



Mid-Atlantic Fishery Management Council
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MEMORANDUM

Date: November 1, 2019
To: Dr. Chris Moore, Executive Director
From: Matthew Seeley, Staff
Subject: 2020-2021 Bluefish Recreational Management Measures

Introduction and Background

The 2019 bluefish operational assessment concluded the bluefish stock was overfished, and overfishing was not occurring in 2018 relative to the updated biological reference points. Based on the SSC's recommendation, the Council and Bluefish Board adopted an ABC of 16.28 million pounds for 2020 and 2021. After accounting for expected discards using the Marine Recreational Information Program (MRIP) mean weight approach, this ABC translates to a commercial quota (CQ) of 2.77 million pounds and a recreational harvest limit (RHL) of 9.48 million pounds for 2020 and 2021 (Table 1). Compared to 2019, this represents a 64% decrease in the CQ and an 18% decrease in the RHL. In recent years, a portion of the total allowable landings above the expected recreational harvest have been transferred from the recreational fishery to the commercial fishery. However, because the recreational fishery is anticipated to fully harvest the RHL, the Council did not authorize a quota transfer from the recreational to the commercial sectors for 2020-2021. Furthermore, the Council adopted the terminal year landings (2018) as the estimate for expected recreational landings. Thus, the Monitoring Committee (MC) now needs to recommend management measures that will constrain the expected recreational landings (13,270,862 pounds) to the Council approved RHL (9,480,162 pounds). This equates to an expected 28.56% reduction in recreational harvest.

Past RHLs and Management Measures

Since 2000, the bluefish fishery has only exceeded the RHL once in 2007 (Table 2). This did not trigger accountability measures because the RHL was exceeded due to a transfer from the recreational to the commercial fishery. Since Amendment 1 (2000), the only implemented management measures have been a federal 15-fish bag limit. Due to the recent change in stock status to overfished, appropriate management measures are necessary to constrain recreational harvest to a lower RHL. Furthermore, the implementation of recreational management measures constraining harvest offers a smooth transition to the forthcoming rebuilding plan.

Table 1. 2020-2021 Council approved bluefish commercial quota and RHL.

Management Measure	2020 - 2021		Basis for the Recommendation
	M lbs	mt	
ABC	16.28	7,385	Derived by SSC; Council P* policy
ACL	16.28	7,385	Defined in FMP as equal to ABC
Management Uncertainty	0	0	Derived by MC
Commercial ACT	2.77	1,255	(ACL – Mgmt. Uncertainty) x 17%
Recreational ACT	13.51	6,130	(ACL – Mgmt. Uncertainty) x 83%
Commercial Discards	0	0	Value used in assessment
Recreational Discards	4.03	1,829	2018 Rec. Discards
Commercial TAL (pre-transfer)	2.77	1,255	Comm. ACT – Comm. Discards
Recreational TAL (pre-transfer)	9.48	4,301	Rec. ACT – Rec. Discards
TAL Combined	12.25	5,556	Comm. TAL + Rec. TAL
Transfer	0	0	Calculated so Expected Rec. Landings = RHL (if transfer can occur)
Expected Rec Landings	13.27	6,020	2018 Rec. Landings
Commercial Quota	2.77	1,255	Comm. TAL + Transfer
Recreational Harvest Limit	9.48	4,301	Rec. TAL - Transfer

Table 2. Summary of bluefish management measures, 2000 – 2019 (Values are in million pounds).

Management Measures	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018 ⁸	2019
TAC ¹ / ABC ²	34.22	29.15	32.03	31.89	34.08	34.38	31.74	32.04	27.47	24.43	21.54	19.45	20.64	21.81	21.81
TAL ³	30.85	24.8	27.76	28.16	29.36	29.26	27.29	28.27	23.86	21.08	18.19	16.46	18.19	18.82	19.33
Comm. Quota ⁴	10.5	8.08	8.69	7.71	9.83	10.21	9.38	10.32	9.08	7.46	5.24	4.88	8.54	7.24	7.71
Comm. Landings ⁵	7.04	6.98	7.51	6.12	7.1	7.55	5.61	4.66	4.12	4.77	4.02	4.1	3.64	2.20	
Rec. Harvest Limit ⁴	20.35	16.72	19.07	20.45	19.53	18.63	17.81	17.46	14.07	13.62	12.95	11.58	9.65	11.58/NA	11.62
Rec. Landings ⁶	19.86	16.65	21.76	19.79	14.47	16.34	11.5	11.84	16.46	10.46	11.67	9.54	9.52	3.64/13.27	
Rec. Possession Limit (# fish)	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
Total Landings	26.9	23.63	29.27	25.91	21.57	23.89	17.11	16.5	20.58	15.23	15.69	13.64	13.16	5.84/15.47	
Overage/Underage	-3.95	-1.17	1.51	-2.25	-7.79	-5.37	-10.18	-11.77	-3.28	-5.85	-2.5	-2.82	-5.03	-12.98	
Total Catch ⁷	31.55	28.08	35.12	31.83	25.10	27.93	20.39	19.26	24.06	17.96	18.65	16.09	15.65	6.96	
Overage/Underage	-2.67	-1.07	3.09	-0.06	-8.98	-6.45	-11.35	-12.78	-3.41	-6.47	-2.89	-3.36	-4.99	-14.85	

¹ Through 2011. ² 2012 fwd. ³ Not adjusted for RSA. ⁴ Adjusted downward for RSA. ⁵ Dealer and South Atlantic Canvas data used to generate values from 2000-2011; Dealer data used to generate values from 2012-2018. ⁶ MRIP. ⁷ Recreational discards were calculated assuming MRIP mean weight of fish landed or harvested. ⁸ Values for 2018 where a “/” is included indicate “old MRIP/new MRIP”.

Recreational Catch, Harvest, and 2019 Projections

According to re-calibrated MRIP estimates, since 1981, recreational bluefish catch has fluctuated from a peak of 75.76 million fish in 1981 to a low of 24.87 million fish in 1988. Harvest fluctuated from a high of 169.63 million pounds in 1981 to a low of 13.27 million pounds in 2018. Thus, 2018 was the worst year for recreational harvest across the time series (Figure 1, Table 3 [1991-2018]). Bluefish advisors and MC members suspect that 2018 may have been an anomalous fishing year and may not fully represent recent trends in landings. To help account for this variability, the MC initially recommended that the Council approve using the three-year average for expected recreational landings (23.15 million pounds). However, the Council used 2018 landings as a proxy for expected recreational landings in 2020 and 2021 because 2018 represents the most recently completed fishing year and is consistent with how expected recreational landings have been proposed in recent years.

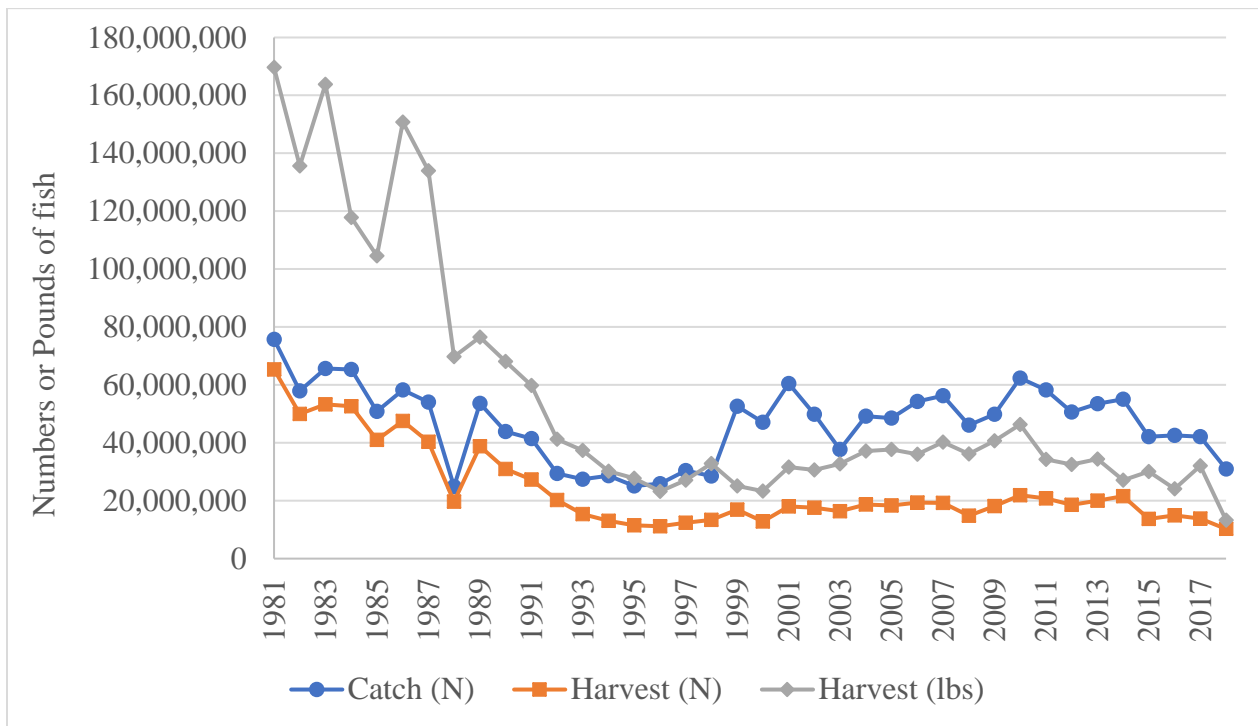


Figure 1. Recreational bluefish catch and harvest from 1981-2018.

Table 3. Number of recreational bluefish fishing trips, recreational harvest/catch, recreational landings per trip, and average weight from 1991 to 2018.

Year	# of bluefish trips	Recreational Catch (N)	Recreational Harvest (N)	Recreational Harvest (lbs)	Recreational landings per “bluefish” trip	Average weight/fish (lbs)
Re-Calibrated MRIP Estimates						
1991	13,896,933	41,416,277	27,317,926	59,792,834	2.0	2.2
1992	11,409,027	29,447,522	20,180,578	41,217,703	1.8	2
1993	11,826,365	27,427,201	15,369,463	37,415,750	1.3	2.4
1994	9,721,530	28,624,144	13,063,628	30,145,680	1.3	2.3
1995	9,968,256	25,084,134	11,532,807	27,710,092	1.2	2.4
1996	7,876,695	25,864,668	11,126,333	23,207,235	1.4	2.1
1997	6,383,072	30,448,296	12,400,982	27,039,375	1.9	2.2
1998	7,638,343	28,511,666	13,397,302	32,880,412	1.8	2.5
1999	7,840,089	52,596,228	16,878,789	25,106,100	2.2	1.5
2000	6,449,833	47,102,869	12,879,485	23,357,120	2.0	1.8
2001	8,161,746	60,512,252	18,048,645	31,654,978	2.2	1.8
2002	8,381,422	49,810,122	17,607,380	30,654,388	2.1	1.7
2003	7,769,721	37,746,238	16,411,932	32,758,670	2.1	2.0
2004	8,894,616	49,239,076	18,631,904	37,133,463	2.1	2.0
2005	9,024,550	48,482,667	18,341,452	37,742,807	2.0	2.1
2006	8,255,002	54,310,049	19,397,272	36,081,958	2.3	1.9
2007	9,655,930	56,313,391	19,189,747	40,239,101	2.0	2.1
2008	8,044,324	46,045,003	14,845,435	36,166,834	1.8	2.4
2009	7,972,341	49,866,587	18,085,386	40,731,438	2.3	2.3
2010	9,773,363	62,350,109	21,929,517	46,302,792	2.2	2.1
2011	8,492,874	58,290,651	20,814,884	34,218,748	2.5	1.6
2012	9,655,507	50,658,367	18,578,838	32,530,917	1.9	1.8
2013	6,394,975	53,494,664	19,975,051	34,398,327	3.1	1.7
2014	9,615,976	55,093,766	21,510,651	27,044,276	2.2	1.3
2015	7,001,696	42,148,960	13,725,106	30,098,649	2.0	2.2
2016	8,625,069	42,528,746	14,899,723	24,155,304	1.7	1.6
2017	8,264,782	42,159,923	13,842,164	32,023,497	1.7	2.3
2018	5,749,291	30,928,703	10,245,710	13,270,862	1.8	1.3

Similar to the approaches used to project landings for other Council managed species, the MC can project 2019 bluefish landings using data from waves 1-4 to estimate overall 2019 landings. The 2019 projections are presented here for context despite the Council’s approved value for expected recreational landings. This estimate results in 17,122,744 pounds harvested compared to the Council approved 13,270,862, which represents a difference of 3,851,882 pounds (Table 4). Understanding the difference between the 2018 landings and 2019 projected landings as the assumed expected recreational landings will assist in avoiding an RHL overage in 2020. Using the

Council approved estimate, constraining harvest to the RHL would result in a necessary 28.56% reduction while constraining harvest using the 2019 projected landings would result in a necessary 44.63% reduction.

Table 4. 2019 projected recreational harvest (in pounds) by state and values used to calculate projections. Values are based on new MRIP estimates. Projections were calculated using 2019 wave 1-4 harvest and the proportion of annual harvest by wave in 2018.

State	2016-2018 wave 1-4 harvest as % of annual harvest	2019 wave 1-4 harvest	Average annual harvest 2016-2018	2019 projected annual harvest	% of projected 2019 total harvest
Maine	100%	0	27	0	0.00%
New Hampshire	100%	0	7	0	0.00%
Massachusetts	64%	277,568	985,870	435,128	2.54%
Rhode Island	44%	1,099,034	369,586	2,473,273	14.44%
Connecticut	55%	310,130	723,794	564,494	3.30%
New York	63%	3,332,449	4,201,467	5,274,758	30.81%
New Jersey	71%	1,422,351	5,780,646	1,993,690	11.64%
Delaware	94%	322,360	903,313	344,695	2.01%
Maryland	53%	98,268	376,809	186,960	1.09%
Virginia	52%	588,754	340,062	1,143,155	6.68%
North Carolina	67%	2,120,394	3,207,078	3,175,257	18.54%
South Carolina	45%	463,252	533,079	1,033,297	6.03%
Georgia	53%	10,435	26,489	19,599	0.11%
Florida	88%	2,213,233	5,701,659	2,528,308	14.77%
Total	72%	12,258,228	23,149,887	17,122,744	100%

Accountability Measures

In 2013, the Council modified the recreational accountability measures (AMs) for Mid-Atlantic species through the Omnibus Recreational AM Amendment. Additionally, in the event of an Annual Catch Limit (ACL) overage, recreational AMs no longer necessarily require a direct pound-for-pound payback of the overage amount in a subsequent fishing year. Instead, AMs are tied to stock status. Though paybacks may be required in some circumstances, any potential payback amount is scaled relative to biomass, as described below.

The ACL will be evaluated based on a single-year examination of total catch (landings and dead discards). Both landings and dead discards will be evaluated in determining if the ACL has been exceeded. If the ACL is exceeded, the appropriate AM is determined based on the following criteria:

Recreational landings AM when the ACL is exceeded and no sector-to-sector transfer of allowable landings has occurred. If the fishery-level ACL is exceeded and landings from

the recreational fishery are determined to be the sole cause of the overage, and no transfer between the commercial and recreational sector was made for the fishing year, as outlined in §648.162(b)(2), then the following procedure will be followed:

If biomass is below the threshold, the stock is under rebuilding, or biological reference points are unknown. If the most recent estimate of biomass is below the B_{MSY} threshold (i.e., B/B_{MSY} is less than 0.5), the stock is under a rebuilding plan, or the biological reference points (B or B_{MSY}) are unknown, and the ACL has been exceeded, then the exact amount, in pounds, by which the most recent year's recreational catch estimate exceeded the most recent year's ACL will be deducted from the following year's recreational ACT, or as soon as possible thereafter, once catch data are available, as a single-year adjustment.

If the ACL has been exceeded. If the ACL has been exceeded, then adjustments to the recreational management measures, taking into account the performance of the measures and conditions that precipitated the overage, will be made in the following fishing year, or as soon as possible thereafter, once catch data are available, as a single-year adjustment.

Monitoring Committee Responsibility

The Monitoring Committee must consider and recommend management measures to ensure that landings in 2020 will not exceed the 2020 RHL. Recreational possession limits, minimum fish size limits, and seasons can be modified to achieve this goal.

Harvest in 2018 is used as the 2020 harvest proxy when considering such measures under the assumption that conditions in 2020 will be similar to those in 2018. Based on the 2018 harvest proxy of 13.27 million pounds, it is assumed that *status quo* recreational management measures will result in a 28.56% overage compared to the 2020 and 2021 RHL of 9.48 million pounds.

Recreational Harvest Constraining Alternatives

The following alternatives were developed to achieve the necessary 28.56% reduction in recreational harvest. Size limit alternatives have been proposed but are not recommended due to angler preference to often harvest smaller fish since larger bluefish are deemed less desirable. Furthermore, the MC can explore a combination of the presented alternatives to assist in meeting the necessary reduction.

Size Limits

To constrain harvest, the MC can consider implementing a minimum size limit (fork length) for bluefish, but consideration should be given to the size at which bluefish are mature. According to SAW/SARC 60, 50% of bluefish coastwide are mature at 11.76 inches and 95% at 17.45 inches. Based on a length frequency distribution calculated using re-calibrated MRIP estimates, an 8-inch minimum size will result in a 28.62% reduction meeting the Council/Board required reduction in harvest. To ensure that approximately 50% of the population can spawn at least once, a 12-inch minimum size results in a 63.92% reduction (Table 5). Furthermore, the MC should note that the expanded lengths show anglers are keeping 4-inch fish, which may not be consistently represented throughout the fishery.

Table 5. Expanded length frequencies of landed bluefish, 2016-2018, from Maine through Florida, as a percent of total recreational landings of bluefish.

Fork Length (Inches)	N Landings (Sum)	% of Total Landings	Cumulative %
4	870,272	2.23%	2.23%
5	2,456,210	6.30%	8.53%
6	2,513,814	6.45%	14.98%
7	2,554,204	6.55%	21.53%
8	2,762,542	7.09%	28.62%
9	3,394,296	8.71%	37.32%
10	3,563,355	9.14%	46.46%
11	3,387,727	8.69%	55.15%
12	3,417,832	8.77%	63.92%
13	2,334,301	5.99%	69.91%
14	1,297,979	3.33%	73.23%
15	1,118,902	2.87%	76.10%
16	1,667,740	4.28%	80.38%
17	1,849,626	4.74%	85.13%
18	722,462	1.85%	86.98%
19	447,313	1.15%	88.13%
20	602,034	1.54%	89.67%
21	296,521	0.76%	90.43%
22	192,002	0.49%	90.92%
23	166,507	0.43%	91.35%
24	214,936	0.55%	91.90%

Seasonal Closures

All states are required to maintain fair and equitable access to the fishery. This may be difficult to achieve through seasonal closures due to bluefish’s migratory life history (Table 6 and 7). During the winter, bluefish are more accessible to the southern states while they are more accessible to the northern states in the summer. The alternatives below take this into account when possible.

Close waves 1 and 2

Close waves 5 and 6

Combination of closures: close different waves in the north and south

Table 6. Annual average percent of bluefish harvest (pounds) by state and wave from 2016-2018 based on revised MRIP estimates.

Row Labels	Wave 1	Wave 2	Wave 3	Wave 4	Wave 5	Wave 6	Total
2016	0.87%	11.84%	38.12%	15.01%	28.72%	5.44%	100.00%
Maine	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%
New Hampshire	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%
Massachusetts	0.00%	0.00%	17.97%	39.79%	42.24%	0.00%	100.00%
Rhode Island	0.00%	0.00%	25.01%	34.08%	33.39%	7.52%	100.00%
Connecticut	0.00%	0.00%	5.06%	48.20%	37.68%	9.06%	100.00%
New York	0.00%	4.87%	48.73%	22.48%	19.70%	4.21%	100.00%
New Jersey	0.00%	9.13%	46.17%	3.41%	33.23%	8.06%	100.00%
Delaware	0.00%	0.00%	77.94%	5.97%	16.09%	0.00%	100.00%
Maryland	0.00%	0.00%	5.07%	44.78%	49.58%	0.57%	100.00%
Virginia	0.00%	17.67%	41.41%	19.69%	21.11%	0.12%	100.00%
North Carolina	0.01%	13.22%	30.31%	24.95%	29.28%	2.23%	100.00%
South Carolina	0.00%	17.14%	10.83%	1.82%	58.12%	12.09%	100.00%
Georgia	0.00%	16.89%	34.33%	2.46%	46.32%	0.00%	100.00%
Florida	7.36%	42.45%	27.93%	1.49%	16.01%	4.77%	100.00%
2017	0.29%	43.33%	25.84%	10.45%	12.19%	7.91%	100.00%
Maine	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%
Massachusetts	0.00%	0.00%	25.67%	41.24%	33.09%	0.00%	100.00%
Rhode Island	0.00%	0.00%	27.12%	15.25%	57.60%	0.03%	100.00%
Connecticut	0.00%	0.00%	5.23%	52.22%	42.55%	0.00%	100.00%
New York	0.00%	0.01%	26.71%	23.77%	24.37%	25.14%	100.00%
New Jersey	0.00%	25.98%	59.14%	4.90%	8.87%	1.12%	100.00%
Delaware	0.00%	50.52%	46.97%	0.29%	2.22%	0.00%	100.00%
Maryland	0.00%	1.54%	6.67%	58.40%	31.74%	1.65%	100.00%
Virginia	0.00%	26.73%	2.70%	2.63%	7.03%	60.91%	100.00%
North Carolina	1.05%	49.05%	28.28%	3.45%	12.99%	5.18%	100.00%
South Carolina	0.00%	49.85%	13.15%	5.94%	17.45%	13.60%	100.00%
Georgia	0.00%	0.00%	91.59%	4.99%	2.80%	0.62%	100.00%
Florida	0.57%	92.88%	0.30%	1.69%	0.06%	4.50%	100.00%
2018	15.84%	11.84%	21.88%	12.42%	26.87%	11.15%	100.00%
Massachusetts	0.00%	0.00%	13.89%	53.26%	32.85%	0.00%	100.00%
Rhode Island	0.00%	0.00%	8.35%	14.70%	76.95%	0.00%	100.00%
Connecticut	0.00%	0.00%	3.05%	51.73%	45.22%	0.00%	100.00%
New York	0.00%	0.00%	55.65%	16.88%	26.30%	1.17%	100.00%
New Jersey	0.00%	0.00%	46.42%	13.10%	40.32%	0.15%	100.00%
Delaware	0.00%	0.00%	80.38%	7.07%	11.80%	0.75%	100.00%
Maryland	0.00%	0.00%	0.70%	44.08%	55.20%	0.02%	100.00%
Virginia	0.00%	0.58%	3.74%	28.93%	43.37%	23.38%	100.00%
North Carolina	0.00%	13.32%	21.84%	8.65%	43.34%	12.85%	100.00%
South Carolina	0.00%	4.22%	36.47%	1.20%	56.38%	1.72%	100.00%
Georgia	0.00%	13.66%	36.52%	0.32%	4.06%	45.43%	100.00%
Florida	46.45%	26.37%	1.45%	1.50%	1.70%	22.52%	100.00%
Coastwide	3.46%	26.36%	29.35%	12.41%	20.74%	7.67%	100.00%

Table 7. Average bluefish percent reduction in coastwide harvest (lbs) associated with closing one day per wave from 2016-2018 based on revised MRIP estimates.

Sum of Harvest (A+B1) Total Weight (pounds)						
Row Labels	Wave 1	Wave 2	Wave 3	Wave 4	Wave 5	Wave 6
Maine	0.00%	0.00%	1.15%	0.48%	0.00%	0.00%
New Hampshire	0.00%	0.00%	0.00%	1.61%	0.00%	0.00%
Massachusetts	0.00%	0.00%	0.34%	0.70%	0.59%	0.00%
Rhode Island	0.00%	0.00%	0.37%	0.35%	0.87%	0.04%
Connecticut	0.00%	0.00%	0.08%	0.81%	0.66%	0.07%
New York	0.00%	0.03%	0.64%	0.36%	0.37%	0.23%
New Jersey	0.00%	0.24%	0.84%	0.08%	0.40%	0.07%
Delaware	0.00%	0.55%	0.95%	0.04%	0.10%	0.00%
Maryland	0.00%	0.01%	0.06%	0.78%	0.77%	0.01%
Virginia	0.00%	0.27%	0.31%	0.27%	0.36%	0.43%
North Carolina	0.01%	0.44%	0.45%	0.20%	0.44%	0.10%
South Carolina	0.00%	0.39%	0.30%	0.05%	0.74%	0.16%
Georgia	0.00%	0.21%	0.65%	0.01%	0.11%	0.66%
Florida	0.23%	1.10%	0.09%	0.03%	0.05%	0.15%
Coastwide	0.06%	0.43%	0.48%	0.20%	0.34%	0.13%

Bag Limits

The current federal bag limit is 15 fish. Reducing the bag limit to 3 fish will result in decreased harvest by the necessary 28.56% (Table 8). However, a decreased bag limit may lead to increased discards through incidental encounters. Alternatively, the increased discards may be offset by decreased effort as many anglers may not target bluefish because as advisors indicated, the 15 fish limit is great incentive for anglers to want to target bluefish.

Table 8. Associated percent reduction in harvest if the bag limit was reduced to 1-10 fish for 2016-2018 based on revised MRIP estimates using group catch data. This analysis assumes that all non-compliant anglers (landing greater than 15 fish) will continue to be non-compliant and that previous compliant anglers (land 15 fish or less) will comply with the proposed regulations and land the full bag limit if they were previously landing higher than the proposed limits.

Bag Limit	Percent Reduction							
	2018		2017		2016		Average (2016-2018)	
	No Discards	Discards	No Discards	Discards	No Discards	Discards	No Discards	Discards
10	-2.50%	-2.12%	-2.03%	-1.57%	-2.96%	-2.50%	-2.50%	-2.06%
9	-4.01%	-3.41%	-3.19%	-3.01%	-4.27%	-4.08%	-3.82%	-3.50%
8	-5.69%	-4.84%	-4.71%	-4.48%	-5.67%	-5.46%	-5.36%	-4.93%
7	-8.23%	-6.99%	-6.50%	-6.23%	-7.47%	-7.20%	-7.40%	-6.81%
6	-11.18%	-9.50%	-9.34%	-8.91%	-10.02%	-9.64%	-10.18%	-9.35%
5	-15.29%	-13.00%	-13.11%	-12.54%	-14.56%	-13.88%	-14.32%	-13.14%
4	-20.58%	-17.49%	-18.69%	-17.85%	-21.20%	-20.21%	-20.16%	-18.52%
3	-29.89%	-25.40%	-26.30%	-25.16%	-30.15%	-28.81%	-28.78%	-26.46%
2	-43.36%	-36.85%	-38.02%	-36.27%	-43.47%	-41.47%	-41.61%	-38.20%
1	-62.27%	-52.93%	-56.19%	-53.46%	-61.80%	-59.05%	-60.09%	-55.15%

Staff Recommendation

The Council approved expected recreational landings of 13,270,862 pounds is 28.56% higher than the 2020 RHL of 9,480,162 pounds. Thus, staff recommends a coastwide 3-fish bag limit to constrain harvest by 28.78% (no discards) so that the 2020 recreational harvest does not exceed the RHL.