

Final Estimate for 2020 of
Spring Harvest of Coastal Migrant Striped Bass in Chesapeake Bay

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INTRODUCTION

This report presents the final estimates of the 2020 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 VI to the Striped Bass Management Plan in 2019 in order to reduce fishing mortality to a level at or below the target. Addendum VI manages the trophy season as part of the coastal fishery and requires an 18% reduction in harvest from 2017 removals. Therefore, Maryland managed the trophy fishery with a minimum size limit of 35 inches and moved the opening day from the third Saturday in April to May 1. All striped bass fishing is closed, including catch and release, from April 1 to April 30. Addendum VI also required a Chesapeake Bay reduction in the summer/fall fishery. The regulations were one fish \geq 19 inches from May 16 to August 15 and September 1 to December 10. A closure period was in the place from August 16 to August 31 including catch and release.

METHODS

Estimation of harvest

Maryland Department of Natural Resources (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 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 occurs during Wave 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 May 1 and June 15. 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 the sum of charter boat harvest (DNR) and private and rental harvest (MRIP; Table 1).

Harvest apportioned by length

Data from the 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 2020 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 2020 spring migrant season in Virginia was closed to harvest.

RESULTS AND DISCUSSION

DNR charter boat estimates of harvest were queried on 1/7/2021. The total charter boat harvest was 693 fish from May 1 to May 15, 11,723 fish from May 16 to May 31 and 12,806 fish from June 1 to June 15. Final MRIP private and rental boat estimates were downloaded on 4/27/2021. Private and rental boat total harvest was 2,499 fish for Wave 2 (March/April), 1,730 fish from May 1 to May 15, 24,220 fish from May 16 to May 31 and 25,950 fish from June 1 to June 15 (Table 1). MRIP estimates for Maryland 2020 include striped bass harvest for Wave 2 which, although included in this report, should be regarded with great skepticism. Estimates for this period are based entirely on catch data from previous years because COVID-19 interrupted Access Point Angler Interview Survey (APAIS) interviews in 2020. This imputation process is inappropriate for Wave 2 because Maryland fishing regulations were changed significantly to reduce harvest and discards of migratory fish in 2020. Unlike in previous years, striped bass harvest was not permitted in Wave 2, and targeted catch-and-release fishing was not permitted in April.

The final estimate of the 2020 Chesapeake Bay spring migrant harvest is 6,947 fish, a 49% decrease from 2019 and below the 2006-2020 average of 36,897 fish (Table 4). The Maryland portion of the Chesapeake Bay migrant harvest is 6,947 migrants (Table 1). The Maryland charter boat migrant harvest is 1,395 fish. The Maryland private boat migrant harvest is 5,552 fish. The estimate of the spring 2020 migrant harvest in Virginia is 0 fish (season closed). Annual spring migrant harvest by length group was bimodal for 2020 compared to 2017-

2018 (Figure 1). As required by ASMFC Addendum VI, an increased minimum size limit of 35 inches for May 1 to May 15 and a minimum size of 19 inches for May 16 to December 10 was in place during 2020. The length frequency distribution derived from the Volunteer Charter Boat Survey data reflected this change in regulations (Table 2, Figure 1).

REFERENCES

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Table 1. 2020 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 May 1st to June 15th season are shown to demonstrate partitioning of the total harvest.

	Interval	Charter Harvest (% by interval)	MD Charter Harvest ¹ (Logbook)	MD Private Harvest ² (MRIP)	MD Total Harvest	MD Charter Migrants	MD Private Migrants	MD Total Migrants	VA Migrants ³	CB Total Migrants
Wave 2	March-April	0	0	2,499	2,499	0	2,394	2,394		
Wave 3	May 1-15	2	693	1,730	2,423	664	1,657	2,321		
	May 16-31	28	11,723	24,220	35,943	394	815	1,209		
	June 1-15	30	12,806	25,950	38,756	337	686	1,023		
	June 16-30	40	16,972	34,600	51,572					
	<i>Wave 3 total</i>	<i>100</i>	<i>42,194</i>	<i>86,499</i>	<i>128,694</i>					
Season total			25,222	54,399	79,621	1,395	5,552	6,947	0	6,947

* – Numbers may not sum due to rounding

1 – Data from MD DNR charter logbooks and SAFIS (1/7/2021)

2 – Data from MRIP (retrieved from NOAA NMFS website 4/27/2021)

3 – Data from VMRC (spring 2020 season closed)

Table 2. Length distribution, in inches, of the 2020 Maryland striped bass spring season harvest as voluntarily reported by charter boat captains by 2-week intervals between May 1 and June 15. Shaded areas represent no-take size groups.

Length Group	March-April	May 1-15	May 16-31	June 1-15	TOTAL
17	0	0	0	0	0
18	0	0	0	1	1
19	0	0	38	27	65
20	0	0	34	52	86
21	0	0	39	42	81
22	0	0	32	20	52
23	0	0	18	20	38
24	0	0	11	10	21
25	0	0	1	3	4
26	0	0	8	5	13
27	0	0	2	0	2
28	0	0	5	0	5
29	0	0	0	2	2
30	0	0	2	3	5
31	0	0	1	1	2
32	0	0	1	1	2
33	0	0	0	1	1
34	0	0	0	0	0
35	2	2	0	0	4
36	7	7	1	1	16
37	8	8	0	0	16
38	3	3	0	0	6
39	10	10	0	0	20
40	5	5	2	0	12
41	10	10	0	0	20
42	7	7	0	0	14
43	6	6	0	0	12
44	3	3	0	0	6
45	1	1	0	0	2
46	1	1	0	0	2
47	0	0	0	0	0
48	0	0	0	0	0
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	63	63	195	189	510

*May 1-15 Length Frequency used for Wave 2 (March-April).

Table 3. 2020 Maryland spring striped bass migrant harvest, distributed among 1 inch length groups (length as total length).*

Length group (inches)	Wave 2 (March-April)			May 1-15			May 16-31			June 1-15		
	Charter	Private	Total	Charter	Private	Total	Charter	Private	Total	Charter	Private	Total
18	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	6	13	19	11	22	32
21	0	0	0	0	0	0	12	24	35	14	28	42
22	0	0	0	0	0	0	15	32	47	11	22	33
23	0	0	0	0	0	0	14	29	43	17	35	53
24	0	0	0	0	0	0	14	28	42	14	29	43
25	0	0	0	0	0	0	2	4	6	7	14	20
26	0	0	0	0	0	0	25	52	78	18	36	54
27	0	0	0	0	0	0	10	21	31	0	0	0
28	0	0	0	0	0	0	39	80	118	0	0	0
29	0	0	0	0	0	0	0	0	0	26	53	79
30	0	0	0	0	0	0	34	69	103	57	116	173
31	0	0	0	0	0	0	23	48	71	26	53	80
32	0	0	0	0	0	0	30	63	93	34	70	104
33	0	0	0	0	0	0	0	0	0	42	86	129
34	0	0	0	0	0	0	0	0	0	0	0	0
35	0	65	65	18	45	63	0	0	0	0	0	0
36	0	244	244	68	169	236	53	109	162	59	121	180
37	0	292	292	81	202	283	0	0	0	0	0	0
38	0	113	113	31	78	110	0	0	0	0	0	0
39	0	384	384	107	266	372	0	0	0	0	0	0
40	0	194	194	54	135	189	118	244	361	0	0	0
41	0	392	392	109	271	380	0	0	0	0	0	0
42	0	276	276	76	191	267	0	0	0	0	0	0
43	0	237	237	66	164	230	0	0	0	0	0	0
44	0	119	119	33	82	115	0	0	0	0	0	0
45	0	40	40	11	27	38	0	0	0	0	0	0
46	0	40	40	11	27	38	0	0	0	0	0	0
47	0		0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0
49	0	0	0	0	0	0	0	0	0	0	0	0
50	0	0	0	0	0	0	0	0	0	0	0	0
51	0	0	0	0	0	0	0	0	0	0	0	0
52	0	0	0	0	0	0	0	0	0	0	0	0
53	0	0	0	0	0	0	0	0	0	0	0	0
54	0	0	0	0	0	0	0	0	0	0	0	0
55	0	0	0	0	0	0	0	0	0	0	0	0
56	0	0	0	0	0	0	0	0	0	0	0	0
n	0	2,394	2,394	664	1,657	2,321	394	815	1,209	337	686	1,023

*Note: numbers may not sum due to rounding.

Table 4. Harvest of migrant striped bass in the spring fishery from 1992-2020 (Individual estimates not available for all sectors prior to 2006). Average was only calculated for 2006-2020 due to techniques used to calculate migrant harvest.

Year	MD Charter Migrant Harvest	MD Angler Migrant Harvest	VA Migrant Harvest	Total Migrant Harvest
2003	43248*		242	43,490
2004	31218*		186	31,404
2005	64345*		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	59,538	169	69,231
2017	4,370	18,483	39	22,892
2018	2,867	14,237	94	17,198
2019	937	12,696	0	13,633
2020	1,395	5,552	0	6,947
Avg (2006-20)	9,146	27,334	417	36,897

Figure 1. Comparison of Maryland's 2017 through 2020 spring striped bass migrant harvests, apportioned by length.

