



Mid-Atlantic Fishery Management Council
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MEMORANDUM

Date: January 13, 2017
To: Chris Moore, Executive Director
From: Kiley Dancy and Brandon Muffley, Staff
Subject: Black Sea Bass Recreational Management Measures for 2017

In February 2017, the Council and the Atlantic States Marine Fisheries Commission's (Commission's) Summer Flounder, Scup, and Black Sea Bass Board (Board) will consider changes to the previously implemented commercial quotas and recreational harvest limits for black sea bass in 2017, based on the recently completed benchmark stock assessment and the January 2017 recommendations of the Scientific and Statistical Committee (SSC) and Monitoring Committee. The previously implemented 2017 recreational harvest limit (RHL) of 2.82 million pounds is likely to change based on these revised recommendations; however, the expected magnitude of this change depends on several decisions to be made by the SSC and Monitoring Committee and cannot be determined prior to the January 2017 meetings of these groups.

The new benchmark stock assessment passed peer review at the 62nd Stock Assessment Review Committee (SARC 62)¹ in December 2016, and concluded that the stock was not overfished and overfishing was not occurring in 2015. The estimated spawning stock biomass in 2015 was approximately 2.3 times the updated spawning stock biomass target. For additional details, see the staff quota memo dated January 12, and other documents posted for the January SSC meeting, at: <http://www.mafmc.org/council-events/2017/january-2017-ssc-meeting/>.

On January 26, the Monitoring Committee will meet to consider recommendations for 2017 Annual Catch Limits (ACLs), Annual Catch Targets (ACTs), and recreational management measures. The Monitoring Committee is responsible for recommending recreational management measures for 2017 that will constrain landings to the recreational harvest limit. Because revised catch limits and 2017 recreational measures are being developed simultaneously, the exact magnitude of potential changes to the RHL cannot be determined at this time, and therefore staff cannot yet confidently predict the exact percent change needed in recreational landings. Once preliminary, and ultimately final, data for the entire 2016 fishing year are available, the percent change needed may be modified again. As a starting point for discussion, this memo considers the staff-recommended RHL for 2017,² with the caveat that this recommendation may not ultimately be adopted. The actual 2017 RHL will depend on several decisions made by the SSC,

¹ For SARC reports, see: <http://www.nefsc.noaa.gov/saw/reports.html>.

² Described in the staff quota memo available at: <http://www.mafmc.org/council-events/2017/january-2017-ssc-meeting/>.

Monitoring Committee, and Council/Board. Once the SSC and Monitoring Committee have developed catch limit recommendations for 2017, recreational recommendations can be developed with more confidence; however, 2017 catch limits will still need to be approved by the Council and Board.

In November 2016, the Monitoring Committee reviewed recreational catch and landings data for the black sea bass fishery through wave 4 (January-August) 2016. Additional data for September and October became available in mid-December 2016. This document includes an updated review of recreational catch and landings, through wave 5 (January-October) 2016. Preliminary data for the complete 2016 fishing year (January-December) is expected to become available in February 2017. The Technical Committee and Board may consider this data during the development of state recreational measures, if the Board continues to apply the “ad hoc regional approach” to recreational black sea bass management as described below.

Staff recommendations for recreational management in 2017 are described in more detail later in this document. As described above, these recommendations should be considered preliminary. In summary, the 2017 staff-recommended RHL is 4.29 million lb, while preliminary 2016 recreational data indicate that black sea bass landings are projected to be 4.67 million lb, approximately double the 2016 RHL of 2.82 million lb. Despite an expected increase in the RHL between 2016 and 2017, a reduction may still be necessary given the very high projected 2016 landings. If the staff recommended RHL were implemented, a reduction in landings of approximately 8% (in pounds) would be required. Under this scenario, staff recommend that this reduction be taken by adjusting management measures in the northern states (Massachusetts through New Jersey), as described in the “Staff Recommendations” section of this document, and that federal measures remain *status quo* in 2017.

Recreational Catch and Landings Trends and 2016 Projections

Recreational catch of black sea bass has fluctuated since 1981, from a peak of 28.95 million fish in 1986 to a low of 3.43 million fish in 1984. Landings have fluctuated from a peak of 12.39 million lb in 1986 to a low of 1.15 million lb in 1998. Landings were estimated to be 3.79 million lb in 2015 (Table 2), approximately 63% above the 2015 RHL of 2.33 million lb.

Marine Recreational Information Program (MRIP) data for 2016 are incomplete and preliminary. To date, only the first five waves (January through October) of catch and landings data for the current year are available. Preliminary data indicate that 13.28 million black sea bass have been caught and 2.23 million black sea bass have been landed through wave 5 in 2016 (north of Cape Hatteras, NC). By weight, landings through wave 5 were 4.55 million lb, with the mean weight at approximately 2.04 lb per landed fish (Table 3). These preliminary estimates indicate that the 2016 RHL of 2.82 million lb has already been exceeded by approximately 61%.

Preliminary wave 1-5 data for 2016 can be used to project catch and landings for the entire year, by assuming the same proportion of catch and landings by wave in the previous year. Because prior year proportions are used in this method, if seasonal adjustments are not considered, landings will tend to be overestimated for states with more restrictive seasons in the current year, and for those with less restrictive seasons, landings are likely to be underestimated. In the November 2016 staff memo³, projection adjustments were made for the states of Rhode Island, Connecticut, New York, and New Jersey, all of which increased the number of open days in waves 3 and/or 4 between 2015 and 2016, impacting the expected percentage of annual landings by wave for those states. Projections were revised in early 2017

³ http://www.mafmc.org/s/bsbrec2017-_Nov2_2016.pdf.

based on the data through wave 5. Because the vast majority of black sea bass landings (over 97% on average from 2013-2015) take place during waves 1-5, and because the unadjusted projected landings for the previously adjusted states were generally within a realistic range, no adjustments were made to the updated projections. Projected landings by state are given in Table 4 (in pounds) and Table 6 (in number of fish), and trends by state over time are shown in Figure 1 and Figure 2.

The coastwide (north of Cape Hatteras, NC) projected catch for 2016 is 13.58 million fish, and projected landings are 4.67 million lb or 2.29 million fish (Table 2). Projected 2016 landings in numbers of fish are very similar to 2015 and 2014 landings, but are the highest since 2003. Projected landings in weight are substantially higher than landings in recent years and are the highest since 1995.

Past Harvest Limits and Management Measures

Recreational harvest limits for black sea bass have ranged from a high of 4.13 million lb in 2005 to a low of 1.14 million lb in 2009. The currently implemented 2017 RHL is identical to the 2016 RHL, at 2.82 million lb (Table 7), and will remain in place until revised through a new rulemaking process that would occur following the Council's submission of their revised preferred specifications to NMFS. The Council expects to package any catch limit revisions with revisions to 2017 recreational management measures such that they would be implemented at the same time, if possible.

Until 2010, the black sea bass recreational fishery was managed with coastwide measures as dictated by the FMP, which included an identical minimum fish size, possession limit, and an open season that were implemented in both state and federal waters. Since 2011, the Commission has developed addenda which have enabled state-specific and regional management measures, which in recent years has been known as "ad hoc regional management." This process essentially results in two regions: the northern states of Massachusetts through New Jersey, which set state-specific measures, and the southern states of Delaware through North Carolina (north of Cape Hatteras), which typically set measures consistent with federal measures given that most landings from southern states are taken in the EEZ (Table 4). Where state and federal measures differ, federal party/charter permit holders and private anglers fishing in federal waters are bound by whichever regulations are more restrictive. Many federal for-hire permit holders drop their federal permits during periods when state waters are open but federal waters are closed, allowing them to fish in state waters during this time. Most reapply for the permit once this period of inconsistency is complete. In practice under ad hoc regional management, landings in the northern states are constrained by state measures rather than federal. As such, if this system remains the same of similar in 2017, any adjustments to the federal recreational measures should be considered adjustments primarily to the measures for the southern region.

In 2016, federal and southern states measures included a 12.5-inch TL minimum size, a 15-fish possession limit, and an open season of May 15-September 21 and October 22-December 31 (Table 7; Table 8). The Commission's Addendum XXVII, approved February 2016, allowed for ad hoc regional management in 2016 with the option to extend this management strategy into 2017. Northern states implemented state-specific measures in 2016 with minimum fish sizes ranging from 12.5 to 15 inches TL, possession limits from 1 to 10 fish, and various seasons (Table 8).

The last year in which a liberalization to recreational measures was allowed was in 2012. Since then, reductions in the recreational fishery have been required each of the last four years (2013 – 2016). These annual reductions have ranged from a low of 7% in 2014 to a high of 33% in 2015. Since the Commission began state-specific or ad-hoc regional management approaches to establishing recreational measures in 2011, there has not been a consistent application of how reductions or liberalizations should be applied.

Since the majority of the harvest (approximately 96%) comes from the northern states of New Jersey – Massachusetts, a greater proportion of the reductions have been applied to this region; while measures in the southern region states of Delaware through North Carolina have remained relatively consistent during this time period. For reductions in 2013 and 2014, reductions were taken in both the northern states and the southern states/federal waters, while in 2015 and 2016, reductions were taken only in the northern states.

Accountability Measures

In 2013, the Council modified the recreational accountability measures (AMs) for Mid-Atlantic species through an Omnibus Recreational Accountability Measures Amendment. This amendment removed the in-season closure authority for the black sea bass recreational fishery that was previously held by the NMFS Regional Administrator. Additionally, in the event of an Annual Catch Limit (ACL) overage, recreational AMs will no longer necessarily include a direct pound-for-pound payback of the overage amount in a subsequent fishing year. Instead, AMs are now tied to stock status, and though paybacks may be required in some circumstances, any potential payback amounts would be scaled relative to biomass, as described below.

The modified recreational AMs are as follows: the 3-year recreational sector ACL is evaluated against a 3-year moving average of total catch. Both landings and dead discards are evaluated in determining if the 3-year average recreational sector ACL has been exceeded. If the recreational ACL is exceeded, the appropriate AM will be determined based on the following criteria:

1. If the stock is overfished ($B < \frac{1}{2} B_{MSY}$), under a rebuilding plan, or the stock status is unknown: The exact amount, in pounds, by which the most recent year's recreational ACL has been exceeded, will be deducted in the following fishing year, or as soon as possible once catch data are available.
2. If biomass is above the threshold, but below the target ($\frac{1}{2} B_{MSY} < B < B_{MSY}$), and the stock is not under a rebuilding plan:
 - a. If only the recreational ACL has been exceeded, then adjustments to the recreational management measures (bag, size, and seasonal limits) would be made in the following year, or as soon as possible once catch data are available. These adjustments would take into account the performance of the measure and conditions that precipitated the overage.
 - b. If the Acceptable Biological Catch (ABC = recreational ACL + commercial ACL) is exceeded in addition to the recreational ACL, then a single year deduction will be made as a payback, scaled based on stock biomass. The calculation for the payback amount in this case is: (overage amount) * $(B_{msy}-B)/\frac{1}{2} B_{msy}$.
3. If biomass is above the target ($B > B_{MSY}$): Adjustments to the recreational management measures (bag, size, and seasonal limits) would be made in the following year, or as soon as possible once catch data are available. These adjustments would take into account the performance of the measure and conditions that precipitated the overage.

Based on a comparison of the 3-year average ACL to the 3-year average of catch, as described above, recreational AMs would typically be triggered for application given the current circumstances. The 2013-2015 average recreational catch (4.11 million lb) exceeded the 2013-2015 average recreational ACL (2.90 million lb). The AM triggered in this case would include adjustments to the recreational management measures (bag, size, and season) with additional considerations for the performance of recent recreational adjustments and the conditions that resulted in overages. However, given the accepted stock assessment and the new information provided regarding the current stock status and condition of the resource, staff believe that applying additional constraints of an AM is unnecessary in this case. The 2015 terminal year estimates from the stock assessment indicate SSB is 2.3 times higher than the target and 4.6 times higher than the threshold and fishing mortality is 25% below the $F_{MSYPROXY}$. Total biomass and SSB estimates in 2014 and 2015 are the highest in the entire time series back to 1989. The high recreational catch estimates from 2012 – 2015 were incorporated in the stock assessment and the population continued to grow and stock status did not change. As part of evaluating the AMs, the Monitoring Committee is responsible for considering the “conditions that precipitated the overage”. Previous Monitoring Committee comments on this issue indicated even with very restrictive measures, catch would not be constrained and cite the strong 2011 year class and the high availability of sea bass, and the disconnect between the data poor constant catch limit set during this time and the actual condition of the stock. All of these reasons support the staff recommendation that no additional constraints are needed at this time.

The Monitoring Committee should continue to update the data and methodology used to calculate effective recreational measures and reductions, taking into consideration the performance of past measures and improving the understanding of how adjustments have effected recent recreational performance. The Commission’s Board has recently formed a recreational working group composed of Board members and Technical Committee members, in order to evaluate and reconsider the methodologies and strategies used to make recreational adjustments, with the goal of improving equity and consistency in methods used along the coast.

Methodology

The Monitoring Committee must consider and recommend measures that will ensure the 2017 RHL will not be exceeded. However, the expected RHL for 2017 is currently unknown at the time of this writing. Projected landings for 2016 are 4.67 million lb. Once a revised 2017 ABC is recommended by the SSC, and the Monitoring Committee subsequently recommends a recreational ACL, ACT, and RHL, the Monitoring Committee will calculate the percentage change in landings needed, relative to 2016 projected landings, to achieve the recommended RHL. Any RHL revisions would not be final until adopted by the Council and Board in February 2017 and later approved by NMFS. However, in order to develop revised 2017 recreational measures in a timely manner, the January 25-26 SSC and Monitoring Committee recommendations should be used to calculate a percent change to form the basis of initial recreational recommendations. If the Council and Board were to adopt 2017 specifications that differ from the SSC and Monitoring Committee recommendations, the Monitoring Committee would potentially need to revisit recreational recommendations following the February 15 joint Council and Board meeting.

Table 1 provides the distribution of landings by wave in 2014-2015 from the southern region of Delaware through Cape Hatteras, North Carolina which are aligned with federal measures. Previously, a similar table with 2006-2008 landings was used on a coastwide basis to calculate the expected effects of seasonal adjustments on landings. Data from 2006-2008 were used because it is the most recent period when the minimum size, season, and possession limit were consistent across all states and federal waters. The Monitoring Committee has determined that the data used to calculate seasonal adjustments should be

updated in order to more effectively predict the effects of recreational adjustments. However, updating this table for the northern states would not be informative given confounding effects of recent northern states regulations, which are complex and variable by state, wave, and fishing mode. Therefore, the table has been updated for the southern region only. The Monitoring Committee should continue to improve on the methods of calculating seasonal adjustments, using recent data and taking into consideration the variations in measures by state and fishing mode.

Table 1: a) Average percent of black sea bass landed (in number) by wave over 2014-2015 for Delaware through Cape Hatteras, North Carolina, and b) projected percent reduction in black sea bass landings (in number) associated with closing one day per wave for the federal/southern states measures, based on MRIP landings data and the number of open days in each wave for 2014-2015.⁴

a.

State	Wave 1	Wave 2	Wave 3	Wave 4	Wave 5	Wave 6
DE	0.00%	0.00%	50.33%	14.65%	10.27%	24.75%
MD	0.00%	0.00%	15.25%	21.09%	37.49%	26.17%
VA	0.00%	0.00%	60.97%	8.82%	18.26%	11.95%
NC ^a	0.00%	28.60%	16.80%	24.30%	30.30%	0.00%
Total : Southern Region	0.00%	0.33%	33.60%	16.80%	27.20%	22.08%

^aNorth of Hatteras.

b.

State	Wave 1	Wave 2	Wave 3	Wave 4	Wave 5	Wave 6
DE	0.00%	0.00%	1.12%	0.24%	0.31%	0.41%
MD	0.00%	0.00%	0.34%	0.34%	1.14%	0.43%
VA	0.00%	0.00%	1.35%	0.14%	0.55%	0.20%
NC ^a	0.00%	0.00%	0.37%	0.39%	0.92%	0.00%
Total: Southern Region	0.00%	0.00%	0.75%	0.27%	0.82%	0.36%

^aNorth of Hatteras.

Fishing Trips and Year Class Effects

Predicting the number of trips that might be taken in 2017 is complicated (Table 9). Changes in fishing site characteristics (travel costs, catch rates, available species, water quality, etc.), fishery management policies (possession limits, size restrictions, closed seasons), and angler demographics can affect the demand for angler fishing trips. Changes in angler behavior may result in a violation of the assumptions associated with specific sets of regulations and their anticipated results.

Year-class effects in terms of fish availability can influence the expected impacts of management measures and should be considered. The Monitoring Committee has previously noted year class effects from the large 2011 year class of black sea bass, which is highlighted by the continued increase in recreational black sea bass catch from 2012 – 2016. The benchmark assessment indicates that recruitment has been

⁴ Average landings from 2014-2015 were used to develop in the information in Table 1a and b is smooth out the variability in the landings from one year and one state to the next. The number of days open in Wave 3 and 5 changed slightly from 2014 to 2015 (four additional days for Wave 3 and four fewer in Wave 5 in 2015), so the average number of days open in 2014-2015 during each respective wave were used to calculate the percent reduction in landings in Table 1b.

average from 2012 – 2014. There is some evidence that the 2015 year class may be above average but additional information from 2016 is needed to evaluate the strength of this year class. The Monitoring Committee should continue to review year class information and determine potential impacts on management actions.

2017 Staff Recommendation

Due to the uncertainty in what the actual 2017 specifications will be until the SSC, Monitoring Committee and Council/Board meet to make their respective recommendations, staff recommend using the staff recommended 2017 RHL of 4.29 million lb (1,945 mt) as a starting point to evaluate recreational measures. Depending upon the SSC recommendation for the ABC, updated information will be provided to the Monitoring Committee in order to evaluate the necessary adjustments needed to constrain landings to the expected revised RHL. Preliminary 2016 recreational data indicate that black sea bass landings are projected to be 4.67 million lb. When evaluating the 2016 landings to the staff recommended 2017 RHL of 4.29 million pounds, an approximate 8% reduction in landings would be needed in 2017. If alternative specifications are recommended or if the 2016 entire year recreational harvest estimates change, then additional adjustments will be required. The Monitoring Committee may also want consider alternative methods for calculating recreational adjustments, including methods to account for projected changes in availability for black sea bass and associated implications for recreational catch.

From 2014 – 2016, the recreational harvest from the southern region states of Delaware through North Carolina have averaged 4.36% of the total coastwide recreational black sea bass landings. Given the relatively small reduction needed for 2017, when compared to the average over the last four years, little saving would be accomplished through reductions in the southern region. Staff preliminarily recommends the reduction be taken by adjusting management measures in the northern states (Massachusetts through New Jersey), where most of the harvest occurs, and that federal measures remain *status quo* in 2017. Therefore, federal and southern states measures would remain at a 12.5 inch minimum fish size, a 15 fish possession limit, and an open season from May 15-September 19 and October 22-December 31.

These recommendations assume the continuation of the Board's ad-hoc regional management approach for 2017. The Board has formed a recreational black sea bass working group to evaluate the state performance under ad-hoc regional management and establish a standard methodology for calculating modifications to recreational management measures. The outcome and recommendations of the working group should be used to help develop measures for the northern states when setting 2017 measures.

Information on recreational fishery trends, through wave 5 of 2016, is provided in the tables and figures below to facilitate initial discussions of options for 2017.

Table 2: Black sea bass recreational catch and landings by year, 1982 to 2015, and projected catch and landings for 2016, Maine to Cape Hatteras, NC. The number of fish released is presented as a proportion of the total catch (% Released).

Year	Catch ^a ('000 fish)	Landings ^a ('000 fish)	Landings ^a ('000 lb)	% Released	Mean weight of landed fish (lb)
1982	11,386	10,045	9,894	12%	0.98
1983	7,561	4,537	4,079	40%	0.90
1984	3,428	1,780	1,447	48%	0.81
1985	6,047	3,388	2,097	44%	0.62
1986	28,946	21,742	12,392	25%	0.57
1987	5,052	2,883	1,924	43%	0.67
1988	8,186	3,088	2,869	62%	0.93
1989	6,427	4,239	3,289	34%	0.78
1990	9,135	3,881	2,761	58%	0.71
1991	10,829	5,269	4,186	51%	0.79
1992	7,722	3,592	2,706	53%	0.75
1993	9,023	6,007	4,842	33%	0.81
1994	7,166	3,430	2,948	52%	0.86
1995	14,059	6,747	6,207	52%	0.92
1996	8,143	3,624	3,993	55%	1.10
1997	10,646	4,739	4,268	55%	0.90
1998	5,146	1,148	1,152	78%	1.00
1999	7,400	1,378	1,664	81%	1.21
2000	16,927	3,629	3,988	79%	1.10
2001	13,869	2,841	3,421	80%	1.20
2002	14,703	3,351	4,349	77%	1.30
2003	12,128	3,251	3,289	73%	1.01
2004	7,238	1,531	1,973	79%	1.29
2005	7,041	1,263	1,883	82%	1.49
2006	7,602	1,286	1,800	83%	1.40
2007	8,727	1,528	2,175	82%	1.42
2008	10,653	1,294	2,031	88%	1.57
2009	9,224	1,806	2,558	80%	1.42
2010	9,964	2,207	3,190	78%	1.45
2011	4,737	817	1,171	83%	1.43
2012	12,536	1,874	3,185	85%	1.70
2013	9,807	1,282	2,464	87%	1.92
2014	10,870	2,118	3,667	81%	1.73
2015	9,429	2,215	3,790	77%	1.71
2016 (proj.) ^b	13,588	2,294	4,666	83%	2.03

^a 1982-2003 data are from MRFSS, 2004-2016 data are from MRIP. Source: Pers. Comm. with the National Marine Fisheries Service, Fisheries Statistics Division, December 16, 2016.

^b Projected using proportion by wave from 2015 MRIP data and 2016 MRIP wave 1-5 data. (Source: Pers. Comm. with the National Marine Fisheries Service, Fisheries Statistics Division, December 16, 2016).

Table 3: Black sea bass recreational catch and landings for waves 1-5, Maine through Cape Hatteras, North Carolina, 2005-2016.^a

Year	Catch ('000 fish)	Landings ('000 fish)	Landings ('000 lb)	Mean Weight (lb)
2005	6,872	1,230	1,843	1.50
2006	7,318	1,215	1,706	1.40
2007	8,446	1,455	2,063	1.42
2008	10,492	1,224	1,898	1.55
2009	9,113	1,784	2,532	1.42
2010	9,481	2,136	3,108	1.46
2011	4,524	739	1,057	1.43
2012	12,504	1,872	3,182	1.70
2013	9,618	1,260	2,424	1.92
2014	10,363	2,017	3,531	1.75
2015	9,214	2,161	3,695	1.71
2016	13,278	2,232	4,550	2.04

^a Source: Pers. Comm. with the National Marine Fisheries Service, Fisheries Statistics Division, December 16, 2016.

Table 4: Landings of black sea bass (in lb) by state and area (state vs. federal waters), 2014 and 2015, Maine through North Carolina, and projected landings for 2016 by state. Area information is self-reported based on the area where most fishing activity occurred per angler trip.

State	2014 Landings (lb)	2015 Landings (lb)	2016 projected landings (lb)	Avg. % of Coastwide Landings (lb) 2014-2015	Proj. % of coastwide landings in 2016	% from State Waters (<= 3 mi), 2014-2015	% from EEZ (> 3 mi), 2014-2015
ME	0	0	0	0.0%	0.0%	--	--
NH	0	0	0	0.0%	0.0%	--	--
MA	1,087,856	718,108	934,542	24.2%	18.0%	93%	7%
RI	370,534	444,341	542,586	10.9%	10.7%	77%	23%
CT	586,118	495,679	996,599	14.5%	19.7%	95%	5%
NY	847,188	1,531,507	1,634,608	31.9%	35.2%	76%	24%
NJ	631,461	428,323	341,868	14.2%	10.6%	13%	87%
DE	30,963	26,893	45,344	0.8%	1.5%	4%	96%
MD	87,087	78,053	108,364	2.2%	3.3%	10%	90%
VA	24,433	63,695	60,541	1.2%	1.0%	26%	74%
NC	1,180 ^a	3,887 ^a	1,165	0.1% ^a	0.0% ^a	16% ^b	84% ^b
Total	3,666,820	3,790,487	4,665,617	100.0%	100.0%	69%	31%

^a Landings data shown are through Cape Hatteras, NC.

^b Landings by area (state vs. federal waters) includes data from all of North Carolina (north and south of Cape Hatteras).

Table 5: Black sea bass recreational landings (in thousands of fish) by state for waves 1-5, Maine through Cape Hatteras, NC, 2007-2016.

State	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
ME	-	-	-	-	-	-	-	-	-	-
NH	-	-	-	-	-	3	12	-	-	-
MA	149	246	431	702	195	520	292	457	343	412
RI	43	52	36	160	50	103	74	212	232	244
CT	2	60	<1	16	8	111	110	395	328	449
NY	382	206	557	542	219	320	344	467	861	793
NJ	717	567	574	624	131	735	335	400	302	237
DE	93	22	37	19	43	40	37	22	13	20
MD	35	26	33	33	44	33	27	50	43	56
VA	26	36	113	30	19	4	21	13	38	21
NC	7	9	3	11	31	4	8	<1	2	<1

Source: Pers. Comm. with the National Marine Fisheries Service, Fisheries Statistics Division, December 16, 2016.

Table 6: Black sea bass recreational landings (in thousands of fish) by state for all waves, Maine through Cape Hatteras, NC, 2007-2016.^a

State	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016 (proj.) ^b
ME	-	-	-	-	-	-	-	-	-	-
NH	-	-	-	-	-	3	12	-	-	-
MA	149	246	431	702	195	520	292	457	343	412
RI	44	52	36	160	50	103	75	214	234	245
CT	24	60	0	16	8	111	110	397	331	453
NY	410	260	566	543	274	322	353	469	877	807
NJ	725	580	583	687	148	735	345	468	310	244
DE	93	23	37	21	43	40	37	24	23	35
MD	39	26	33	36	47	33	30	68	58	75
VA	36	38	115	30	19	4	21	19	39	22
NC	9	9	3	11	31	4	8	<1	2	<1

^a Source: Pers. Comm. with the National Marine Fisheries Service, Fisheries Statistics Division, October 28, 2016 and December 16, 2016.

^b Projected using proportion by wave from 2015 MRIP data and 2016 MRIP wave 1-5 data (Source: Pers. Comm. with the National Marine Fisheries Service, Fisheries Statistics Division, December 16, 2016).

Table 7: Summary of management measures for the black sea bass recreational fishery, 1997-2017.

Measure	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	
ABC (m lb)	-	-	-	-	-	-	-	-	-	-	
Recreational ACL (m lb)	-	-	-	-	-	-	-	-	-	-	
Harvest Limit (m lb)^a	-	3.15	3.15	3.15	3.15	3.43	3.43	4.01	4.13	3.99	
Landings (m lb)^b	4.3	1.2	1.7	4.0	3.4	4.4	3.3	2.0	1.9	1.8	
Possession Limit	-	- ^c	- ^c	- ^c	25	25	25	25	25	25	
Size Limit (TL in)	9	10	10	10	11	11.5	12	12	12	12	
Open Season	1/1-12/31	1/1-7/30 and 8/16-12/31	1/1-12/31	1/1-12/31	1/1-2/28 and 5/10-12/31	1/1-12/31	1/1-9/1 and 9/16-11/30	1/1-9/7 and 9/22-11/30	1/1-9/7 and 9/22-11/30	1/1-12/31	
Measure	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017 ^f
ABC (m lb)				4.50	4.50	4.50	5.50	5.50	5.50	6.67	10.47
Recreational ACL (m lb)	-	-	-	-	-	-	2.90	2.90	2.90	3.52	5.38
Harvest Limit (m lb)^a	2.47	2.11	1.14	1.83	1.84	1.32	2.26	2.26	2.33	2.82	4.29
Landings (m lb)^b	2.17	2.03	2.56	3.19	1.17	3.19	2.46	3.67	3.79	4.67 ^e	-
Possession Limit	25	25	25	25	25	15 or 25 ^d	20	15	15	15	-
Size Limit (TL in)	12	12	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	-
Open Season	1/1-12/31	1/1-12/31	1/1-12/31	1/1-10/5	5/22-10/1 and 11/1-12/31	1/1-2/29, 5/19-10/14 and 11/1-12/31	5/19-10/14 and 11/1-12/31	5/19-9/21 and 10/18-12/31	5/15-9/21 and 10/22-12/31	5/15-9/21 and 10/22-12/31	-

^a For 2006-2014, recreational harvest limits are adjusted for Research Set Aside (RSA). Quotas and harvest limits for 2015-2017 do not reflect an adjustment for RSA due to the suspension of the program in 2014.

^b Landings for Maine through Cape Hatteras, NC. 1997-2003 data are from MRFSS, 2004-2015 data are from MRIP.

^c There was no federal possession limit but some states implemented a 20 fish possession limit in these years.

^d 15 fish from 1/1-2/29; 25 fish from 5/19-10/14 and 11/1-12/31.

^e Projected using preliminary data from waves 1-5, 2016, and proportions of landings by wave from 2015.

^f Staff recommended; actual 2017 RHL is dependent on decisions and recommendations made by the SSC, Monitoring Committee, and Council/Board.

Table 8: Black sea bass recreational management measures by state, 2015 (a) and 2016 (b).

a) 2015 measures by state.

State	Minimum Size (inches)	Possession Limit	Open Season
Maine	13	10 fish	May 19 - September 21 and October 18-December 31
New Hampshire	13	10 fish	January 1 - December 31
Massachusetts	14	8 fish	May 23 - August 27
Rhode Island	14	1 fish	July 2 - August 31
		7 fish	September 1 - December 31
Connecticut	14	3 fish	June 1 - August 31
		5 fish	September 1- December 31
Connecticut authorized party/charter monitoring program vessels	14	8 fish	June 21-December 31
New York	14	8 fish	July 15 - October 31
		10 fish	November 1 - December 31
New Jersey	12.5	2 fish	July 1 - July 31
		15 fish	May 27 - June 30; October 22- December 31
Delaware	12.5	15 fish	May 15 - September 21 and October 22 - December 31
Maryland	12.5	15 fish	May 15 - September 21 and October 22 - December 31
Potomac River Fisheries Commission	12.5	15 fish	May 15 - September 21 and October 22 - December 31
Virginia	12.5	15 fish	May 15 - September 21 and October 22 - December 31
North Carolina (north of Cape Hatteras)	12.5	15 fish	May 15 - September 21 and October 22 - December 31

b) 2016 measures by state.

State	Minimum Size (inches)	Possession Limit	Open Season
Maine	13	10 fish	May 19-September 21; October 18- December 31
New Hampshire	13	10 fish	January 1-December 31
Massachusetts	15	5 fish	May 21-August 31
Rhode Island	15	3 fish	June 24- August 31
		7 fish	September 1-December 31
Connecticut (Private & Shore)	15	5 fish	May 1-December 31
CT (Authorized party/charter monitoring program vessels)		8 fish	
New York	15	3	June 27 – August 31
		8 fish	September 1-October 31
		10 fish	November 1-December 31
New Jersey	12.5	10 fish	May 23-June 19
	13	2 fish	July 1-August 31
		15 fish	October 22-December 31
Delaware	12.5	15 fish	May 15-September 21; October 22-December 31
Maryland	12.5	15 fish	May 15-September 21; October 22-December 31
Virginia	12.5	15 fish	May 15-September 21; October 22-December 31
North Carolina, North of Cape Hatteras (N of 35° 15'N)	12.5	15 fish	May 15-September 21; October 22-December 31

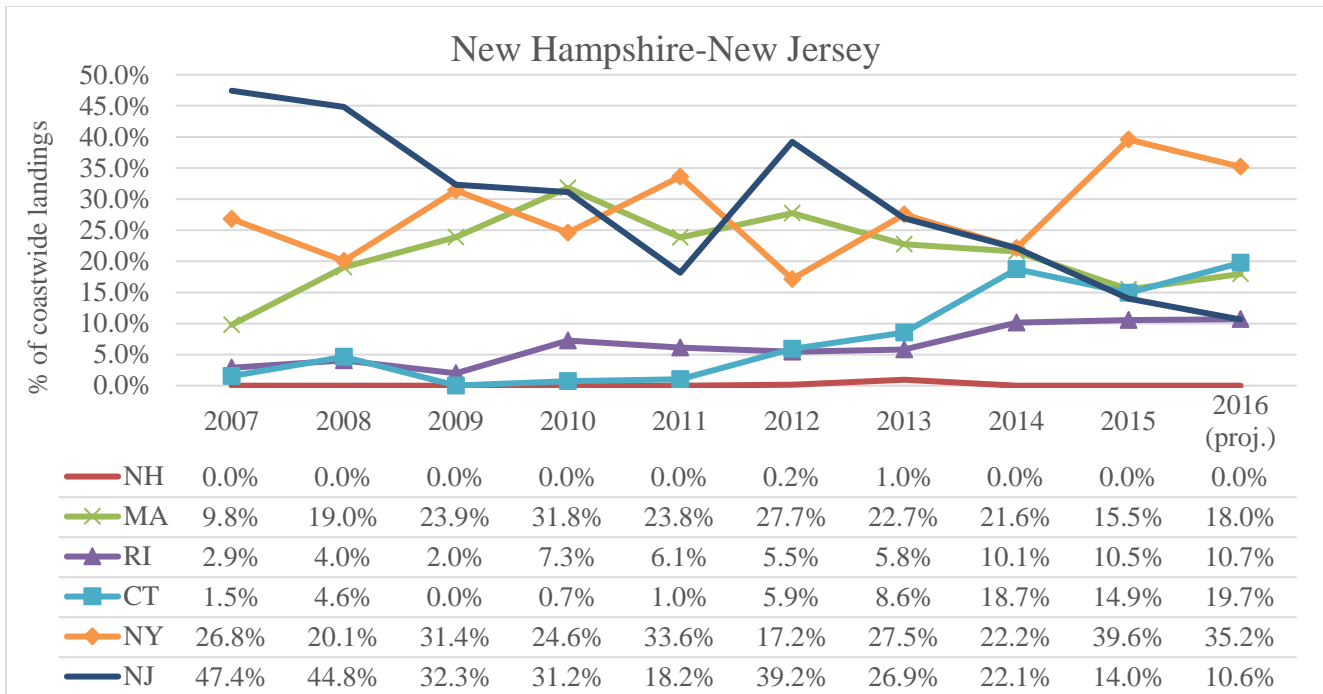


Figure 1: Percentage of coastwide black sea bass landings (in number of fish) by state, 2007-2016 (projected) for New Hampshire-New Jersey.

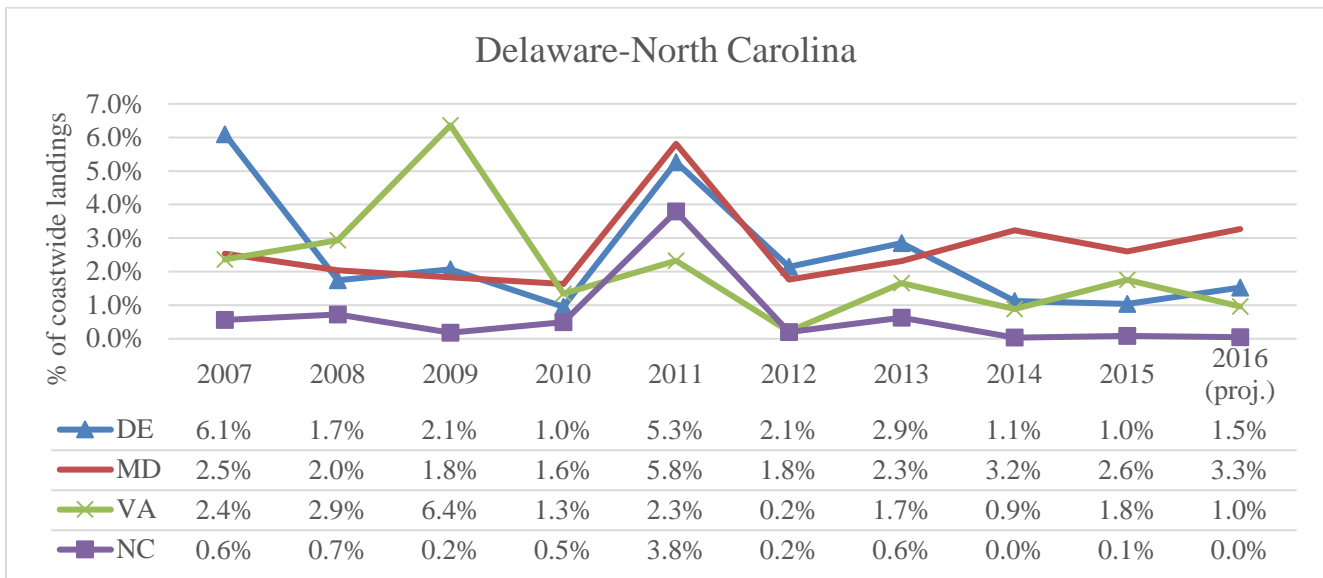


Figure 2: Percentage of coastwide black sea bass landings (in number of fish) by state, 2007-2016 (projected) for Delaware-North Carolina.

Table 9: Number of directed black sea bass recreational fishing trips (Maine through North Carolina), recreational harvest limits, recreational landings, and fishery performance from 1995 to 2016.

Year	Number of Directed Fishing Trips ^a	Percentage of Directed Trips relative to Total Trips ^b	Recreational Harvest Limit (million lb) ^c	Recreational Landings of BSB (million lb) ^{d,e}	Percentage Overage (+%)/ Underage (-%)
1995	313,537	1.2	None	6.34	None
1996	231,090	0.8	None	3.99	None
1997	310,898	1.0	None	4.26	None
1998	137,734	0.5	3.15	1.14	-64%
1999	136,452	0.5	3.15	1.64	-48%
2000	255,789	0.7	3.15	3.98	+26%
2001	293,191	0.8	3.15	3.41	+8%
2002	283,537	0.9	3.43	4.37	+27%
2003	285,861	0.8	3.43	3.30	-4%
2004	149,670	0.4	4.01	1.97	-51%
2005	199,603	0.5	4.13	1.88	-54%
2006	253,040	0.7	3.99	1.80	-55%
2007	368,042	1.0	2.47	2.18	-12%
2008	256,341	0.7	2.11	2.03	-4%
2009	393,389	1.3	1.14	2.56	+125%
2010	417,663	1.4	1.83	3.19	+74%
2011	193,655	0.7	1.83	1.17	-36%
2012	267,932	0.8	1.32	3.19	+142%
2013	261,582	1.0	2.26	2.46	+9%
2014	403,624	1.0	2.26	3.67	+62%
2015	505,571	1.8	2.33	3.79	+63%
2016	NA	NA	2.82	NA	NA

^a Estimated number of recreational fishing trips (expanded) where the primary target species was black sea bass, Maine through North Carolina. Source: Pers. Comm. with the National Marine Fisheries Service, Fisheries Statistics Division, October 27, 2016.

^b Source of total trips (Maine through North Carolina) for all species combined: Pers. Comm. with the National Marine Fisheries Service, Fisheries Statistics Division, October 18, 2016.

^c Harvest limits for 2002 through 2014 are adjusted for research set-aside.

^d Maine through Cape Hatteras, NC.

^e 1994-2003 data are from MRFSS, 2004-2015 data are from MRIP. Source: Pers. Comm. with the National Marine Fisheries Service, Fisheries Statistics Division, October 27, 2016.

NA = Data not available.

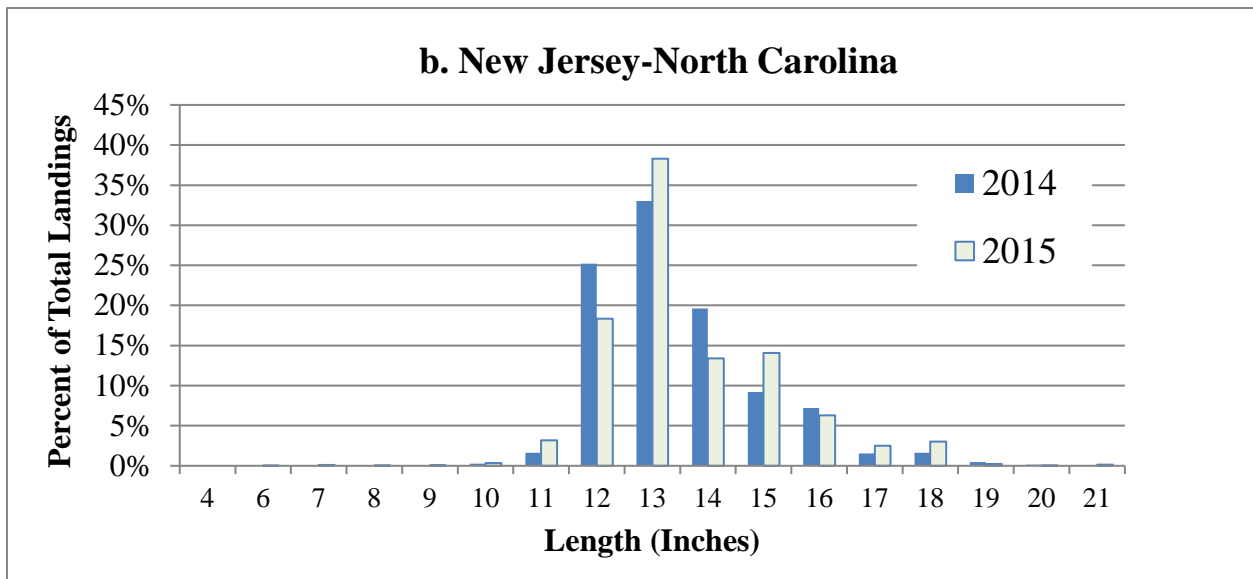
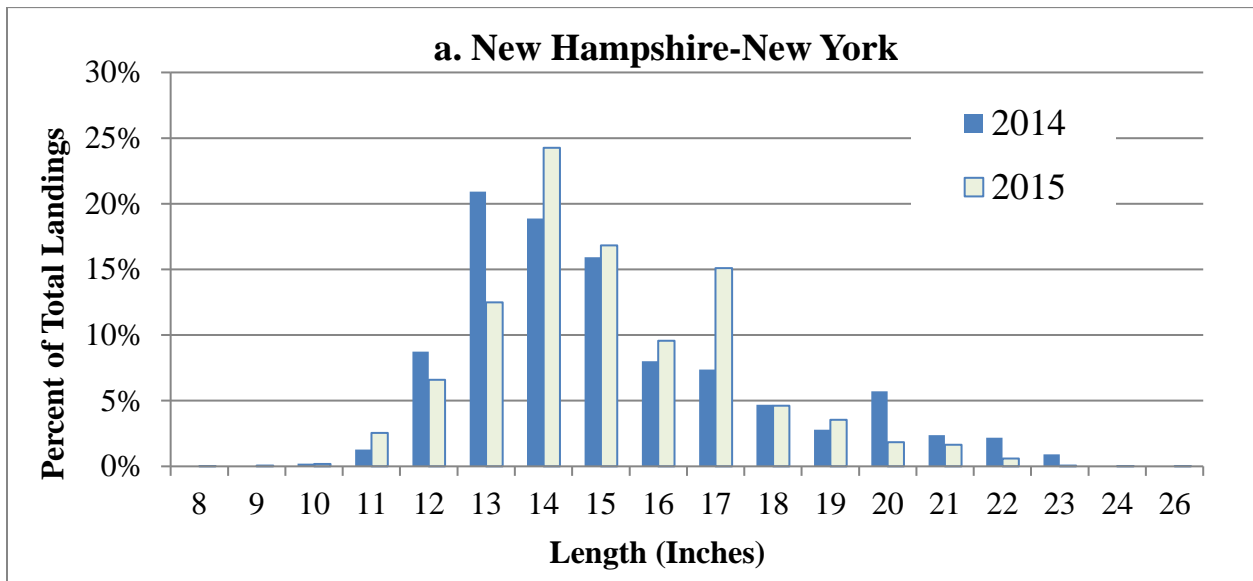


Figure 3: Expanded length frequencies of landed black sea bass from 2014 and 2015 MRIP data, as a percent of total landed fish, for a) New Hampshire through New York (13 or 15-inch size limits) and b) New Jersey through North Carolina (generally 12.5-inch size limit, except for New Jersey fall season). Each length bin contains fish from X.0 to X.99 inches. Source: Pers. Comm. with the National Marine Fisheries Service, Fisheries Statistics Division, October 28, 2016.