



Mid-Atlantic Fishery Management Council
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Richard B. Robins, Jr., Chairman | Lee G. Anderson, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

M E M O R A N D U M

DATE: November 27, 2013

TO: Council

FROM: Kiley Dancy, Staff

SUBJECT: Black Sea Bass Recreational Measures for 2014

The following materials are enclosed for Council consideration of the above subject:

- 1) Advisory panel meeting summary
- 2) Monitoring Committee meeting summary and 2013 waves 1-4 data update
- 3) Black sea bass staff memo dated November 12, 2013



Summer Flounder, Scup, and Black Sea Bass Advisory Panel Meeting Summary November 25, 2013

The Mid-Atlantic Fishery Management Council's (Council's) Summer Flounder, Scup, and Black Sea Bass Advisory Panel met jointly with the Atlantic States Marine Fisheries Commission's (Commission's) Summer Flounder, Scup, and Black Sea Bass Advisory Panels on November 25, 2013 to discuss 2014 recreational management measures.

Council Advisory Panel members present: James Fletcher (NC), Skip Feller* (VA), Willy Hatch (MA), Denny Dobbins (VA), Steve Witthuhn (NY), Adam Nowalsky (NJ), Rick Bellavance* (RI)

Commission Black Sea Bass Advisory Panel members present: Marc Hoffman (NY), Mike Plaia (CT), Victor Bunting (MD), James Tietje (MA), Frank Blount (RI), Roman Jesien (MD), James Lovgren (NJ), Skip Feller* (VA), Rick Bellavance* (RI)

Other Commission Advisory Panel members present: Paul Forsberg (NY), Robert Busby (NY), Bill Shillingford (NJ), Jack Conway (CT), Paul Risi (NY), Mike Fedosh (NJ), Joseph Huckemeyer (MA)

Others present: Kiley Dancy (Council staff), Kirby Rootes-Murdy (ASMFC staff), Emerson Hasbrouck (NY), Kareem Alalkey, Ray Stinsman, Cary O'Kane

*Serves on both Council and Commission Advisory Panels

Black Sea Bass 2014 Measures

The advisors agreed that the abundance of black sea bass and the apparent health of the fishery are not reflected in recent catch limits. An improved stock assessment should be completed as soon as possible, as the current assessment is not capturing the reality of the health of the stock. The advisors support status quo recreational measures, given the apparent disconnect between the data and on-the-water observations of the health of the stock.

The advisors expressed general concern with lowering possession limits in this fishery, stating that the possibility of landing the limit is an important draw for customers in the party/charter sector, even if they do not actually achieve the limit.

A cumulative length limit was suggested for black sea bass, similar to the recommendation for summer flounder and scup. Other advisors disagreed with this recommendation, stating that it is unrealistic to expect that once the cumulative length limit is reached, fishing would stop.

In response to the Monitoring Committee recommendation for a seasonal reduction in wave 5, some advisors would prefer a reduction in wave 3 instead. An open season during at least part of October is more important to the northern states. In Maryland, however, a reduction in wave 5 would be strongly preferred, as the fishery could not take any closures in June. Additional suggestions included splitting the reduction between waves 3 and 5, or taking a closure in the last two weeks of June. After much discussion, most advisors agreed that if a seasonal reduction is needed, a Federal season of May 19-September 15 and October 18-December 31 would be a workable solution.

Some advisors suggested reducing the possession limit and/or increasing the size limit in July and August in Federal waters if it would allow for keeping the season open longer. Earlier in the year, a lower possession limit can be tolerated in the northern states; however, it would present a problem for Virginia.

The advisors would like to see the fishery open in wave 1 in 2015, and stated that they should not be penalized because NMFS does not have MRIP sampling during wave 1. VTRs are completed by party/charter vessels and can and should be used to account for landings during this time. Alternatively, NMFS should produce estimates for wave 1.

Advisors generally expressed support for a regional approach for sea bass management, given that what is beneficial to the northern states tends to differ from what is beneficial to the southern states. However, some felt that in a crisis situation, state-by-state measures should be used, including for 2014. The advisors support an addendum/amendment that would allow for regional management of black sea bass, so that Federal regulations do not interfere with state or regional regulations.

General Comments

As noted in the September 2013 Fishery Performance Reports, advisors continue to be concerned that the effort estimation methodology used by MRIP has not accurately captured a reduction in effort in New York and New Jersey due to Superstorm Sandy.



**Summer Flounder, Scup, and Black Sea Bass Monitoring Committee
Meeting Summary and Data Update
November 22, 2013**

Black Sea Bass 2014 Monitoring Committee Recommendations

Attendees: Paul Caruso (MA-DMF), Jason McNamee (RI-DFW), Peter Clarke (NJ-F&W), Greg Wojcik (CT-DEEP), Sally Roman (VMRC), Rich Wong (DNREC), Steve Doctor (MD-DNR), Moira Kelly (NMFS NERO), John Maniscalco (NY-DEC), Tom Wadsworth (NC-DMF), Kiley Dancy (Council Staff), Kirby Rootes-Murdy (ASMFC), Toni Kerns (ASMFC), Mike Luisi (MD-DNR; MAFMC Demersal Committee Chair)

The Monitoring Committee met on Friday, November 22, 2013 in Linthicum, MD to recommend recreational management measures for summer flounder, scup, and black sea bass in 2014. Prior to the meeting, preliminary Marine Recreational Information Program (MRIP) data for 2013 waves 3 and 4 (May through August) were undergoing revisions by NMFS and were unavailable for analysis. Revised data were posted shortly after the Monitoring Committee meeting began, and were reviewed by the Committee but were not able to be analyzed in-depth. Recommendations below are based on a review of available information, including projected landings through 2013.

For 2014, based on currently projected 2013 black sea bass landings, a coastwide reduction of at least 6% would be required in order to constrain landings to the 2014 recreational harvest limit. However, the Committee recommends a reduction of 9% in order to comply with the Council's Accountability Measures triggered by the 2012 recreational overage. The group recommends that the Council and Board follow a similar management approach as in 2013, where the states of New Jersey through Massachusetts set ad-hoc state measures to achieve the required reduction. The Committee recommends that each of the Northern states implement measures resulting in a reduction of 9% relative to that state's landings. Additionally, Federal measures should also achieve a reduction of 9%, and southern states should implement measures consistent with Federal measures.

Specifically, the group recommends Federal waters measures including a 12.5-inch TL size limit, a reduction in the season of 15 days during wave 5, and a reduction in the bag limit from 20 to 15 fish. In combination, these measures would be expected to constrain landings to the harvest limit. The Committee does not recommend increases in size limits for any state or in Federal waters, due to concerns related to the unusual life history of black sea bass as outlined in the staff memo. The Committee recommends that any seasonal adjustment be taken in wave 5, which would provide the greatest amount of reduction in the fewest amount of days. Removing 15 days from the season in wave 5 would provide a reduction of approximately 8.9%. The reduction in the bag limit is designed to provide an additional buffer to address the required adjustments resulting from the 2012 overage, consistent with the Council's new system of Accountability Measures (pending implementation).

If this approach is not adopted, a coastwide regulation would need to be considered. The Monitoring Committee does not believe that the coastwide measures recommended in the staff memo would constrain landings to the harvest limit in 2014. If the Addendum does not address the required reduction and the adjustments required for the 2012 overage, the Committee recommends coastwide measures including a 13-inch TL minimum size, a 5 fish possession limit, and an open season from June 1-September 5.

The fishery should not be open in wave 1 (January 1-February 28) without adequate recreational data sampling in place to produce comparable MRIP estimates. In terms of implementing any changes to early parts of the 2014 fishing season, in Federal waters the 2014 final rule for recreational fishing measures is not likely to publish until June 2014. This means the 2013 regulations in Federal waters will roll forward into 2014 until replaced by the final rule. Therefore, any changes to the first half of the 2014 fishing season would not occur until the first half of the 2015 fishing year.

The Committee concurs with the language in the staff memos regarding concern with high possession limits in recreational fisheries.

The Committee also wishes to emphasize that the assessment of risk for the different management configurations for each of the species is based on a preliminary review of 2013 data, which was not available until the day of the meeting, as well as a more thorough review of more historical datasets including 2011 and 2012. The Council and Board may wish to consider this significant data gap when developing their recommendations.

Black Sea Bass 2013 Data Update

As mentioned previously, MRIP data for waves 1-4 (May through August) were undergoing revision prior to the Monitoring Committee meeting and were not included in the staff memo dated November 12, 2013. Tables 1-4 below summarize the revised data, which was posted during the Monitoring Committee meeting on November 22, 2013.

Black sea bass landings through the end of 2013 are projected at 2.40 million lb (Table 2), above the 2013 recreational harvest limit (RHL) of 2.26 million lb. Based on the 2014 recreational harvest limit of 2.26 million lb, a coastwide reduction of at least 6% would be required in 2014.

Table 1. Black sea bass recreational catch and landings for waves 1-4, Maine through North Carolina, 2013.

Year	Catch (‘000 fish)	Landings (‘000 fish)	Landings (‘000 lb)	% Released	Mean Weight (lb)
2013	6,134	880	1,720	85.7	1.95

Table 2. Projected black sea bass recreational catch and landings for 2013.^a

Year	Catch (‘000 fish)	Landings (‘000 fish)	Landings (‘000 lb)	Recreational Harvest Limit (‘000 lb)
2013	9,984	1,325	2,403	1.96

^a Projected using proportion from 2012 MRIP data and 2013 MRIP wave 1-4 data (Source: Pers. Comm. with the National Marine Fisheries Service, Fisheries Statistics Division, November 26, 2013).

Table 3. Black sea bass recreational landings ('000 fish) by state, waves 1-4, 2004-2013.

State	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
ME	-	-	-	-	-	-	-	-	-	-
NH	-	-	-	-	-	-	-	-	3	12
MA	158	175	105	149	246	431	702	195	520	213
RI	27	85	41	44	52	36	160	50	103	49
CT	26	0	3	24	60	0	16	8	111	111
NY	133	143	269	410	260	566	543	274	322	249
NJ	1,078	660	531	725	580	583	687	148	735	206
DE	44	68	114	93	23	37	21	43	40	25
MD	16	91	121	39	26	33	36	47	33	4
VA	46	34	83	36	38	115	30	19	4	12
NC	397	231	126	110	57	107	139	95	76	40
TOTAL	1,925	1,489	1,392	1,630	1,342	1,909	2,335	881	1,946	922

Source: Pers. Comm. with the National Marine Fisheries Service, Fisheries Statistics Division, November 26, 2013.



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MEMORANDUM

Date: November 12, 2013
To: Chris Moore
From: Kiley Dancy, Jessica Coakley, and José Montañez , Staff
Subject: Black Sea Bass Recreational Management Measures in 2014

In October 2013, the Council and the Atlantic States Marine Fisheries Commission's (Commission's) Summer Flounder, Scup, and Black Sea Bass Board (Board) reviewed previously implemented multi-year commercial quotas and recreational harvest limits for black sea bass for the 2014 fishing year, and considered specifications for the 2015 fishing year. Specifications were recommended by the Council and implemented by NMFS for 2014 were implemented earlier in 2013. At the October meeting, the Council and Board made no changes to the previously implemented 2014 specifications, and extended these same specifications into 2015.

The final rule implementing 2014 commercial quotas and recreational harvest limits for black sea bass published on June 21, 2013, and includes an adjusted recreational harvest limit of 2.26 million lb. There was a significant overage in the recreational black sea bass fishery in 2012 that previously would have required a direct payback in the amount of the overage in 2014. However, the pending implementation of the Council's Omnibus Recreational Accountability Measures Amendment is expected to change the way this overage will be addressed. Instead of a payback, the overage will be addressed via adjustments to bag limits, size limits, and seasons in 2014 (see "Accountability Measures" below). lb. The proposed rule for 2015 has not yet filed, however, we do not expect the NMFS proposed rule will be different than the Council and Commission recommendations given that the harvest limits are consistent with the recommendations of the SSC and the Monitoring Committee.

The Monitoring Committee must recommend recreational management measures for 2014 that will constrain landings to the recreational harvest limit. Additionally, these measures must address the 2012 recreational overage, consistent with the proposed revisions to the Council's recreational accountability measures. The following is a review of recreational catch and landings data for the black sea bass fishery to aid in the Monitoring Committee's deliberations.

Recreational Catch and Landings

Recreational catch of black sea bass has fluctuated since 1981, from a peak in 1986 at 28.9 million fish to a low of 3.4 million fish in 1984 (Table 1). Landings were estimated at 3.18 million lb in 2012. The 2013 MRIP data are incomplete and preliminary. Black sea bass landings in number of fish, by state,

indicate that New Jersey landed the greatest number of black sea bass followed by Massachusetts and New York (Table 2).

Typically, the first four waves of catch and landings data for the current year become available in mid-October. The Monitoring Committee does an early review of the MRIP data because the Council and Commission agreed that recommendations would have to be made late in the current year (i.e., 2013) to give the states enough time to enact changes in their regulations for the upcoming year (i.e., 2014). However, estimates for 2013 waves 3 and 4 (May-August) are undergoing significant revisions at the time of this writing and are currently unavailable for analysis. Catch and landings estimates for 2013 waves 1-4 (January through August) will be provided when they become available.

In the past, preliminary wave 1-4 data for the current year has been 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 2013 preliminary estimates are expected to change, staff did not rely on this data to make projections when developing staff recommendations for 2014. Instead, recommendations were developed using data from the most recent complete year (2012), as the baseline.

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 (Table 3). In 2013, the harvest limit was 2.26 million lb. Since 2011, state-specific measures have been implemented in state waters, including minimum fish sizes ranging from 12.5 to 14 inches TL and various combinations of possession limits and open seasons (Table 4). The Federal waters (EEZ) measures in 2013 are similar to those states in the southern half of the stock range, and include a 12.5-inch TL minimum size, a 20 fish possession limit, and open seasons of May 19-October 14 and November 1-December 31 (Table 3).

Accountability Measures

The proposed rule for the Council's Omnibus Recreational Accountability Measures Amendment filed on September 18, 2013. Several changes to the Council's system of accountability measures (AMs) are proposed. The following would apply if the Council-preferred alternatives are implemented:

1. The NMFS Regional Administrator (RA) would no longer have in-season closure authority for the black sea bass recreational fishery.
2. The determination of whether a recreational overage has occurred would be made by comparing the 3-year moving average of the lower bound of the confidence interval of the recreational catch estimate (rather than the point estimate, as is currently used) to the 3-year moving average of the recreational ACL. The 3-year moving average will continue to be phased in over a 3-year period, beginning with 2012. NMFS has identified some concerns with the use of the lower bound of the confidence interval and requested comments on this aspect of the proposed rule.
3. In the event of a recreational overage, accountability measures would no longer necessarily include a pound-for-pound payback of the overage amount in a subsequent fishing year. Instead, paybacks would occur only if: a) the ACL is exceeded for stocks that are overfished, under a rebuilding plan, or with unknown stock status; or b) biomass is below the target, but above the

threshold ($1/2 < B/B_{MSY} < 1$), and the acceptable biological catch (ABC) is exceeded.

4. If a payback is needed, the amount will be scaled relative to biomass (resulting in paybacks that are smaller for stocks where biomass is closer to the target).

In 2012, recreational black sea bass landings were estimated at 3.18 million lb,¹ exceeding both the recreational harvest limit (1.32 million lb) and the recreational ACL (2.52 million lb). If the above changes to the accountability measures are implemented, the lower bound of the confidence interval of this estimate will be compared to the 2012 recreational ACL. In the event of a confirmed overage, the type of accountability measure to be applied would be dependent on stock status. Because the black sea bass stock is not overfished or under a rebuilding plan, and because the most recent point estimate of biomass is above the biomass target (i.e., $B/B_{MSY} > 1$), no payback would be required. Instead, adjustments to recreational management measures (bag limit, size limit, and season) would be used as the AM.

Methodology

The Monitoring Committee must consider and recommend measures that will ensure the recreational harvest limit of 2.26 million lb will not be exceeded in 2014. As mentioned previously, data for 2013 waves 1-4 are currently unavailable for use in projecting 2013 catch and landings. The performance of the recreational black sea bass fishery in 2012, relative to 2012 management measures, can be compared to the 2014 harvest limit to derive measures that are likely to constrain 2014 landings to the harvest limit. Landings in 2012 were estimated at 3.18 million lb, under the management measures described in Tables 3 and 4. The distribution of 2012 landings by length is given in Figure 1. Using 2012 as the baseline, to achieve the 2014 harvest limit of 2.26 million lb, landings would need to be reduced by 29%. The management measures applied in 2012, including possession limits, size limits, and seasons, can be modified to achieve the desired harvest level in 2014. Table 5 provides the distribution of landings by wave from 2006-2008, when identical state and Federal waters measures (coastwide) were in place.

Fishing Trips and Year Class Effects

Predicting the number of trips that might be taken in 2014 is complicated (Table 6). 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 characteristics (age, gender, race, income, etc.) affect the demand for angler fishing trips. Changes in angler behavior may result in a breakdown in 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.

¹ Includes landings north of Cape Hatteras, NC, only.

2014 Staff Recommendation

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. In 2011, 2012, and 2013, the Commission developed an addendum which enabled state-specific measures to be implemented in state waters. These measures have varied substantially among the states and from the measures implemented in Federal waters. In 2014, staff recommend setting coastwide measures, to be implemented in both state and Federal waters, in order to reduce complexity in the regulations, increase compliance by making measures consistent across the management unit, and improve the ability to analyze the impacts of management measures.

Based on the information available to staff at this time, 2014 landings would have to be reduced by 29% from 2012 levels to achieve the 2014 recreational harvest limit of 2.26 million lb. This reduction would be based on adjustments to 2012 measures as the baseline, rather than adjustments to 2013 measures. This reduction would also account for the adjustments to bag limit, size limit, and season that would be required to address the 2012 overage under the new system of accountability measures.

Staff do not recommend increasing the current minimum fish size in federal waters above the current 12.5 inch TL minimum fish size. For a species such as black sea bass with an unusual life history (protogynous hermaphrodite), where the very large fish tend to be dominant males, a high minimum fish size may result in skewed or unbalanced sex ratios for this species with potential implications on stock productivity. Instead, staff recommend adjustments be made to the season and possession limit to achieve the required reduction in landings. Staff recommend a coastwide minimum size of 12.5 inches, which is less than or equal to the size limits currently implemented in Federal and state waters, and consistent with what the majority of anglers are landing under these regulations (Table 4; Figure 1).

Staff remain concerned about the use of high possession limits in recreational fisheries, particularly with large increases in the average size of black sea bass being landed. The mean weight of landed black sea bass has increased significantly in recent years, from 1.10 lb in 2000 to 1.70 lb in 2012 (Table 1). This has substantial implications for a fishery managed using weight-based harvest limits. A federal 20 fish per person, per day possession limit borders on commercial quantities and negates the effectiveness of the possession limit as a management tool. High possession limits also contribute to high variance in the catch estimates and the potential for relatively unconstrained fishing effort under high fish availability conditions. Possession limits should be reduced to levels more consistent with the average angler catch per trip. Based on Type A fish examined in 2010 and 2011, about 97% and 98% of anglers, respectively, landed 10 or fewer fish. However, the reduction generated by reducing the possession limit is potentially greater than this statistic would imply, given the high numbers of fish being landed by some anglers. Catch per angler trip data from 2011 indicate that reducing the possession limit from 20 fish to 10 fish would potentially generate a reduction of approximately 4% (Table 7). Therefore, staff recommend a 10 fish possession limit, in order to help constrain landings while remaining consistent with the performance of the majority of anglers.

The remaining portion of the reduction in landings can be accounted for by modifications to the black sea bass season. A closure of all of Wave 6 (November/December) results in a reduction in landings of

5.3%, and a closure of 34 consecutive days in wave 5 (September/October) results in a reduction of 20.1% (Table 5a). In total, a black sea bass season extending from May 19-September 10 would account for a 25.4% reduction in landings.

Staff recommend that the black sea bass fishery remain closed during wave 1 (January 1 to February 28). This time period is not sampled by MRIP, and therefore wave 1 catch is not accounted for in the stock assessment, overall catch estimates, or calculations of recreational management measures. Vessel trip reports indicate that there is some fishing activity during this time period, when black sea bass are aggregated on the shelf and may be more susceptible to fishing mortality. In addition, anecdotal information has suggested that the fish being caught during this time period may be larger than during the other times of the fishing year.

The seasonal measures described above, coupled with a reduction in the possession limit, should reduce the risk of exceeding the 2014 recreational harvest limit of 2.26 million lb.

Based on the above information, staff recommend coastwide measures for the 2014 fishing year that include a 12.5 inch minimum fish size, a 10 fish possession limit, and an open season from May 19 to September 10, 2014. These coastwide measures would need to be implemented in both state and Federal waters.

Table 1. Black sea bass recreational catch and landings by year, 1981 to 2013, Maine to Cape Hatteras, NC. The number of fish released is presented as a proportion of the total catch.

Year	Catch ^a (‘000 fish)	Landings ^a (‘000 fish)	Landings ^a (‘000 lb)	% Released	Mean weight (lb)
1981	3,681	1,886	1,232	48.8	0.65
1982	11,386	10,045	9,894	11.8	0.98
1983	7,561	4,537	4,079	40.0	0.90
1984	3,428	1,780	1,447	48.1	0.81
1985	6,047	3,388	2,097	44.0	0.62
1986	28,946	21,742	12,392	24.9	0.57
1987	5,052	2,883	1,924	42.9	0.67
1988	8,186	3,088	2,869	62.3	0.93
1989	6,427	4,239	3,289	34.0	0.78
1990	9,135	3,881	2,761	57.5	0.71
1991	10,829	5,269	4,186	51.3	0.79
1992	7,722	3,592	2,706	53.5	0.75
1993	9,023	6,007	4,842	33.4	0.81
1994	7,166	3,430	2,948	52.1	0.86
1995	14,059	6,747	6,207	52.0	0.92
1996	8,143	3,624	3,993	55.5	1.10
1997	10,646	4,739	4,268	55.5	0.90
1998	5,146	1,148	1,152	77.7	1.00
1999	7,400	1,378	1,664	81.4	1.21
2000	16,927	3,629	3,988	78.6	1.10
2001	13,869	2,841	3,421	79.5	1.20
2002	14,703	3,351	4,349	77.2	1.30
2003	12,128	3,251	3,289	73.2	1.01
2004	7,238	1,531	1,942	78.8%	1.27
2005	7,041	1,263	1,906	82.1%	1.51
2006	7,602	1,286	1,778	83.1%	1.38
2007	8,727	1,528	2,178	82.5%	1.43
2008	10,653	1,294	2,027	87.9%	1.57
2009	9,224	1,806	2,482	80.4%	1.37
2010	9,964	2,207	3,122	77.9%	1.41
2011	4,737	817	1,171	82.8%	1.43
2012	12,536	1,874	3,181	85.1%	1.70
2013 ^b	NA	NA	NA	NA	NA

^a For 1981-2003 data are MRFSS, 2004-2013 are MRIP. Source: Pers. Comm. with the National Marine Fisheries Service, Fisheries Statistics Division, October 31, 2013. ^b NA = Not available.

Table 2. Black sea bass recreational landings (number '000) by state, waves 1-6, 2003-2012.

State	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
ME	-	-	-	-	-	-	-	-	-	-
NH	-	-	-	-	-	-	-	-	-	3
MA	117	158	175	105	149	246	431	702	195	520
RI	70	27	85	41	44	52	36	160	50	103
CT	5	26	0	3	24	60	0	16	8	111
NY	318	133	143	269	410	260	566	543	274	322
NJ	1,903	1,078	660	531	725	580	583	687	148	735
DE	307	44	68	114	93	23	37	21	43	40
MD	241	16	91	121	39	26	33	36	47	33
VA	265	46	34	83	36	38	115	30	19	4
NC^a	166	397	231	126	110	57	107	139	95	76

Source: Pers. Comm. with the National Marine Fisheries Service, Fisheries Statistics Division, November 4, 2013. For 2003 data are based on MRFSS, 2004-2012 are MRIP. ^aIncludes all of NC, both North and South of Hatteras.

Table 3. Summary of management measures for the black sea bass recreational fishery, 1996-2014, and proposed harvest limit for 2015.

Measure	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Harvest Limit (m lb)	-	-	3.15	3.15	3.15	3.15	3.43	3.43	4.01	4.13
Landings (m lb)^a	4.1	4.4	1.3	1.7	4.1	3.6	4.4	3.4	2.3	2.2
Possession Limit	-	-	- ^b	- ^b	- ^b	25	25	25	25	25
Size Limit (TL in)	9	9	10	10	10	11	11.5	12	12	12
Open Season	1/1 - 12/31	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
Measure	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Harvest Limit (m lb)	3.99	2.47	2.11	1.14	1.83	1.84	1.32	2.26	2.26	2.26 ^c
Landings (m lb)^a	1.9	2.4	2.1	2.6	3.3	1.3	3.2	-	-	-
Possession Limit	25	25	25	25	25	25	20 or 25	20	-	-
Size Limit (TL in)	12	12	12	12.5	12.5	12.5	12.5	12.5	-	-
Open Season	1/1-12/31	1/1-12/31	1/1-12/31	1/1-12/31	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	-	-

^a For 1996-2003 data are MRFSS, 2004-2013 are MRIP. ^b There was no Federal possession limit but some states implemented a 20 fish possession limit in these years. ^c Council-preferred; pending implementation by NMFS.

Table 4. Black sea bass recreational management measures by state, 2012 and 2013.

a) 2012 measures by state.

State	Minimum Size (inches)	Possession Limit	Open Season
Massachusetts	14	10 fish	May 11-June 24
		20 fish	June 25-October 31
Rhode Island	13	15 fish	June 15-December 31
Connecticut	13	15 fish	June 15-December 31
New York	13	15 fish	June 15-December 31
New Jersey	12.5	25 fish	May 19-September 3, September 23-October 14, and November 1-December 31
Delaware	12.5	25 fish	May 22-October 14 and November 1-December 31
Maryland	12.5	25 fish	May 22-October 14 and November 1-December 31
PRFC	12.5	25 fish	May 19-October 14 and November 1-December 31
Virginia	12.5	25 fish	May 19-October 14 and November 1-December 31
North Carolina (North of Cape Hatteras)	12.5	25 fish	May 19-October 14 and November 1-December 31

b) 2013 measures by state.

State	Minimum Size (inches)	Possession Limit	Open Season (closed in October)
Massachusetts (Private and For-hire)	14	4 fish	May 11- October 31
Massachusetts (For-hire with Letter of Authorization from MA DMF)	14	10 fish	May 11- June 14
		20 fish	July 1- August 11 and September 1- October 10
Rhode Island	13	3 fish	June 15- August 31
		7 fish	September 1- December 31
Connecticut (Private and Shore)	13	3 fish	June 15-August 31
		8 fish	September 1-October 29
Connecticut (For-hire)	13	8 fish	June 15-November 30
New York	13	8 fish	July 10-December 31
New Jersey	12.5	20 fish	May 19-August 8, September 27-October 14, and November 1-December 31
Delaware	12.5	15 fish	January 1- February 28
		20 fish	May 19 - October 14 and November 1 - December 31
Maryland	12.5	15 fish	January 1 - February 28
		20 fish	May 19 - October 14 and November 1 - December 31
PRFC	12.5	15 fish	January 1 - February 28
		20 fish	May 19 - October 14 and November 1 - December 31
Virginia	12.5	15 fish	January 1 - February 28
		20 fish	May 19 - October 14 and November 1 - December 31
North Carolina (North of Cape Hatterass 35° 15'N Latitude)	12.5	15 fish	January 1 - February 28
		20 fish	May 19 - October 14 and November 1 - December 31

Table 5. a) Average percent of black sea bass landed (in number) by wave, 2006 to 2008, based on MRIP landings data and b) projected reduction in black sea bass landings (in number) associated with closing one day per wave, based on 2006 to 2008 MRIP landings data.

a.

State	Wave 1	Wave 2	Wave 3	Wave 4	Wave 5	Wave 6
MA	0.0000	0.0000	37.1113	20.0479	42.8408	0.0000
RI	0.0000	0.0058	4.3758	24.4527	64.0531	7.1126
CT	0.0000	0.0000	2.0370	72.2979	0.9908	24.6742
NY	0.0000	0.0000	24.8098	29.4535	36.1107	9.6260
NJ	0.0000	0.1494	41.5411	16.6213	38.7958	2.8924
DE	0.0000	4.5314	51.5769	21.7233	20.4979	1.6704
MD	0.0000	0.6181	59.0091	9.5374	24.6708	6.1646
VA	0.0000	2.4764	42.8817	25.7301	17.4615	11.4503
NC ^a	2.4157	5.4607	24.6746	23.6117	30.6216	13.2157
Coast	0.0508	0.5525	36.2126	21.8059	36.1011	5.2770

^aNorth of Hatteras.

b.

State	Wave 1	Wave 2	Wave 3	Wave 4	Wave 5	Wave 6
MA	0.0000	0.0000	0.6084	0.3234	0.7023	0.0000
RI	0.0000	0.0001	0.0717	0.3944	1.0501	0.1166
CT	0.0000	0.0000	0.0334	1.1661	0.0162	0.4045
NY	0.0000	0.0000	0.4067	0.4751	0.5920	0.1578
NJ	0.0000	0.0024	0.6810	0.2681	0.6360	0.0474
DE	0.0000	0.0743	0.8455	0.3504	0.3360	0.0274
MD	0.0000	0.0101	0.9674	0.1538	0.4044	0.1011
VA	0.0000	0.0406	0.7030	0.4150	0.2863	0.1877
NC ^a	0.0409	0.0895	0.4045	0.3808	0.5020	0.2167
Coast	0.0009	0.0091	0.5936	0.3517	0.5918	0.0865

^aNorth of Hatteras.

Table 6. Number of coastwide black sea bass recreational fishing trips, recreational harvest limits, recreational landings, and fishery performance from 1994 to 2015.

Year	Number of Fishing Trips ^a	Percentage of Directed Trips relative to Total Trips ^b	Recreational Harvest Limit (million lb)	Recreational Landings of BSB (million lb) ^d	Percentage Overage (+%)/ Underage (-%)
1994	253,888	0.9	None	3.05	None
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 ^c	4.37	+27
2003	285,861	0.8	3.43 ^c	3.30	-4
2004	149,670	0.4	4.01 ^c	1.68	-58
2005	199,603	0.5	4.13 ^c	1.88	-54
2006	253,040	0.7	3.99 ^c	1.98	-50
2007	368,042	1.0	2.47 ^c	2.23	-10
2008	256,341	0.7	2.11 ^c	1.57	-26
2009	393,389	1.3	1.14 ^c	2.31	+103
2010	417,663	1.4	1.83 ^c	2.98	+63
2011	193,655	0.7	1.83 ^c	1.27	-31
2012	267,934	1.0	1.32 ^c	3.18	+141
2013	NA	NA	2.26 ^c	NA	NA
2014	NA	NA	2.26 ^c	NA	NA
2015	NA	NA	2.26 ^{c,e}	NA	NA

^aEstimated 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, November 4, 2013.

^bSource of total trips for all species combined: Pers. Comm. with the National Marine Fisheries Service, Fisheries Statistics Division, November 4, 2013.

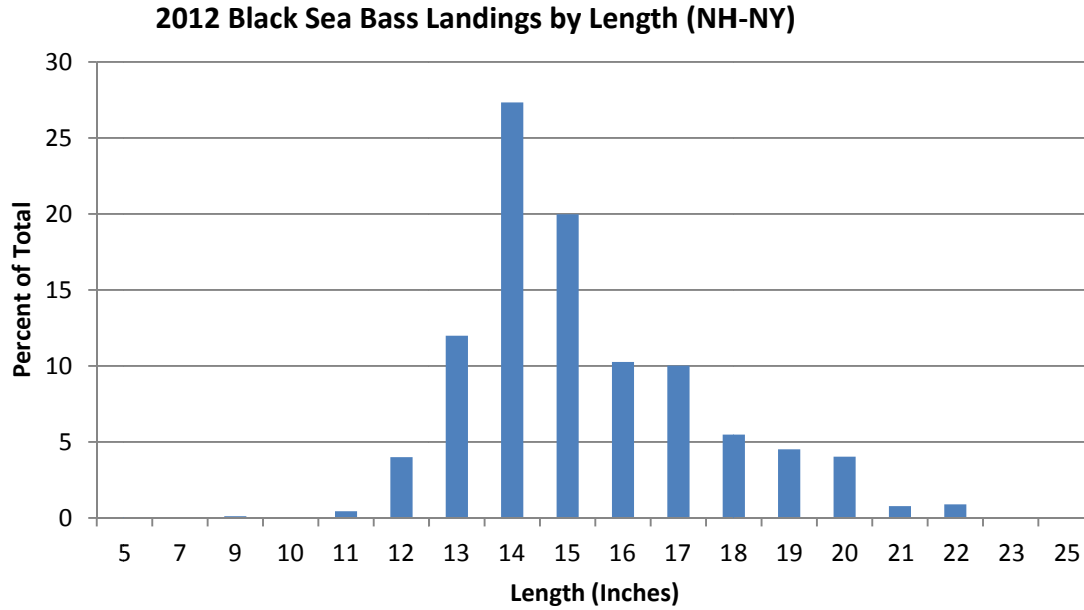
^cAdjusted for research set-aside. ^dFor 1994-2003 data are MRFSS, 2004-2013 are MRIP. Source: Pers. Comm. with the National Marine Fisheries Service, Fisheries Statistics Division, November 4, 2013. ^eRecreational harvest limit is Council recommended for 2015; pending implementation. NA = Data not available.

Table 7. Catch per angler trip for black sea bass, from 2011 Waves 1-4 MRFSS data.

No. caught per trip	Frequency	Fish Landed	New catch per trip with 10 fish possession limit	New Fish Landed	
1	254	254	1	254	
2	94	188	2	188	
3	43	129	3	129	
4	34	136	4	136	
5	30	150	5	150	
6	6	36	6	36	
7	7	49	7	49	
8	3	24	8	24	
9	3	27	9	27	
10	2	20	10	20	
11	2	22	10	20	
13	2	26	10	20	
14	1	14	10	10	
15	1	15	10	10	
18	1	18	10	10	
31	1	31	10	10	Reduction
Total	484	1139		1093	4%

Figure 1. Length frequency of Type A (landed) black sea bass from 2012 MRIP data for a) New Hampshire through New York and b) New Jersey through North Carolina.

a.



b.

