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MEMORANDUM

DATE: July 8, 2014

TO: Chris Moore, Executive Director

FROM: Kiley Dancy, Staff

SUBJECT: Review of Black Sea Bass Management Measures for 2015

Executive Summary

In 2013, two-year specifications were implemented for black sea bass, establishing management measures for the 2014 and 2015 fishing years. Catch and landings limits are already in place for 2015 and may remain unchanged if the Scientific and Statistical Committee (SSC), Council, and ASMFC's Summer Flounder, Scup, and Black Sea Bass Board determine that the previously recommended Acceptable Biological Catch (ABC) for 2015 (5.50 mil lb; 2,494 mt) is still appropriate. Similarly, the Monitoring Committee will review recent fishery performance and make a recommendation to the Council and Board regarding any necessary modifications to the implemented 2015 commercial management measures.

Based on the latest stock assessment update in July of 2012, the black sea bass stock was not overfished and overfishing was not occurring in 2011. The 2011 stock was estimated to be at 102% of the spawning stock biomass at maximum sustainable yield (SSB_{MSY}).

Staff recommends maintaining the specified ABC (5.50 mil lb) as the basis for management measures in 2015. This ABC resulted in a commercial Annual Catch Limit (ACL) of 2.60 million lb (1,180 mt), and a recreational ACL of 2.90 million lb (1,314 mt). Based on the recommendation of the Monitoring Committee, both the commercial Annual Catch Target (ACT) and the recreational ACT were set equal to their respective sector ACLs for 2015. Last year, the Council recommended that up to 3% of the commercial and recreational quotas be reserved for research set-aside (RSA) in 2015.¹ After adjusting for projected discards and 3% RSA, the 2015 commercial quota is 2.17 mil lb, and the recreational harvest limit is 2.26 mil lb (Table 1).

Staff does not recommend any change to the current minimum fish size (11 inch total length) or gear requirements (4.5 inch mesh with 500/100 lb trigger; current pot/trap vent requirements).

¹The Council is scheduled to have a separate discussion at the August 2014 meeting regarding the future of the RSA program.

Table 1: Current multi-year catch and landings limits for black sea bass in 2014 and 2015. (Numbers may not add precisely due to rounding error.)

Management Measure	Current (2014)		2015		Basis
	mil lb.	mt	mil lb.	mt	
ABC	5.50	2,494	5.50	2,494	Projections
ABC Landings Portion	4.56	2,070	4.56	2,070	Projections
ABC Discards Portion	0.94	424	0.94	424	Projections
Commercial ACL (=ACT)	2.60	1,180	2.60	1,180	49% of ABC landings portion (per FMP) + 39% of ABC discards portion
Comm. discards (projected)	0.36	166	0.36	166	39% of ABC discards portion, based on 2010-2011 average % discards by sector
RSA deduction (3%)	0.07	32	0.07	32	3% of pre-RSA Comm. Quota
Commercial quota (adjusted)	2.17	984	2.17	984	Comm. ACT less discards and RSA
Recreational ACL (=ACT)	2.90	1,314	2.90	1,314	51% of ABC landings portion (per FMP) + 61% of ABC discards portion
Rec. discards (projected)	0.57	258	0.57	258	61% of ABC discards portion, based on 2010-2011 average % discards by sector
RSA deduction (3%)	0.07	30	0.07	30	3% of pre-RSA RHL
Recreational Harvest Limit (adjusted)	2.26	1,024	2.26	1,024	Rec. ACT less discards and RSA

Introduction

The Magnuson-Stevens Act (MSA) requires each Council's Scientific and Statistical Committee (SSC) to provide ongoing scientific advice for fishery management decisions, including recommendations for ABC, preventing overfishing, and maximum sustainable yield. The Council's catch limit recommendations for the upcoming fishing year(s) cannot exceed the ABC recommendation of the SSC. In addition, the Monitoring Committees established by the Fishery Management Plan (FMP) are responsible for developing recommendations for management measures designed to achieve the recommended catch limits.

Multi-year specifications may be set for black sea bass for up to three years at a time. For fishing year 2015, the SSC previously recommended an ABC for black sea bass as part of the multi-year specifications setting process for the 2014 and 2015 fishing years. The SSC recommended an ABC that addresses scientific uncertainty, while the Monitoring Committee recommended an annual catch target (ACT) and management measures that address management uncertainty. Both the SSC and Monitoring Committee will review the measures currently implemented and determine if any changes may be warranted. Based on the SSC and Monitoring Committee recommendations, the Council will make a recommendation to the

National Marine Fisheries Service (NMFS) Greater Atlantic Regional Administrator, if changes are believed to be warranted. Because the FMP is cooperatively managed with the Atlantic States Marine Fisheries Commission, the Commission's Summer Flounder, Scup, and Black Sea Bass Board will meet jointly with the Council to revisit black sea bass management measures. In this memorandum, information is presented to assist the SSC and Monitoring Committee in developing recommendations for the Council and Board to consider for the 2015 fishing year for black sea bass.

Additional relevant information about the fishery and past management measures is presented in the Fishery Performance Report for black sea bass developed by the Council and Commission Advisory Panels, as well as in the corresponding Black Sea Bass Fishery Information Document prepared by Council staff.

Catch and Landings Update

According to the Black Sea Bass Data Update for 2014, commercial landings in 2013 were 2.26 million lb (1,027 mt), and recreational landings were 2.32 million lb (1,054 mt).² The 2014 commercial landings as of the week ending June 21, 2014, indicate that 54% of the coastwide commercial quota has been landed (Table 2).

Table 2: 2014 black sea bass commercial quota and landings by state as of week ending June 21, 2014.

State	Cumulative Landings (lb)	Quota (lb)	Percent of Quota (%)	Research Set-Aside Landings (lb)
ME	0	--	--	0
NH	16	--	--	0
MA	7,399	--	--	915
RI	119,511	--	--	3,258
CT	10,934	--	--	0
NY	59,007	--	--	19,189
NJ	242,613	--	--	7,094
DE	22,008	--	--	0
MD	202,227	--	--	0
VA	287,691	--	--	401
NC	223,458	--	--	0
Other	1,589	--	--	0
Totals	1,176,453	2,174,312	54	30,857

Source: NMFS Weekly Quota Report for week ending June 21, 2014.

Stock Status and Biological Reference Points

The most recent accepted benchmark assessment on black sea bass was peer-reviewed and accepted in December 2008 by the DPSWG Peer Review Panel. Documentation associated with this assessment and previous stock assessments, such as reports on stock status, including annual assessment and reference point update reports, Stock Assessment Workshop (SAW) reports, and Stock Assessment Review Committee (SARC) panelist reports, are available online at the NEFSC website: <http://www.nefsc.noaa.gov/saw/>.

²Recreational landings for Maine through Cape Hatteras, NC.

The biological reference points for black sea bass were updated as part of the 2012 assessment update³, as the result of several changes made to the information incorporated into the SCALE model. The updated fishing mortality threshold for black sea bass is $F_{MSY} = F_{40\%}$ (as F_{MSY} proxy) = 0.44, and SSB_{MSY} is 24.00 million lb (10,880 mt). The minimum stock size threshold, one-half SSB_{MSY} is estimated to be 12.00 million lb (5,440 mt).

The July 2012 assessment update indicates the black sea bass stock was not overfished and overfishing is not occurring in 2011, relative to the biological reference points. Fishing mortality (F_{MULT}) in 2011 was $F = 0.21$, below the fishing mortality threshold of $F=0.44$. Total stock biomass in 2011 was estimated at 28.0 million lb (12,700 mt), above B_{MSY} . SSB in 2011 was estimated at 24.57 million lb (11,145 mt), and was at 102% of SSB_{MSY} . Recruitment estimated by the model was relatively constant through the time series with the exception of the 1999 and 2001 year classes. These cohorts appeared to be the driving force behind the increase in biomass and SSB. The estimated average recruitment (age one) in 2011 (2010 cohort) was 21.0 million fish.

Regulatory Review

As described above, the last assessment update for black sea bass was completed in 2012 (with data through 2011). The overfishing limit (OFL) provided by the assessment update was specified as 7.00 million lb (3,175 mt), based on an F_{MSY} proxy of $F_{40\%} = 0.44$. However, the SSC did not endorse this estimate because of concerns about the unresolved uncertainty in the OFL related to stock mixing, life history, and natural mortality. For each year 2010-2013, the SSC had recommended an ABC of 4.50 million lb (2,041 mt), based on a constant catch approach. However, in January 2013, the SSC met to reconsider that ABC recommendation, after reviewing new information relative to fishery performance (including recent catch data) and abundance and recruitment (i.e., state survey data).

The SSC concluded that there was little information in these data that would lead to a change in the ABC recommendation, the constant catch approach, or the designation of the assessment as level 4. However, the SSC believed it was appropriate to re-evaluate whether the constant catch level used since 2010 (4.50 mil lb) was still appropriate. The SSC evaluated the performance of the ABC and concluded that its continued application in 2013 and 2014 was overly conservative, and recommended a 2013-2014 ABC based on a constant catch level of 5.50 million lb (2,494 mt). This results in a commercial ACL (=ACT) of 2.60 million lb (1,180 mt) and a recreational ACL (=ACT) of 2.90 million lb (1,314 mt).

In September 2013, the SSC met to review the existing 2014 ABC recommendations for black sea bass to determine if changes were necessary, and to consider recommending an ABC for 2015. The SSC determined that available scientific evidence was not compelling enough to warrant a change to its ABC recommendation for 2014 (5.50 mil lb), and additionally recommended extending this same ABC into the 2015 fishing year.

³Shepherd, G.R. 2012. Black Sea Bass Assessment Summary for 2012. Northeast Fisheries Science Center.

The SSC considered black sea bass to be a level 4 assessment, and considered the following to be the most significant sources of uncertainty:

- Difficulty in determining appropriate reference points due to atypical life history strategy (protogynous hermaphrodite);
- Assessment assumes a completely mixed stock, while tagging analyses suggesting otherwise;
- Uncertainty exists with respect to M because of the unusual life history strategy the current assumption of a constant M in the model for both sexes may not adequately capture the dynamics in M); and
- Concern about the application of trawl calibration coefficients (ALBATROSS IV vs BIGELOW) and their influence on the selectivity pattern and results of the assessment.

Management measures in the commercial fishery other than quotas and harvest limits (i.e., minimum fish size, gear requirements, etc.) have remained constant since 2006.

Basis for 2015 Staff Recommendation

Input from the Council's Visioning and Strategic Planning processes as well as from the Advisory Panel Fishery Performance Reports highlight stakeholder interest in increasing the stability of fishery management measures. Last year, multi-year specifications were set for black sea bass for 2014 and 2015, with the understanding that recent fishery data would be reviewed in 2014 to identify any potentially critical issues in the fishery or problems with maintaining the implemented measures.

In April 2013, a black sea bass data workshop was sponsored by the Partnership for Mid-Atlantic Fisheries Science (PMFAS) and conducted by the Atlantic States Marine Fisheries Commission (ASMFC). The working group concluded that consideration of additional indices and datasets were not likely to result in any near-term changes in the perception of uncertainty in the assessment. Additionally, an assessment update would not likely be used for management purposes given the existing perception of uncertainty in the assessment. The working group recommended delaying a black sea bass benchmark stock assessment to 2016 or later, to allow for progress to be made on interim analyses and advances in modeling approaches.

Since establishing a new basis for a constant catch ABC recommendation in January 2013, the SSC has revisited those specifications and concluded that there was no compelling evidence at the time to warrant a change in the ABC, nor was there new information upon which to base a revised ABC recommendation. While progress has been made toward reducing uncertainties in the assessment, work is ongoing and currently there is little new information available to support changing the implemented specifications. Thus, staff recommends no changes to the implemented 2015 catch limits and commercial measures for black sea bass.

Other Management Measures

Recreational and Commercial ACLs

As defined by the Omnibus ACLs and AMs Amendment, the ABC is equivalent to the total allowable catch (TAC), and is equal to the sum of the commercial and recreational ACL (Figure 1).

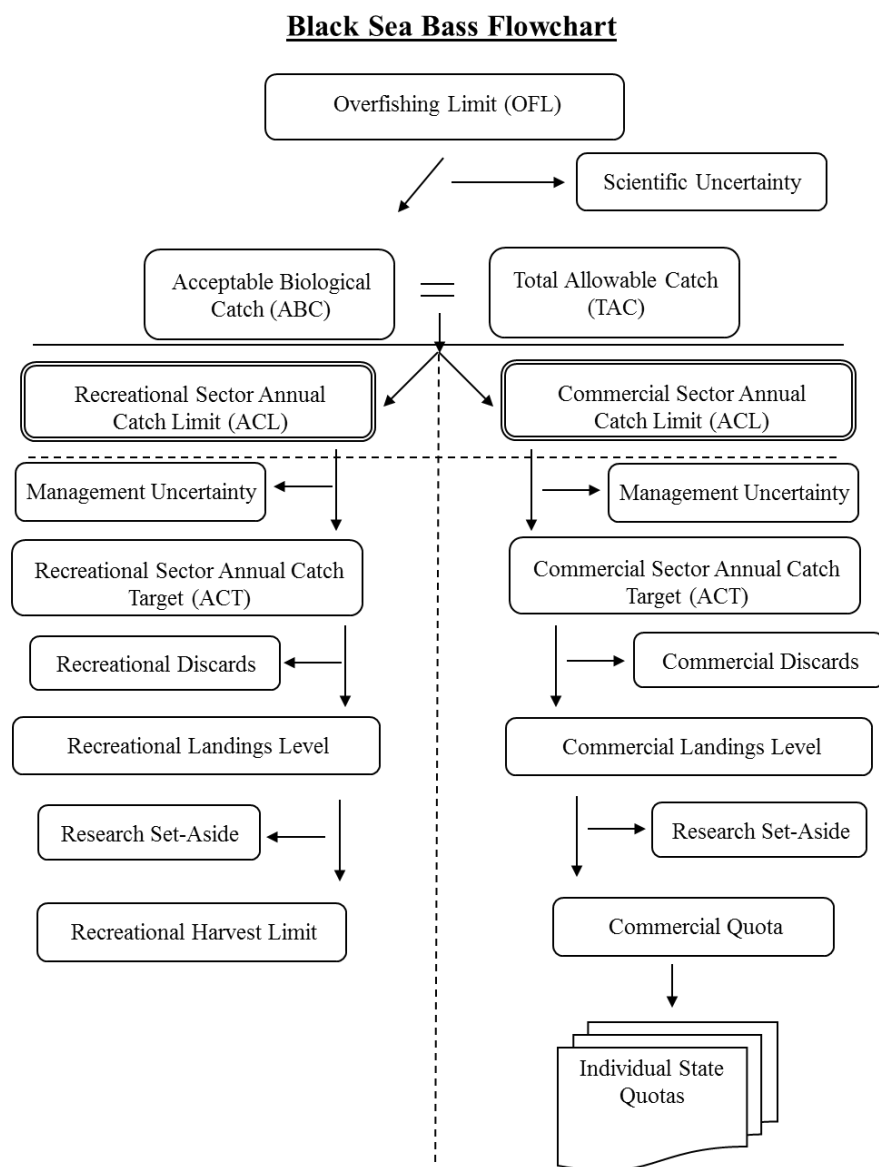


Figure 1: Flowchart for black sea bass catch and landings limits.

The ABC in place for 2015 is comprised of both landings and discards. Based on the allocation percentages in the FMP, 49% of the landings are allocated to the commercial fishery, and 51% to the recreational. Discards are apportioned based on the contribution from each fishing sector using the 2010-2011 average ratios; 61% of dead discards are attributable to the recreational fishery, 39% to the commercial (Table 1).

Annual Catch Targets

The Black Sea Bass Monitoring Committee is responsible for recommending ACTs for the Council to consider. The relationship between the recreational and commercial ACTs, and other catch components are given in Figure 1. The Monitoring Committee may provide other recommendations relevant to setting catch limits consistent with the Magnuson Stevens Act. The Monitoring Committee is responsible for considering all relevant sources of management uncertainty in the black sea bass fishery and providing the technical basis, including any formulaic control rules, for any reduction in catch when recommending an ACT. The ACTs, technical basis for ACT recommendations, and sources of management uncertainty would be described and provided to the Council.

Management uncertainty is comprised of two parts: uncertainty in the ability of managers to control catch and uncertainty in quantifying the true catch (i.e., estimation errors). Management uncertainty can occur because of a lack of sufficient information about the catch (e.g., due to late reporting, underreporting, and/or misreporting of landings or bycatch) or because of a lack of management precision (i.e., the ability to constrain catch to desired levels).

The sector-specific landings performance in recent years indicates that the recreational fishery has been variable in its performance relative to the harvest limits, but has periodically experienced large overages, including a significant overage in 2012. In 2013, the recreational fishery landings were much closer to, but slightly above the harvest limit (Table 3). For 2014 and 2015, the Monitoring Committee indicated that it would address recreational management uncertainty during the process for setting recreational measures in each year. Therefore, staff recommends no modifications to the current ACTs, which are set equal to the sector-specific ACLs for 2015.

Table 3: Black sea bass commercial and recreational fishery performance relative to quotas and harvest limits, 2009-2013.

Year	Commercial Landings (mil lb)	Commercial Quota (mil lb)	Percent Overage(+)/ Underage(-)	Recreational Landings (mil lb)¹	Recreational Harvest Limit (mil lb)	Percent Overage(+)/ Underage(-)
2009	1.17	1.09	+7%	2.40	1.14	+111%
2010	1.75	1.76	-1%	3.03	1.83	+66%
2011	1.69	1.71	-1%	1.13	1.78	-37%
2012	1.72	1.71	+1%	3.18	1.32	+141%
2013	2.26	2.17	+4%	2.32	2.26	+3%
5-yr Avg.	-	-	+2%	-	-	+57%

¹Recreational landings north of Cape Hatteras, NC.

Commercial Quota, Recreational Harvest Limit, and Research Set-Aside

The landings-based allocations (49% commercial, 51% recreational) were maintained in the derivation of the sector-specific ACLs and ACTs, such that the sums of the sector-specific TALs (total allowable landings for each sector) are equal to overall TAL. Based on the implemented ACLs and ACTs given above and a 3% research set-aside deduction, the adjusted commercial quota in 2015 is 2.17 mil lb (986 mt), and the adjusted recreational harvest limit is 2.26 mil lb (1,026 mt; Table 1). The ASMFC allocates the commercial quota to each state based on the allocation percentages given in Table 4.

Table 4: The Commission state-by-state commercial allocation percentages.

State	Allocation (percent)
ME	0.5
NH	0.5
MA	13.0
RI	11.0
CT	1.0
NY	7.0
NJ	20.0
DE	5.0
MD	11.0
VA	20.0
NC	11.0
Totals	100

Specific management measures that will be used to achieve the harvest limit for the recreational fishery in 2015 will not be determined until after the first four waves of 2014 recreational landings are reviewed. These data will be available in October 2014. The Monitoring Committee will meet in November to review landings data and make recommendations regarding changes in the recreational management measures (i.e., possession limit, minimum size, and season). Given the performance of the recreational fishery relative to the recreational harvest limit in recent years, management measures (i.e., minimum size, possession limits, and seasons) should be implemented that are designed to achieve the recreational ACT, while preventing the recreational ACL from being exceeded.

Commercial Gear Regulations and Minimum Fish Size

Amendment 9 established minimum fish sizes for black sea bass in federal and state waters. The Council and Commission increased the size limit to 11-inch total length (TL) in 2002. Staff recommends that the size limit remain at 11 inch-TL. Amendment 9 also established gear regulations that became effective in December of 1996. Current regulations state that large trawl nets are required to possess a minimum of 75 meshes of 4.5 inch diamond mesh in the codend, or the entire net must have a minimum mesh size of 4.5 inch throughout. The threshold level used to trigger the minimum mesh requirement size is 500 lb from January through March and 100 lb from April through December. Staff recommends no change in these trawl mesh regulations.

The Council and Commission adopted modifications to the circle vent size in black sea bass pots/traps, effective in 2007, based on the findings of a Council and Commission sponsored workshop. The minimum circle vent size requirements for black sea bass pots/traps were increased from 2.375 inch to 2.5 inch. The requirements of 1.375 inch x 5.75 inch for rectangular vents and 2 inch for square vents remained unchanged. In addition, 2 vents are required in the parlor portion of the pot/trap. Staff recommends no change in these pot/trap regulations.