

Final Estimate for 2017 of
Spring Harvest of Coastal Migrant Striped Bass in Chesapeake Bay

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INTRODUCTION

This report presents the final estimates of the 2017 Maryland and Virginia spring harvest of coastal migrant striped bass in Chesapeake Bay (Table 1). The method used to determine coastal migrants in Maryland was presented in detail in Jones (2003), Barker and Sharov (2004), and Sharov et al. (2005). This report is submitted yearly to the Atlantic States Marine Fisheries Commission (ASMFC) as an appendix to the annual compliance reporting, and as an appendix to the recreational fishing section of the Chesapeake Bay Finfish Investigations Federal Aid Report to the U. S. Fish and Wildlife Service (USFWS).

ASMFC implemented Addendum IV to the Striped Bass Management Plan in 2014 in order to reduce fishing mortality to a level at or below the target. Addendum IV manages the trophy season as part of the coastal fishery and required a 25% reduction in harvest for 2017. Therefore, Maryland raised the minimum size limit to 35 inches from April 15 to May 15. Addendum IV also required a Chesapeake Bay reduction of 20.5% in the summer/fall fishery. The regulations were two fish ≥ 20 inches (only one over 28 inches) from May 16 to December 20th.

METHODS

Estimation of harvest

Maryland Department of Natural Resources (MD DNR) charter boat logbook reports provided the census values of daily charter boat harvest in numbers of fish (Table 1). Due to increased online reporting of charter boat logbook data, Standard Atlantic Fisheries Information System (SAFIS) data were also used for the charter calculation. The NOAA Marine Recreational Information Program (MRIP) survey provided final estimates of harvest for Maryland private and rental boats, in numbers of fish, for Wave 2 (March/April) and Wave 3

(May/June; Table 1). The Virginia Marine Resources Commission (VMRC) provided mandatory spring season striped bass reporting data.

Harvest apportioned by time

The migrant harvest season overlaps parts of both Waves 2 and 3 of the MRIP survey. Length distribution of the harvest is known to change over this time period, so total harvest was apportioned into 2-week intervals between April 16 and June 15. All Wave 2 landings for striped bass occurred in the last 2 weeks of the wave. The 2-week interval proportions for Wave 3 landings were developed as the proportions of the harvest recorded in the Maryland charter boat logbook and SAFIS reports (Table 1). Total Maryland striped bass harvest per interval was calculated as charter boat harvest (MD DNR) + private and rental harvest (MRIP; Table 1).

Harvest apportioned by length

Data from the MD DNR Volunteer Charter Boat Survey and Charter Creel Survey were used to develop the length frequency distribution of the Maryland charter boat catch for each 2-week interval (Table 2). Data from the Volunteer Charter Boat Survey were also used to develop the length frequency distribution for the Maryland private angler catch due to small samples of fish reported in the Volunteer Angler Survey. Harvest in each interval was distributed by the length frequency distribution for each 2-week interval. The number of migrants harvested in Maryland during the spring trophy season was determined by applying length-specific migration probabilities. These probabilities were derived from the estimate of the number of striped bass tagged on the spawning grounds in Maryland that migrate to the Atlantic coast before December of the first year at large (Dorazio et al. 1994). The result was a migrant and resident harvest estimate for each 2-week interval, distributed among interval-specific length groups (Table 3). The total 2017 Maryland spring harvest of coastal migrant striped bass in Chesapeake Bay was

calculated as the sum of migrants over all length groups and 2-week intervals from both sectors (charter and private). The estimate of the migrant harvest for Virginia's portion of Chesapeake Bay was calculated by applying the same length-specific migration probabilities to the length frequency data provided by VMRC, based on mandatory reporting by recreational anglers and charter boat captains.

RESULTS and DISCUSSION

MD DNR charter boat estimates of harvest were queried on 11/17/17. The total charter boat harvest was 2,847 fish from April 15 to April 30, 1,042 fish from May 1 to May 15, 6,592 fish from May 16 to May 31 and 6,886 fish from June 1 to June 15. Final MRIP private and rental boat estimates were downloaded on 5/22/18. Private and rental boat total harvest was 8,574 fish from April 15 to April 30, 6,817 fish from May 1 to May 15, 39,541 fish from May 16 to May 31 and 40,904 fish from June 1 to June 15 (Table 1).

The final estimate of the 2017 Chesapeake Bay spring migrant harvest is 22,892 fish, a decrease compared to 2016 and below the 2006-2017 average of 42,973 fish (Table 4). The Maryland portion of the Chesapeake Bay migrant harvest is 22,853 migrants (Table 1). The Maryland charter boat migrant harvest is 4,370 fish. The Maryland private boat migrant harvest is 18,483 fish. The estimate of the spring 2017 migrant harvest in Virginia is 39 fish. Annual spring migrant harvest by length group has shifted to slightly smaller fish compared to 2015 and 2016, however, fish are larger than 2014 (Figure 1). As required by ASMFC Addendum IV, an increased minimum size limit of 35 inches for April 15 to May 15 and a new minimum size of 20 inches for May 16 to December 20th was in place for 2017. The length frequency distribution and Volunteer Charter Boat Survey data reflected this change in regulations (Table 2, Figure 1).

REFERENCES

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Table 1. 2017 Chesapeake Bay spring striped bass migrant harvest, distributed among 2-week intervals, based on data from Maryland charter boat logbook reports, MRIP Maryland recreational harvest estimate and VA calculated migrant harvest.* Shaded time intervals outside of the April 15th to June 15th season are shown to demonstrate partitioning of the total harvest.

	Interval	Charter Harvest (% by interval) ¹	MD Charter Harvest ¹	MD Private Harvest ²	MD Total Harvest	MD Charter Migrants	MD Private Migrants	MD Total Migrants	VA Migrants ³	Bay Total Migrants		
Wave 2	Apr 1-14	0	0	0	0	0	0	0				
	Apr 15-30	100	2,847	8,574	11,421	2,757	8,304	11,061				
Wave 3	May 1-15	5	1,042	6,817	7,859	955	6,250	7,205				
	May 16-31	29	6,592	39,541	46,133	365	2,190	2,555				
	June 1-15	30	6,886	40,904	47,790	293	1,739	2,032				
	June 16-30	36	8,247	49,085	57,332							
	<i>Wave 3 total</i>	<i>100</i>	<i>22,767</i>	<i>136,347</i>	<i>159,114</i>							
Season total (Apr 15 – June 15)			17,367	95,836	113,203	4,370	18,483	22,853			39	22,892

* – Numbers may not sum due to rounding

1 – Data from MD DNR charter logbooks and SAFIS (11/17/17)

2 – Data from MRIP (retrieved from NOAA NMFS website 5/22/18)

3 – Data from VMRC (Alex Aspinwall, VMRC, Pers. Comm. 11/17/17)

Table 2. Length distribution, in inches, of the 2017 Maryland striped bass spring season harvest as voluntarily reported by charter boat captains and supplemented with fish sampled at charter boat docks (May 1-15 only), by 2-week intervals between April 15 and June 15. Shaded areas represent no-take size groups.

Length Group	April 15-30	May 1-15	May 16-31	June 1-15	Total
17	0	0	0	0	0
18	0	0	0	0	0
19	0	0	1	0	1
20	0	0	45	37	82
21	0	0	46	40	86
22	0	0	62	57	119
23	0	0	36	38	74
24	0	0	27	47	74
25	0	0	25	17	42
26	0	0	19	20	39
27	0	0	21	12	33
28	0	0	5	13	18
29	0	0	9	4	13
30	0	0	4	1	5
31	0	1	9	2	12
32	0	0	3	2	5
33	0	0	2	1	3
34	0	7	1	1	9
35	6	5	2	0	13
36	9	9	0	1	19
37	16	7	0	1	24
38	33	14	0	0	47
39	50	14	0	0	64
40	48	12	0	0	60
41	37	5	0	0	42
42	31	5	0	0	36
43	15	0	0	0	15
44	15	0	0	0	15
45	3	0	0	0	3
46	5	0	0	0	5
47	0	0	0	0	0
48	1	0	0	0	1
49	0	0	0	0	0
50	0	0	0	0	0
51	0	0	0	0	0
52	0	0	0	0	0
53	0	0	0	0	0
54	0	0	0	0	0
55	0	0	0	0	0
56	0	0	0	0	0
n	269	79	317	294	959

Table 3. 2017 Maryland spring striped bass migrant harvest, distributed among 1 inch length groups (length as total length).*

Length Group	Apr 15-30			May 1-15		
	Charter	Private	Total	Charter	Private	Total
17	0	0	0	0	0	0
18	0	0	0	0	0	0
19	0	0	0	0	0	0
20	0	0	0	0	0	0
21	0	0	0	0	0	0
22	0	0	0	0	0	0
23	0	0	0	0	0	0
24	0	0	0	0	0	0
25	0	0	0	0	0	0
26	0	0	0	0	0	0
27	0	0	0	0	0	0
28	0	0	0	0	0	0
29	0	0	0	0	0	0
30	0	0	0	0	0	0
31	0	0	0	5	33	38
32	0	0	0	0	0	0
33	0	0	0	0	0	0
34	0	0	0	67	441	508
35	52	156	208	54	351	405
36	84	252	335	104	681	785
37	156	469	625	85	556	641
38	332	999	1,330	175	1,147	1,323
39	512	1,543	2,056	179	1,170	1,349
40	498	1,500	1,998	155	1,015	1,170
41	387	1,165	1,552	65	426	491
42	326	981	1,306	65	428	494
43	158	476	634	0	0	0
44	158	477	635	0	0	0
45	32	96	127	0	0	0
46	53	159	212	0	0	0
47	0	0	0	0	0	0
48	11	32	42	0	0	0
49	0	0	0	0	0	0
50	0	0	0	0	0	0
51	0	0	0	0	0	0
52	0	0	0	0	0	0
53	0	0	0	0	0	0
54	0	0	0	0	0	0
55	0	0	0	0	0	0
56	0	0	0	0	0	0
n	2,757	8,304	11,061	955	6,250	7,205

*Note: numbers may not sum due to rounding.

Table 3. 2017 Maryland spring striped bass migrant harvest, distributed among 1 inch length groups (length as total length).* Continued.

Length Group	May 16-31			June 1-15		
	Charter	Private	Total	Charter	Private	Total
17	0	0	0	0	0	0
18	0	0	0	0	0	0
19	0	0	0	0	0	0
20	3	17	20	3	16	18
21	5	28	33	5	27	32
22	10	61	72	11	63	74
23	10	58	67	11	68	79
24	12	70	81	23	135	158
25	17	104	121	13	79	92
26	21	125	146	25	147	172
27	36	218	254	23	139	162
28	13	80	93	39	232	271
29	36	217	253	18	107	125
30	23	140	163	7	39	45
31	72	434	507	18	108	126
32	32	189	221	24	141	165
33	26	156	182	15	87	102
34	15	91	106	17	102	119
35	34	203	237	0	0	0
36	0	0	0	21	122	143
37	0	0	0	22	128	150
38	0	0	0	0	0	0
39	0	0	0	0	0	0
40	0	0	0	0	0	0
41	0	0	0	0	0	0
42	0	0	0	0	0	0
43	0	0	0	0	0	0
44	0	0	0	0	0	0
45	0	0	0	0	0	0
46	0	0	0	0	0	0
47	0	0	0	0	0	0
48	0	0	0	0	0	0
49	0	0	0	0	0	0
50	0	0	0	0	0	0
51	0	0	0	0	0	0
52	0	0	0	0	0	0
53	0	0	0	0	0	0
54	0	0	0	0	0	0
55	0	0	0	0	0	0
56	0	0	0	0	0	0
n	365	2,190	2,555	293	1,739	2,032

*Note: numbers may not sum due to rounding.

Table 4. Harvest of migrant striped bass in the spring fishery from 1992-2017 (Individual estimates not available for all sectors prior to 2006). Average was only calculated for 2006-2017 due to techniques used to calculate migrant harvest.

Year	MD Charter Migrant Harvest	MD Private Migrant Harvest	VA Migrant Harvest	Total Migrant Harvest
1992				1,013
1993				2,719
1994				3,672
1995				42,634
1996				11,613
1997				21,222
1998				10,021
1999				17,051
2000				26,748
2001				25,728
2002				14,839
2003	43,248		242	43,900
2004	31,218		186	31,404
2005	64,345		1,319	65,664
2006	15,570	47,878	4,323	67,771
2007	9,359	26,229	740	36,328
2008	13,106	22,785	275	36,166
2009	12,740	77,799	243	90,782
2010	12,504	7,261	82	19,847
2011	13,673	22,616	145	36,434
2012	9,335	8,796	77	18,208
2013	13,724	34,810	23	48,557
2014	12,311	26,599	11	38,921
2015	5,771	24,725	37	30,533
2016	9,524	64,615	169	74,308
2017	4,370	18,483	39	22,892
Avg (2006-17)	10,999	31,460	514	42,973

Figure 1. Comparison of Maryland's 2014 through 2017 spring striped bass migrant harvests, apportioned by length.

