

Final Estimate for 2021 of
Spring Harvest of Coastal Migrant Striped Bass in Chesapeake Bay

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INTRODUCTION

This report presents the final estimates of the 2021 Maryland and Virginia spring harvest of coastal migrant striped bass in Chesapeake Bay (Table 1). The method used to determine coastal migrant harvests in Maryland was presented in detail by 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 (Amendment 6) in 2019 to reduce fishing mortality to a level at or below the fishing mortality target. Addendum VI considered the trophy season in Maryland's portion of the Chesapeake Bay as part of the coastal fishery and required 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. Additionally, striped bass fishing is closed, including targeted catch and release fishing, 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 July 15 and August 1 to December 10. A closure period was in the place from July 16 through July 31 including targeted catch and release. The 2021 spring migrant season in Virginia was closed to harvest.

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. Final estimates of harvest for the Maryland private and rental boat fleet were provided by the NOAA Marine Recreational Information Program (MRIP) survey in numbers of fish, for Wave 3 (May/June; Table 1).

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 period, so we apportioned total harvest into two-week intervals between May 1 and June 15. The proportions by two week intervals for Wave 3 landings were derived from the harvest recorded in the Maryland charter boat logbook and SAFIS reports (Table 1). Total Maryland striped bass harvest per two-week interval was calculated as the sum of charter boat harvest from charter logbook data and private and rental boat harvest from MRIP (Table 1).

Harvest apportioned by length

The length frequency distribution of the Maryland charter boat catch for each two-week interval (Table 2) was derived from the DNR Volunteer Charter Boat Survey and Charter Creel Survey. 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 2021 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).

RESULTS AND DISCUSSION

DNR charter boat harvest was queried on 1/24/2022. The total charter boat harvest was 1,291 fish from May 1 to May 15, 13,132 fish from May 16 to May 31 and 15,081 fish from June 1 to June 15. Final MRIP private and rental boat estimates were downloaded on 5/9/2022. Private and rental boat total harvest was 3,214 fish from May 1 to May 15, 28,924 fish from May 16 to May 31 and 34,280 fish from June 1 to June 15 (Table 1). Beginning in 2020, 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 2021 Chesapeake Bay spring migrant harvest is 6,016 fish, a 15% decrease from 2020 and below the 2006-2021 average of 34,967 fish (Table 4). The Maryland charter boat migrant harvest is 1,764 fish. The Maryland private boat migrant harvest is 4,252 fish. The estimate of the spring 2021 migrant harvest in Virginia is 0 fish (season closed). As required to meet the reduction in 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 2021. 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. 2021 Chesapeake Bay striped bass migrant harvest, distributed among two-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 (Logbook)	Md Private Harvest (MRIP)	Md Total Harvest	Md Charter Migrants	Md Private Migrants	Md Total Migrants	Va Migrants	CBay Total Migrants
Wave 2		0	0	0	0	0	0	0		
Wave 3	May 1-15	3	1,291	3,214	4,505	1,220	3,036	4,256		
	May 16-31	27	13,132	28,924	42,056	294	648	942		
	June 1-15	32	15,081	34,280	49,361	250	568	818		
	June 16-30	38	18,294	40,708	59,002					
	<i>Wave 3 total</i>	<i>100</i>	<i>47,798</i>	<i>107,125</i>	<i>154,924</i>					
Season total			29,504	66,418	95,922	1,764	4,252	6,016	0	6,016

* – Numbers may not sum due to rounding

1 – Data from MD DNR charter logbooks and SAFIS (1/24/2022)

2 – Data from MRIP (retrieved from NOAA NMFS website 5/9/2022)

3 – Data from VMRC (spring 2021 season closed)

Table 2. Length distribution, in inches, of the 2021 Maryland striped bass harvest as voluntarily reported by charter boat captains by two-week intervals between May 1 and June 15. Shaded areas represent no-take size groups.

Length group	April	May 1-15	May 16-31	June 1-15	TOTAL
17					0
18					0
19			5	41	46
20			35	85	120
21			31	76	107
22			44	100	144
23			26	79	105
24			19	61	80
25			8	24	32
26			6	8	14
27			6	9	15
28			1	3	4
29			3	3	6
30			2	0	2
31			0	1	1
32			1	1	2
33			0	1	1
34			0	0	0
35		2	0	0	2
36		6	0	0	6
37		10	0	0	10
38		12	0	0	12
39		14	0	0	14
40		5	0	0	5
41		1	0	0	1
42		3	0	0	3
43		3	0	0	3
44		0	0	0	0
45		0	0	0	0
46		0	0	0	0
47		0	0	0	0
48		0	0	0	0
49		0	0	0	0
50		0	0	0	0
51		0	0	0	0
52		0	0	0	0
53		0	0	0	0
54		0	0	0	0
55		0	0	0	0
56		0	0	0	0
n	0	56	187	492	735

Table 3. 2021 Maryland striped bass migrant harvest, distributed among one inch length groups (length as total length).*

Length group (inches)	Wave2			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	7	16	24	8	18	26
21	0	0	0	0	0	0	11	24	34	11	26	37
22	0	0	0	0	0	0	25	54	79	24	55	80
23	0	0	0	0	0	0	23	52	75	31	71	102
24	0	0	0	0	0	0	28	61	88	39	88	127
25	0	0	0	0	0	0	19	41	60	24	56	80
26	0	0	0	0	0	0	22	49	71	13	29	42
27	0	0	0	0	0	0	35	77	112	23	52	75
28	0	0	0	0	0	0	9	20	29	12	27	39
29	0	0	0	0	0	0	41	90	130	18	40	58
30	0	0	0	0	0	0	39	87	126	0	0	0
31	0	0	0	0	0	0	0	0	0	12	27	39
32	0	0	0	0	0	0	36	78	114	16	35	51
33	0	0	0	0	0	0	0	0	0	19	44	63
34	0	0	0	0	0	0	0	0	0	0	0	0
35	0	0	0	38	93	131	0	0	0	0	0	0
36	0	0	0	121	302	423	0	0	0	0	0	0
37	0	0	0	212	528	741	0	0	0	0	0	0
38	0	0	0	263	654	917	0	0	0	0	0	0
39	0	0	0	313	778	1,090	0	0	0	0	0	0
40	0	0	0	113	281	394	0	0	0	0	0	0
41	0	0	0	23	57	79	0	0	0	0	0	0
42	0	0	0	69	171	239	0	0	0	0	0	0
43	0	0	0	69	171	240	0	0	0	0	0	0
44	0	0	0	0	0	0	0	0	0	0	0	0
45	0	0	0	0	0	0	0	0	0	0	0	0
46	0	0	0	0	0	0	0	0	0	0	0	0
47	0	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	0	0	1,220	3,036	4,256	294	648	942	250	568	818

*Note: numbers may not sum due to rounding.

Table 4. Harvest of migrant striped bass in the spring fishery from 1992-2021 (Individual estimates not available for all sectors prior to 2006). Average was only calculated for 2006-2021 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
2021	1,764	4,252	0	6,016
Avg (2006-21)	8,684	25,891	391	34,967

Figure 1. Comparison of Maryland's 2018 through 2021 striped bass migrant harvests, apportioned by length.

