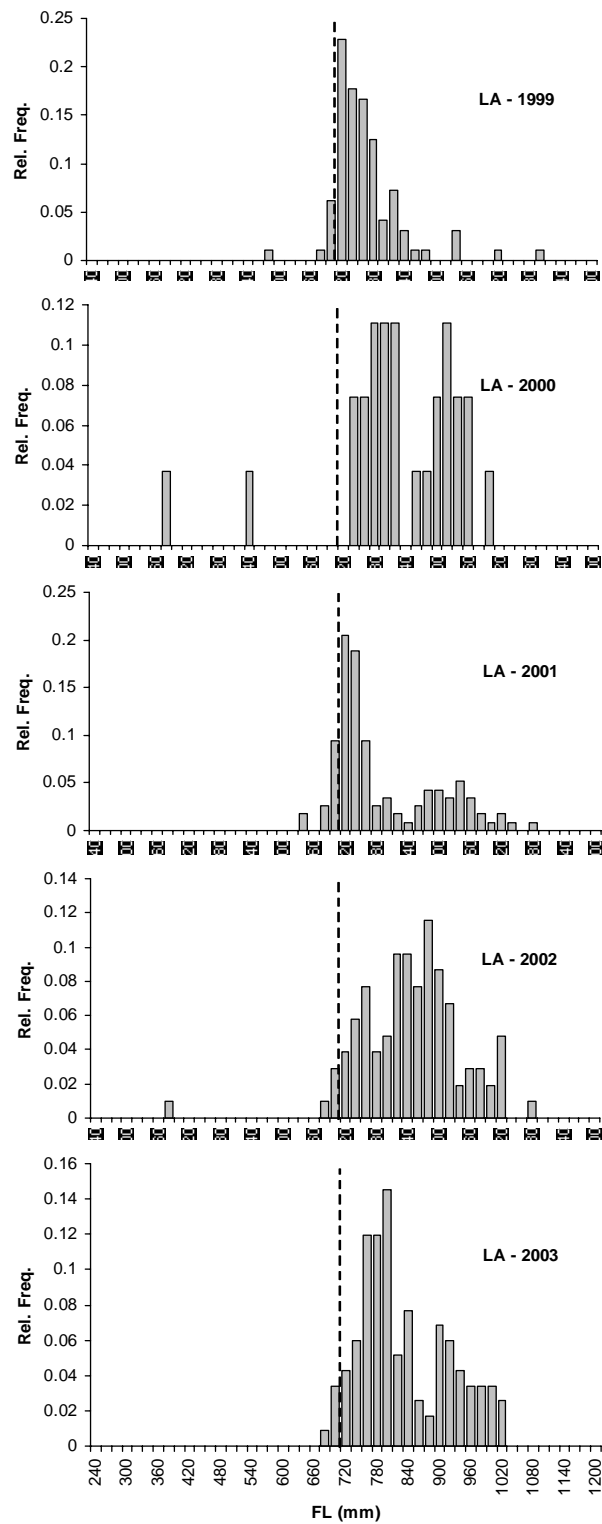


Figure 3: Relative size frequency distribution of greater amberjack from Headboat sampled landings in the AL area. Vertical dashed line indicates minimum size limit (710 mm) established in 1990.

Fig. 3 (continued)



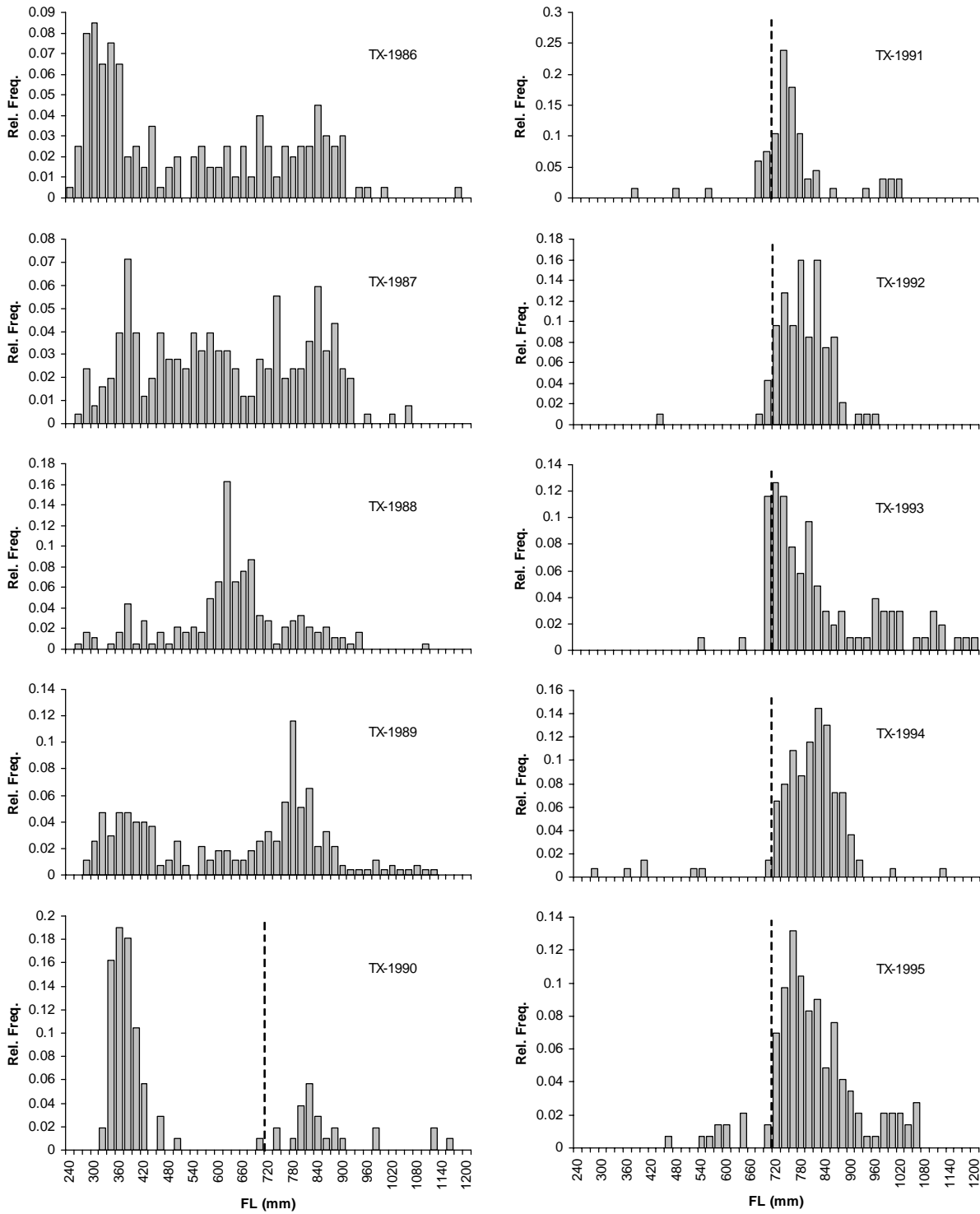
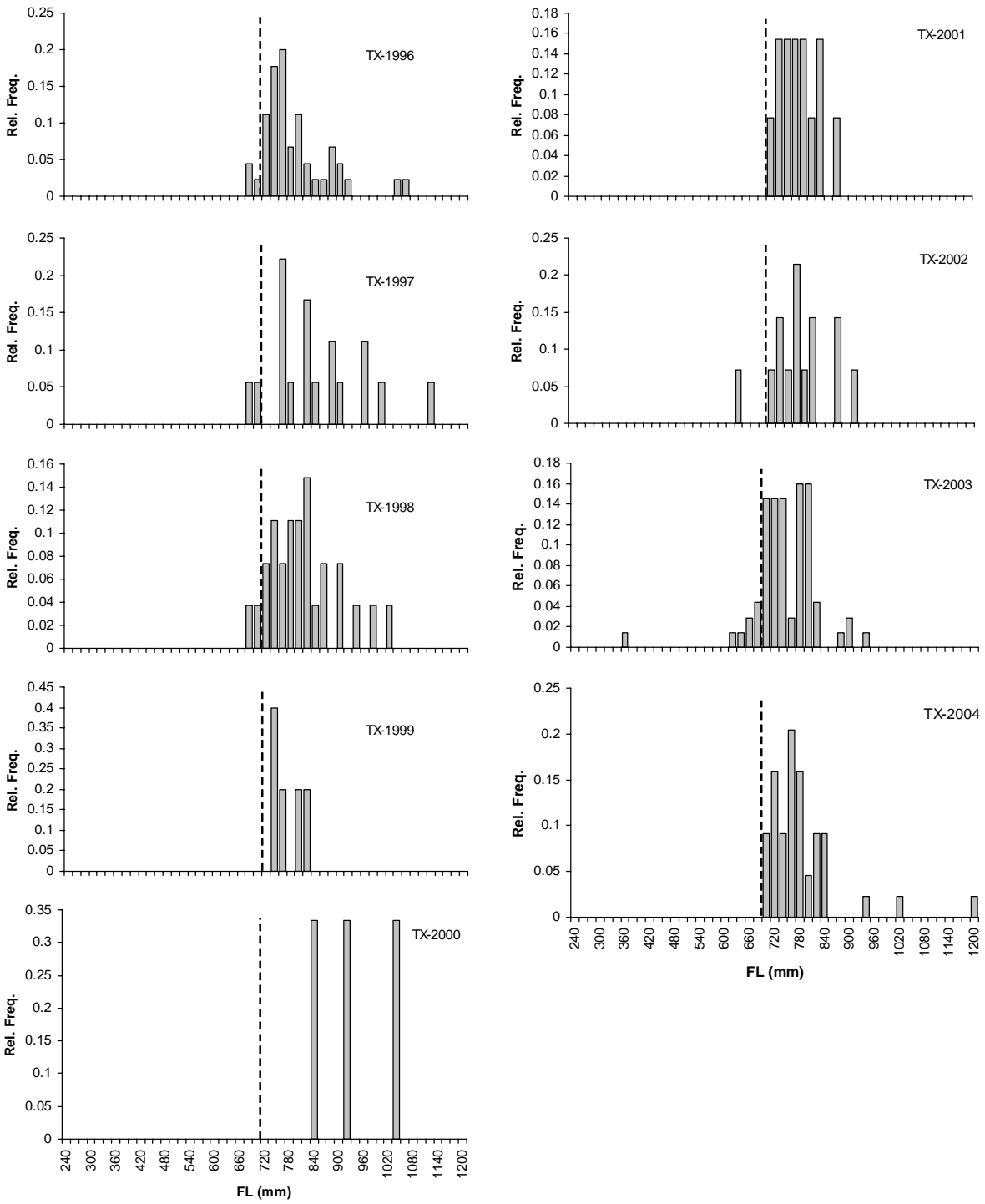


Figure 4: Relative size frequency distribution of greater amberjack from Headboat sampled landings in the TX area. Vertical dashed line indicates minimum size limit (710 mm) established in 1990.

Fig. 4 (continued)



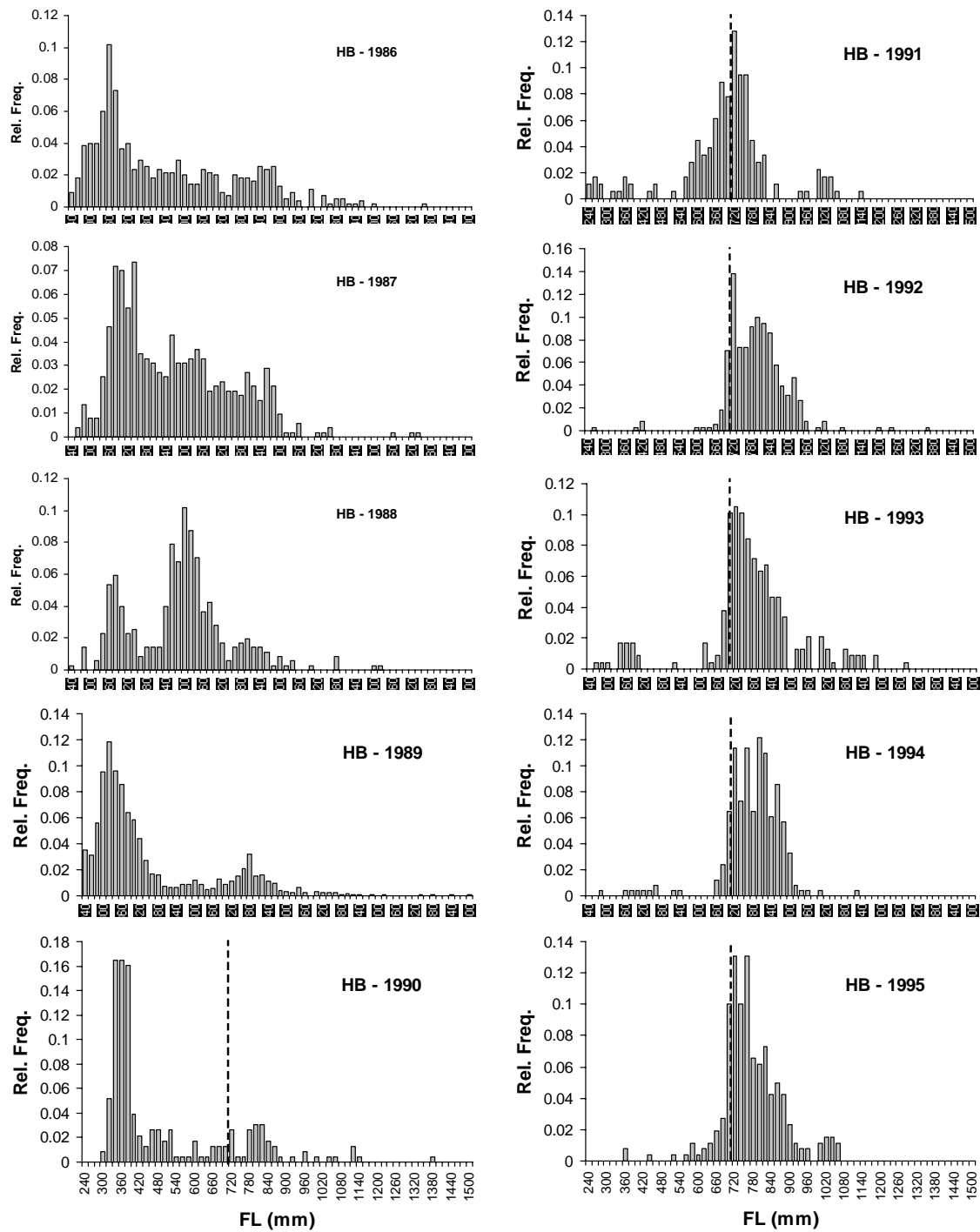
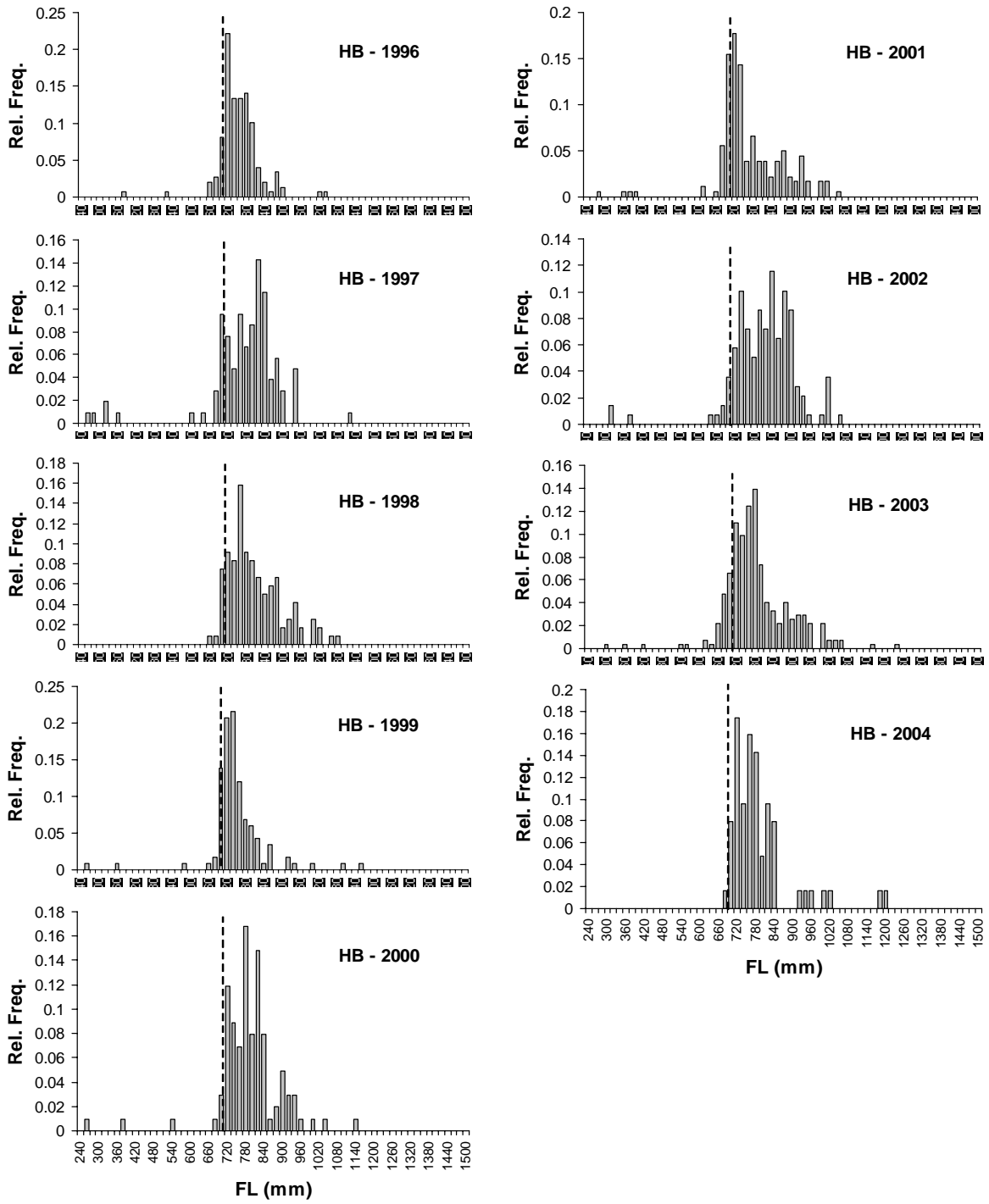


Figure 5: Relative size frequency distribution of greater amberjack from Headboat sampled landings all areas combined. Vertical dashed line indicates minimum size limit (710 mm) established in 1990.

Figure 5 (continued)



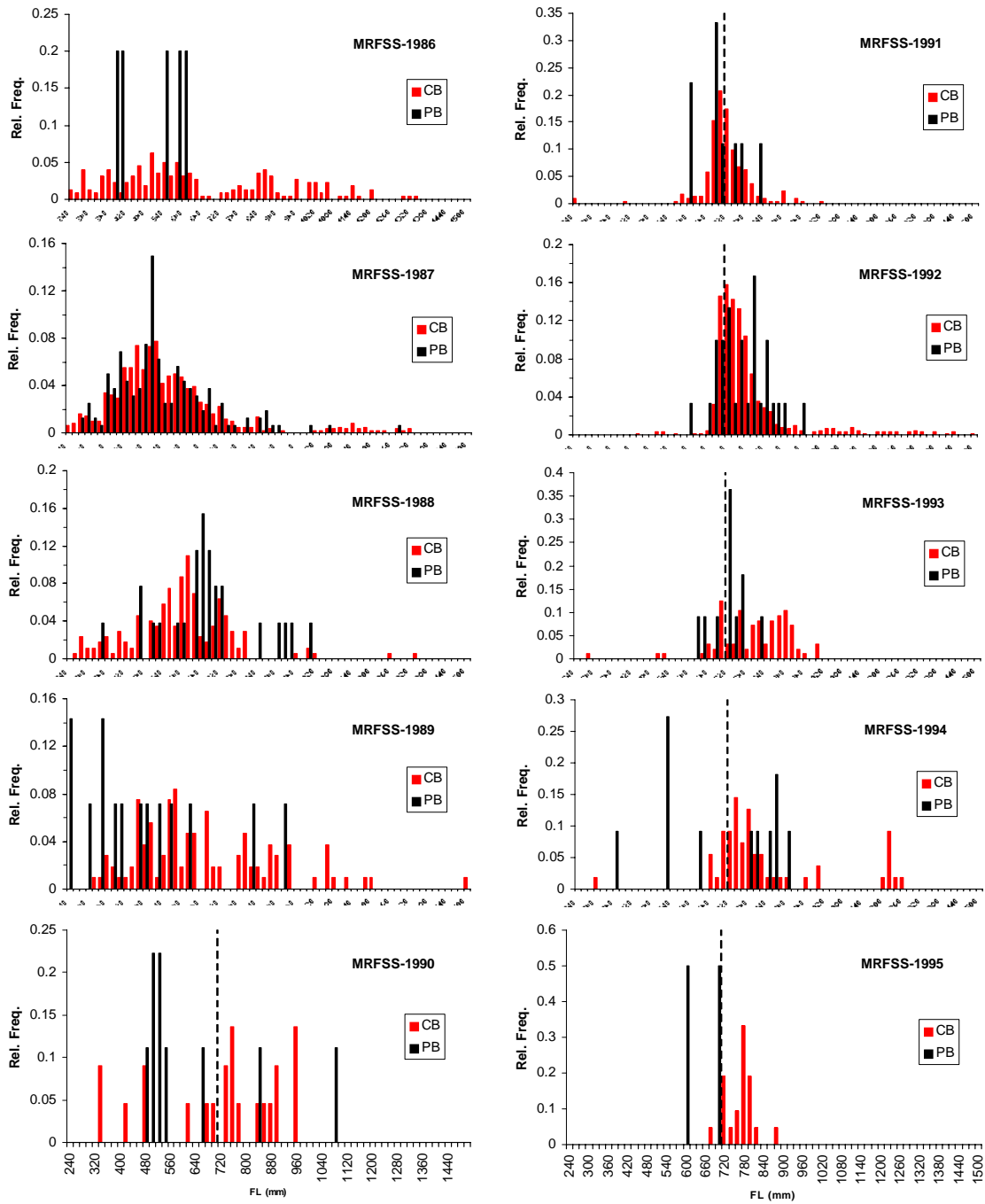
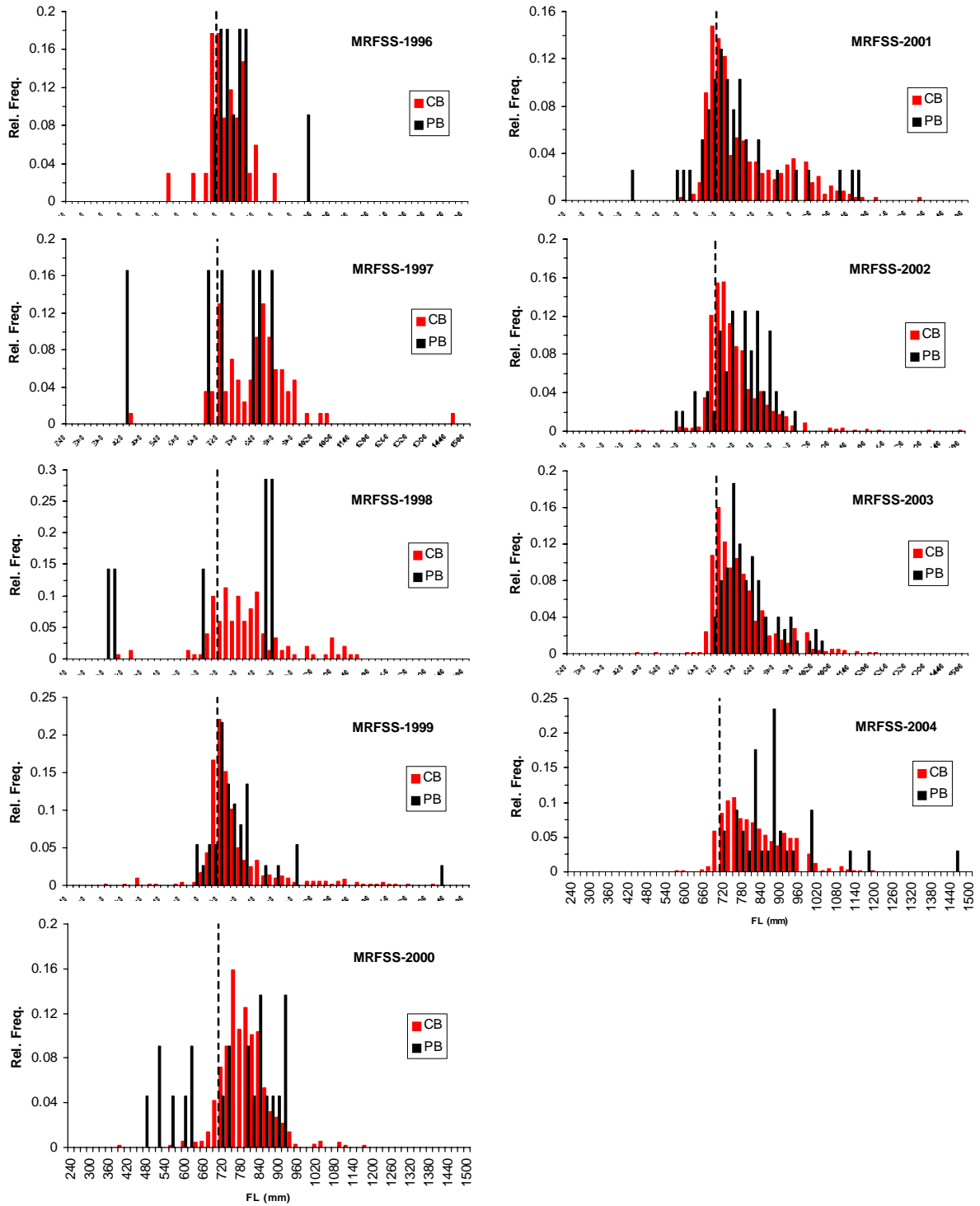


Fig 6: Relative size frequency distribution of greater amberjack from private boat (PB) and charterboat (CB) sampled landings all areas combined. Vertical dashed line indicates minimum size limit (710 mm) established in 1990.

Fig. 6 (continued)



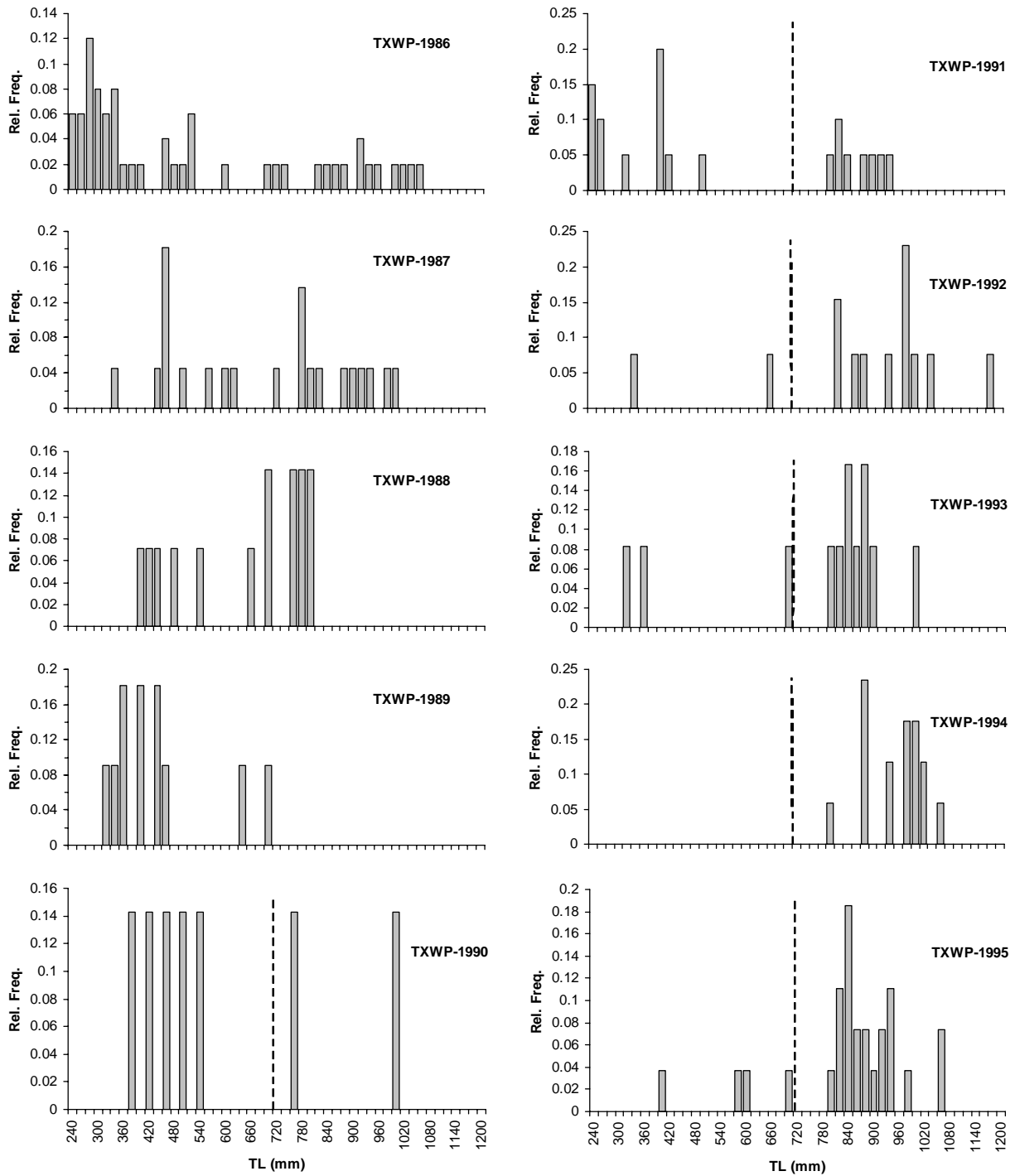


Figure 7: Relative size frequency distribution of greater amberjack from the TXPW size data (All modes combined). Vertical dashed line indicates minimum size limit (710 mm) established in 1990.

Fig. 7 (continued)

