

Estimation of the length and age composition of red drum caught and released alive by anglers fishing along the mid and South Atlantic coast of the U.S. during 1982-2007.

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A significant portion of the total kill of red drum by anglers fishing along the Atlantic coast is made as the result of the post-release mortality suffered by caught and released fish. The portion of the estimated total catch that was caught and released alive increased rapidly during the mid 1980's in Florida and Georgia and during the early 1990's in South Carolina, North Carolina, and Virginia northward (Table 1). In recent years, in most states, about 85% of the total recreational catch of red drum gets released. While only a relative small portion of fish die subsequent to release, assumed 10% based on hooking mortality studies, the large numbers released mean the kill associated with this can be significant (Table 2). The ratios of the number of released-alive mortalities to the landings averaged 42% in the southern region and 57% in the northern region during 2003-2007.

Despite this significance, there is little data available to characterize the size or age composition of this portion of the catch. Since 2002 in Florida, randomly chosen licensed anglers have been asked to keep a logbook for a single fishing trip, recording the sizes of all red drum captured (Table 3). Given the scarcity of data, length information from the gulf coast of Florida was included from volunteer angler logbooks used here. In South Carolina, a captain's logbook from selected anglers (?) provided lengths of red drum released during 2007 and 2008 (Table 4). Another indication of the sizes of released red drum in the southern region came from a 2004-2007 scientific hook-and-line sampling study conducted on the gulf coast of Florida. Given complete information about the sizes and sequence of fish captured, the expected number and sizes of fish kept and the number and sizes of fish released could be estimated based on compliance to any set of size or bag limits (Table 5). From the northern region, an analysis of the release rates for tagged fish during studies conducted between 1999 and 2005 provide estimates of ages of red drum released alive during 1999-2007 in North Carolina (Table 6).

Length composition

The length composition of released fish in Florida was estimated for each year during 1989-2007 by applying the proportions observed at length from the pooled 2002-2007 angler volunteer logbook program operating on both the Atlantic and gulf coast. For the years prior to 1989, the scientific hook-and-line sampling, conducted during 2004-2007 on the gulf coast, was filtered through the year-specific regulations in place at the time to predict the length composition of released fish. This assumed complete compliance with the size and bag limits (if any) employed at the time and that the hook-and-line sampling drew fish from the same size composition of fish during 2004-2007 that would have occurred in earlier years.

The lengths of released fish in Georgia and South Carolina were assumed to follow the average 2007-2008 length composition during 1992-2007. Prior to this, the

release lengths were assumed to follow the Florida gulf coast scientific sampling length frequencies adjusted for the minimum size limit in Georgia and South Carolina during 1987-1991. Prior to 1987, the only available information was the estimated lengths for Florida releases and these were used even though there were no minimum size limits in Georgia or South Carolina (?) and a 12 inch fork length minimum size limit in Florida during those years.

Age composition

The age-length keys used to convert the landings length frequencies into ages were used for the released-alive length frequencies from Florida, Georgia, and South Carolina. The age composition of released fish was estimated directly from tag/recapture data analysis in North Carolina for the period 1999-2007. North Carolina's estimated age composition for 1999 was assumed to also be valid for the 1991-1998 age composition of released fish. For earlier years, the South Carolina/Georgia estimated age composition was used for North Carolina. The final North Carolina estimates for released-alive age composition were assumed valid for all states in the northern region therefore these age proportions were applied to the Virginia, Maryland, Delaware, and New Jersey release estimates.

The estimated age composition of angler-released-alive red drum appear to show a marked response to the enactment of strict regulations to the legal size for harvested fish. For instance, most states showed a dramatic increase in the numbers of older-aged fish released alive approximately the same year that maximum size limits were first enacted (Table 7). Of course, many of these changes also reflect the assumptions about what were the appropriate data to use for many years when there was no direct observations of the sizes or ages of release-alive fish.

Table 1. Estimated annual total catch (TC), in numbers, of red drum by anglers fishing in the mid and South Atlantic region of the U.S. during 1982-2007, the numbers of red drum released alive (B2) and the proportion of the total catch represented by these releases (prop).

	Florida			Georgia			South Carolina			North Carolina			Virginia north		
	TC	B2	prop	TC	B2	prop	TC	B2	prop	TC	B2	prop	TC	B2	prop
1982	214,573	10,172	4.7%	34,135	3,378	9.9%	163,258	2,497	1.5%	16,444	0	0.0%	0	0	
1983	399,238	54,724	13.7%	58,272	1,416	2.4%	111,556	6,750	6.1%	83,393	1,866	2.2%	35,353	0	0.0%
1984	596,577	47,196	7.9%	262,418	4,231	1.6%	129,548	0	0.0%	111,720	2,931	2.6%	1,457	0	0.0%
1985	458,583	193,398	42.2%	190,150	6,315	3.3%	546,798	16,688	3.1%	22,077	0	0.0%	1,115	1,115	100.0%
1986	213,535	100,095	46.9%	162,653	58,639	36.1%	217,950	23,923	11.0%	17,501	0	0.0%	48,538	7,595	15.6%
1987	429,183	377,959	88.1%	374,603	237,296	63.3%	604,129	82,085	13.6%	79,600	18,499	23.2%	2,186	0	0.0%
1988	243,530	233,988	96.1%	317,986	180,700	56.8%	557,560	269,138	48.3%	167,534	24,874	14.8%	8,270	3,958	47.9%
1989	207,049	172,301	83.2%	123,411	72,178	58.5%	170,652	42,823	25.1%	69,923	7,566	10.8%	22,977	9,955	43.3%
1990	112,949	68,667	60.8%	233,005	156,397	67.1%	213,748	100,559	47.0%	45,664	12,453	27.3%	2,213	934	42.2%
1991	748,501	645,772	86.3%	258,718	95,584	36.9%	229,909	102,492	44.6%	160,270	121,455	75.8%	38,756	18,893	48.7%
1992	388,924	284,800	73.2%	215,966	130,090	60.2%	161,030	46,257	28.7%	83,824	60,229	71.9%	28,959	15,685	54.2%
1993	532,340	465,655	87.5%	250,135	141,947	56.7%	280,158	158,013	56.4%	232,244	182,326	78.5%	64,439	50,434	78.3%
1994	812,748	691,811	85.1%	286,470	147,213	51.4%	440,607	321,524	73.0%	136,909	107,690	78.7%	12,061	10,683	88.6%
1995	780,630	683,706	87.6%	505,967	364,295	72.0%	540,233	363,162	67.2%	253,848	164,593	64.8%	37,225	33,560	90.2%
1996	647,099	500,277	77.3%	135,815	72,666	53.5%	329,292	203,456	61.8%	72,652	35,752	49.2%	2,996	2,424	80.9%
1997	635,436	560,345	88.2%	62,157	22,795	36.7%	328,353	196,518	59.8%	268,339	259,540	96.7%	114,247	112,326	98.3%
1998	590,487	482,041	81.6%	62,388	34,790	55.8%	131,469	83,855	63.8%	322,000	202,307	62.8%	109,499	96,428	88.1%
1999	714,375	583,157	81.6%	87,714	18,704	21.3%	140,510	94,685	67.4%	313,983	247,645	78.9%	247,466	235,041	95.0%
2000	907,171	712,491	78.5%	225,225	130,793	58.1%	136,929	99,568	72.7%	266,102	204,442	76.8%	220,601	197,998	89.8%
2001	1,044,656	863,580	82.7%	340,258	249,862	73.4%	281,438	220,394	78.3%	261,771	238,608	91.2%	37,606	30,365	80.7%
2002	790,852	670,211	84.7%	262,432	169,128	64.4%	197,887	156,416	79.0%	688,802	643,911	93.5%	876,628	821,036	93.7%
2003	974,408	803,044	82.4%	399,371	275,929	69.1%	606,672	443,976	73.2%	118,472	90,715	76.6%	60,651	47,045	77.6%
2004	1,301,709	1,137,540	87.4%	290,150	156,749	54.0%	521,812	389,737	74.7%	219,839	189,691	86.3%	38,784	33,594	86.6%
2005	1,467,276	1,271,042	86.6%	438,551	330,581	75.4%	632,549	491,527	77.7%	372,588	319,320	85.7%	33,592	30,968	92.2%
2006	1,043,535	893,780	85.6%	230,391	148,121	64.3%	679,868	607,381	89.3%	513,333	461,810	90.0%	194,545	171,467	88.1%
2007	1,096,253	897,093	81.8%	295,124	191,738	65.0%	625,229	537,008	85.9%	510,090	444,740	87.2%	237,048	166,223	70.1%

Table 2. Estimated annual number of red drum that died subsequent to being released alive (0.1B2), at a release mortality rate of 10%, by anglers fishing in the mid and South Atlantic region of the U.S. during 1982-2007; the estimated landings (AB1), in numbers, and the ratio of released-alive deaths to the estimated landings (ratio)

	Florida			Georgia			South Carolina			North Carolina			Virginia north		
	0.1B2	AB1	ratio	0.1B2	AB1	ratio	0.1B2	AB1	ratio	0.1B2	AB1	ratio	0.1B2	AB1	ratio
1982	1,017	204,401	0.00	338	30,757	0.01	250	160,761	0.00	0	16,444	0.00	0	0	
1983	5,472	344,514	0.02	142	56,856	0.00	675	104,806	0.01	187	81,527	0.00	0	35,353	0.00
1984	4,720	549,381	0.01	423	258,187	0.00	0	129,548	0.00	293	108,789	0.00	0	1,457	0.00
1985	19,340	265,185	0.07	632	183,835	0.00	1,669	530,110	0.00	0	22,077	0.00	112	0	
1986	10,010	113,440	0.09	5,864	104,014	0.06	2,392	194,027	0.01	0	17,501	0.00	760	40,943	0.02
1987	37,796	51,224	0.74	23,730	137,307	0.17	8,209	522,044	0.02	1,850	61,101	0.03	0	2,186	0.00
1988	23,399	9,542	2.45	18,070	137,286	0.13	26,914	288,422	0.09	2,487	142,660	0.02	396	4,312	0.09
1989	17,230	34,748	0.50	7,218	51,233	0.14	4,282	127,829	0.03	757	62,357	0.01	996	13,022	0.08
1990	6,867	44,282	0.16	15,640	76,608	0.20	10,056	113,189	0.09	1,245	33,211	0.04	93	1,279	0.07
1991	64,577	102,729	0.63	9,558	163,134	0.06	10,249	127,417	0.08	12,146	38,815	0.31	1,889	19,863	0.10
1992	28,480	104,124	0.27	13,009	85,876	0.15	4,626	114,773	0.04	6,023	23,595	0.26	1,569	13,274	0.12
1993	46,566	66,685	0.70	14,195	108,188	0.13	15,801	122,145	0.13	18,233	49,918	0.37	5,043	14,005	0.36
1994	69,181	120,937	0.57	14,721	139,257	0.11	32,152	119,083	0.27	10,769	29,219	0.37	1,068	1,378	0.78
1995	68,371	96,924	0.71	36,430	141,672	0.26	36,316	177,071	0.21	16,459	89,255	0.18	3,356	3,665	0.92
1996	50,028	146,822	0.34	7,267	63,149	0.12	20,346	125,836	0.16	3,575	36,900	0.10	242	572	0.42
1997	56,035	75,091	0.75	2,280	39,362	0.06	19,652	131,835	0.15	25,954	8,799	2.95	11,233	1,921	5.85
1998	48,204	108,446	0.44	3,479	27,598	0.13	8,386	47,614	0.18	20,231	119,693	0.17	9,643	13,071	0.74
1999	58,316	131,218	0.44	1,870	69,010	0.03	9,469	45,825	0.21	24,765	66,338	0.37	23,504	12,425	1.89
2000	71,249	194,680	0.37	13,079	94,432	0.14	9,957	37,361	0.27	20,444	61,660	0.33	19,800	22,603	0.88
2001	86,358	181,076	0.48	24,986	90,396	0.28	22,039	61,044	0.36	23,861	23,163	1.03	3,037	7,241	0.42
2002	67,021	120,641	0.56	16,913	93,304	0.18	15,642	41,471	0.38	64,391	44,891	1.43	82,104	55,592	1.48
2003	80,304	171,364	0.47	27,593	123,442	0.22	44,398	162,696	0.27	9,072	27,757	0.33	4,705	13,606	0.35
2004	113,754	164,169	0.69	15,675	133,401	0.12	38,974	132,075	0.30	18,969	30,148	0.63	3,359	5,190	0.65
2005	127,104	196,234	0.65	33,058	107,970	0.31	49,153	141,022	0.35	31,932	53,268	0.60	3,097	2,624	1.18
2006	89,378	149,755	0.60	14,812	82,270	0.18	60,738	72,487	0.84	46,181	51,523	0.90	17,147	23,078	0.74
2007	89,709	199,160	0.45	19,174	103,386	0.19	53,701	88,221	0.61	44,474	65,350	0.68	16,622	70,825	0.23

Table 3. Number of fishing trips and the length frequencies (inches total length) of red drum caught and kept (K) or released (R) on these trips as reported in volunteer angler logbooks available for 2002-2007 from anglers fishing along Florida's Atlantic or gulf coasts.

Trips inchTL	2002 37		2003 121		2004 134		2005 105		2006 26		2007 36	
	K	R	K	R	K	R	K	R	K	R	K	R
5	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	2	1	0	0	0	0	1	0	0
9	0	1	0	2	0	1	0	1	0	1	0	0
10	0	0	0	1	0	4	0	1	0	0	0	0
11	0	0	0	1	0	7	0	2	0	0	0	0
12	0	2	0	2	1	9	0	4	0	1	0	2
13	0	1	0	0	0	9	0	8	0	1	0	2
14	0	5	0	5	0	4	0	13	0	7	0	2
15	0	3	0	14	0	8	0	13	0	3	0	7
16	0	5	0	17	0	17	0	18	0	6	0	7
17	0	3	0	12	0	20	0	8	0	4	0	7
18	0	0	3	5	1	9	3	4	0	4	1	2
19	0	2	2	7	6	10	7	4	0	2	5	1
20	0	2	3	6	2	11	2	3	0	2	0	3
21	1	1	1	9	8	7	4	6	0	1	0	3
22	1	1	5	10	5	7	7	5	2	0	4	1
23	1	1	3	11	6	5	2	3	1	0	2	1
24	0	0	5	14	5	7	4	6	3	0	2	0
25	1	3	11	11	3	5	2	4	0	1	2	2
26	0	0	15	12	6	6	5	2	0	4	2	1
27	0	2	4	2	3	1	2	2	0	0	0	1
28	0	0	0	6	0	5	0	1	0	2	0	1
29	0	1	0	9	0	3	0	9	0	0	0	3
30	0	0	0	9	0	2	0	5	0	0	0	1
31	0	0	0	7	0	1	0	5	0	0	0	0
32	0	0	0	8	0	4	0	2	0	1	0	1
33	0	0	0	5	0	3	0	0	0	0	0	1
34	0	0	0	0	0	0	0	0	0	0	0	1
35	0	0	0	0	0	1	0	0	0	0	0	0
36	0	0	0	2	0	3	0	0	0	0	0	1
37	0	1	0	0	0	0	0	0	0	0	0	0
38	0	0	0	1	0	0	0	0	0	0	0	0
39	0	0	0	0	0	1	0	0	0	0	0	0
40	0	0	0	0	0	1	0	0	0	0	0	2
Totals	4	34	52	190	47	171	38	129	6	41	18	53

Table 4. Length frequencies of red drum releases recorded in the South Carolina captain's logbook program during 2007 and 2008 and the average proportion in each total length inch class.

“ TL	2007	2008	Ave prop.
8	0	2	0.000
9	0	0	0.000
10	8	20	0.007
11	11	11	0.006
12	77	32	0.033
13	64	38	0.030
14	105	56	0.048
15	128	99	0.065
16	128	121	0.070
17	134	184	0.087
18	86	135	0.059
19	66	266	0.083
20	41	89	0.034
21	43	99	0.037
22	50	103	0.040
23	38	97	0.035
24	37	101	0.035
25	22	63	0.022
26	51	161	0.054
27	66	148	0.056
28	33	115	0.037
29	45	89	0.035
30	31	60	0.024
31	21	43	0.017
32	10	24	0.009
33	3	11	0.004
34	4	4	0.002
35	6	3	0.003
36	14	6	0.006
37	8	0	0.003
38	10	2	0.004
39	27	1	0.009
40	134	7	0.046
Totals	1,501	2,190	

Table 5. Length frequencies (inches total length) of red drum caught and kept (K) or released (R) and number of trips made by scientist using hook-and-line gear during 2004-2007 fishery independent monitoring surveys along the Florida gulf coast.

Trips inchTL	2004 46		2005 120		2006 78		2007 56	
	K	R	K	R	K	R	K	R
5	0	0	0	0	0	0	0	0
6	0	0	0	1	0	0	0	0
7	0	0	0	2	0	0	0	0
8	0	0	0	21	0	0	0	8
9	0	0	0	53	0	1	0	10
10	0	6	0	106	0	1	0	7
11	0	21	0	96	0	6	0	10
12	0	23	0	140	0	13	0	13
13	0	30	0	97	0	35	0	11
14	0	39	0	78	0	48	0	3
15	0	27	0	73	0	65	0	8
16	0	17	0	49	0	44	0	15
17	0	19	0	26	0	43	0	19
18	4	27	6	16	8	26	4	12
19	5	45	4	17	2	18	1	17
20	7	25	8	18	3	4	5	10
21	1	22	3	13	2	18	5	12
22	5	17	4	10	6	22	4	11
23	0	7	4	11	2	25	3	12
24	2	3	0	8	4	10	4	5
25	1	2	1	8	2	11	0	3
26	0	2	1	3	0	7	1	1
27	0	0	0	8	0	6	0	5
28	0	1	0	4	0	3	0	5
29	0	0	0	4	0	2	0	0
30	0	0	0	1	0	0	0	1
31	0	1	0	0	0	0	0	0
32	0	0	0	0	0	1	0	0
33	0	0	0	0	0	0	0	0
34	0	0	0	0	0	0	0	0
35	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0
37	0	0	0	0	0	0	0	0
38	0	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0	0
40	0	0	0	0	0	0	0	0
Totals	25	334	31	863	29	409	27	198

Table 6. The estimated age composition of the released-alive recreational catch of red drum in North Carolina during 1999-2007. These are based on MRFSS adjusted B2 estimated and an analysis of the lengths of hook-and-line releases reported during a tag/recapture study. The conversion of size classes to ages was based on an age-length key.

Age	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	193,755	161,546	107,969	588,051	55,300	89,629	140,611	254,206	245,249
2	180,072	150,138	100,344	546,523	51,394	83,300	130,681	236,254	227,929
3	24,854	20,722	13,850	75,432	7,093	11,497	18,037	32,608	31,459
4	15,922	13,275	8,872	48,323	4,544	7,365	11,555	20,889	20,153
5	8,358	6,969	4,658	25,368	2,386	3,866	6,066	10,966	10,580
6	417	348	233	1,267	119	193	303	548	528
7	2,722	2,269	1,517	8,261	777	1,259	1,975	3,571	3,445
8	3,557	2,965	1,982	10,795	1,015	1,645	2,581	4,666	4,502
9	624	521	348	1,895	178	289	453	819	790
10+	52,401	43,690	29,200	159,037	14,956	24,240	38,028	68,750	66,327
Total	482,682	402,443	268,973	1,464,952	137,762	223,283	350,290	633,277	610,962

Table 7. Estimated released-alive (MRFSS Type B2) age composition for red drum in Florida, Georgia, South Carolina, and the northern region (North Carolina through New Jersey) during 1982-2007.

Florida											
	1	2	3	4	5	6	7	8	9	10 ⁺	Total
1982	10,172	0	0	0	0	0	0	0	0	0	10,172
1983	54,724	0	0	0	0	0	0	0	0	0	54,724
1984	47,196	0	0	0	0	0	0	0	0	0	47,196
1985	193,398	0	0	0	0	0	0	0	0	0	193,398
1986	59,262	34,573	5,747	450	59	0	5	0	0	0	100,096
1987	178,149	134,273	48,351	14,430	1,428	900	344	84	0	0	377,959
1988	110,289	83,126	29,933	8,933	884	557	213	52	0	0	233,988
1989	54,489	59,003	24,670	21,890	3,929	4,441	1,782	569	422	1,109	172,303
1990	21,715	23,514	9,832	8,724	1,566	1,770	710	227	168	442	68,667
1991	204,217	221,137	92,461	82,042	14,724	16,644	6,678	2,132	1,582	4,155	645,772
1992	90,064	97,526	40,777	36,182	6,493	7,341	2,945	940	698	1,832	284,798
1993	147,258	159,459	66,672	59,159	10,617	12,002	4,815	1,538	1,141	2,996	465,657
1994	218,776	236,903	99,053	87,891	15,773	17,831	7,154	2,284	1,695	4,451	691,811
1995	216,213	234,127	97,892	86,861	15,589	17,622	7,070	2,258	1,675	4,399	683,706
1996	158,206	171,314	71,629	63,558	11,406	12,894	5,173	1,652	1,226	3,219	500,278
1997	177,202	191,884	80,230	71,189	12,776	14,443	5,794	1,850	1,373	3,605	560,345
1998	152,439	165,069	69,018	61,241	10,991	12,424	4,985	1,592	1,181	3,101	482,040
1999	157,410	251,422	73,767	57,063	26,838	2,809	5,054	4,159	1,138	3,498	583,157
2000	192,320	307,183	90,127	69,719	32,790	3,432	6,175	5,082	1,390	4,274	712,492
2001	233,103	372,323	109,239	84,503	39,743	4,160	7,484	6,159	1,685	5,180	863,580
2002	180,909	288,956	84,779	65,582	30,844	3,229	5,808	4,780	1,308	4,020	670,215
2003	216,761	346,221	101,581	78,579	36,957	3,868	6,959	5,728	1,567	4,817	803,039
2004	276,068	468,000	155,586	172,950	47,455	5,480	2,958	0	2,220	6,824	1,137,540
2005	308,467	522,925	173,846	193,248	53,024	6,123	3,305	0	2,480	7,624	1,271,042
2006	253,140	303,619	165,891	119,317	38,080	4,306	2,324	0	1,744	5,361	893,781
2007	254,077	304,743	166,505	119,758	38,221	4,321	2,333	0	1,750	5,381	897,091

Table 7 (con't.). Estimated released-alive (MRFSS Type B2) age composition for red drum in Florida, Georgia, South Carolina , and the northern region (North Carolina through New Jersey) during 1982-2007.

Georgia											
	1	2	3	4	5	6	7	8	9	10 ⁺	Total
1982	3,356	22	0	0	0	0	0	0	0	0	3,378
1983	1,407	9	0	0	0	0	0	0	0	0	1,416
1984	4,205	27	0	0	0	0	0	0	0	0	4,232
1985	6,274	40	0	0	0	0	0	0	0	0	6,314
1986	58,264	374	0	0	0	0	0	0	0	0	58,638
1987	235,785	1,512	0	0	0	0	0	0	0	0	237,297
1988	179,548	1,151	0	0	0	0	0	0	0	0	180,699
1989	71,719	460	0	0	0	0	0	0	0	0	72,179
1990	155,400	997	0	0	0	0	0	0	0	0	156,397
1991	94,976	609	0	0	0	0	0	0	0	0	95,585
1992	41,168	47,127	24,614	4,233	3,179	198	179	133	236	9,023	130,090
1993	44,920	51,422	26,857	4,619	3,469	216	195	145	257	9,846	141,946
1994	46,587	53,330	27,854	4,791	3,598	224	203	150	267	10,211	147,213
1995	115,284	131,971	68,927	11,855	8,903	554	502	372	660	25,268	364,295
1996	22,996	26,325	13,749	2,365	1,776	111	100	74	132	5,040	72,667
1997	7,214	8,258	4,313	742	557	35	31	23	41	1,581	22,796
1998	9,355	14,618	6,678	1,207	168	206	48	36	63	2,413	34,791
1999	5,228	6,979	4,412	510	90	111	26	19	34	1,297	18,706
2000	44,536	40,189	30,626	4,414	630	775	180	134	237	9,072	130,793
2001	85,079	76,777	58,507	8,432	1,204	1,481	344	255	453	17,331	249,863
2002	55,611	59,646	34,166	5,300	793	1,078	293	171	262	11,813	169,131
2003	77,717	112,613	60,016	2,320	1,329	1,635	380	282	500	19,139	275,931
2004	36,788	66,683	32,017	8,044	755	929	216	160	284	10,872	156,748
2005	99,924	129,862	63,913	9,008	1,593	1,959	455	338	599	22,930	330,581
2006	38,791	64,644	26,952	5,244	714	878	204	151	268	10,274	148,120
2007	50,214	83,679	34,888	6,789	924	1,136	264	196	347	13,299	191,737

Table 7 (con't.). Estimated released-alive (MRFSS Type B2) age composition for red drum in Florida, Georgia, South Carolina , and the northern region (North Carolina through New Jersey) during 1982-2007.

South Carolina											
	1	2	3	4	5	6	7	8	9	10 ⁺	Total
1982	2,341	156	0	0	0	0	0	0	0	0	2,497
1983	6,330	421	0	0	0	0	0	0	0	0	6,751
1984	0	0	0	0	0	0	0	0	0	0	0
1985	15,648	1,041	0	0	0	0	0	0	0	0	16,689
1986	22,431	1,492	0	0	0	0	0	0	0	0	23,923
1987	76,965	5,119	0	0	0	0	0	0	0	0	82,084
1988	252,354	16,784	0	0	0	0	0	0	0	0	269,138
1989	40,153	2,671	0	0	0	0	0	0	0	0	42,824
1990	94,287	6,271	0	0	0	0	0	0	0	0	100,558
1991	100,821	1,671	0	0	0	0	0	0	0	0	102,492
1992	12,284	20,226	8,869	1,594	451	47	193	21	7	2,566	46,257
1993	38,391	65,496	31,128	12,264	1,055	160	659	71	24	8,766	158,015
1994	72,669	129,099	60,768	35,030	3,826	757	1,342	145	49	17,837	321,522
1995	113,805	118,138	57,496	43,227	7,689	924	1,516	164	56	20,147	363,163
1996	42,852	88,232	25,037	25,790	8,467	818	849	92	31	11,287	203,456
1997	79,825	49,526	24,025	26,738	1,920	4,460	1,448	634	178	7,765	196,519
1998	14,768	37,811	10,304	11,223	4,011	1,763	361	180	13	3,419	83,854
1999	27,945	31,895	14,715	9,494	4,329	716	257	127	67	5,140	94,686
2000	32,925	31,145	16,157	10,824	3,622	200	978	6	0	3,710	99,566
2001	73,752	65,674	39,784	22,310	5,037	1,377	101	100	34	12,227	220,395
2002	39,160	64,260	23,388	13,961	4,286	653	62	180	282	10,184	156,416
2003	98,007	168,066	72,089	55,786	18,877	5,245	467	222	116	25,100	443,976
2004	71,220	164,817	61,066	51,760	13,696	3,407	366	232	101	23,072	389,738
2005	135,181	150,879	98,643	58,696	15,997	2,697	189	275	128	28,841	491,526
2006	185,708	268,367	81,082	24,963	6,762	4,285	370	367	521	34,955	607,380
2007	190,804	189,905	98,240	16,067	4,090	410	85	0	1,677	35,729	537,007

Table 7 (con't.). Estimated released-alive (MRFSS Type B2) age composition for red drum in Florida, Georgia, South Carolina , and the northern region (North Carolina through New Jersey) during 1982-2007.

Northern region											
	1	2	3	4	5	6	7	8	9	10 ⁺	Total
1982	0	0	0	0	0	0	0	0	0	0	0
1983	1,854	12	0	0	0	0	0	0	0	0	1,866
1984	2,912	19	0	0	0	0	0	0	0	0	2,931
1985	1,108	7	0	0	0	0	0	0	0	0	1,115
1986	7,547	48	0	0	0	0	0	0	0	0	7,595
1987	18,382	118	0	0	0	0	0	0	0	0	18,500
1988	28,648	184	0	0	0	0	0	0	0	0	28,832
1989	17,410	112	0	0	0	0	0	0	0	0	17,522
1990	13,300	85	0	0	0	0	0	0	0	0	13,385
1991	139,453	894	0	0	0	0	0	0	0	0	140,347
1992	30,473	28,321	3,909	2,504	1,315	66	428	559	98	8,241	75,915
1993	93,434	86,835	11,984	7,677	4,031	201	1,313	1,715	301	25,269	232,761
1994	47,516	44,161	6,095	3,905	2,050	102	668	872	153	12,851	118,372
1995	79,541	73,924	10,203	6,536	3,431	171	1,117	1,460	257	21,512	198,152
1996	15,324	14,242	1,966	1,259	661	33	215	281	49	4,144	38,175
1997	149,273	138,731	19,148	12,266	6,440	322	2,097	2,740	481	40,371	371,869
1998	119,917	111,447	15,381	9,854	5,174	258	1,685	2,201	386	32,432	298,735
1999	193,755	180,072	24,854	15,922	8,358	417	2,722	3,557	624	52,401	482,682
2000	161,546	150,138	20,722	13,275	6,969	348	2,269	2,965	521	43,690	402,443
2001	107,969	100,344	13,850	8,872	4,658	233	1,517	1,982	348	29,200	268,973
2002	588,051	546,523	75,432	48,323	25,368	1,267	8,261	10,795	1,895	159,037	1,464,952
2003	55,300	51,394	7,093	4,544	2,386	119	777	1,015	178	14,956	137,762
2004	89,629	83,300	11,497	7,365	3,866	193	1,259	1,645	289	24,240	223,283
2005	140,611	130,681	18,037	11,555	6,066	303	1,975	2,581	453	38,028	350,290
2006	254,206	236,254	32,608	20,889	10,966	548	3,571	4,666	819	68,750	633,277
2007	245,249	227,929	31,459	20,153	10,580	528	3,445	4,502	790	66,327	610,962