Mid-Atlantic Fishery Management Council
800 North State Street, Suite 201, Dover, DE 19901
Phone: 302-674-2331 | FAX: 302-674-5399 | www.mafmc.org
Michael P. Luisi, Chairman | G. Warren Elliott, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: July 31, 2020

To: Council and Board

From: Julia Beaty, Staff

Subject: Black Sea Bass 2021 Specifications Review, Including February Recreational Fishery

On August 11, the Council and Board will review previously adopted 2021 specifications for black sea bass and will consider modifications based on revised SSC and Monitoring Committee recommendations. These modified recommendations account for changes to the Council's revised risk policy adopted in December 2019. In addition, the Council and Board will consider if changes are needed to the February 2021 recreational black sea bass fishery. Recreational management measures for the remainder of 2021 will be considered later in 2020.

Materials listed below are provided for the Council and Board's consideration of this agenda item. Please note that some materials are behind other tabs and some will be posted as supplemental materials.

1) July 2020 SSC meeting report *(behind Tab 11)*
2) Staff memo on 2021 black sea bass specifications dated July 9, 2020
3) Staff memo on February recreational black sea bass fishery dated May 22, 2020
4) Summary of May 28, 2020 Monitoring Committee meeting
5) June 2020 Advisory Panel Fishery Performance Report and additional AP comments received through July 9, 2020 *(behind Tab 5 or available here)*
6) Black sea bass data update for 2020
7) 2020 Black Sea Bass Fishery Information Document
8) Additional public comments received through July 29, 2020 *(behind Tab 5)*

The following documents will be added as supplemental meeting materials on the August meeting page on the Council's website:

1) Monitoring Committee meeting summary from July 27 *(to be posted as supplemental under Tab 5)*
2) Advisory Panel meeting summary from July 29 *(to be posted as supplemental under Tab 5)*

SSC Report is behind

Tab 11

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Michael P. Luisi, Chairman | G. Warren Elliott, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

DATE: July 9, 2020

TO: Chris Moore, Executive Director

FROM: Julia Beaty, Staff

SUBJECT: 2021 Black Sea Bass Specifications

Executive Summary

This memorandum includes information to assist the Mid-Atlantic Fishery Management Council's (Council's) Scientific and Statistical Committee (SSC) and Monitoring Committee in: 1) reviewing and potentially revising the previously approved 2021 catch and landings limits for black sea bass, 2) considering commercial management measures for 2021, and 3) considering any needed changes to the black sea bass recreational fishery in February 2021 only. Recreational management measures for the remainder of 2021 will be considered later in 2020. Additional information on fishery performance and past management measures can be found in the 2020 Black Sea Bass Fishery Information Document and the 2020 Summer Flounder, Scup, and Black Sea Bass Fishery Performance Report developed by advisors.[1]

A black sea bass operational stock assessment was peer reviewed and accepted in August 2019. This assessment incorporated fishery catch and fishery-independent survey data through 2018, including revised recreational catch data provided by the Marine Recreational Information Program (MRIP) for 1989-2018.[2]

The 2019 operational assessment found that the black sea bass stock north of Cape Hatteras, North Carolina was not overfished and overfishing was not occurring in 2018. Spawning stock biomass (SSB) in 2018 was 73.65 million pounds (33,407 mt, adjusted for retrospective bias), 2.4 times the updated biomass reference point (i.e., SSB_{MSY} proxy = $SSB_{40\%}$=31.07 million pounds/14,092 mt). The average fishing mortality rate (F) on fully selected ages 6-7 fish in 2018 was 0.42 (adjusted for retrospective

[1] Available at: http://www.mafmc.org/sf-s-bsb

[2] The revised MRIP data are based on a new estimation methodology accounting for changes to the angler intercept methodology and the transition from a telephone-based effort survey to a mail-based effort survey. The revised estimates of catch and landings are several times higher than the previous estimates for shore and private boat modes, substantially raising the overall black sea bass catch and harvest estimates. For example, estimates of black sea bass harvest in weight for 2014-2018 using the revised methodology are on average 2.32 times the estimates using the old methodology.

bias), 91% of the updated fishing mortality threshold reference point (i.e., F_{MSY} proxy = $F_{40\%}$ = 0.46).[3] The results of the 2019 operational assessment are described in more detail on pages 5-7.

The Council and the Atlantic States Marine Fisheries Commission's (ASMFC's or Commission's) Summer Flounder, Scup, and Black Sea Bass Management Board (Board) approved 2020-2021 catch and landings limits for black sea bass in October 2019 based on the Acceptable Biological Catch (ABC) recommendations of the Council's SSC. These previously approved 2021 catch and landings limits are shown in Table 1 and were implemented via final rule on May 15, 2020 (85 Federal Register 29345).

The Council approved revisions to their risk policy in December 2019 with the intent that 2021 catch and landings limits would reflect the new policy. Therefore, the SSC is tasked with considering whether their previously recommended 2021 ABC should be revised to account for the change in the risk policy, or for other reasons.

The Monitoring Committee will review and, if appropriate, recommend changes to the previously approved 2021 Annual Catch Limits (ACLs), Annual Catch Targets (ACTs), commercial quotas, recreational harvest limits (RHLs). They will also recommend any necessary modifications to commercial gear restrictions, minimum fish sizes, and other commercial measures, and any necessary changes to the black sea bass recreational fishery for February 2021 only.

The Council and the Board will meet jointly in August 2020 to review the recommendations of the SSC and Monitoring Committee, as well as input from advisors. They will then consider revising their previously approved catch and landings limits for 2021, and any desired changes to the commercial management measures for 2021, as well as any desired changes the February 2021 recreational fishery. Recreational management measures for the remainder of 2021 will be considered in later in 2020.

As described in more detail below, staff recommend revisions to the 2021 catch and landings limits to account for revisions to the Council's risk policy. Staff also recommend that the discard projections used to calculate the 2021 catch and landings limits be revised to help prevent ABC and OFL overages. Staff also recommend revisions to the February 2021 recreational fishery to account for recent changes in the MRIP data. No other changes to recreational management measures in 2021 are recommended at this time. Recreational management measures for March-December will be consider later in 2020.

Staff do not recommend any changes to the current federal commercial management measures, including the minimum fish size, mesh size requirements and associated incidental possession limits, or pot/trap gear requirements for 2021.

[3] A prepublication copy of the August 2019 operational stock assessment report prepared for the Council and the SSC is available at: http://www.mafmc.org/ssc-meetings/2019/september-9-11

Table 1: Previously approved 2021 black sea bass catch and landings limits, staff recommendation for revisions, and revisions based only on the change in the Council's risk policy.

Measure	Previously approved			Staff recommended revision			Revision based only on P* change		
	mil lb	mt	Basis	mil lb	mt	Basis	mil lb	mt	Basis
OFL	17.68	8,021	2019 operational stock assessment projections	17.68	8,021	No change	17.68	8,021	No change from previously approved
ABC	15.07	6,835	Sept. 2019 SSC recommendation based on stock assessment projections & risk policy	17.45	7,916	P* change only	17.45	7,916	P* change only
ABC discards	3.68	1,671	24% of ABC, based on avg. 2016-2018 discards as % of catch	5.01	2,275	Sector-specific discards described below combined with requirement to allocate 49% of the landings portion of the ABC the com. fishery and 51% to the rec. fishery	4.19	1,900	Same basis as previously approved values. Updated based on revised ABC only.
Projected com. discards	1.40	637	38% of ABC discards, based on avg. 2016-2018 % of discards by sector	3.43	1,556	Calculated based on assumption that com. discards would be 36% of com. catch (2016-2018 avg.)	1.59	722	
Projected rec. discards	1.40	637	62% of ABC discards, based on avg. 2016-2018 % of discards by sector	1.58	719	Calculated based on assumption that rec. discards would be 20% of rec. catch (2016-2018 avg.)	2.60	1,178	
Com. ACL	6.98	3,167	49% of ABC landings portion (per FMP) + projected com. discards	9.52	4,320	49% of ABC landings portion (per FMP) + projected com. discards	8.09	3,670	
Com. ACT	6.98	3,167	Com. ACL, with no deduction for mgmt. uncertainty	9.52	4,320	Com. ACL, with no deduction for mgmt. uncertainty	8.09	3,670	
Com. quota	**5.58**	**2,530**	Com. ACT minus projected com. discards	**6.09**	**2,764**	Com. ACT minus projected com. discards	6.50	2,948	
Rec. ACL	8.09	3,668	51% of ABC landings portion (per FMP) + projected rec. discards	7.93	3,596	51% of ABC landings portion (per FMP) + projected rec. discards	9.36	4,246	
Rec. ACT	8.09	3,668	Rec. ACL, with no deduction for mgmt. uncertainty	7.93	3,596	Rec. ACL, with no deduction for mgmt. uncertainty	9.36	4,246	
RHL	**5.81**	**2,634**	Rec. ACT minus projected rec. discards	**6.34**	**2,877**	Rec. ACT minus projected rec. discards	6.76	3,068	

Introduction

The Magnuson-Stevens Fishery Conservation and Management Act requires the Council's SSC to provide scientific advice for fishery management decisions, including recommendations on ABCs, prevention of overfishing, and achieving maximum sustainable yield (MSY). The SSC recommends ABCs that address scientific uncertainty. The Council's catch limit recommendations cannot exceed the ABCs recommended by the SSC.

The Monitoring Committee recommends management measures to achieve the SSC's recommended ABCs. Specifically, the Monitoring Committee recommends ACLs, ACTs, commercial quotas, RHLs, and management measures designed to achieve but not exceed the catch and landings limits.

Black sea bass are cooperatively managed by the Council and the Commission. The Council and the Commission's Management Board meet jointly each year to consider SSC and Monitoring Committee recommendations, as well as Advisory Panel input, before adopting catch and landings limits and other management measures. They may set specifications for these three species for up to three years at a time. The Council submits their recommendations to the National Marine Fisheries Service (NMFS). NMFS reviews, implements, and enforces federal fisheries regulations.

Recent Catch and Landings

Commercial and recreational landings both increased from 2018 to 2019 (Table 6, page 13). According to dealer data, commercial fishermen landed 3.53 million pounds (1,603 mt) of black sea bass in 2019, representing a less than 1% overage of the commercial quota of 3.52 million pounds (1,596 mt).

According to the revised MRIP data, recreational fishermen from Maine through Cape Hatteras, NC harvested 8.61 million pounds (3,907 mt) of black sea bass in 2019. This estimate should not be compared to the 2019 RHL as the RHL did not account for the revised MRIP estimates.

Commercial and recreational dead discard estimates for 2019 are not yet available; therefore, it is not possible to compare catch to the 2019 ACLs. A comparison of landings and dead discards by sector to the catch and landings limits during 2015-2018 is shown in Table 6 on page 13.

As of July 1, about 1.80 million pounds (815 mt) of black sea bass had been landed by commercial fishermen in 2020, corresponding to 32% of the 2020 commercial quota (5.58 million pounds/2,531 mt, Table 2). Commercial landings through July 1, 2020 show a very similar trend as in 2019. Commercial landings could have been higher in 2020 due to a 59% increase in the coastwide quota which became effective in mid-May; however, as described in more detail in the Fishery Performance Report written by advisors, widespread restaurant closures due to the COVID-19 pandemic impacted demand.

Preliminary recreational harvest estimates are currently only available through April 2020. This does not provide meaningful information about 2020 recreational harvest trends for black sea bass given that a very small percentage of black sea bass recreational harvest typically occurs during this time of year. Recreational harvest in the two states which participated in the optional February recreational open season in 2020 (i.e., Virginia and North Carolina) is described in more detail later in this memo.

Table 2: 2020 commercial black sea bass landings by state with data reported through July 1, 2020, according to preliminary data from NMFS weekly quota reports available at: https://www.fisheries.noaa.gov/new-england-mid-atlantic/quota-monitoring-greater-atlantic-region.

State	Landings (lb)
ME	0
NH	0
MA	7,440
RI	249,595
CT	14,557
NY	145,844
NJ	525,111
DE	157,061
MD	220,820
VA	287,955
NC	189,832
Total	**1,798,215**
2020 Commercial Quota	**5,580,000**
Percent of Quota Landed	**32%**

Stock Status and Biological Reference Points

A black sea bass operational stock assessment was peer reviewed and accepted in August 2019. This assessment retained the model structure of the 2016 benchmark stock assessment,[4] and incorporated fishery data and fishery-independent survey data through 2018, including revised recreational data provided by MRIP for 1989-2018. The following information is based on the prepublication draft of the August 2019 operational assessment prepared for use by the Council and SSC.[5]

As with the 2016 benchmark assessment, the 2019 operational assessment has a regional structure. The stock was modeled as two separate sub-units (north and south) divided at approximately Hudson Canyon. Each sub-unit was modeled separately and the average F and combined biomass and SSB across sub-units were used to develop stock-wide reference points. As with the 2016 benchmark assessment, the peer reviewers of the 2019 operational assessment concluded that "although the two-area model had a more severe retrospective pattern in opposite directions in each area sub-unit than when a single unit was assumed, it provides reasonable model estimates after the retrospective corrections and combining the two spatial units. Thus, even though reference points are generated and stock status determinations are conducted for each subunit, the combined projections should be used."

Due to the lack of a stock/recruit relationship, a direct calculation of MSY and associated reference points was not feasible and proxy reference points were used. SSB calculations and SSB reference points account for mature males and females. The reference points and terminal year SSB and F estimates from the 2019 operational assessment are shown in Table 3.

A comparison of the 2018 SSB and F estimates to the reference points indicates that the black sea bass stock north of Cape Hatteras, North Carolina was not overfished and overfishing was not occurring in

[4] Available at: https://www.nefsc.noaa.gov/saw/reports.html
[5] Available at: http://www.mafmc.org/ssc-meetings/2019/september-9-11

2018. SSB in 2018 was estimated at 73.65 million pounds (33,407 mt, adjusted for retrospective bias), 2.4 times the updated biomass reference point (i.e., SSB_{MSY} proxy = $SSB_{40\%}$=31.07 million pounds/14,092 mt). The average fishing mortality rate on fully selected ages 6-7 fish in 2018 was 0.42 (adjusted for retrospective bias), 91% of the updated fishing mortality threshold reference point (i.e., F_{MSY} proxy = $F_{40\%}$ = 0.46; Table 3). The 2018 estimates of F and SSB were adjusted for internal model retrospective error (Figure 1). Figure 2 and Figure 3 show the time series of estimated SSB, recruitment, fishing mortality, and catch without retrospective adjustments.

The 2011 year class was estimated to be the largest in the time series at 144.7 million fish. The 2015 year class was the second largest at 79.4 million fish. Recruitment of the 2017 year class as age 1 in 2018 was estimated at 16.0 million, well below the 1989-2018 average of 36 million fish (Figure 2).

Updated estimates of spawning stock biomass, fishing mortality, and recruitment since the 2019 operational stock assessment are not currently available. In July 2020, the Northeast Fisheries Science Center (NEFSC) provided updated landings information as well as NEFSC trawl survey indices through spring 2020. This data update did not show signs of trends in catch or stock status which were not evident in the 2019 operational assessment or described elsewhere in this memo.

Table 3: Black sea bass biological reference points from the 2019 operational stock assessment.

Metric	Estimate
$SSB_{MSY\ proxy}$ = $SSB_{40\%}$ (biomass target)	31.07 mil lb / 14,092 mt
½ SSB_{MSY} (biomass threshold defining an overfished state)	15.53 mil lb / 7,046 mt
SSB in 2018	73.65 mil lb / 33,407 mt (2018). Adjusted for retrospective bias. 240% of SSB_{MSY}.
$F_{MSY\ proxy}$ = $F_{40\%}$ (threshold defining overfishing)	0.46
F in 2018	0.42 (2018). Adjusted for retrospective bias. Fully selected ages 6-7. 9% below F_{MSY}.

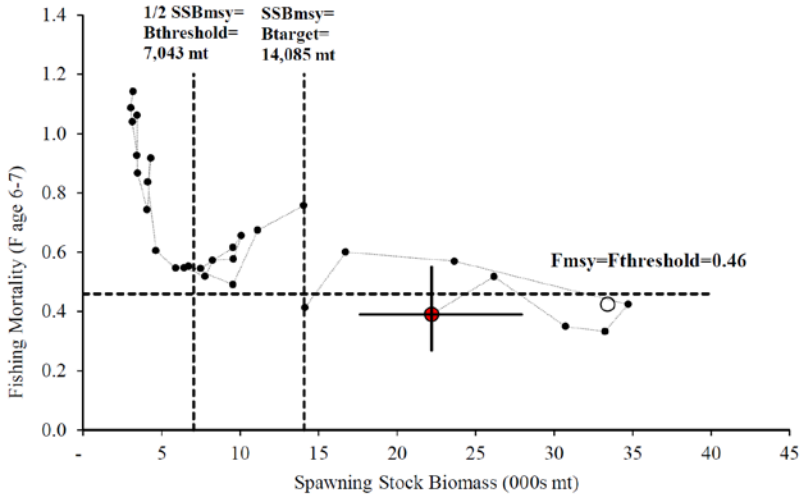

Figure 1: Estimates of black sea bass SSB and F relative to the biological reference points from the 2019 operational stock assessment. The red filled circle with 90% confidence intervals shows the un-adjusted 2018 estimates. The open circle shows the retrospectively adjusted estimates for 2018. (Source: prepublication copy of the August 2019 operational stock assessment report.)

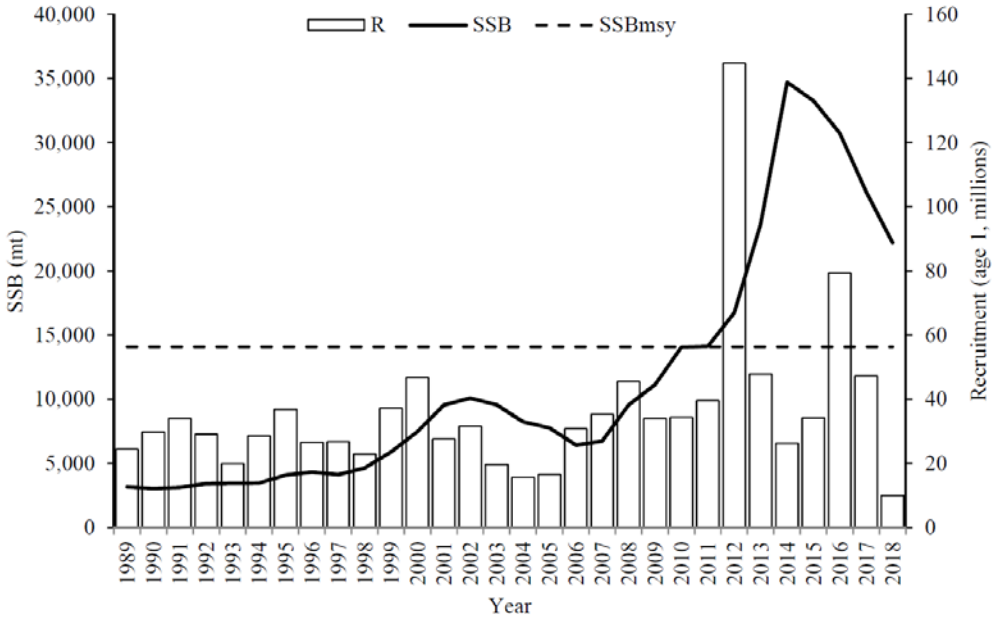

Figure 2: Black sea bass SSB and recruitment, 1989-2018 from the 2019 operational stock assessment. The horizontal dashed line is the updated biomass reference point. (Source: prepublication copy of the August 2019 operational stock assessment report.)

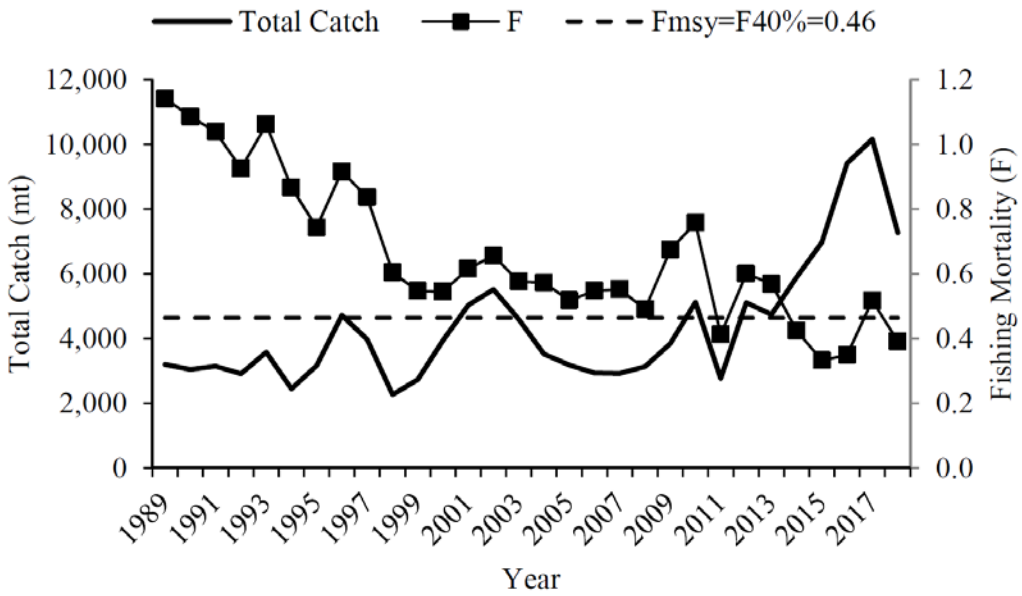

Figure 3: Total black sea bass catch and fishing mortality, 1989-2018, from the 2019 operational stock assessment. (Source: prepublication copy of the August 2019 operational stock assessment report.)

Review of Prior SSC Recommendations

In September 2019, the SSC recommended, and the Council and Board adopted 2020 and 2021 ABCs for black sea bass based on new stock status information and projections from the 2019 operational assessment.

The SSC applied a 100% coefficient of variance (CV) to the overfishing limit (OFL) when developing their ABC recommendations for 2020-2021. This represents an increase from the 60% OFL CV used for their 2017-2019 ABC recommendations.[6] A higher OFL CV results in a greater buffer between the OFL and the ABC to account for scientific uncertainty. The following text was copied directly from the SSC's September 2019 meeting summary[7] and describes their rationale for applying a 100% OFL CV for 2020-2021:

- There is a strong retrospective bias present in the assessment results and this pattern differs between the two spatial sub-areas.
- The fishery has a large recreational component (~60-80% of total harvest in recent years), and thus a substantial reliance on MRIP. Updated MRIP numbers differ substantially from the old estimates, and the updated estimate for one year (2016) was considered implausible owing to high variance in wave-specific data.
- Spatially explicit models were implemented in the 2016 benchmark assessment, and there were detailed efforts to explore the consequences of the misspecification of the spatial resolution of these models on perceptions of stock status.
- There were broadly consistent patterns in the fishery independent indices.

The SSC determined the following to be the most significant sources of scientific uncertainty associated with determination of the 2020-2021 OFLs and ABCs:

- The retrospective pattern was large enough to need the corrections (outside the 90% confidence intervals), and the additional uncertainty caused by applying the correction is unclear. The model for the northern sub-area has a larger retrospective pattern than the model for the southern sub-area.
- The natural mortality rate (M) used in the assessment —because of the unusual life history strategy, the current assumption of a constant M in the assessment model for both sexes —may not adequately capture the dynamics in M.
- The spatial distribution of productivity within the stock range.
- The level, temporal pattern, and spatial distribution of recreational catches.
- The nature of exchanges between the spatial regions defined in the assessment model.
- The extent to which the spatial structure imposed reflects the dynamics within the stock. The combination of the values from the northern and southern sub-areas is done without weighting based on landings or biomass. It is unclear whether or how the uncertainty should be treated when the biological reference points are combined using simple addition.
- Future effects of temperature on stock productivity and range are highly uncertain.

Table 4 shows the 2020-2021 OFls and ABCs which were previously recommeded by the SSC and approved by the Council and Board. The ABC projections were based on the assumption that catch will be equal to the ABC each year; however, adjustments to projected catch in 2019 were made to account for the revised MRIP methodology. The projections were made separately for the northern and southern sub-units at F_{MSY}=0.46, then combined for total OFL and ABC calculations. Recruitment was sampled from the estimates for 2000-2018. The Council's ABC risk policy for a stock with a typical life history

[6] The SSC's 2017-2019 ABC recommendations and supporting rationale are summarized here: https://www.mafmc.org/s/January-2017-SSC-Report.pdf

[7] Available at: https://www.mafmc.org/s/September-2019-SSC-Meeting-ReportRevised.pdf

was applied, resulting in an ABC P* (i.e., probability of overfishing) of 40% on average across the two years. As previously stated and described in more detail below, the Council has since revised their risk policy. The SSC should consider whether revisions to their previously recommened 2021 ABC are necessary given the change in the risk policy.

Table 4: 2020-2021 OFL and ABCs recommended by the SSC and approved by the Council and Board in 2020, as well as associated fishing mortality rate, P*, and SSB projections. (Source: personal communication, Gary Shepherd, NEFSC.)

Year	OFL total catch		ABC total catch		ABC F	ABC P*	SSB	
	MT	Mil. lb	MT	Mil. lb			MT	Mil. lb
2020	8,795	19.39	6,835	15.07	0.30	38%	23,688	52.22
2021	8,021	17.68	6,835	15.07	0.33	42%	22,282	52.22

Revisions to the Council's Risk Policy

The Council first implemented a risk policy and ABC control rule in 2011 to comply with the 2006 re-authorization of the MSA. In 2017, the Council expressed interest in more comprehensively considering economic and social factors, in addition to biological factors, in their risk policy. In 2019, a workgroup comprised of NMFS staff, SSC members, academics, and Council staff was formed and tasked with developing and analyzing various risk policy alternatives in order to assess the short and long-term trade-offs between stock biomass protection and economic yield and benefits. Members of the workgroup built off their existing biological and economic management strategy evaluation models.

The Council considered nine different risk policy alternatives in December 2019, ultimately approving a combination of two alternatives.[8] The approved risk policy allows for increased risk under high stock biomass conditions (increased P* at most biomass levels, compared to the previous risk policy; Figure 4). The change is greatest for stocks with biomass above the target level (B_{MSY}). The revised risk policy retains the previous stock replenishment threshold (i.e., biomass levels where P*=0) of $B/B_{MSY} \leq 0.1$. The policy uses a linear ramping for B/B_{MSY} values less than 1.0 up to a maximum P* of 0.45 when stock biomass is at its target. For stocks with B/B_{MSY} values over 1.0, a second linear ramp is used up to a maximum P* of 0.49 for stocks at or above $B/B_{MSY} = 1.5$. In addition, the Council also removed the typical/atypical designation from the risk policy.

[8] Alternatives 2 and 8 described in the December 2019 discussion document available at http://www.mafmc.org/briefing/december-2019.

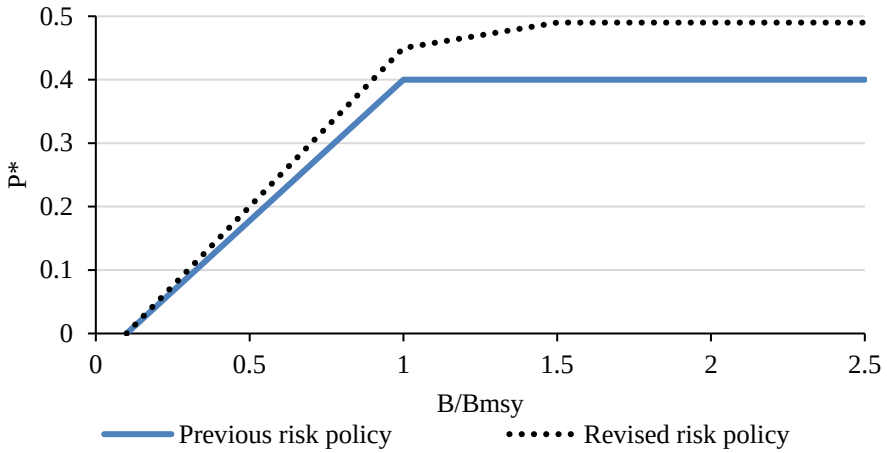

Figure 4: Acceptable probability of overfishing (P*) at different biomass levels under the Council's previous and revised risk policies.

Staff Recommendation for 2021 ABC

Staff recommend revising the previously approved 2021 black sea bass ABC based on the recent revisions to the Council's risk policy. This would revise the 2021 ABC from 15.07 million pounds (6,835 mt) to 17.45 million pounds (7,916 mt), a 16% increase (Table 5).

Table 5: 2021 black sea bass ABC and associated metrics considered in the Council's ABC control rule and risk policy, based on the SSC's previous OFL CV recommendation, as well the staff recommendations for revisions based on changes to the Council's risk policy.

Measure	Value
B/B_{MSY} in 2021 based on stock assessment projections	1.58
2021 OFL (not affected by risk policy change)	17.82 mil lb / 8,083 mt
OFL CV (not affected by risk policy change)	100%
P* under previous risk policy	42%[a]
P* under revised risk policy	49%
Previously approved 2021 ABC	**15.07 mil lb / 6,835 mt**
Revised 2021 ABC (staff recommendation based on revised P*)	**17.45 mil lb / 7,916 mt**
Difference between previously approved and staff recommendation for revised ABC	+16%

[a]The P* associated with the previously approved 2021 ABC exceeded 40% due to the averaging approach used to allow for constant ABCs across 2020 and 2021

Other Management Measures

2021 Discard Projections

It is necessary to project expected dead discards by sector to derive the commercial and recreational ACLs, the commercial quota, and the RHL from the ABC. Staff recommend reconsideration of the method used to project total and sector-specific discards for 2021 for the reasons described below.

Projected black sea bass discards are typically calculated by first dividing the ABC into a landings portion and a discards portion based on the most recent three year average proportions of total (commercial and recreational) landings and dead discards based on NEFSC data (i.e., the same data used in the stock assessment). The discards portion is then further divided into projected commercial discards and recreational discards based on the most recent three year average of dead discards by sector. The 2021 catch and landings limits previously approved by the Council and Board used this method of projecting discards by sector.

In September 2019, the Monitoring Committee noted that this method has repeatedly under-estimated discards in both the commercial and recreational sectors. For example, the commercial and recreational ACLs were exceeded every year during 2015-2018. In each case the overage was due at least in part to discards exceeding those projected through the specifications process. This resulted in ABC overages in every year during 2015-2018 (Table 6). Dead discard estimates for 2019 are not currently available; therefore, it is not known if the 2019 ABC was exceeded.

Despite multiple consecutive years of ABC overages, biomass has remained high (i.e., more than double the target level in the terminal year of both the 2016 and 2019 stock assessments). Continued high biomass despite multiple consecutive years of ABC overages is likely due at least in part to the buffer between the OFL and ABC starting in 2017 and the conservative ABCs that were set prior to 2017 due to the lack of a peer reviewed and approved stock assessment (personal communication, Gary Shepherd, NEFSC). **If the 2021 ABC is revised to account for the change in the Council's risk policy, the buffer between the OFL and the ABC will shrink from 15% to 1%, which will have a much greater risk of resulting in overfishing. For this reason, staff strongly recommend reconsideration of the methods used to project discards in order to prevent ACL and ABC overages in 2021.**

Staff recommend that the Monitoring Committee revisit their September 2019 recommendation for projected discards. The Council and Board reviewed this recommendation in October 2019 and instead decided to continue with the past approach for projecting discards (described above), which resulted in lower discard projections than those recommended by the Monitoring Committee. This decision was due in part to uncertainty about how discards would change in response to an increase in the landings limits for 2020-2021, as well as a desire to minimize negative impacts on the recreational fishery resulting from the disconnect between the revised MRIP estimates and the commercial and recreational sector allocations.

During their September 2019 meeting, the Monitoring Committee noted that trends in commercial quotas, landings, and discards since 1998 suggest that commercial black sea bass landings closely follow changes in the quota and that discards tend to scale up or down with increases or decreases in landings. They also noted that sector-specific discards as a proportion of sector-specific catch were relatively consistent during 2016-2018, even under varying commercial quotas and RHLs and highly variable recreational harvest estimates over that time period (including two years with outlier recreational estimates). They agreed that the past approach of projecting discards notably under-predicted discards, leading to ACL overages in both sectors. They therefore agreed that a new approach was warranted for black sea bass. They recommended that expected commercial and recreational discards in 2020-2021 be calculated based on the assumption that recreational dead discards would account for 20% of total recreational catch and commercial dead discards would account for 38% of total commercial catch, based on 2016-2018 averages using NEFSC data. The calculations also factored in the requirement that 49% of the landings proportion of the ABC must be allocated to the commercial fishery and 51% to the recreational fishery. In September 2019, the Monitoring Committee agreed that this methodology is more appropriate than the previous

methodology as it scales discards with expected changes in landings, consistent with observed patterns in the fishery. It also gives equal weight to the sector-specific proportions in each of the three years, thus downplaying the influence of any potential single year outliers. Staff recommend that the Monitoring Committee consider whether this method should be used to revise the 2021 discard projections. Updated discard projections based on this methodology are shown in Table 1.

It is worth noting that the NMFS Greater Atlantic Regional Fisheries Office (GARFO) and the NEFSC are working to develop a new system of estimating discards with the goal of both groups using the same estimates in the future. This work is ongoing. In recent years, the NEFSC discard estimates have been used for specifications calculations based on the advice of the Monitoring Committee. Staff recommend continued use of the NEFSC discard estimates in the specifications process until the outcome of the ongoing collaboration between GARFO and the NEFSC is known.

Recreational and Commercial ACLs

Based on the allocation percentages defined in the FMP, 49% of the total allowable landings (i.e., the proportion of the ABC that is expected to be landed as opposed to discarded) are allocated to the commercial fishery and 51% to the recreational fishery. These allocations are combined with expected commercial and recreational discards to calculate sector-specific ACLs.

These allocations were implemented through Amendment 9 (1996) and first came into effect in 1998. They were based on the proportions of commercial and recreational landings during 1983-1992 and do not reflect the current understanding of the proportion of catch and landings from the commercial and recreational sectors based on the revised time series of MRIP data and current commercial fishery data. The Council and Board are in the process of developing an FMP Amendment to consider if changes to these allocations should be made. Any changes made to these allocations will not be implemented until 2022 or later.

The change in the Council's risk policy and the staff recommendation for projected discards (both described above) would result in a revised 2021 commercial ACL of 9.52 million pounds (4,320 mt), an increase of 36% compared to the previously approved 2021 commercial ACL. It would result in a revised 2021 recreational ACL of 7.93 million pounds (3,596 mt), a decrease of 2% compared to the previously approved 2021 recreational ACL. Although the recreational ACL would decrease, as described below, the RHL would increase due to the recommended change in the discard estimates (Table 1).

Table 6: Commercial and recreational landings and dead discard compared to the 2015-2019 commercial quotas, RHLs, ACLs, ABCs, and OFLs. Landings and discard estimates for 2015-2018 were provided by the NEFSC, with the exception of commercial landings which are from dealer data.[9] Dead discard estimates for 2019 are not yet available; therefore, it is not possible to compare catch to the catch limits in 2019. The catch and landings estimates shown below may differ from those used by GARFO for ACL overage evaluation in some cases. Note that the 2015 and 2016 catch and landings limits for both sectors were not set based on a peer reviewed and accepted stock assessment and were likely not reflective of stock status and availability at the time.

Metric (mil lb or %)	**2015**	**2016**	**2017**	**2018**	**2019**
OFL and ABC overage/underages					
Total catch	8.02	12.93	11.74	10.07	--
OFL	N/A	N/A	12.05	10.29	10.29
OFL overage/underage	N/A	N/A	-3%	-2%	--
ABC	5.5	6.67	10.47	8.94	8.94
ABC overage/underage	46%	94%	12%	13%	--
Commercial overages/underages					
Commercial landings	2.38	2.59	4.01	3.46	3.53
Commercial quota	2.21	2.71	4.12	3.52	3.52
Quota overage/underage	8%	-4%	-3%	-2%	0%
Commercial discards	0.93	1.67	2.26	1.59	--
Commercial discards overage compared to projected amount	155%	282%	132%	92%	--
Commercial catch	3.31	4.26	6.27	5.05	--
Commercial ACL	2.6	3.15	5.09	4.35	4.35
Commercial ACL overage	27%	35%	23%	16%	--
Recreational overages/underages					
Recreational landings (old MRIP estimates)	3.79	5.23	4.19	3.92	--
RHL	2.33	2.82	4.29	3.66	3.66
RHL overage/underage (old MRIP estimates)	63%	85%	-2%	7%	--
Recreational discards (old MRIP estimates)	0.92	3.45	1.27	1.10	--
Rec. discards overage compared to projected amount (old MRIP estimates)	61%	394%	17%	18%	--
Recreational catch (old MRIP estimates)	4.71	8.67	5.46	5.02	--
Recreational ACL	2.9	3.52	5.38	4.59	4.59
Rec. ACL overage (old MRIP estimates)	62%	146%	2%	9%	--
Recreational landings (revised MRIP estimates)	9.81	13.52	12.55	8.84	8.61
Rec. dead discards (revised MRIP estimates)	2.17	3.07	3.6	2.28	--
Recreational catch (revised MRIP estimates)	11.98	16.59	16.15	11.12	--

[9] Under the federal regulations, all commercial landings in North Carolina from federally-permitted vessels count towards the quota. Landings from south of Cape Hatteras for state-only permitted vessels do not count towards the quota. The stock assessment only considers commercial landings north of Cape Hatteras.

Recreational and Commercial ACTs

ACTs are set less than or equal to the sector-specific ACLs to account for management uncertainty (Figure 5). 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 due to a lack of sufficient information about the catch (e.g., due to late reporting, underreporting, and/or misreporting of landings or discards) or because of a lack of management precision (i.e., the ability to constrain catch to desired levels). The Monitoring Committee considers all relevant sources of management uncertainty in the black sea bass fishery when recommending ACTs.

Commercial landings have not exceeded the quota by more than 1% since 2015 (2015-2019, Table 6). The commercial quota monitoring system is timely and typically successful in constraining landings to the commercial quota. In contrast, the recreational fishery exceeded the RHL in several recent years, with substantial overages prior to 2017 (based on the old MRIP data, Table 6). It should be noted that the revised time series of MRIP data was released in July 2018 and was first incorporated into a stock assessment in August 2019; therefore, RHLs prior to 2020 did not account for these revised estimates. Past RHLs should not be compared against the revised estimates. In addition, the Monitoring Committee has noted that these recreational overages occurred when the stock was rapidly expanding and availability to anglers was very high. At the same time, due to the lack of an approved stock assessment prior to 2017, the RHLs were set at levels not reflective of the large and increasing stock abundance. Analysis using the 2016 stock assessment indicated that RHLs during the few years prior to 2017 would have been approximately double those implemented if they had been set using the new assessment model, and overages would likely not have occurred to the same degree.

In recent years, the Monitoring Committee and the ASMFC's Technical Committee have been working to develop new and alternative methodologies to evaluate management uncertainty in the recreational fishery, the predictability and uncertainty in recreational catch estimates, and the influence of recreational regulations on harvest. Some of this work has been incorporated into the ongoing Recreational Reform Initiative.[10]

The Monitoring Committee has generally not recommended deductions from the ACLs to the ACTs in either sector to account for management uncertainty. Staff recommend careful consideration of management uncertainty for 2021 given the potential for a greatly reduced scientific uncertainty buffer between the OFL and ABC under the Council's revised risk policy as well as due to concerns about discard projections described above. Specifically, if the projected discard estimates continue to be based on the past methodology which consistently under-estimated actual discards (Table 6), then management uncertainty may warrant more serious consideration than if an alternative approach to discards is used. It is worth noting that commercial and recreational discard projections cannot be calculated separately given that the sector allocations are landings-based, rather than catch based. This means that the discard projections in one sector impact the catch and landings limits in the other sector. Management uncertainty, however, can be addressed separately for each sector.

It is also worth noting that the 2020 discard estimates will likely be highly uncertain given several months without commercial fisheries observer coverage or MRIP angler access point sampling due to the COVID-19 pandemic. This will pose challenges for evaluating discards against projected estimates in future years.

[10] More information is available at: https://www.mafmc.org/actions/recreational-reform-initiative.

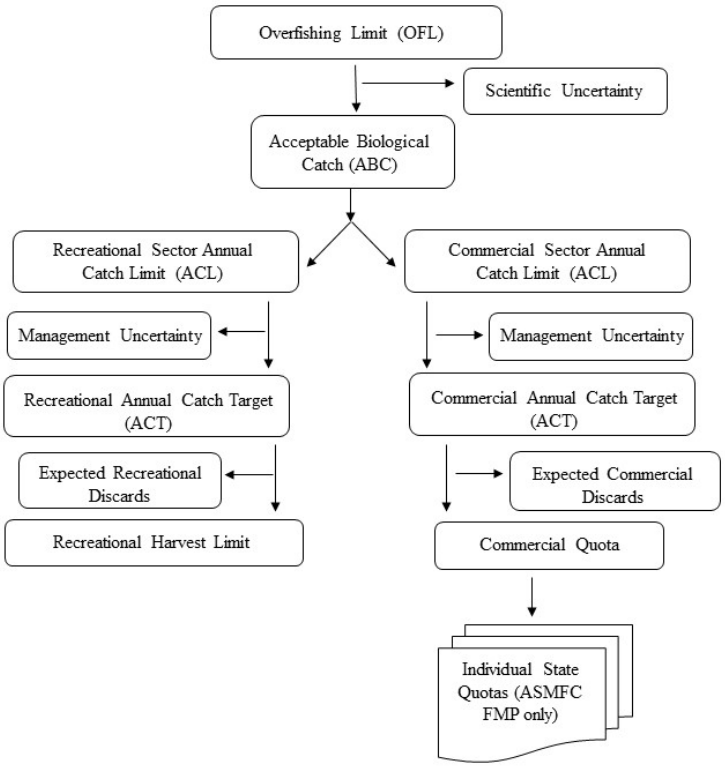

Figure 5: Flowchart for black sea bass catch and landings limits.

Commercial Quotas and Recreational Harvest Limits

Projected discards are subtracted from the sector-specific ACTs to derive annual commercial quotas and RHLs. Considerations related to projected 2021 discards are described above.

The change in the Council's risk policy and the staff recommendation for projected discards (both described above) would result in a revised 2021 commercial quota of 6.09 million pounds (2,764 mt), an increase of 9% compared to the previously approved 2021 quota. It would result in a revised 2021 RHL of 6.34 million pounds (2,877 mt), an increase of 9% compared to the previously approved 2021 RHL (Table 1).

An increase in the commercial quota would allow for increased commercial landings; however, the RHL will not increase enough to allow for increased recreational harvest or liberalized recreational management measures in 2021. This is because the revised MRIP estimates show much higher recreational harvest in recent years (Table 6) than any of the RHLs which are expected to result from the revised 2021 ABC given the fixed commercial/recreational allocation percentages defined in the FMP.

Commercial Minimum Fish Size, Gear Regulations, and Possession Limits

Amendment 9 (1996) established a commercial minimum fish size of 9 inches total length. The minimum fish size was increased to 10 inches in 1998, and to 11 inches in 2002. The 11-inch minimum size has remained unchanged since 2002.

Two escape vents are required in the parlor portion of pots/traps used to catch black sea bass. The Council and Commission adopted modifications to the size for circular vents, effective in 2007, based

on the findings of a Council and Commission sponsored workshop. The minimum circle vent size increased from 2.375 inches to 2.5 inches. The requirements of 1.375 inches x 5.75 inches for rectangular vents and 2 inches for square vents remained unchanged.

Amendment 9 also established gear regulations that became effective in December 1996 and were modified in 1998 and again in 2002. Current regulations, unchanged since 2002, state that trawl vessels that possess 500 pounds or more of black sea bass from January 1 through March 31, or 100 pounds or more from April 1 through December 31, must fish with nets that have a minimum mesh size of 4.5-inch diamond mesh throughout the codend for at least 75 continuous meshes forward of the terminus of the net. For codends with less than 75 meshes, the entire net must have a minimum mesh size of 4.5-inch diamond mesh.

Beyond the possession limits associated with the minimum trawl mesh size, there are no federal waters commercial possession limits for black sea bass. Several states set commercial possession limits that apply within state waters to help ensure that commercial landings do not exceed each state's allocation as defined in the Commission's FMP. In recent years, a few advisors have requested consideration a federal waters commercial possession limit to help prevent negative impacts on the price of black sea bass resulting from individual trawl trips with high landings. Other advisors have disagreed with this recommendation. At this time, Council staff recommend no changes to the current federal regulations regarding commercial black sea bass possession limits.

The Council recently funded a project which analyzed the selectivity of multiple codend mesh sizes relative to summer flounder, black sea bass, and scup retention in the commercial bottom trawl fishery in the Mid-Atlantic region. Results confirmed that the current minimum mesh sizes for all three species are effective at releasing most fish smaller than the commercial minimum sizes (i.e., 14 inches total length for summer flounder, 9 inches total length for scup, and 11 inches total length for black sea bass). The study was not able to identify a common mesh size for all three species that would be effective at minimizing discards under the current minimum fish size limits. However, the authors concluded that a common mesh size of 4.5 or 5 inches diamond for scup and black sea bass would be effective at releasing undersized fish.[11]

The Monitoring Committee reviewed the results of this study in 2018 and recommended no changes to the commercial minimum mesh sizes for 2019. They recommended clarification of the objectives of the Council regarding consideration of the mesh sizes (e.g., establishing a common minimum mesh size, minimizing discards, and/or maintaining or increasing catches of legal-sized fish). Input from the commercial fishing industry should be sought before any minimum mesh size changes are considered.

Staff will continue to work with the Monitoring Committee and Advisory Panel in 2020 to further analyze and consider potential changes to mesh size regulations. Currently, staff recommend no changes to the black sea bass minimum mesh sizes and associated possession limits, or other commercial management measures for 2021.

[11] [11] Hasbrouck, E., S. Curatolo-Wagemann, T. Froelich, K. Gerbino, D. Kuehn, P. Sullivan, J. Knight. 2018. Determining Selectivity and Optimum Mesh Size to Harvest Three Commercially Important Mid-Atlantic Species - A Report to the Mid-Atlantic Fishery Management Council and the Atlantic States Marine Fisheries Commission. Available at: http://www.mafmc.org/s/Tab08_SFSBSB-Mesh-Selectivity-Study-Apr2018.pdf

February 2021 Recreational Management Measures

The Council and the Commission allowed states to open their recreational black sea bass fisheries during February 2018-2020 under specific constraints. The recreational black sea bass fishery was previously closed during January and February for several years. States were required to opt-in to the February opening during 2018-2020. Participating states were required to have a 12.5 inch minimum fish size limit and a 15 fish possession limit during February (identical to the federal recreational measures). Participating states were required to adjust their recreational management measures during the rest of the year to account for expected February harvest to help ensure that the coastwide RHL was not exceeded as a result of the February opening. Expected February harvest by state was pre-defined based on an analysis of vessel trip report data from federally permitted for-hire vessels in February 2013, the last year the recreational fishery was open in February prior to 2018. To date, only Virginia and North Carolina have participated in this optional opening.

Detailed background information on the February recreational fishery in 2018-2020 and considerations for 2021 can be found in various documents which were previously provided to the Monitoring Committee and are available at: https://www.mafmc.org/council-events/2020/sfsbsb-mc-meeting-july27. This information is not repeated here.

During their May 2020 meeting, the Monitoring Committee reviewed performance of the recreational black sea bass fishery during February 2018-2020 and considered if any management changes are needed for February 2021. They will continue these discussions during their July 2020 meeting and make recommendations on any necessary changes for the Council and Board to consider in August 2020.

Staff recommend revisions to the values for expected February harvest by state to account for recent revisions to the MRIP (see the staff memo dated May 22, 2020, available at the link above). Staff also recommend that the Council and Board clarify certain aspects of the requirements for state participation in this optional opening, including requirements for quantifying February harvest and requirements for changes to recreational management measures later in the year if February harvest exceeds the expected value in any individual state. Staff caution against participation in this optional fishery by states which are not able to modify their measures later in the year to account for greater than expected February harvest.

The Monitoring Committee will discuss recreational management measures for the rest of 2021 in the fall of 2020, after preliminary MRIP data through August 2020 are available. Management measures for the February 2021 recreational fishery must be considered earlier in 2020 to allow sufficient time for the federal rulemaking process if any changes are needed.

Staff have no recommendations for recreational management measures for black sea bass during March-December 2021 at this time.

Mid-Atlantic Fishery Management Council
800 North State Street, Suite 201, Dover, DE 19901
Phone: 302-674-2331 | FAX: 302-674-5399 | www.mafmc.org
Michael P. Luisi, Chairman | G. Warren Elliott, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: May 22, 2020

To: Summer Flounder, Scup, and Black Sea Bass Monitoring Committee

From: Julia Beaty (MAFMC staff), Caitlin Starks (ASMFC staff)

Subject: February 2021 recreational black sea bass fishery

Introduction

The Mid-Atlantic Fishery Management Council (Council) and the Atlantic States Marine Fisheries Commission's Summer Flounder, Scup, and Black Sea Bass Management Board (Board) allowed states to open their recreational black sea bass fisheries during February 2018-2020 under specific constraints (see page 2). The recreational black sea bass fishery was previously closed during January and February for several years.

During their May 2020 meeting, the Monitoring Committee will review performance of the recreational black sea bass fishery during February 2018-2020 and consider if any management changes are needed for the February 2021 recreational fishery. For example, changes to the values for expected February harvest by state may warrant consideration due to recent revisions to the Marine Recreational Information Program (MRIP) data and after considering estimated February harvest during 2018-2020 in the states which were open.

The Monitoring Committee will discuss recreational management measures for the rest of 2021 in the fall of 2020, after preliminary MRIP data through August 2020 are available. Management measures for the February 2021 recreational fishery must be considered earlier in 2020 to allow sufficient time for the federal rulemaking process if any changes are needed.

Discussion questions for Monitoring Committee

- Should the black sea bass recreational fishery be open in 2021 under the same constraints in place for 2018-2020, or are any changes needed?
- Should the values for expected February harvest by state (Table 1) be modified? If so, how (e.g., see pages 6-7).
- Should a different approach be used that does not rely on expected harvest in pounds (e.g. states only propose changes to measures once February harvest estimate is available)?
- Should the Council and Board adopt specific requirements for how states monitor their February harvest? Or is the current process sufficient (i.e., monitoring requirements are

unspecified; states develop proposals, Technical Committee reviews, and Board approves)?

- Should the Council and Board adopt specific requirements for how states should account for greater than expected February harvest? Or is the current process sufficient (i.e., management responses are unspecified; states develop proposals, Technical Committee reviews, and Board approves)?
- Some states are not able to adjust their measures in-season to account for higher than expected February harvest. If any of these states participate in the February opening in the future, how should they account for higher than expected February harvest? For example, would paybacks in a future year be appropriate given that states are not held to hard annual harvest targets and given that recreational overage paybacks are not required in most other situations under current stock status? Would it be appropriate, fair, and equitable to not require a management response to higher than expected February harvest? Would it be fair and equitable to prevent states from participating in the February opening if they cannot implement a management response to overages?
- Should the Council and Board consider any other changes to the February recreational black sea bass fishery for 2021?

Background

During 2010-2012 and 2014-2017, the recreational black sea bass fishery was closed during wave 1 (January and February) in state and federal waters. This closure was partially the result of limited recreational harvest data during this time of year (North Carolina is the only state in the management unit which conducts MRIP sampling during January and February) and concerns about constraining harvest to the recreational harvest limit (RHL). The recreational fishery was open during wave 1 in 2013 in federal waters and in many states. In recent years, some recreational fishery stakeholders requested a wave 1 opening to allow for increased fishing opportunities in light of the positive stock status indicated by the 2016 benchmark stock assessment.

The Council and Board agreed to open the recreational black sea bass fishery in federal waters during February 1-28, 2018-2020 and gave states the option of opening their fisheries under specific constraints. Participating states were required to have a minimum fish size of 12.5 inches and a 15 fish possession limit, identical to the federal waters measures. Participating states were also required to account for expected February harvest when developing recreational management measures for the rest of the fishing year to help ensure that the coastwide RHL would not be exceeded due to the February opening. The Council and Board recommended a total expected February harvest estimate of 100,000 pounds, distributed among states based on the analysis summarized in the next section. Participating states submitted proposals to the Technical Committee describing how they would account for February harvest when setting their recreational management measures for the rest of the year. The proposals (as modified after Technical Committee feedback, if needed) were then sent to the Board for review and approval before they could be implemented.

Only Virginia and North Carolina participated in the 2018-2020 February opening. Estimated February harvest and resulting changes to the management measures in Virginia and North Carolina are summarized on pages 3-6.

Calculation of expected February harvest for 2018-2020

The values for expected February harvest by state for 2018-2020 (Table 1) were calculated based an analysis that used vessel trip report (VTR) data from federally permitted for-hire vessels in January and February 2013, the last year the recreational fishery was open in wave 1 prior to 2018. As data from private anglers are lacking for this time of year (except for North Carolina), an assumption was made about the ratio of for-hire to private angler harvest. It was assumed that February 2013 private/rental boat and shore harvest was equal to for-hire harvest based on an evaluation of catch by mode in wave 6 (November and December) and wave 2 (March and April) during 2007-2016. It was estimated that if a 15 fish possession limit and a 12.5 inch minimum size limit had been in place in February 2013, approximately 100,000 pounds of black sea bass would have been harvested, assuming similar levels of participation as in 2013. This 100,000 pounds was then divided among states based on the proportion of recreational wave 1 catch by state according to federal for-hire VTR data from 1996-2009 and 2013. This analysis was done in 2017 and should be revisited in light of the revisions to the MRIP data released in 2019 and considering available information from the February 2018-2020 openings in Virginia and North Carolina. An example updated analysis is included on pages 6-7.

Table 1: State allocations of 100,000 pounds of expected February black sea bass harvest for 2018-2020.

State	Proportion of Wave 1 Catch	Allocation of 100,000 pounds
RI	0.29%	288
CT	0.06%	57
NY	9.41%	9,410
NJ	82.85%	82,850
DE	1.30%	1,297
MD	0.54%	541
VA	5.50%	5,496
NC	0.06%	62
Total	100.00%	100,000

February 2018-2020 harvest estimates and resulting modifications to management measures

As previously stated, only Virginia and North Carolina opened their state waters recreational black sea bass fishery during February 2018-2020. Table 2 summarizes estimated harvest during those openings and resulting changes in management measures in each state. More details are provided below.

In 2018 and 2019, February harvest accounted for 0.09% and 0.12%, respectively, of total estimated recreational harvest from Maine through Cape Hatteras, North Carolina. Therefore, it is assumed that the February 2018-2019 recreational opening did not pose a noteworthy risk to the black sea bass stock. Final estimates for 2020 are not yet available.

Table 2: Expected and estimated recreational black sea bass harvest in pounds in Virginia and North Carolina during 2018-2020. Adjustments to measures to account for estimated February harvest are also shown.

Year	Virginia			North Carolina		
	Expected	Estimated	Adjustments to measures	Expected	Estimated	Adjustments to measures
2018	5,496	6,902[a]	None[b]	62	0	None
2019	5,496	10,082	21 day wave 3 closure	62	0	2 day wave 3 closure[c]
2020	5,496	14,236	14 day wave 3 closure	62	50,692[d]	TBD

[a] The VMRC estimated a range of values based on different potential assumptions about the weight of harvested fish. The value shown here is the average value estimated by the VMRC.

[b] No adjustments to management measures were needed due to a change in the target harvest level used to develop recreational management measures for all of 2018. The target harvest level increased enough to account for the greater than expected February 2018 harvest without requiring a change to management measures later in the year.

[c] Although there was no estimated February 2019 black sea bass harvest in North Carolina north of Cape Hatteras, the state maintained a previously approved 2 day closure to account for harvest which may not have been sampled by MRIP.

[d] All North Carolina estimates were produced by MRIP. The Monitoring and Technical Committees should consider whether the 2020 estimate is an outlier estimate and should be adjusted (see NCDMF memo dated May 15, 2020).

Virginia

During February 2018-2020, recreational fishermen who intended to target black sea bass and return to a Virginia port were required to obtain a recreational black sea bass permit from the state. They were also required to complete a logbook for each trip and to call the Virginia Marine Resources Commission (VMRC) before or immediately after the start of each trip. For some trips, MRIP and law enforcement requested an additional call on the way back to port; however, this was not required. VMRC staff collected biological data from harvested black sea bass. The number of harvested fish was estimated from trip reports and the weight of harvested fish was estimated based on the average weights sampled by VMRC staff.

Table 3 shows the number of recreational trips by sector (for-hire or private), the total number of anglers, and estimated harvest, discards, and total catch for the February 2018-2020 black sea bass opening in Virginia. Estimated harvest in weight is shown in Table 2.

As shown in Table 2, estimated February harvest was greater than anticipated in each year during 2018-2020. Virginia accounted for the full amount of February harvest by closing additional days in wave 3 (May/June) in 2019 and 2020 (see note in Table 2 about 2018). The number of additional closed days was based on the average daily landings rate in wave 3 from the most recent two years of MRIP data. Proposals for these season modifications were reviewed by the Technical Committee and approved by the Board each year.

Table 3: Summary of the Virginia February 2018-2020 recreational black sea bass fishery catch and participation information. Information is based on federal VTRs and the Virginia reporting system. Not all trip reports provided all catch and participation information. Variables with incomplete information which may not be representative of all trips are denoted with *.

Virginia February 2018-2020						
Year	**Sector**	**# of trips**	**Total anglers***	**Harvest** (# of fish)	**Discards*** (# of fish)	**Total catch** (# of fish)
2018	For-Hire	17	199	1,996	675	2,671
	Private	44	96	1,140	334	1,474
	Unknown	1	-	30	-	30
	Total	**62**	**295**	**3,166**	**1,009**	**4,175**
2019	For-Hire	12	206	2,560	466	3,026
	Private	59	190	1,838	1,321	3,159
	Unknown	0	0	0	0	0
	Total	**71**	**396**	**4,398**	**1,787**	**6,185**
2020	For-Hire	30	305	4,045	574	4,619
	Private	109	377	2,800	2,560	5,360
	Unknown	16	-	583	-	583
	Total	**155**	**682**	**7,428**	**3,134**	**10,562**
2018-2020 average	For-Hire	20	237	2,867	572	3,439
	Private	71	221	1,926	1,405	3,331
	Unknown	6	0	204	0	204
	Total	**96**	**458**	**4,997**	**1,977**	**6,974**

North Carolina

North Carolina did not implement a sampling protocol specific to the February black sea bass opening; however, North Carolina is the only state in the management unit which carries out shoreside intercept surveys through MRIP during wave 1. MRIP samplers in North Carolina were instructed to collect length and weight data on black sea bass harvested in February as well as information on reported releases, catch and harvest per angler, and fishing locations. North Carolina Department of Marine Fisheries (NCDMF) staff worked with charter boat captains to collect black sea bass carcasses for age and growth samples.

Table 4 shows a summary of North Carolina private angler black sea bass catch and harvest north of Cape Hatteras during February 2018-2020 based on MRIP estimates. Table 5 shows available information on for-hire participation in the February 2018-2020 opening in North Carolina. As shown in Table 4 and Table 5, the only harvest in North Carolina estimated by MRIP for wave 1 2018-2020 was from private anglers in 2020.

NCDMF staff have indicated that the 2020 February harvest estimate of 50,692 pounds is unbelievable high.[1] The Monitoring and Technical Committees should consider whether this is an outlier estimate and should be adjusted, and for future years, whether it is appropriate to rely solely on MRIP estimates for management of the North Carolina February fishery.

Table 2 lists changes to North Carolina's management measures in 2018 and 2019 to account for the February opening. Changes to their 2020 management measures have yet to be determined.

[1] For more information, see the memo from NCDMF dated May 15, 2020, available at: https://www.mafmc.org/council-events/2020/sfsbsb-mc-may28.

Table 4: Summary of estimated North Carolina private angler black sea bass catch and harvest north of Cape Hatteras during February 2018-2020. All values are based on MRIP estimates.

Private anglers - North Carolina February 2018-2020						
Year	**MRIP intercepts**	**# fish harvested on intercepted trips**	**Estimated total harvest** (# fish)	**Estimated total harvest** (lb)	**Estimated total discards** (#s fish)	**Estimated total catch** (#s fish)
2018	0	0	0	0	0	0
2019	0	0	0	0	0	0
2020	2	67	28,091	50,692	18,936	97,719

Table 5: Summary of available information on for-hire participation in the North Carolina recreational black sea bass opening north of Cape Hatteras during February 2018-2020. Values are based on MRIP, federal VTRs, and NCDMF sampling, as indicated below.

For-hire - North Carolina February 2018-2020					
Year	**MRIP intercepts**	**Federal VTRs submitted**	**Trips sampled by NCDMF**	**Number fish sampled by NCDMF**	**Estimated weight of sampled fish**
2018	0	0	0	0	0
2019	0	0	1	24	55
2020	0	0	1	31	71

Updated analysis for Monitoring Committee review

Staff updated the analysis used to calculate expected February harvest for 2018-2020 with the current MRIP data. The Monitoring Committee should discuss whether the revised analysis presented in this section is appropriate or if any modifications are needed.

As previously stated, this analysis used federal VTR data from January and February 2013, the last year prior to 2018 with a wave 1 opening. Federal VTR data for January and February 2013 are summarized in Table 6. The analysis done in 2017 relied on an assumption that wave 1 harvest from private anglers would be roughly equal to that of anglers on party and charter boats. This assumption was based on an evaluation of catch in waves 2 (March-April) and 6 (November-December), 2007-2016. Under the revised MRIP data, estimated catch from private anglers is much higher than that from party/charter boats. For example, during waves 2 and 6 in 2010-2019, 90% of the estimated recreational black sea bass catch from Maine through Cape Hatteras, North Carolina came from the private/rental and shore modes, compared to only 10% from the for-hire mode. The percentage of catch by mode varied by state, as shown in Table 7. Waves 2 and 6 were used for this aspect of the analysis because they were assumed to be most similar to wave 1. However, the revised coastwide average ratio of 90% private to 10% for-hire catch varied very little across all waves during 2010-2019.

The revised calculations suggest that if all states were to participate in the February opening, 483,993 pounds of black sea bass may be harvested (Table 6). This is almost five times the amount previously calculated based on the old MRIP data. The initial analysis divided the total expected amount among states based on the proportion of recreational wave 1 (January and February) catch by state according to federal for-hire VTR data from 1996-2009 and 2013 (years with open wave 1 fisheries). Revised estimates by state using this same information are shown in Table 8.

The revised expected February harvest values for Virginia and North Carolina in Table 8 are quite different than those estimated by the VMRC and MRIP respectively for 2018-2020 (Table 2). Consideration could be given to allowing those states to use a different value for expected February harvest in upcoming years, for example based on a three year average.

Table 6: Estimated black sea bass harvest in pounds during January and February 2013, based on federal VTR data scaled up based on the average proportion of for-hire to private catch during 2010-2019. Estimates for February are emphasized because it is anticipated that the fishery will remain closed in January in 2021.

Month	# vessels submitted federal VTRs	Avg. trips per vessel	Avg. number anglers per trip	Avg. # fish harvested per angler	Total harvested fish reported on VTRs	Total for-hire harvest (lb)[a]	Estimated total for-hire and private harvest (lb)[b]
Jan	35	5.00	24.73	8.76	44,651	83,497	834,974
Feb	**19**	**3.68**	**28.94**	**11.46**	**25,882**	**48,399**	**483,993**
Jan & Feb	39	6.28	25.93	9.53	70,533	131,897	1,318,967

[a]These values represent total harvested fish as reported on VTRs multiplied by the average MRIP-estimated weight of landed fish for all modes in 2013 (i.e., 1.87 pounds).
[b]These values were calculated based on an assumption that total harvest was 10% for-hire, 90% private based on wave 2 (March-April) and wave 6 (November-December) MRIP data for 2010-2019.

Table 7: Percentage of black sea bass catch in numbers of fish by mode and state during waves 2 (March-April) and 6 (November-December), 2010-2019.

State	Party/charter	Private/rental/shore
ME	-	-
NH	-	-
MA	0%	100%
RI	3%	97%
CT	0%	100%
NY	2%	98%
NJ	51%	49%
DE	4%	96%
MD	38%	62%
VA	4%	96%
NC*	13%	87%
ME-NC*	**10%**	**90%**

*North of Cape Hatteras

Table 8: Updated allocation of expected February harvest among states.

State	Proportion of Wave 1 Catch	Allocation of 483,993 pounds
RI	0.24%	1,146
CT	0.03%	158
NY	8.65%	41,871
NJ	83.87%	405,913
DE	1.33%	6,418
MD	0.46%	2,227
VA	5.14%	24,891
NC	0.28%	1,369
Total	100%	483,993

Next steps

The Council and Board plan to discuss the management program for the February 2021 recreational black sea bass fishery during their joint meeting in August 2020.

Summer Flounder, Scup, and Black Sea Bass Monitoring Committee
Meeting Summary
May 28, 2020
Webinar

Monitoring Committee Attendees: Julia Beaty (MAFMC staff), Peter Clarke (NJ DEP), Dustin Colson Leaning (ASMFC staff), Karson Coutré (MAFMC staff), Kiley Dancy (MAFMC staff), Steve Doctor (MD DNR), Emily Keiley (GARFO), Alexa Kretsch (VMRC), John Maniscalco (NY DEC), Lee Paramore (NC DMF), Caitlin Starks (ASFMC staff), Rachel Sysak (NY DEC), Mark Terceiro (NEFSC), Corinne Truesdale (RI DEM), Sam Truesdell (MA DMF), Greg Wojcik (CT DEP), Rich Wong (DNREC), Tony Wood (NEFSC)

Additional Attendees: Annie, Steve Cannizzo (NY RFFA), Mike Celestino (NJ DEP, Bluefish MC), Nicole Lengyel Costa (RI DEM, Bluefish MC), Maureen Davidson (NY DEC, Council/Board member), Greg DiDomenico (Lund's Fisheries), Tony DiLernia (Council member), Cynthia Ferrio (GARFO, Bluefish MC), James Fletcher (United National Fishermen's Association), Jeff Kaelin (Lund's Fisheries), Joseph Munyandorero (FL FWC, Bluefish MC), Adam Nowalsky (Council/Board member), Eric Reid (Council member), SRW, Mike Waine (ASA), Kate Wilke (Council member), Amy Zimney (SC DNR, Bluefish MC)

Meeting Summary

The Summer Flounder, Scup, and Black Sea Bass Monitoring Committee met via webinar on Thursday May 28, 2020 to discuss several topics. The Bluefish Monitoring Committee was invited to participate in the discussion of the Recreational Reform Initiative as this initiative also addresses bluefish.

Briefing materials considered by the Monitoring Committee are available at: https://www.mafmc.org/council-events/2020/sfsbsb-mc-may28.

Recreational Reform Initiative

Council staff summarized a draft outline of the Recreational Reform Initiative developed by the Recreational Reform Steering Committee. The Monitoring Committee was generally supportive of continued development of all approaches in the Steering Committee outline. Monitoring Committee comments on each objective in the outline are summarized below.

Objective 1: Better incorporate uncertainty in the MRIP data into the management process

Objective 1 in the Steering Committee outline contains three specific suggestions for better considering uncertainty in the MRIP data. The first suggestion is to adopt a standardized process for identifying and smoothing outlier MRIP estimates to be applied to both high and low outliers. The Monitoring Committee agreed that it would be very beneficial to adopt such a process.

The group agreed that outliers could be identified using the Modified Thompson Tau approach used in the past for some black sea bass outliers, or other methods. One Monitoring Committee member said there are multiple potentially appropriate methods for identifying outliers and consideration should be given to which methods are most appropriate for different circumstances. For example, a multi-faceted approach could be considered. Another Monitoring Committee member said consideration should be given to the appropriate level at which the estimates are examined for outliers, for example, at the state/wave/mode/year level or the coastwide annual level.

MRIP estimates are used in many parts of the management process, including in the stock assessment, development of annual catch and landings limits, comparison of catch to the annual catch limit (ACL) to determine if accountability measures are triggered, and development of recreational management measures. To date, smoothed outliers have only been used in a few instances to develop recreational management measures for black sea bass. They have not been used for other purposes for summer flounder, scup, and black sea bass. For example, the smoothed black sea bass estimates for 2016 and 2017 were not used in the 2019 operational stock assessment due to concerns about the appropriateness of smoothing only two high estimates in recent years without examining the entire time series for both high and low outliers. Several Monitoring Committee members noted that this creates a potentially problematic disconnect with other parts of the management process. The group agreed that adoption of a standardized method for identifying and smoothing both high and low outliers would increase the likelihood of being able to use smoothed estimates in all parts of the management process. The group agreed that it would be very important to identify and smooth both high and low outliers and to have a standardized process.

One Monitoring Committee member noted that even if smoothed estimates were used in management, no change would be made to the official MRIP estimates. The group agreed that it could be beneficial to have MRIP staff provide feedback on the process to identify and smooth outliers to help increase buy-in for using smoothed estimates in multiple parts of the management process. The intent would not be to have MRIP staff approve the smoothed estimates, but rather to provide feedback on the appropriateness of any methods developed.

The second specific suggestion under objective 1 is to use an “envelope of uncertainty” approach to determine if changes to recreational management measures are needed. Under this approach, a certain range above and below the projected harvest estimate (e.g., based on percent standard error) would be defined for comparison against the upcoming year’s recreational harvest limit (RHL). If the RHL falls within the pre-defined range above and below the projected harvest estimate, then no changes would be made to management measures. The Monitoring Committee agreed that this is worth pursuing and that further discussion is needed on defining the appropriate envelope. One Monitoring Committee member noted that the group has struggled to define similar metrics in the past and asked if the Council and Board would determine how to define the envelope or if it would be a Monitoring Committee decision. One Monitoring Committee member said that, given their technical expertise, it may be more appropriate for the Monitoring Committee to recommend the appropriate envelope, rather than the Council and Board.

The third specific suggestion under objective 1 is to consider the appropriateness of using preliminary current year MRIP data in the management process. The Monitoring Committee agreed that this may warrant further consideration. One member noted that MRIP has changed

the timing of when they incorporate for-hire data into their estimates. In the past, preliminary estimates were sometimes released without the incorporation of for-hire vessel trip report (VTR) data. VTR data were incorporated into the final estimates. Under the current process, VTRs are incorporated into the preliminary estimates, so the differences between the preliminary and final estimates may not be as great as they were in the past. He recommended an evaluation of the scale of the change from preliminary to final estimates under the current MRIP estimation methodology. He also noted that final data may be appropriate for longer-term decisions including development of management measures that are intended to be in place for multiple years. However, he cautioned that if only final data are used for annual adjustments to measures, there will be a greater disconnect between the data used and current operating conditions than if preliminary current year data were also considered.

One Steering Committee member said the Steering Committee's intent for all three suggestions under objective 1 was not to ask the Monitoring Committee to second guess and revise the MRIP estimates, but rather to think about the impact that outliers can have on recreational management. For example, outlier estimates can lead to significant changes in management measures from year to year which may not be reflective of a true conservation need.

Objective 2: Develop guidelines for maintaining status quo measures

The second objective in the Steering Committee outline is to develop a process for considering both recreational harvest data (all considerations under objective 1 could apply) and multiple stock status metrics (biomass, fishing mortality, recruitment) when deciding if measures should remain unchanged. The Monitoring Committee was generally supportive of this approach.

One Monitoring Committee member said it would be helpful to give greater consideration to how expected catch (i.e., landings and dead discards) compares to the ACL, rather than focusing on the RHL as the primary management target when setting management measures for the following year. She questioned whether the Fishery Management Plan would need to be modified to provide more flexibility in this regard.

Another Monitoring Committee member said the group tends to be most comfortable with estimates of expected landings and dead discards when they are based on assessment data. He thought it could be helpful to give stock status metrics from the assessments greater consideration in the process of determining how to change management measures. For example, he feels more confident in the need for more restrictive measures in response to a stock assessment rather than in response to recreational harvest estimates alone, which can be quite variable.

Objective 3: Develop process for setting multi-year recreational management measures

The third objective in the Steering Committee outline is to develop a process for setting recreational management measures for two years at a time with a commitment to making no changes in the interim year. This would include not reacting to new data that would otherwise allow for liberalizations or require restrictions. The Monitoring Committee was very supportive of this approach.

The Monitoring Committee agreed that this approach could lead to compounding overages or underages of catch and harvest limits. However, this could represent just as much of a conservation benefit as a conservation risk.

Multiple Monitoring Committee members said maintaining the same measures for at least two years can allow for better evaluation of the effectiveness of the measures at constraining harvest. The group discussed how harvest can fluctuate widely under constant management measures. Having more years of constant measures would allow for a better understanding of the variations in harvest.

One member clarified that the proposal was for two years and not a longer time period because it is anticipated that updated stock assessment information will be available every two years. This would allow for management to react to updated stock assessment information.

One Monitoring Committee member said this approach could pull together many aspects of the other approaches in the Steering Committee outline and it could be a good way to move forward with the goal of stability in management measures. For example, it could allow for use of final MRIP estimates (see objective 1), would allow for consideration of the timing of the management measures recommendation (see objective 5), would allow for changes to be considered in response to updated stock assessment information, and would allow for year-to-year stability in recreational management measures.

The group discussed how state conservation equivalency could work under this approach. There was a general consensus that the approach would work best with a strong commitment to no changes at the federal or state level during the two years.

One Monitoring Committee member noted that it could be difficult to explain to stakeholders why they may have to forego potential liberalizations in the interim year under this approach. She recommended that this approach be evaluated from a socioeconomic perspective. Another Monitoring Committee member recommended consideration of the benefits of this approach in terms of compliance with and enforcement of the management measures.

Objective 4: Consider improvements to the process used to make changes to state and federal recreational management measures

The third objective in the Steering Committee outline relates to improvements to the process used to make changes to state and federal waters recreational management measures. The Steering Committee has not discussed this objective in great detail.

A few Monitoring Committee members said it would be beneficial to have guidelines on how to best use MRIP data at the state/mode/wave levels. The group agreed that additional analysis is needed to better understand the limitations of the MRIP data for any given species before recommendations can be made for how to best use the MRIP data. For example, one Monitoring Committee member said it may be challenging to develop robust guidelines that could be applied uniformly across all states as MRIP sampling is not consistent across states and states with more frequent intercepts of the species in question may be put at an advantage.

One bluefish Monitoring Committee member said regional measures, especially for shared water bodies, are worth considering and can help address concerns about using MRIP data at too fine of a scale.

Objective 5: Consider making recommendations for federal waters recreational management measures earlier in the year

The Steering Committee has discussed the idea of recommending federal waters recreational management measures in August or October rather than December of each year. The Monitoring

Committee supported further consideration of this approach. Many members noted that it has been challenging for states to develop measures and for the Technical Committee to review proposals under the tight deadlines that are needed under the current process. Moving some of the decision making to earlier in the year could allow for more time for robust review of proposals. However, the group also noted that earlier decision making would not allow for consideration of preliminary current year data when developing recreational management measures for the following year. This may be appropriate for measures that are intended to be in place for multiple years (e.g., see objective 3).

General comments on the Recreational Reform outline

The group noted that the Council and Board may wish to include additional topics in the Recreational Reform Initiative after discussing the ongoing commercial/recreational allocation amendment during their next meeting.

Several Monitoring Committee members supported consideration of an additional approach that would more explicitly tie changes in management measures to the stock assessment, for example by considering changes only when new stock assessment information is available. This may be feasible under the anticipated every other year timeline for stock assessment updates in the future.

One member of the public asked how the Recreational Reform Initiative complies with the recent executive order to produce seafood. One Steering Committee member emphasized that the initiative relates to recreational fishing only and not commercial fishing. Another Steering Committee member said the initiative would help to support a supply of seafood by ensuring that harvest is managed at sustainable levels.

Commercial Scup Discards Report

Council staff reviewed the staff memo on planned scup discards analysis for 2020. The objective of this discussion was to receive preliminary feedback from the Monitoring Committee on approaches and data sources for this analysis.

One Monitoring Committee member asked if given the fact that the gear restricted areas (GRAs) give temporal protection to other species besides scup, would the report consider discards of all relevant species? Staff responded that the report currently focuses solely on scup due to concerns with high discards, though the Council could expand this in the future.

One member noted that since the largest year class recruitment event in 2015 there has been increasing discards (peaking in 2017) as that year class recruits into the fishery. Based on 2018 information, discards may be trending down. Staff added that in 2019 discards also continued to decrease, following the downward trend in recruitment.

Another MC member said thinking about the data sources and caveats associated with them will be important. In the past, the "MESH240" estimates have been used. These estimates are peer reviewed from the assessment and provide overall estimates, but they don't allow for fine scale temporal or spatial analysis. To look at a finer scale, observer data would need to be used but there are different caveats associated with that dataset (e.g., variable observer coverage over time). One member noted that it can be problematic to use VTR data for fine scale information. It may be best to look at a lot of VTR data over time, which might not answer the more specific

discard questions being asked. One member noted that Rutgers and the NEFSC created fishing footprint maps which combined VTR and observer data to obtain a finer resolution.

A member of the public commented that the scup discard issue has caused the industry to take broader look at all demersal discards with a $44,000 SCeMFiS proposal to answer various questions.

Summer Flounder Commercial Minimum Mesh Size Exemptions

The Monitoring Committee reviewed the staff memo on summer flounder mesh exemption evaluation and discussed plans for review of current programs.

One Monitoring Committee member asked whether information was available on the size of discarded fish and thought this could be interesting to analyze. Staff responded that this could potentially be looked at through observer data.

A member of the public commented that in the early 1970s, the United National Fisherman's Association put forth a 5" mesh size for summer flounder, scup and black sea bass but this proposal was ignored. He said management should implement a 5" net for all 3 species. He also said that the Monitoring Committee should understand the difference between a high rise and a flynet and should discuss if net size regulations are changing the way fish grow and are impacting length at age. He also asked whether fish are slower growing as a result of fisheries management. He also discussed the recent Executive Order that includes increasing seafood production in the United States and felt that more fish could be landed if the minimum size restrictions were liberalized. He proposed that with a net size of 5", fishing pressure would be taken off large females. He commented that high grading needs to be considered when analyzing discards and that current regulations are reducing fishing instead of encouraging it. He also recommended a cumulative total length limit in the recreational sector to eliminate all recreational discards. Lastly, he recommended that we learn from Japanese studies that have supplemented wild fish populations with breeding programs.

February Recreational Black Sea Bass Fishery

The Monitoring Committee reviewed the recent February opening of the recreational black sea bass fishery and discussed if changes are needed for February 2021.

One Monitoring Committee member said the current management program does not allow equal access to the February fishery among all states. Specifically, states which feel that their management measures during the rest of the year are already quite restrictive (i.e., Massachusetts through New Jersey) are not willing to take an additional restriction in order to participate in the optional February opening. However, during February, black sea bass are found in federal waters and fish which spend the warmer months in different states are mixed together. For this reason, states which participate in the February opening are not just impacting "their fish." This Monitoring Committee member said access to the February opening should be more equitable and states with restrictive management measures during the rest of the year should not be required to further restrict their measures if they participate in the February opening. He suggested that this could be achieved by deducting the February harvest from the coastwide RHL, rather than parsing it out on a state-by-state basis. In the past, some states expressed

concern about an "off the top" approach like this as not all states would likely participate in the opening, but all would be impacted if adjustments are made at the coastwide level.

Another Monitoring Committee member asked if states could provide estimates of how many vessels or trips would be expected to target black sea bass during February if the season were open in their state. Alternatively, the number of for-hire trips for all species during February in recent years could be examined using federal VTRs. This could be a starting point for evaluating the potential amount of effort in the February black sea bass fishery and could help provide a better understanding of the impacts of moving to a system where February harvest is taken off the RHL.

The Monitoring Committee agreed that the system used by Virginia to monitor their February harvest (i.e., permit requirements, logbooks, and call ins) and adjust their season length later in the year as needed has worked well. The group agreed that MRIP estimates should not be used to monitor February harvest and make adjustments to measures later in the year. The challenge of determining the appropriate season adjustment in North Carolina to account for an unreasonable MRIP estimate in February 2020 clearly illustrates this point. The current February management program requires estimation of harvest at a finer scale than is generally appropriate for the MRIP data.

Currently, North Carolina is the only state in the management unit which conducts MRIP sampling during January and February. One Monitoring Committee member said the additional monitoring required during February is a burden on states. States may not see this burden as worthwhile, especially if they are required to further restrict their already restrictive measures to participate in the optional February opening. A coastwide, standardized monitoring system could be beneficial.

Equitable access is also challenging under the current program as not all states are able to modify their measures later in the year to account for higher than expected February harvest. One Monitoring Committee member asked if these states could pre-determine different management measures which would be implemented at different levels of February harvest. In this way, the response to estimated February harvest would be automatic.

One Monitoring Committee member noted that if the updated assumption of 90% for-hire and 10% recreational harvest during February relies heavily on wave 6 MRIP data from 2016, then this this assumption may not be valid as wave 6 in 2016 included an estimate from New York that has been widely accepted as an unrealistically high outlier.

Public comments

One Council member said he supported the approach of taking February harvest "off the top" of the RHL as the February fishery occurs in federal waters and fish from different areas are mixed together. In addition, anglers can travel to different states to participate in this fishery. Participation should not be limited to residents of states with openings.

One member of the public from New York noted that the current management program relies on old data and is especially problematic that it places a strong emphasis on data from a few months after Superstorm Sandy. He said the majority of fishing activity during this time of year is in the for-hire sector and the primary driver for fishing activity during this time of year is cod, not black sea bass, as they can be caught closer in shore. He added that February harvest is very weather-dependent. He said it is a small fishery and the opening should not require restrictions

during the rest of the year. He added that black sea bass migration has changed. They are wintering further south than the used to.

One member of the public asked what percentage of black sea bass harvested during the February recreational fishery in Virginia were males. He claimed that "everything the Council has done in the past has been to target the females." He added that recreational fishermen should be required to report their catch through smart phones immediately after each trip, at least during the February recreational black sea bass fishery. He said this will illustrate the true extent of the inaccuracies in the data used in management to date.

One Council and Board member noted that the 50% private, 50% for-hire assumption used in the previous analysis generated much debate. He said the updated 90% private, 10% for-hire assumption based on the revised MRIP data does not seem reasonable for wave 1 as for-hire vessels tend to be larger than private vessels and thus better able to fish in the rough weather conditions during wave 1. He requested that the Monitoring Committee further evaluate the updated 90%/10% assumption, perhaps using information other than MRIP data from waves 2 and 6 as those waves can have milder weather than wave 1.

After the Monitoring Committee discussion ended, the ASMFC's Technical Committee met to discuss the February 2020 recreational black sea bass fishery in North Carolina and review a proposal for a season modification to account for higher than expected February harvest. A summary of this discussion is available at https://www.mafmc.org/council-events/2020/sfsbsb-mc-meeting-july27.

The Summer Flounder, Scup, and Black Sea Bass Fishery Performance Report is behind Tab 5

Black Sea Bass Data Update for 2020

National Marine Fisheries Service
Northeast Fisheries Science Center
166 Water St.
Woods Hole, MA 02543

Reported 2019 landings in the commercial fishery were 1,579 mt = 3.483 million lb, an increase of 4% from 2018, and 99% of the 2019 commercial quota. Estimated 2019 landings in the recreational fishery were 3.914 mt = 8.630 million lb, a decrease of 2% from 2018. Total commercial and recreational landings in 2019 were 5,493 mt = 12.112 million lb, a decrease of 1% from 2018 (Figure 1).

The total index of abundance has steadily increased since 2015 (Figure 2). The large 2011 cohort was apparent in the NEFSC spring 2013 survey abundance index. The NEFSC spring survey length frequency distributions show an above average 2015 cohort has been evident in the index since 2017 (note that the 2020 information is from an incomplete survey) (Figure 3).

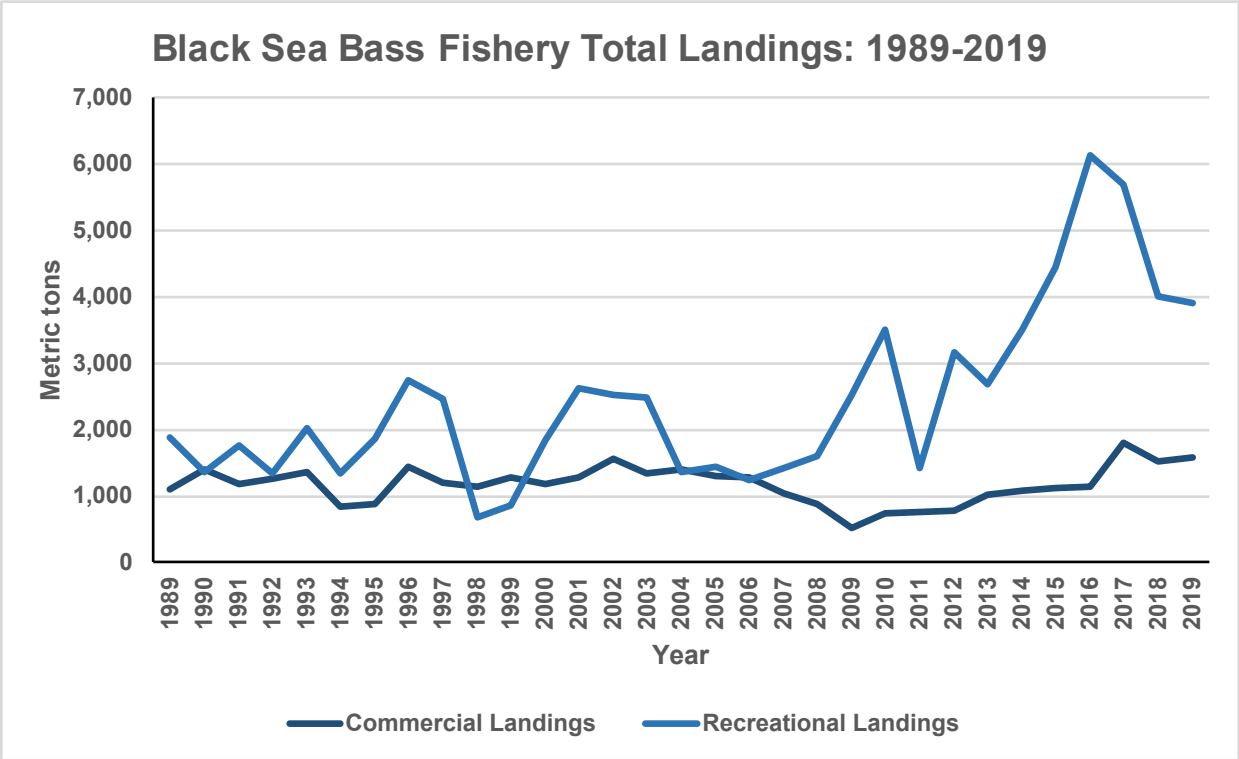

Figure 1. Black Sea Bass fishery total landings.

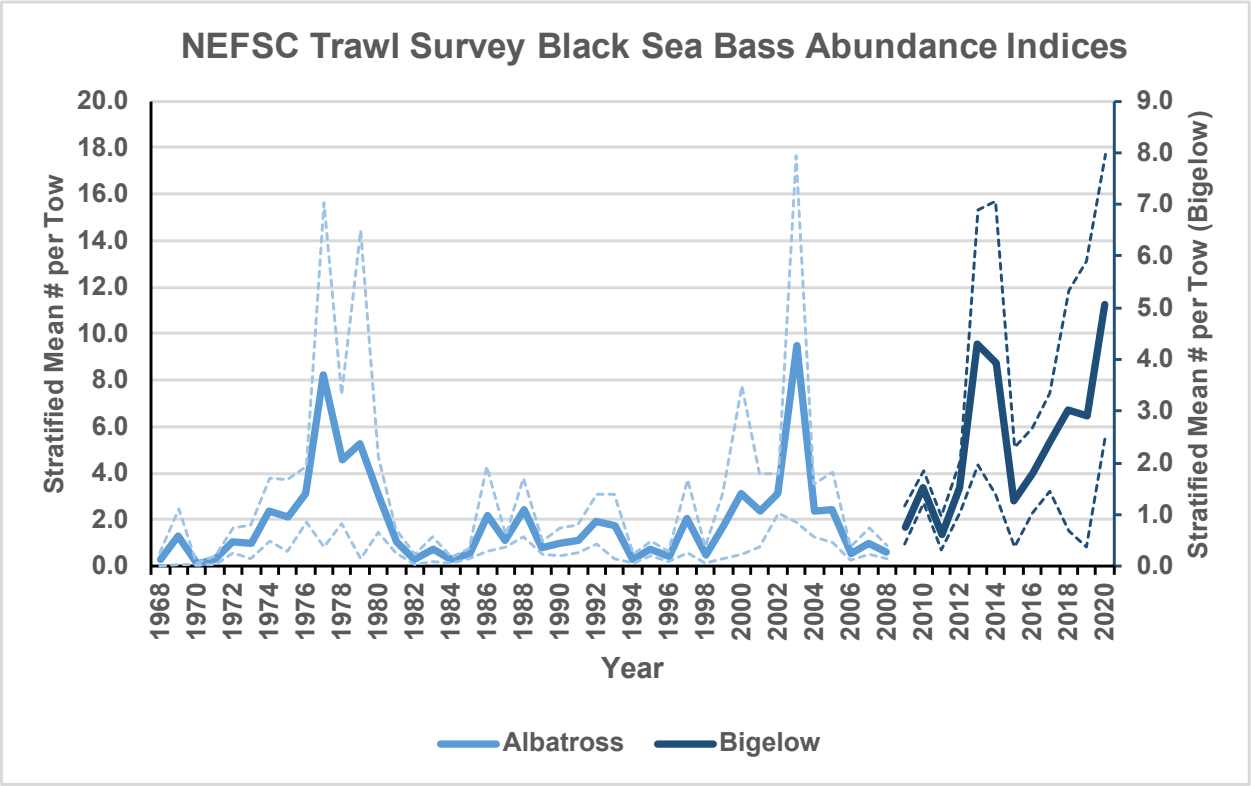

Figure 2. NEFSC Spring trawl survey abundance indices (± 90% CI) for black sea bass collected on FSVs Albatross IV (1968-2008) and H. B. Bigelow (2009-2020). Note: the 2020 index is based on incomplete survey.

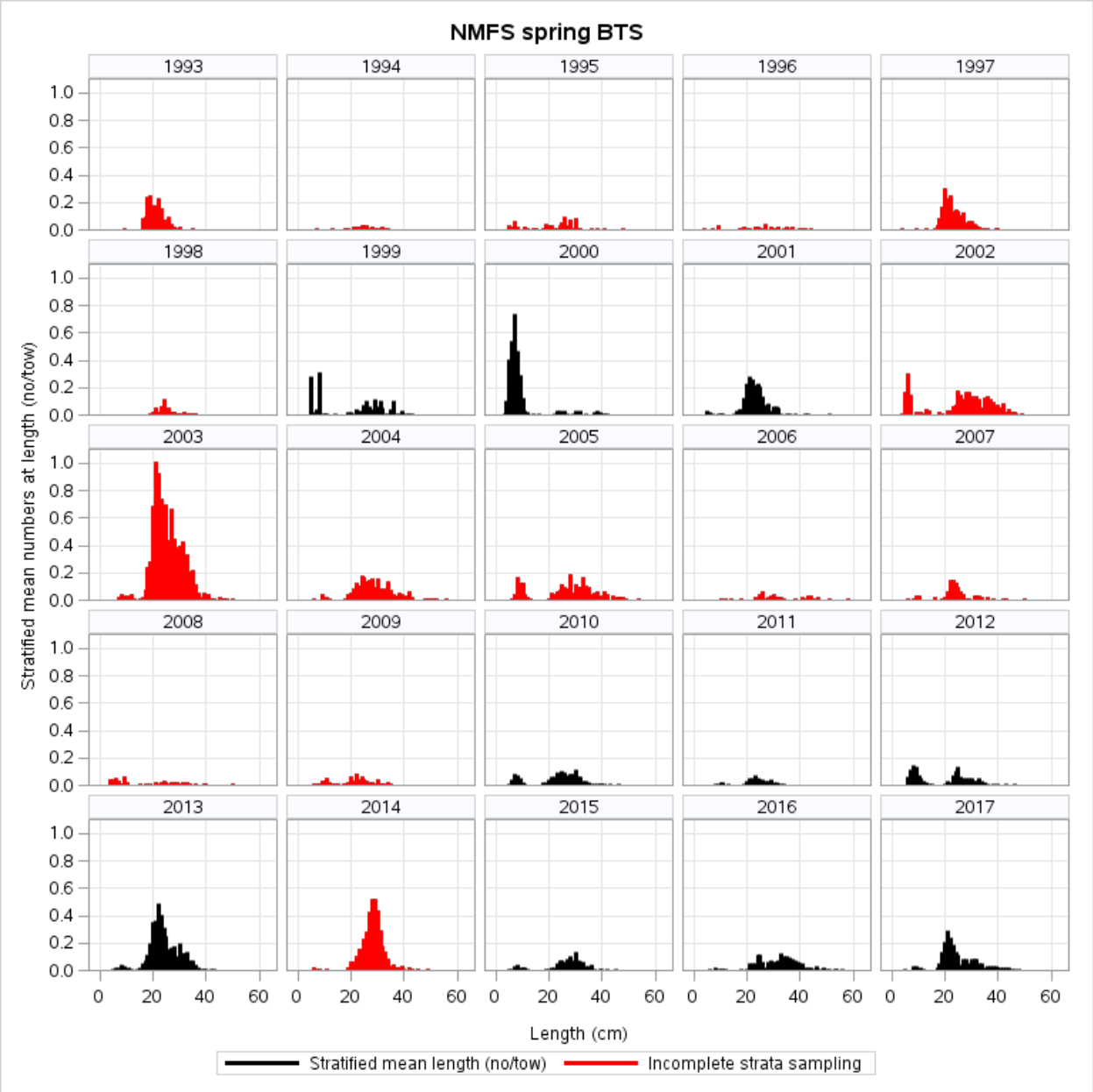

Figure 3. Northeast Fisheries Science Center (NEFSC) spring trawl survey black sea bass indices at length. Indices since 2009 are uncalibrated Bigelow values. Note: the 2020 index is based on incomplete survey.

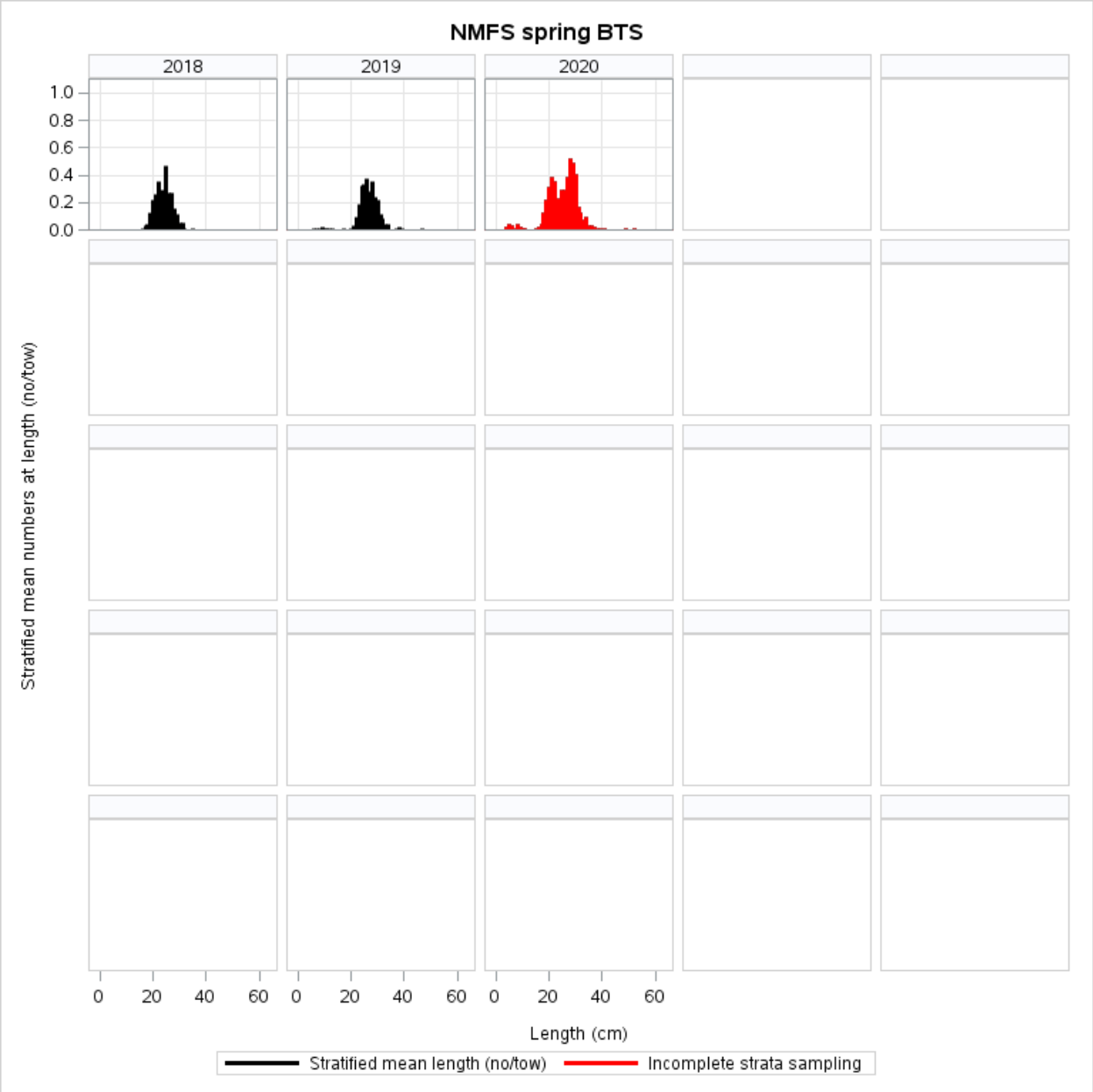

Figure 3 (cont'd). Northeast Fisheries Science Center (NEFSC) spring trawl survey black sea bass indices at length. Indices since 2009 are uncalibrated Bigelow values. Note: the 2020 index is based on incomplete survey.

Black Sea Bass Fishery Information Document

June 2020

This document provides a brief overview of the biology, stock condition, management system, and fishery performance for black sea bass (Centropristis striata) with an emphasis on 2019. Data sources include unpublished National Marine Fisheries Service (NMFS) fisheries-independent trawl survey data, commercial fish dealer reports, vessel trip reports (VTRs), permit data, and Marine Recreational Information Program (MRIP) data. All data should be considered preliminary. For more resources on black sea bass management, including previous Fishery Information Documents, please visit http://www.mafmc.org/sf-s-bsb.

Key Facts

- Black sea bass are not overfished and overfishing is not occurring, according to the most recent stock assessment which included data through 2018. Incorporation of a revised time series of MRIP data and data on the large 2015 year class both contributed to an increase in estimated stock biomass compared to the previous assessment.
- In 2019, about 3.53 million pounds of black sea bass were landed by commercial fishermen, a slight increase from 2019. Commercial fish dealers paid an average of $3.41 per pound of black sea bass, a slight decrease from 2018.
- Recreational fishermen harvested an estimated 8.61 million pounds of black sea bass in 2019, a 9% increase from 2018. Anglers fishing from private vessels accounted for 79% of black sea bass harvest (in numbers of fish) in 2019.

Basic Biology

Black sea bass are distributed from the Gulf of Maine through the Gulf of Mexico. Genetic studies have identified three stocks within that region. This document focuses on the stock from the Gulf of Maine through Cape Hatteras, North Carolina.

Adult and juvenile black sea bass are mostly found on the continental shelf. Young of the year (i.e., fish less than one year old) can be found in estuaries. Adults show strong site fidelity during the summer and prefer to be near structures such as rocky reefs, coral patches, cobble and rock fields, mussel beds, and shipwrecks. Black sea bass migrate to offshore wintering areas starting in the fall. During the winter, young of the year are distributed across the shelf and adults and juveniles are found near the shelf edge. During the fall, adults and juveniles off New York and north move offshore and travel along the shelf edge to as far south as Virginia. Most return to northern inshore areas by May. Black sea bass off New Jersey to Maryland travel southeast to the shelf edge during the late fall. Black sea bass off Virginia and Maryland travel a shorter distance due east to the shelf edge, which is closer to shore than in areas to the north.[1,2]

Black sea bass are protogynous hermaphrodites, meaning they are born female and some later transition to males, usually around 2-5 years of age. Male black sea bass are either of the dominant or subordinate type. Dominant males are larger than subordinate males and develop a bright blue nuccal hump during the spawning season. About 25% of black sea bass are male at 15 cm (about 6 inches), with increasing proportions of males at larger sizes until about 50 cm, when about 70-80% of black sea bass are male. Results from a simulation model highlight the importance of subordinate males in spawning success. This increases the resiliency of the population to exploitation compared to other species with a more typical protogynous life history. About half of black sea bass are sexually mature by 2 years of age and 21 cm (about 8 inches) in length. Black sea bass reach a maximum size of about 60 cm (about 24 inches) and a maximum age of about 12 years.[2, 3]

Black sea bass in the mid-Atlantic spawn in nearshore continental shelf areas at depths of 20-50 meters. Spawning usually takes place between April and October. During the summer, adult black sea bass share habitats with tautog, hakes, conger eel, sea robins and other migratory fish species. Essential fish habitat for black sea bass consists of pelagic waters, structured habitat, rough bottom, shellfish, sand, and shell, from the Gulf of Maine through Cape Hatteras, North Carolina. Juveniles and adults mostly feed on crustaceans, small fish, and squid. The Northeast Fisheries Science Center (NEFSC) food habits database lists spiny dogfish, Atlantic angel shark, skates, spotted hake, summer flounder, windowpane flounder, and monkfish as predators of black sea bass.[1]

Status of the Stock

A black sea bass operational stock assessment was peer reviewed and accepted in August 2019. It incorporated fishery data and fishery-independent survey data through 2018, including revised MRIP data for 1989-2018. The assessment concluded that the black sea bass stock north of Cape Hatteras, North Carolina was not overfished and overfishing was not occurring in 2018. Spawning stock biomass in 2018 was estimated to be 2.4 times the target level. The average fishing mortality rate on fully selected ages 6-7 fish in 2018 was 9% below the fishing mortality threshold reference point, meaning that overfishing was not occurring in 2018 (Table 1). Figure 1 and Figure 2 show the time series of estimated spawning stock biomass, recruitment, fishing mortality, and catch from the most recent stock assessment. The values for fishing mortality and spawning stock biomass were adjusted for 2018 only to account for retrospective bias in the model.[4]

The 2011 year class (i.e., those fish spawned in 2011) was estimated to be the largest in the time series at 144.7 million fish. The 2015 year class was the second largest at 79.4 million fish. The 2011 year class had a major impact on recent stock dynamics and was much more prevalent off Massachusetts through New York compared to New Jersey and south. The large 2015 year class is more evenly between the northern (ME-NY) and southern (NJ-NC) states. Recruitment of the 2017 year class as age 1 in 2018 was estimated at 16.0 million fish, well below the 1989-2018 average of 36 million fish (Figure 1).[4] Recruitment estimates for 2018-2020 are not yet available.

Table 1: Black sea bass biological reference points from the 2019 operational stock assessment.[4]

Reference Points and terminal year SSB and F estimates	**2019 operational stock assessment** Data through 2018
$SSB_{MSY\ proxy}$ = $SSB_{40\%}$ (biomass target)	31.07 mil lb / 14,092 mt
½ SSB_{MSY} (biomass threshold defining an overfished state)	15.53 mil lb / 7,046 mt
Terminal year SSB	73.65 mil lb / 33,407 mt (2018). Adjusted for retrospective bias. 240% of SSB_{MSY}.
$F_{MSY\ proxy}$ = $F_{40\%}$ (threshold defining overfishing)	0.46
Terminal year F	0.42 (2018). Adjusted for retrospective bias. Fully selected ages 6-7. 9% below F_{MSY}.

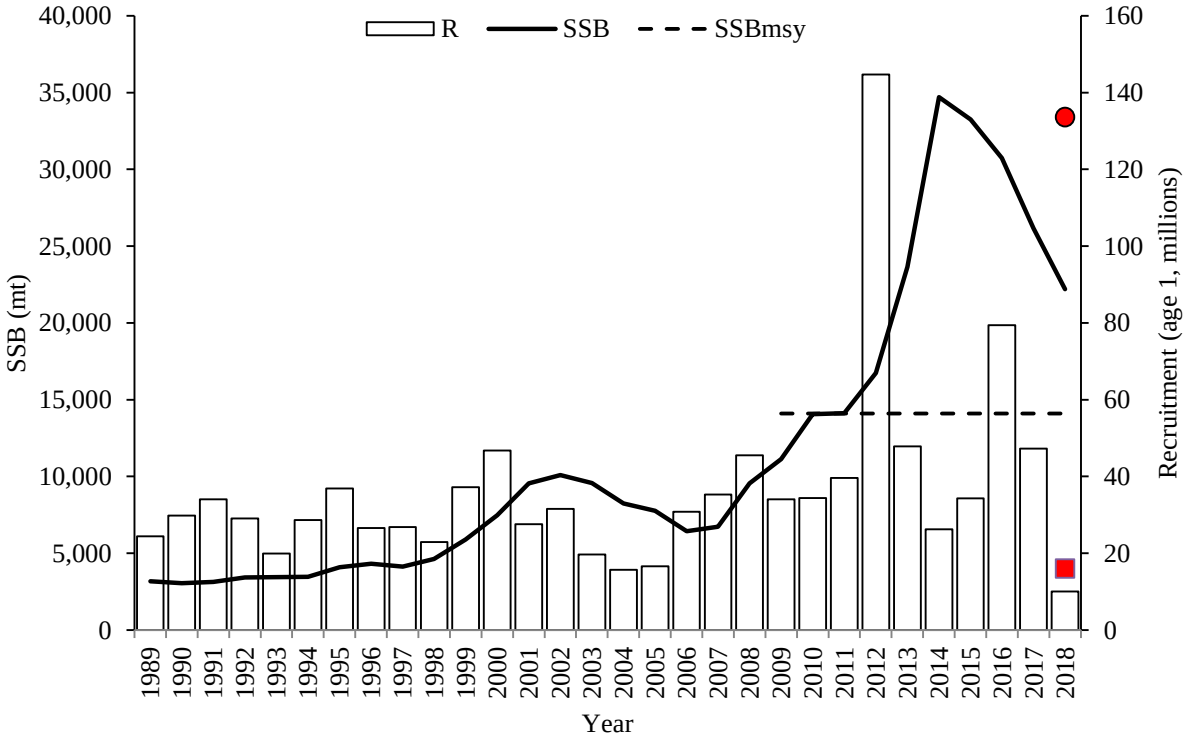

Figure 1: Black sea bass spawning stock biomass (solid line) and recruitment (bars), 1989 - 2018, and biomass reference point (dashed line) from the 2019 operational stock assessment. The red circle is the retro-adjusted spawning stock biomass value for 2018. The red square is the retro-adjusted recruitment value for 2018. These values were adjusted only for 2018. The adjustments were made to correct for retrospective bias in the assessment model. The adjusted spawning stock biomass estimate should be used for comparison against the reference point. The stock is overfished when spawning stock biomass is below this reference point. [4]

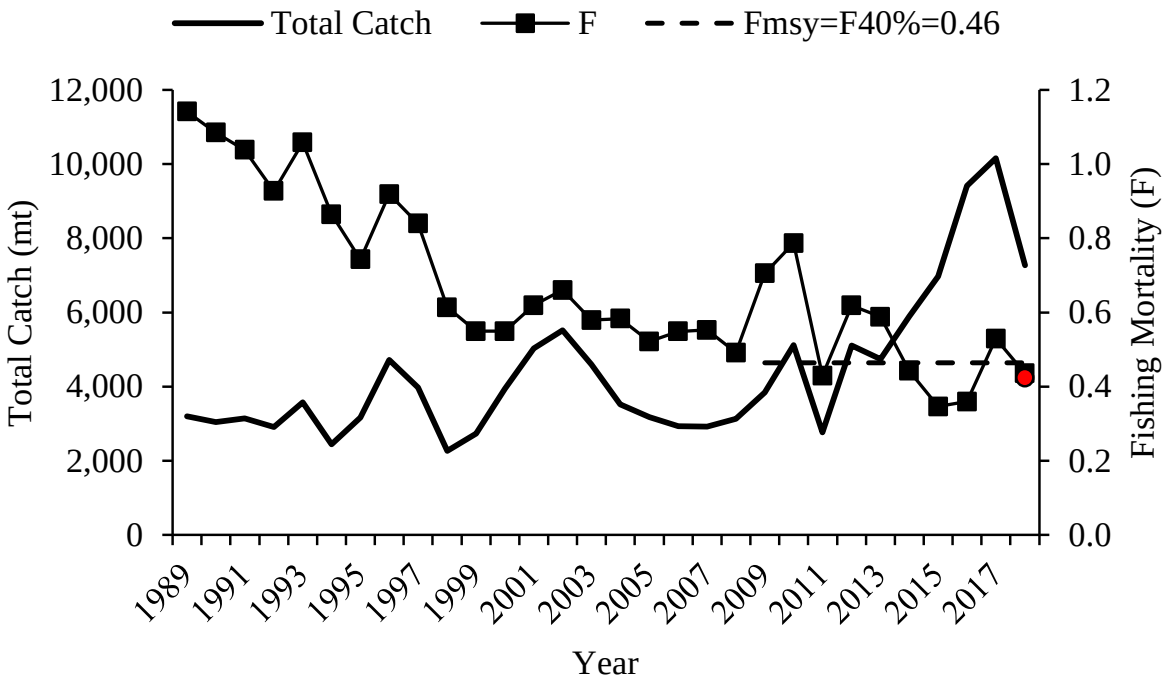

Figure 2: Fishing mortality rate (F) on black sea bass ages 6-7, the F_{MSY} proxy reference point from the 2019 operational stock assessment, and total catch, 1989-2018. The red circle is the retro-adjusted fishing mortality rate for 2018. This adjustment was made to correct for retrospective bias present in the assessment model and is used as the estimate to compare to the reference point. Overfishing is occurring when the fishing mortality rate exceeds this reference point.[4]

Management System and Fishery Performance

Management

The Mid-Atlantic Fishery Management Council (Council) and the Atlantic States Marine Fisheries Commission (Commission) work cooperatively to develop commercial and recreational fishery regulations for black sea bass from Maine through Cape Hatteras, North Carolina. The Council and Commission work in conjunction with NMFS, which serves as the federal implementation and enforcement entity. This cooperative management endeavor was developed because a significant portion of the catch is taken from both state waters (0-3 miles offshore) and federal waters (3-200 miles offshore). This joint management program began in 1996 with the approval of amendment 9 to the Summer Flounder, Scup, and Black Sea Bass Fishery Management Plan (FMP). The original FMP and subsequent amendments and framework adjustments are available at: www.mafmc.org/fisheries/fmp/sf-s-bsb.

Commercial and recreational black sea bass fisheries are managed using catch and landings limits, commercial quotas, recreational harvest limits (RHLs), minimum fish sizes, open and closed seasons, gear regulations, permit requirements, and other provisions.

The Council's Scientific and Statistical Committee (SSC) recommends annual Acceptable Biological Catch (ABC) levels for black sea bass. The Council and Commission must either approve the ABC recommended by the SSC or approve a lower ABC. The ABC is divided into commercial and recreational Annual Catch Limits (ACLs), based on the landings allocations

prescribed in the FMP (i.e., 49% commercial, 51% recreational) and the recent distribution of discards between the commercial and recreational fisheries. The Council and Commission are currently developing an amendment to consider revising these allocation percentages.[5]

The Council and Commission also approve commercial and recreational annual catch targets (ACTs), which are set equal to or less than the respective ACLs to account for management uncertainty. To date, the black sea bass ACTs have always been set equal to the ACLs. The ABC, ACLs, and ACTs are catch limits which account for both landings and discards, while the commercial quota and RHL are landing limits. The commercial quota and RHL are calculated by subtracting expected discards from the respective ACTs.

Table 2 shows black sea bass catch and landings limits from 2010 through 2021, as well as commercial and recreational landings through 2019. Total landings (commercial and recreational) peaked in 2017 at 15.5 million pounds. About 12.15 million pounds of black sea bass were landed by commercial and recreational fishermen from Maine through Cape Hatteras, North Carolina in 2019 (Figure 3).[6,7]

In July 2018, MRIP released revisions to their time series of recreational catch and landings estimates based on adjustments for a revised angler intercept methodology and a new effort estimation methodology, including a transition from a telephone-based effort survey to a mail-based effort survey. The revised estimates of catch and landings are several times higher than the previous estimates for shore and private boat modes, substantially raising the overall black sea bass catch and harvest estimates. The RHLs and other management measures through 2019 were based on the previous MRIP estimates and should not be compared against the revised MRIP estimates. The revised MRIP estimates were incorporated into the 2019 operational stock assessment and were used to derive the catch and landings limits for 2020-2021.

Table 2: Summary of catch and landings limits, and landings for commercial and recreational black sea bass fisheries from Maine through Cape Hatteras, NC 2010 through 2021. All values are in millions of pounds unless otherwise noted.

Management measure	**2010**[a]	**2011**[a]	**2012**[a]	**2013**[a]	**2014**[a]	**2015**[a]	**2016**[b]	**2017**[c]	**2018**[c]	**2019**[c]	**2020& 2021**[c]
ABC	4.50	4.50	4.50	5.50	5.50	5.50	6.67	10.47	8.94	8.94	15.07
Commercial ACL	--	--	1.98	2.60	2.60	2.60	3.15	5.09	4.35	4.35	6.98
Commercial quota[d]	1.76	1.71	1.71	2.17	2.17	2.21	2.71	4.12	3.52	3.52	5.58
Commercial landings	1.73	1.69	1.72	2.26	2.40	2.38	2.59	4.01	3.46	3.53	--
% of commercial quota landed	98%	99%	101%	104%	111%	108%	96%	97%	98%	100%	--
Recreational ACL	--	--	1.86	2.90	2.90	2.90	3.52	5.38	4.59	4.59	8.09
RHL[d]	1.83	1.78	1.32	2.26	2.26	2.33	2.82	4.29	3.66	3.66	5.81
Recreational landings, old MRIP estimates	3.19	1.17	3.18	2.46	3.67	3.79	5.19	4.16	3.82	--	--
% of RHL harvested (old MRIP estimates)[e]	174%	66%	241%	109%	162%	163%	184%	97%	104%	--	--
Recreational landings, revised MRIP estimates	8.07	3.27	7.04	5.69	7.24	9.06	12.05	11.50	7.92	8.61	--

[a] Measures in 2010-2015 were based on a constant catch approach used by the Council's SSC to set the ABC.

[b] Measures in 2016 were based on ABC that was set using a data poor management strategy evaluation approach.

[c] Measures in 2017-2021 were set based on a peer reviewed and approved stock assessment. The 2020-2021 measures are based on a stock assessment update that incorporated the revised time series of MRIP data. The 2021 measures are subject to revision by the SSC, the Council, and the Commission.

[d] The commercial quotas and RHLs for 2006-2014 account for deductions for the Research Set Aside program.

[e] The percent of RHL harvested is based on a comparison of the RHL to the previous or old MRIP estimates. The RHLs did not account for the new MRIP estimates, which were released in July 2018 and were not incorporated into a stock assessment until 2019; therefore, it would be inappropriate to compare past RHLs to the revised MRIP estimates.

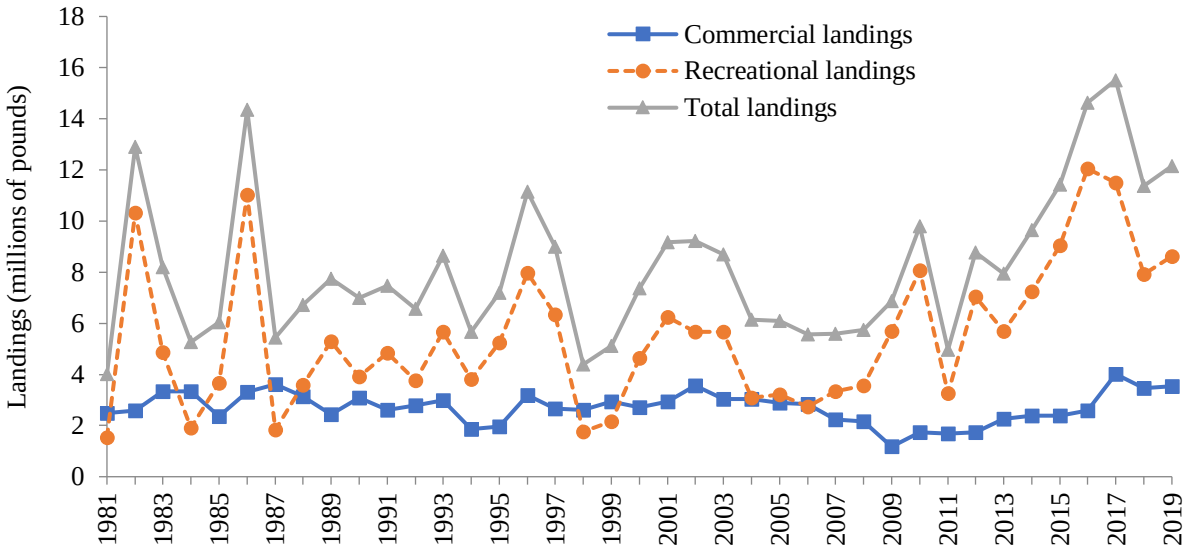

Figure 3: Commercial and recreational black sea bass landings in millions of pounds from Maine through Cape Hatteras, North Carolina, 1981-2019. Recreational landings are based on the revised MRIP estimates.[6,7]

Commercial Fishery

Commercial black sea bass landings peaked in 2017 at 4.01 million pounds, and were at their lowest in 2009, when 1.18 million pounds were landed (Figure 3). About 3.53 million pounds of black sea bass were landed by commercial fishermen in 2019, very close to the commercial quota of 3.52 million pounds (Table 2).[7]

Black sea bass are a valuable commercial species. Total ex-vessel value averaged $12.40 million per year during 2017-2019. In some fisheries, ex-vessel price tends to decrease with increases in landings. However, during 2010-2019, the opposite occurred for black sea bass. During these years, the average annual ex-vessel black sea bass price per pound tended to increase with increases in landings (Figure 4).[6] Landings have generally increased over time as the quotas increased; therefore, the relationship between price and landings could reflect increased market demand over time rather than a causal relationship between price and landings. This is not to say that sudden increases of black sea bass on the market do not cause decreases in price. Some fishermen and dealers have said that temporary price drops can occur at both the local and regional levels due to increases in the coastwide quota, state-specific seasonal openings, or individual trawl trips with high landings, all of which can be inter-related. These sudden price drops are often temporary and the price usually rises again.

According to federal VTR data, statistical area 616, which includes important fishing areas near Hudson Canyon, was responsible for the largest percentage of commercial black sea bass catch (landings and discards) in 2019 (i.e., 39%). Statistical area 621, off southern New Jersey, Delaware, and Maryland accounted for the second highest proportion of catch (9%), followed by statistical area 622 off Delaware (8%), statistical area 615 off New Jersey (7%), and statistical area 537, south of Massachusetts and Rhode Island (5%; Table 3, Figure 5). Statistical area 611, in Long Island Sound, and statistical area 539, off Rhode Island, had the highest number of trips

which reported black sea bass catch on federal VTRs in 2019 (over 1,500 trips each); however they each accounted for less than 5% of total black sea bass catch.[8]

In 2019, most commercial black sea bass landings from state and federally-permitted vessels occurred in New Jersey (20%) and Virginia (18%).[7] The percentage of landings by state is driven by and closely matches the state-by-state commercial quota allocations managed by the Commission (Table 4). States set measures to achieve their state-specific commercial quotas. The Council and Commission are currently developing a management action to consider if these state allocations should be modified.[9]

At least 100,000 pounds of black sea bass were landed in each of 10 ports in 7 states from Maine through North Carolina in 2019. These 10 ports collectively accounted for over 66% of all commercial black sea bass landings in 2019 (Table 5).[7] Detailed community profiles developed by the NEFSC Social Science Branch can be found at www.mafmc.org/communities/.

Over 189 federally-permitted dealers from Maine through North Carolina purchased black sea bass in 2019. More dealers bought black sea bass in New York than in any other state (Table 6).[7]

A moratorium permit is required to fish commercially for black sea bass in federal waters. In 2019, 657 federal commercial black sea bass permits were issued.[10]

A minimum commercial black sea bass size limit of 11 inches total length has been in place in federal waters since 2002. There is no federal waters black sea bass possession limit; however, states set possession limits for state waters.

State and federal dealer data, coupled with federal VTR data, indicate that at least 57% of commercial black sea bass landings in 2019 were caught with bottom otter trawl gear. At least 22% was caught with fish or lobster pots/traps, at least 13% with hand lines, and 1% with gill nets. Seven percent of commercial landings in 2019 were associated with an unknown gear type; this includes landings from state-only permitted vessels which do not submit federal VTRs. Other gear types each accounted for 1% or less of total commercial catch in 2019.[11]

Any federally-permitted vessel which uses otter trawl gear and catches more than 500 pounds of black sea bass from January through March, or more than 100 pounds from April through December, must use nets with a minimum mesh size of 4.5-inch diamond mesh applied throughout the codend for at least 75 continuous meshes forward of the end of the net. Pots and traps used to commercially harvest black sea bass must have two escape vents with degradable hinges in the parlor. The escape vents must measure 1.375 inches by 5.75 inches if rectangular, 2 inches by 2 inches if square, or have a diameter of 2.5 inches if circular.

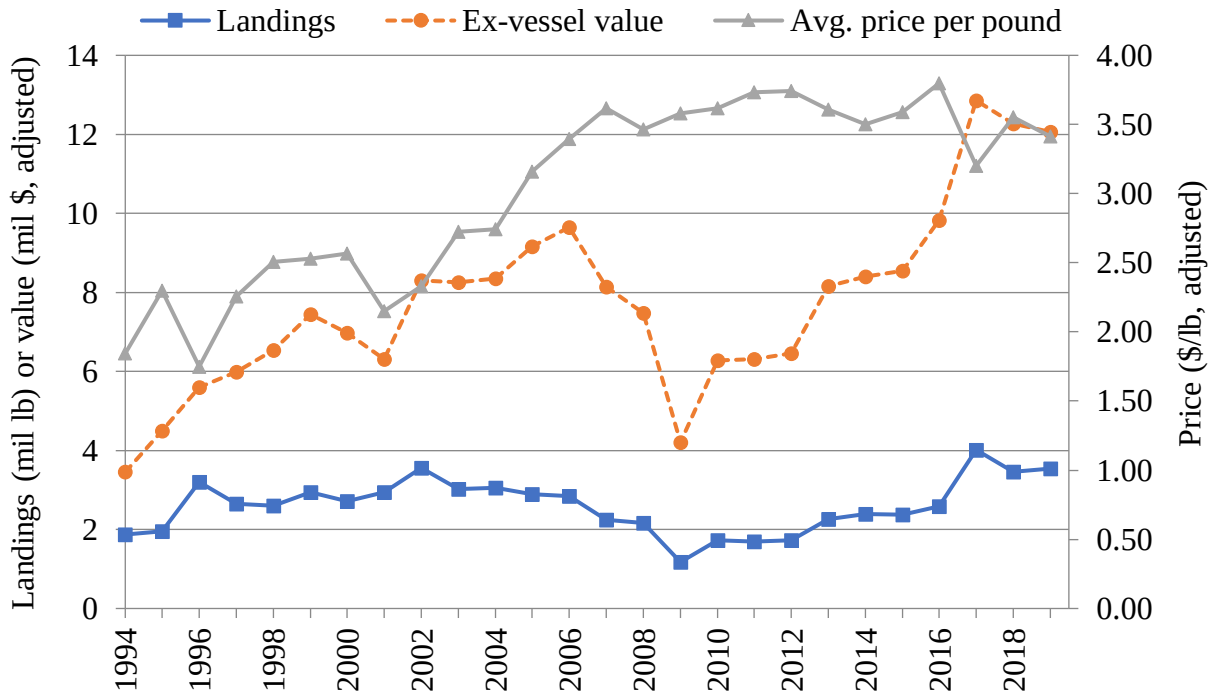

Figure 4: Landings, ex-vessel value, and average price for black sea bass, ME-NC, 1994-2019. Ex-vessel value and price are inflation-adjusted to 2019 dollars using the Gross Domestic Product Price Deflator.[7]

Table 3: Statistical areas that accounted for at least 5% of the total commercial black sea bass catch in 2019 based on federal VTRs, with associated number of trips.[8]

Statistical Area	Percent of 2019 Commercial Black Sea Bass Catch	Number of Trips
616	39%	761
621	10%	332
622	8%	104
615	7%	175
537	5%	774

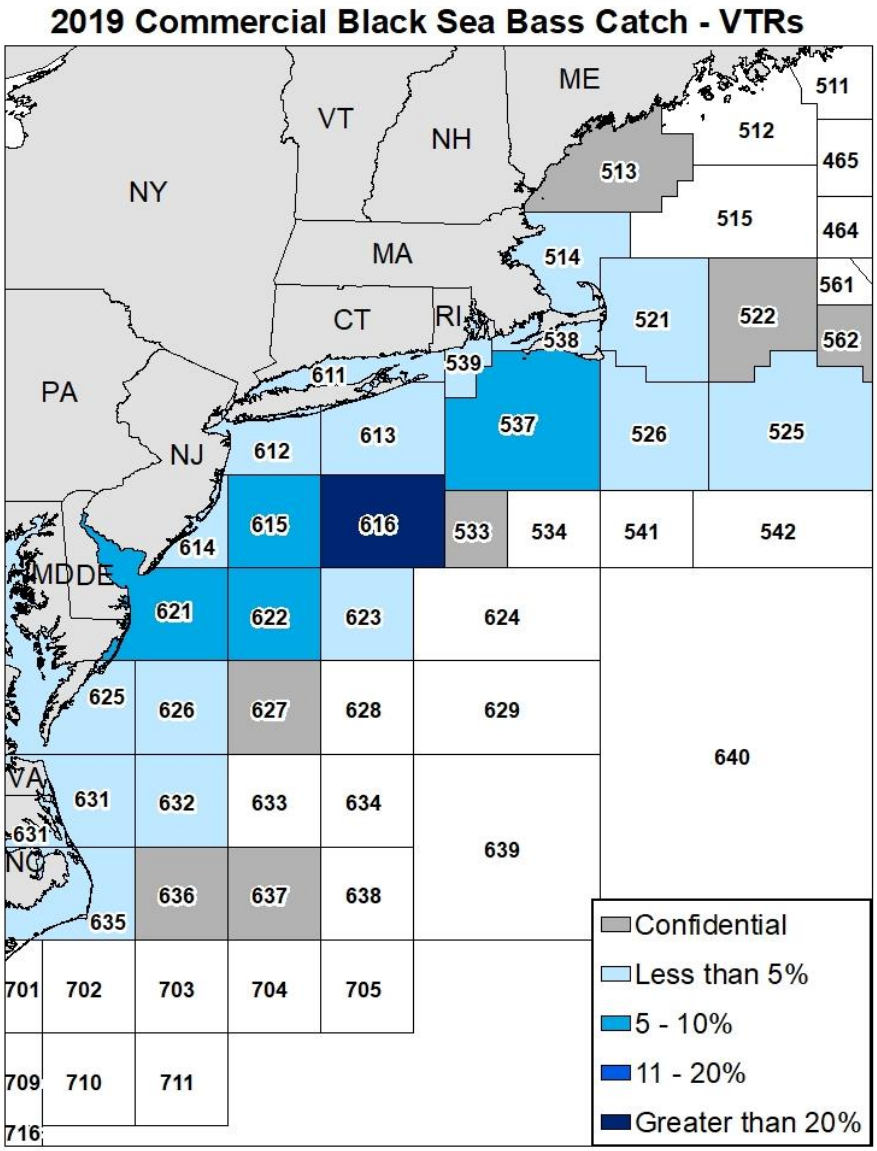

Figure 5: Proportion of black sea bass catch by statistical area in 2019 based on federal VTR data. Statistical areas marked "confidential" are associated with fewer than three vessels and/or dealers. Statistical areas with confidential data collectively accounted for less than 1% of commercial catch reported on VTRs in 2019. The amount of catch that was not reported on federal VTRs (e.g., catch from vessels permitted to fish only in state waters) is unknown. Northeast Fisheries Science Center Data ("AA tables") suggest that 20% of total commercial landings (state and federal) in 2019 were not associated with a statistical area reported on federal VTRs.[8,11]

Table 4: Allocation of commercial black sea bass quota among states under the Commission's FMP.

State	Allocation (percent)
Maine	0.5
New Hampshire	0.5
Massachusetts	13.0
Rhode Island	11.0
Connecticut	1.0
New York	7.0
New Jersey	20.0
Delaware	5.0
Maryland	11.0
Virginia	20.0
North Carolina	11.0
Total	100

Table 5: Ports reporting at least 100,000 pounds of black sea bass landings in 2019, associated number of vessels, and percentage of total commercial landings.[7]

Port name	Pounds of black sea bass landed	% of total commercial black sea bass landed	Number of vessels landing black sea bass
POINT PLEASANT, NJ	395,691	11%	40
OCEAN CITY, MD	369,507	10%	8
POINT JUDITH, RI	284,176	8%	315
HAMPTON, VA	266,307	8%	32
NEW BEDFORD, MA	217,593	6%	192
NEWPORT NEWS, VA	188,542	5%	17
BEAUFORT, NC	163,148	5%	52
CAPE MAY, NJ	161,095	5%	32
MONTAUK, NY	159,324	5%	126
CHINCOTEAGUE, VA	113,229	3%	8

Table 6: Number of dealers, by state, reporting purchases of black sea bass in 2019.[7]

State	ME	MA	RI	CT	NY	NJ	DE	MD	VA	NC
Number of dealers	C	29	30	12	48	29	C	5	16	20

Recreational Fishery

The Council develops coast-wide regulations for the recreational black sea bass fishery in federal waters, including a minimum fish size limit, a possession limit, and open and closed seasons (Table 7). The Commission and member states develop recreational measures in state waters (Table 8).

As previously described, the revised time series of MRIP estimates for black sea bass catch, harvest, and effort are substantially higher than the previous estimates, largely due to increased estimates for private anglers. Information presented in this section is based on the revised estimates.

Between 1981 and 2019, recreational catch of black sea bass from Maine through Cape Hatteras, NC was lowest in 1984 at 4.73 million fish and was highest in 2017 at 41.19 million fish. Recreational harvest in weight was highest in 2016 at 12.05 million pounds; however, harvest in numbers of fish was highest in 1986 at 19.28 million fish. Recreational harvest in weight was lowest in 1981 at 1.53 million pounds, while harvest in numbers of fish was lowest in 1998 at 1.56 million fish.[6]

In 2019, an estimated 4.38 million black sea bass, at about 8.61 million pounds, were harvested by recreational anglers from Maine through Cape Hatteras, North Carolina (Figure 3, Table 9).[6] Harvest prior to 2020 should not be compared against the respective RHLs as the RHLs prior to 2020 do not account for the recent changes in the MRIP estimation methodology.

In 2019, 62% of black sea bass harvested by recreational fishermen from Maine through North Carolina (in numbers of fish) were caught in state waters and about 38% in federal waters (Table 10). Most of the recreational harvest in 2019 was landed in New York (36%), followed by New Jersey (19%), Massachusetts, Rhode Island, and Connecticut (12 each%; Table 11).[6]

For-hire vessels carrying passengers in federal waters must obtain a federal party/charter permit. In 2019, 812 vessels held a federal party/charter permit.[10]

About 79% of the recreational black sea bass harvest in 2019 came from anglers fishing on private or rental boats, about 18% from anglers aboard party or charter boats, and 3% from anglers fishing from shore (Table 12).[6]

Table 7: Federal black sea bass recreational measures, Maine - Cape Hatteras, NC, 2007 - 2020.

Year	Min. size	Bag limit	Open season
2007-2008	12”	25	Jan 1 - Dec 31
2009	12.5”	25	Jan 1 - Oct 5
2010-2011	12.5”	25	May 22 - Oct 11; Nov 1 - Dec 31
2012	12.5”	25	May 19 - Oct 14; Nov 1 - Dec 31
2013	12.5”	20	Jan 1 - Feb 28; May 19 - Oct 14; Nov 1 - Dec 31
2014	12.5”	15	May 19 - Sept 18; Oct 18 - Dec 31
2015-2017	12.5”	15	May 15 - Sept 21; Oct 22 - Dec 31
2018-2020	12.5”	15	Feb 1 - 28; May 15 - Dec 31

Table 8: State waters black sea bass recreational measures in 2018-2020. Measures were the same across all years unless otherwise noted.

State	Min. Size	Bag Limit	Open Season
Maine	13”	10 fish	May 19 - Sept 21; Oct 18 - Dec 31
New Hampshire	13”	10 fish	Jan 1 - Dec 31
Massachusetts	15”	5 fish	2018: May 19 - Sept 12
			2019 & 2020: May 18 - Sept 8
Rhode Island	15”	3 fish	Jun 24 - Aug 31
		7 fish	Sept 1 - Dec 31
Connecticut private & shore	15”	5 fish	May 19 - Dec 31
CT authorized party/charter monitoring program vessels	15”	5 fish	May 19 - Aug 31
		7 fish	Sept 1- Dec 31
New York	15”	3 fish	Jun 23 - Aug 31
		7 fish	Sept 1- Dec 31
New Jersey	12.5”	10 fish	May 15 - Jun 22
		2 fish	Jul 1- Aug 31
		10 fish	Oct 8 - Oct 31
	13”	15 fish	Nov 1 - Dec 31
Delaware	12.5”	15 fish	May 15 - Dec 31
Maryland	12.5”	15 fish	May 15 - Dec 31
Virginia	12.5”	15 fish	2018: Feb 1 - 28; May 15 - Dec 31
			2019: Feb 1-28; May 15-31; June 22-Dec 31
			2020: Feb 1 - 28; May 29 - Dec 31
North Carolina, North of Cape Hatteras (35° 15’N)	12.5	15 fish	2018: Feb 1 - 28; May 15 - Dec 31
			2019: Feb 1 - 28; May 17 - Dec 31
			2020: Feb 1 - 28; May 17 - TBD

Table 9: Estimated recreational black sea bass catch and harvest from Maine through Cape Hatteras, North Carolina, 20010-2019, based on the revised MRIP estimates.[6]

Year	Catch (millions of fish)	Harvest (millions of fish)	Harvest (millions of pounds)	% of catch retained
2010	26.42	5.10	8.07	19%
2011	12.47	1.78	3.27	14%
2012	34.95	3.69	7.04	11%
2013	25.78	3.02	5.69	12%
2014	23.89	3.97	7.24	17%
2015	24.11	4.94	9.06	20%
2016	35.80	5.84	12.05	16%
2017	41.19	5.70	11.50	14%
2018	24.99	3.99	7.92	16%
2019	32.32	4.38	8.61	14%

Table 10: Estimated percentage of black sea bass recreational harvest (in numbers of fish) in state and federal waters, from Maine through North Carolina, 2010-2019, based on the revised MRIP estiamtes.[6]

Year	State waters	Federal waters
2010	64%	36%
2011	65%	35%
2012	69%	31%
2013	67%	33%
2014	68%	32%
2015	69%	31%
2016	59%	41%
2017	40%	60%
2018	61%	39%
2019	62%	38%
2010-2019 average	**61%**	**39%**
2017-2019 average	**53%**	**47%**

Table 11: State-by-state contribution to total recreational harvest of black sea bass (in number of fish), Maine through Cape Hatteras, North Carolina, 2017 - 2019, based on the revised MRIP estimates.[6]

State	2017	2018	2019	2017-2019 average
Maine	0%	0%	0%	0%
New Hampshire	0%	0%	0%	0%
Massachusetts	10%	17%	12%	13%
Rhode Island	6%	18%	12%	11%
Connecticut	9%	10%	12%	10%
New York	43%	21%	36%	35%
New Jersey	26%	26%	19%	24%
Delaware	2%	2%	1%	2%
Maryland	3%	4%	3%	3%
Virginia	2%	2%	5%	3%
North Carolina	<1%	<1%	<1%	<1%

Table 12: Percent of total recreational black sea bass harvest (in numbers of fish) by recreational fishing mode, Maine through Cape Hatteras, North Carolina, 2010-2019, based on the revised MRIP estimates.[6]

Year	Shore	Party/charter	Private/rental	Total Number of Fish in Millions
2010	1%	10%	90%	5,101,763
2011	3%	17%	80%	1,782,517
2012	1%	19%	80%	3,690,190
2013	2%	9%	89%	3,021,533
2014	3%	19%	78%	3,974,874
2015	0%	22%	78%	4,941,538
2016	4%	9%	88%	5,841,461
2017	1%	9%	90%	5,704,071
2018	1%	12%	87%	3,992,626
2019	3%	18%	79%	4,377,491
2010-2019 average	**2%**	**14%**	**84%**	**4,242,806**

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[5] More information on the Summer Flounder, Scup, and Black Sea Bass Commercial/Recreational Allocation Amendment is available at: https://www.mafmc.org/actions/sfsbsb-allocation-amendment.

[6] Personal communication from the National Marine Fisheries Service, Fisheries Statistics Division. Accessed June 18, 2020. Available at: https://www.st.nmfs.noaa.gov/recreational-fisheries/data-and-documentation/queries/index

[7] Unpublished NMFS commercial fish dealer data (i.e., "DERS"), which include both state and federal dealer data).

[8] Unpublished NMFS VTR data.

[9] More information on the Black Sea Bass Commercial State Allocation Amendment/Addendum is available at: https://www.mafmc.org/actions/bsb-commercial-allocation.

[10] Unpublished NMFS permit data.

[11] Unpublished NEFSC commercial fish dealer data (i.e., "AA tables"), which include both state and federal dealer data).

Additional public comments are behind Tab 5