



Mid-Atlantic Fishery Management Council
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Michael P. Luisi, Chairman | G. Warren Elliott, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: July 21, 2017
To: Council
From: Brandon Muffley, Staff
Subject: Review of 2018 Black Sea Bas Specifications

The following materials are provided for the Council and Board's review of previously implemented 2018 black sea bass specifications. The July 28, 2017 Advisory Panel webinar summary, once finalized, will be posted to the Council's website as a supplemental document for the August briefing materials.

Please note the Scientific and Statistical Committee meeting report is behind the Committee Reports tab (Tab 11) within the Business Session agenda item.

- 1) Monitoring Committee recommendations for black sea bass
- 2) July 2017 Scientific and Statistical Committee meeting report (behind Tab 11)
- 3) Staff memo on review of black sea bass management measures for 2018
- 4) Black Sea Bass Data Update for 2017
- 5) Advisory Panel Fishery Performance Report for black sea bass and additional written comments received through July 28, 2017
- 6) 2017 Black Sea Bass Fishery Information Document



Summer Flounder, Scup, and Black Sea Bass Monitoring Committee Webinar Meeting Summary - Black Sea Bass July 24, 2017

Monitoring Committee Attendees: Tiffany Vidal (MA DMF), Greg Wojcik (CT DEEP), John Maniscalco (NY DEC), Peter Clarke (NJ F&W), Rich Wong (DE DFW), Steve Doctor (MD DNR), Joe Cimino (VMRC), Todd Daniel VanMiddlesworth (NC DMF), Kiley Dancy (MAFMC staff), Kirby Rootes-Murdy (ASMFC staff), John Carmichael (SAFMC staff), Mark Terceiro (NMFS NEFSC)

Additional Attendees: Morgan Brunbauer (NY DEC), Katie Almeida (Town Dock), Mike Ruccio (NMFS GARFO), Jim (no last name provided)

General Comments

The Monitoring Committee (MC) does not currently have any formal control rules for the recommendation of Annual Catch Targets (ACTs). The MC recognizes the need to develop ACT control rules or guidelines for addressing management uncertainty in the future, which would be applicable to all three species.

Black Sea Bass Comments and Recommendations

The MC agreed with the staff recommendation for no changes to the currently implemented ACLs and ACTs for 2018 (Table 1). These measures were implemented earlier in 2017, and there is no data to suggest that changes are necessary at this time. In January 2017, the MC recommended no reduction in catch from the recreational and commercial ACLs, such that the ACTs are set equal to the ACLs.

At the January 2017 meeting, the MC noted that commercial landings have been very close to the commercial quotas in recent years. For the recreational fishery, the MC noted that recent large recreational overages occurred due to a rapidly expanding stock and very high availability, at a time when there was no approved stock assessment for black sea bass and the recreational harvest limits were not reflective of the large and increasing stock abundance. The new benchmark stock assessment should improve evaluation of fishery performance in future years. The MC and TC will continue to evaluate management uncertainty in the recreational fishery, the predictability and uncertainty in recreational catch estimates, and the influence of recreational regulations on harvest.

As stated in the January 2017 MC report, the group plans to closely evaluate actual 2017 discards compared to projected discards, given the substantial increase in quotas implemented in mid-2017 (82 FR 24078, May 25, 2017). During the January meeting, the MC had considered adjusting the projected commercial discards for 2017 due to the expectation that discards will decrease with an increase in quota. However, the MC noted the uncertainty associated with the discard estimates, as well as a potential for increased discards of undersized fish due to a potentially large 2015 year class. Therefore, the MC believed that the 3-year average used as a basis for discard projections is appropriate to account for this uncertainty.

The MC agreed with the staff recommendation that no changes be made to the commercial minimum fish size (11-inch total length) and gear requirements.

Regarding the potential for opening the wave 1 recreational fishery in 2018, the MC reiterated past comments that if the recreational fishery is open during January and February, there should be sampling and/or reporting requirements in place to produce catch estimates. It is important to document removals occurring from the fisheries, and wave 1 recreational catch (for states other than North Carolina) is currently not incorporated into final catch estimates or the stock assessments. In addition, the MC noted that an open wave 1 fishery for black sea bass may increase discards of other demersal species with closed seasons at that time. Specifically, if the Council and Board decide to open the black sea bass fishery in wave 1, consideration should be given to opening scup in wave 1 as well (in states where wave 1 is currently closed). The MC notes that given recent overages and high catch estimates in the recreational black sea bass fishery, the Council and Board should carefully consider the potential implications of opening wave 1 on the rest of the year's management measures.

Table 1: Currently implemented black sea bass catch and landings limits for 2017-2018. The SSC and Monitoring Committee recommend no changes to the implemented measures for 2018. Numbers may not add precisely due to unit conversions and rounding.

Management Measure	2017		2018		Basis
	<i>mil lb.</i>	<i>mt</i>	mil lb.	mt	
OFL	<i>12.05</i>	<i>5,467</i>	10.29	4,669	Stock assessment projections
ABC	<i>10.47</i>	<i>4,750</i>	8.94	4,057	Stock assessment projections/staff recommended application of Council risk policy
ABC Landings Portion	<i>8.41</i>	<i>3,814</i>	7.18	3,258	80.3% of ABC, based on average 2013 – 2015 % landings portion of total catch
ABC Discards Portion	<i>2.06</i>	<i>936</i>	1.76	799	19.7% of ABC, based on average 2013 – 2015 % discards portion of total catch
Commercial ACL	<i>5.09</i>	<i>2,311</i>	4.35	1,974	49% of ABC landings portion (per FMP allocation) + 47.2 % of ABC discards portion
Commercial ACT	<i>5.09</i>	<i>2,311</i>	4.35	1,974	Commercial ACL, less deduction for management uncertainty
Projected Commercial Discards	<i>0.97</i>	<i>442</i>	0.83	377	47.2% of ABC discards portion, based on 2013-2015 average % discards by sector
Commercial Quota	<i>4.12</i>	<i>1,869</i>	3.52	1,596	Commercial ACT, less discards
Recreational ACL	<i>5.38</i>	<i>2,439</i>	4.59	2,083	51% of ABC landings portion (per FMP allocation) + 52.8 % of ABC discards portion
Recreational ACT	<i>5.38</i>	<i>2,439</i>	4.59	2,083	Recreational ACL, less deduction for management uncertainty
Projected Recreational Discards	<i>1.09</i>	<i>494</i>	0.93	422	52.8 % of ABC discards portion, based on 2013-2015 average % discards by sector
Recreational Harvest Limit	<i>4.29</i>	<i>1,945</i>	3.66	1,661	Recreational ACT, less discards



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

MEMORANDUM

DATE: July 6, 2017

TO: Chris Moore, Executive Director

FROM: Brandon Muffley, Staff

SUBJECT: Review of Black Sea Bass Management Measures for 2018

Executive Summary

In February 2017, the Mid-Atlantic Fishery Management Council (Council) set two-year specifications for black sea bass, establishing revised catch and landings limits for the 2017 fishing year and new limits for 2018. These specifications were based on a benchmark stock assessment that was completed and peer reviewed in December 2016 (NEFSC 2017a). The Council and the Atlantic States Marine Fisheries Commission's Summer Flounder, Scup, and Black Sea Bass Management Board (Board) will review the 2018 black sea bass management measures during their joint meeting in August 2017. These measures may remain unchanged if the Scientific and Statistical Committee (SSC) determines that the previously recommended Acceptable Biological Catch (ABC) for 2018 (8.94 million pounds; 4,057 metric tons) is still appropriate and if the Council and Board recommend no changes to the previously implemented catch and landings limits. The Summer Flounder, Scup, and Black Sea Bass Monitoring Committee will also review recent fishery performance and make a recommendation to the Council and Board regarding any necessary modifications to the previously implemented 2018 Annual Catch Targets (ACTs) and commercial management measures (e.g., possession limits, quota period provisions, gear restrictions, and minimum fish size).

Based on the results of the benchmark stock assessment, the black sea bass stock north of Cape Hatteras, North Carolina was not overfished and overfishing was not occurring in 2015, the terminal year of the assessment. The model-estimated spawning stock biomass (SSB) in 2015 was 48.89 million pounds (22,176 mt), 2.3 times the spawning stock biomass at maximum sustainable yield, $SSB_{MSY} = 21.31$ million pounds (9,667 mt). The average fishing mortality on ages 4-7 (F_{4-7}) in 2015 was estimated at $F=0.27$, which is 25% below the fishing mortality threshold reference point $F_{MSYPROXY} = F_{40\%} = 0.36$.

The Northeast Fisheries Science Center (NEFSC) provided a data update on black sea bass fishery catch, landings, and discards, as well as NEFSC and state survey catches through 2016. No new stock projections or estimates of stock status are available. The data update indicates that black sea bass biomass continues to be high and the 2015 year class appears to be above average in many of the state surveys, (with the exception of NJ and VA) as well as the preliminary 2017 NEFSC survey. Reported 2016 landings in the

commercial fishery were 2.50 million pounds (1,133 mt), about 93% of the 2016 commercial quota (2.70 million pounds, 1,226 mt). Estimated 2016 landings in the recreational fishery were 5.19 million pounds (2,354 mt), about 184% of the recreational harvest limit (2.82 million pounds, 1,280 mt). Total commercial and recreational landings in 2016 were 7.69 million pounds (3,488 mt). Total commercial and recreational dead discards were 2.23 million pounds (1,011 mt). Total catch in 2016 was about 9.92 million pounds (4,500 mt), about 149% of the 2016 ABC (NEFSC 2017b).

Staff recommend maintaining the previously adopted 2018 ABC of 8.94 million pounds as the basis for black sea bass management measures in 2018. This ABC results in a commercial Annual Catch Limit (ACL) of 4.32 million pounds (1,974 mt) and a recreational ACL of 4.59 million pounds (2,083 mt). Consistent with the prior year Monitoring Committee recommendation, staff recommend no reduction from the commercial and recreational ACLs to account for management uncertainty; therefore, both the commercial and recreational ACTs are set equal to their respective ACLs for 2018. After removing projected discards, the previously implemented 2018 black sea bass commercial quota is 3.52 million pounds (1,596 mt) and the recreational harvest limit is 3.66 million pounds (1,661 mt; Table 1).

In 2015, the Council and Commission's Monitoring and Technical Committees conducted a thorough review of current summer flounder, scup and black sea bass commercial management measures (MAFMC 2015). No changes to black sea bass measures were adopted; however, Council and Board members indicated that additional exploration of some measures may be warranted, as described under "Other Management Measures" in this document. Additional data and analyses are needed to address the questions raised, and staff will continue to work with the Monitoring and Technical Committees on these issues. Results of the Council funded 2016-2017 Collaborative Fisheries Research Program study to analyze the selectivity of multiple codend mesh sizes in the summer flounder, scup and black sea bass fisheries will be available later this year may be used to inform future changes in these fisheries. At this time, staff do not recommend any changes to the current commercial measures, including the 11-inch minimum fish size, mesh size requirements and seasonal thresholds, or pot/trap gear requirements.

Table 1: Currently implemented multi-year catch and landings limits for black sea bass for 2017-2018.

Management Measure	2017		2018		Basis
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OFL	12.05	5,467	10.29	4,669	Stock assessment projections
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Introduction

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

Multi-year specifications may be set for black sea bass for up to three years at a time. The SSC must recommend ABCs that addresses scientific uncertainty, while the Monitoring Committee must recommend annual catch targets (ACTs) that address management uncertainty. Based on the SSC and Monitoring Committee recommendations, the Council will make a recommendation to the National Marine Fisheries Service (NMFS) Greater Atlantic Regional Administrator. Because the FMP is cooperatively managed with the Atlantic States Marine Fisheries Commission, the Commission's Summer Flounder, Scup, and Black Sea Bass Board will meet jointly with the Council to recommend black sea bass catch limits and management measures. In this memorandum, information is presented to assist the SSC and Monitoring Committee in developing recommendations for the Council and Board to consider for the 2018 fishing year for black sea bass.

Additional relevant information about fishery performance and past management measures is presented in the June 2017 Black Sea Bass Fishery Information Document prepared by Council staff and the June 2017 Fishery Performance Report for black sea bass developed by the Council and Commission Advisory Panels. These documents are available at: <http://www.mafmc.org/council-events/2017/july-2017-ssc-meeting>.

Recent Catch and Landings

Reported 2016 commercial black sea bass landings were approximately 2.50 million pounds (corresponding to 93% of the commercial quota), an increase from 2.29 million pounds in 2015 which corresponds to an increase in the 2016 quota. Preliminary 2017 coastwide commercial landings, according to the NMFS weekly quota reports as of the week ending June 24, 2017, indicate landings totaled 1.63 million pounds (738 mt) which accounts for 39% of the 2017 coastwide commercial quota (Table 2).

According to the Marine Recreational Information Program (MRIP) estimates, recreational landings in 2016 north of Cape Hatteras, North Carolina were 5.19 million pounds (1,719 mt), approximately 84% above the 2016 RHL of 2.82 million pounds. This was the highest recreational black sea bass harvest, in pounds, since 1995.

Table 2: 2017 black sea bass commercial quota and landings by state for the week ending June 24, 2017.

State	Cumulative Landings (lb)	Quota (lb) ^a	Percent of Quota (%)
ME	0	--	--
NH	0	--	--
MA	16,069	--	--
RI	238,961	--	--
CT	11,617	--	--
NY	124,524	--	--
NJ	322,048	--	--
DE	32,733	--	--
MD	289,763	--	--
VA	309,272	--	--
NC	279,930	--	--
Other	1,169	--	--
Totals	1,626,086	4,120,000	39

^a State-by-state quotas contained in the Commission's FMP are not administered or monitored in-season by GARFO. Source: NMFS Weekly Quota Report for week ending June 24, 2017.

Currently Implemented 2017-2018 ABCs

The 2016 benchmark stock assessment for black sea bass serves as the basis for setting black sea bass catch and landing limits (NEFSC 2017a). At their January 2017 meeting, the SSC reviewed the most recent black sea bass benchmark stock assessment and peer review results, and provided recommendations for annual ABC levels for 2017-2019 (MAFMC 2017). The SSC recognized the substantial improvement in the black sea bass stock assessment and accepted the OFL estimates produced by the stock assessment for management use. The SSC determined the level of uncertainty of the OFL derived from the assessment required an SSC-specified coefficient of variation (CV) and recommended a CV of 60%. The SSC recognized the assessment conducted a thorough analysis and simulation testing regarding the unique life history (i.e. protogynous hermaphroditism) of black sea bass and concluded that no additional buffer for an atypical life history be applied and therefore used a probability of overfishing (p^*) of 40%. Based on this application of the Council's risk policy, the resulting SSC-recommended ABCs were 10.47 million pounds for 2017, 8.94 million pounds for 2018, and 7.97 million pounds for 2019. The declining pattern of the ABCs reflects the population responding to fishing at the OFL (F_{MSY}) and also the declining 2011 year class exiting the fishery. The stock assessment estimated the 2011 year class to be 68.9 million fish, nearly three times the average of 24.3 million fish and therefore this year class has played a key role in recent black sea bass stock dynamics.

The Council and Board set black sea bass specifications for the 2017-2018 fishing years in February 2017 based on the SSC's ABC recommendations. The Council and Board did not set specifications for 2019 due to uncertainties related to a possibly large 2015 year class as well as the possibility of incorporating revised recreational catch estimates into an assessment update in 2018 that will be used for future year specification setting.

Table 3: ABC total catch, landings, discards, fishing mortality (F) and Spawning Stock Biomass (SSB) based on projections (2017-2018) from the 2016 benchmark black sea bass stock assessment (NEFSC 2017a). Projected catch, landings, discards, and SSB for 2017-2018 were calculated using a typical life-history application ($p^*=0.40$) and a 60% OFL CV.

Year	ABC Total Catch (mil lb)	ABC Total Catch (mt)	Landings (mil lb)	Landings (mt)	Discards (mil lb)	Discards (mt)	F	SSB (mil lb)	SSB (mt)
2016	6.67	3,024	5.53	2,510	1.13	514	0.27	41.11	18,647
2017	10.47	4,750	8.41	3,814	2.06	936	0.36	35.88	16,275
2018	8.94	4,057	7.18	3,258	1.76	799	0.36	31.29	14,183

The SSC considered the following to be the most significant sources of uncertainty with the determination of an OFL and ABC from the 2016 benchmark assessment (MAFMC 2017):

- 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

Stock Status and Biological Reference Points

The benchmark stock assessment for black sea bass was peer-reviewed and approved at the 62nd Stock Assessment Review Committee (SARC 62) in December 2016 (NEFSC 2017a). To address concerns raised during the SAW/SARC 53 review (NEFSC 2012) regarding potential spatial structure of the stock, the assessment modeled black sea bass 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 spawning stock biomass (SSB) across sub-units were used to develop stock-wide reference points. As the result of this new information and changes to the modeling approaches, new biological reference points were developed as part of the assessment. Due to the lack of a stock/recruit relationship, a direct calculation of MSY and associated reference points (F and biomass) was not feasible and proxy reference points were approved for management use. SSB calculations and SSB reference points include both mature males and females. The average fishing mortality threshold for black sea bass is $F_{MSY} = F_{40\%}$ (as $F_{MSYproxy} = 0.36$, and the combined $SSB_{MSYproxy}$ target is 21.3 million pounds (9,667 mt). The minimum stock size threshold, $\frac{1}{2} SSB_{MSY}$ is estimated to be 10.7 million pounds (4,834 mt).

The 2016 benchmark assessment indicated that the black sea bass stock was not overfished and overfishing was not occurring in 2015, relative to the biological reference points. The average fishing mortality on ages 4-7 (F_{4-7}) in 2015 was estimated at $F=0.27$, which is 25% below the fishing mortality threshold of $F=0.36$. Total spawning stock biomass in 2015 was estimated at 48.9 million pounds (22,199 mt) which is 2.3 times above the target $SSB_{MSYproxy}$ of 21.3 million pounds (9,667 mt) and 4.6 times higher than the biomass threshold $SSB_{MSYproxy}$ of 10.7 million pounds (4,834 mt). Total January 1 stock biomass in 2015 was estimated at 70.7 million pounds (32,061 mt). The terminal year estimates of F and SSB provided here are retrospectively adjusted and do not change stock status.

Recruitment estimated by the model was relatively constant through the time series except for large peaks from the 1999 and 2011 year classes. Average recruitment from 1989 – 2015 equaled 24.3 million fish with the 1999 year class estimated at 37.3 fish and the 2011 year class estimated at 68.9 million fish. Since 2012, recruitment has been average with the latest cohort (2014 year class) estimated to be 24.9 million fish. The 2015 year class appears to be above average in many of the state surveys, (with the exception of NJ and VA) as well as the preliminary 2017 NEFSC survey.

Catch and survey data through 2016 indicate that black sea bass SSB remains high and the 2015 year class appears to be large (NEFSC 2017b).

Other Management Measures

Recreational and Commercial Annual Catch Limits

As defined by the Omnibus ACLs and AMs Amendment (Amendment 15 to the Summer Flounder, Scup, and Black Sea Bass FMP), the ABC includes both landings and discards, and is equal to the sum of the commercial and recreational ACLs for black sea bass (Figure 1). The Monitoring Committee is responsible for recommending ACLs and ACTs derived from the ABC recommendations of the SSC. The catch projections provided by the NEFSC are not separated into projected landings and discards. Data taken directly from the stock assessment was used to derive sector-specific ACL recommendations from the SSC approved ABCs. Specifically, the ABCs are apportioned into total landings and discards based on the 2013-2015 average portion of the catch which are believed to be most representative of the current fishery. Based on this evaluation, ABCs are apportioned into 80.3% landings and 19.7% discards. An evaluation of the proportion of landings and discards using the 2014-2016 average catch was conducted to compared to current ratios used to apportion the ABC. Using the updated average information, landings comprise 78% of the total catch and discards account for 22% of the catch. The slightly higher proportion of discards observed during this time period correspond to the peak black sea bass SSB and the lower landing limits in place. It is anticipated that discards will decline in 2017 and 2018 as some discards will be converted to landings as a result of the substantially higher 2017-2018 specifications and due to the declining sea bass SSB as the 2011 year class begins to decline in abundance and exit the fishery. Based on the allocation percentages in the FMP, 49% of the total allowable landings are allocated to the commercial fishery, and 51% to the recreational fishery.

Staff recommend no changes to the previously implemented 2018 commercial ACL of 4.35 million pounds (1,974 mt) and recreational ACL of 4.59 million pounds (2,083 mt).

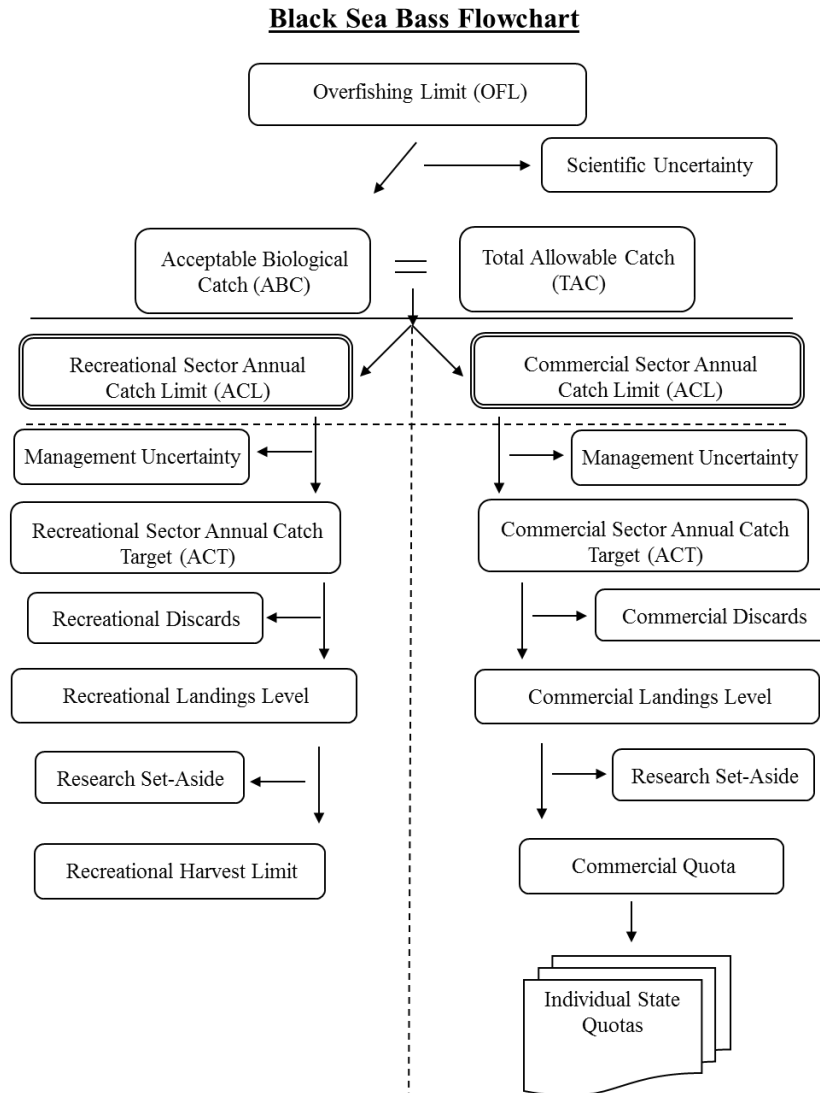


Figure 1: Flowchart for black sea bass catch and landings limits.

Annual Catch Targets

The Monitoring Committee is responsible for recommending Annual Catch Targets (ACTs), which are intended to account for management uncertainty, for the Council and Board’s consideration. The Monitoring Committee is responsible for considering all relevant sources of management uncertainty in the black sea bass fishery and providing the technical basis, including any formulaic control rules, for any reduction in catch when recommending an ACT. The ACTs, technical basis for ACT recommendations, and sources of management uncertainty should be described and provided to the Council. The relationships between the recreational and commercial ACTs and other catch components are given in Figure 1.

Management uncertainty is comprised of two parts: uncertainty in the ability of managers to control catch and uncertainty in quantifying the true catch (i.e., estimation errors). Management uncertainty can occur because of a lack of sufficient information about the catch (e.g., due to late reporting, underreporting,

and/or misreporting of landings or discards) or because of a lack of management precision (i.e., the ability to constrain catch to desired levels).

The sector-specific landings performance in recent years indicates that the commercial landings have generally been near the commercial quotas for most of the past five years (2012-2016) with less than a 1% difference between landings and the quota over this time period. The commercial quota monitoring system is timely and typically successful in constraining landings to the commercial quota. In contrast, the recreational fishery has generally exceeded its harvest limits in recent years, with periodic substantial overages (Table 4). The Monitoring Committee has noted that these recreational overages occurred when the black sea bass stock was rapidly expanding and availability to recreational anglers was very high. At the same time, due to the lack of an approved stock assessment for black sea bass the recreational harvest limits were set at levels not reflective of the large and increasing stock abundance; therefore, prior to 2017, making any consideration of recreational performance difficult to evaluate. Analysis using the 2016 stock assessment indicates that recreational harvest limits during the last few years would have been significantly higher (i.e. 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. Over the last two years, the Monitoring Committee and ASMFC Technical Committee have spent a great deal of time developing 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. These Committees plan continue to work to make improvements to the evaluation process for recreational measures. Staff recommend no changes to the currently implemented ACTs for 2018, which include no reduction in catch from the recreational or commercial ACLs so that each sector's ACT is set equal to the ACL.

Table 4: Black sea bass commercial and recreational fishery performance relative to quotas and harvest limits, 2012-2016.

Year	Commercial Landings (mil lb)	Commercial Quota (mil lb)	Percent Overage(+)/ Underage(-)	Recreational Landings (mil lb)	Recreational Harvest Limit (mil lb)	Percent Overage(+)/ Underage(-)
2012	1.72	1.71	+1%	3.19	1.32	+142%
2013	2.26	2.17	+4%	2.46	2.26	+9%
2014	2.18	2.17	0%	3.67	2.26	+62%
2015	2.29	2.21	+4%	3.79	2.33	+63%
2016	2.50	2.70	-7%	5.19	2.82	+84%
5-yr Avg.	-	-	-0.09%	-	-	+66.5%

Commercial Quotas and Recreational Harvest Limits

Projected discards are subtracted from the sector-specific ACTs to derive landings limits, which include annual commercial quotas and recreational harvest limits. Projected discards from the stock assessment are apportioned between the recreational and commercial fisheries using the average percentage of dead discards attributable to each sector over the past three years. Based on 2013-2015 discard data, 47.2% of discards were attributable to the commercial sector, and 52.8% to the recreational sector (Table 1). An evaluation of the 2014-2016 average discard information indicates a slight change with 48% of the discards attributable to the commercial sector and 52% to the recreational sector. The Monitoring Committee plans to evaluate discards and the ratios apportioned in the ABC and for each sector over the next couple of years to consider expected changes in discards resulting from changes in quota; specifically, the expectation that commercial discards will decrease with an increase in quota.

Table 5: The Commission state-by-state commercial allocation percentages.

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

Specific management measures that will be used to achieve the harvest limit for the recreational fishery in 2018 will not be determined until after the first four waves of 2017 recreational landings are reviewed. These data will become available in October 2017. The Monitoring Committee will meet in November to review these data and make recommendations regarding any necessary changes in the recreational management measures (i.e., possession limit, minimum size, and season). The Board has initiated an addendum to develop recreational black sea bass management options for 2018. The addendum will evaluate the current ad-hoc regional management approach and develop options that achieve consistent/similar management measures within a region and alternatives to the existing regional structure (MA-NJ/DE-NC). The Council and Board are also considering the potential re-opening of the Wave 1 (January/February) recreational black sea bass season. Specific measures for Wave 1 and its implications for the rest of the recreational black sea bass season are currently being developed and evaluated for consideration at the joint Council and Board meeting in August 2017.

Given the performance of the recreational fishery relative to the recreational harvest limit in recent years and continued high recreational catch and harvest of black sea bass, the Monitoring Committee and ASMFC Technical Committee will need to continue to closely monitor and evaluate the effectiveness of

management measures (i.e., minimum size, possession limits, and seasons) designed to achieve the recreational harvest limit while preventing the recreational ACL from being exceeded. Potential management changes for 2018 currently under consideration by the Council and Board will need to be factored into this evaluation. Significant strides have been made recently by the Monitoring Committee and Technical Committee in developing new and alternative methodologies used to develop and evaluate effective recreational measures, taking into consideration the uncertainty in the recreational catch estimates and the performance of past measures. The Committees need to continue and finalize their evaluation and analyses for use in the development of 2018 recreational management measures.

Commercial Gear Regulations and Minimum Fish Size

Management measures in the commercial black sea bass fishery, other than quotas and harvest limits (i.e., minimum fish size, gear requirements, etc.), have remained constant since 2007.

Amendment 9 in 1996 incorporated black sea bass into the Summer Flounder FMP, and established an initial minimum fish size of 9 inches total length as part of an effort to reduce fishing mortality on immature black sea bass and increase spawning stock biomass. The Council and Commission increased the commercial minimum size to 10 inches TL in 1998, and to 11 inches TL in 2002. The 11-inch minimum size has remained unchanged since 2002.

Amendment 9 also established gear regulations that became effective in December of 1996, and were modified in 1998 and again in 2002. Current regulations, unchanged since 2002, state that trawl vessels whose owners have a black sea bass moratorium permit and possess 500 pounds or more of black sea bass from January 1 through March 31, or 100 pounds from April 1 through December 31 (i.e., the threshold or incidental possession limits), must fish with nets that have a minimum mesh size of 4.5-inch diamond mesh applied 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.

The Council and Commission adopted modifications to the circle vent size in black sea bass pots/traps, effective in 2007, based on the findings of a Council and Commission sponsored workshop. The minimum circle vent size requirements for black sea bass pots/traps were increased from 2.375 inch to 2.5 inch. The requirements of 1.375 inch x 5.75 inch for rectangular vents and 2 inch for square vents remained unchanged. In addition, 2 vents are required in the parlor portion of the pot/trap.

In the fall of 2015, the Council and Commission's Monitoring and Technical Committees conducted a thorough review of current commercial management measures (MAFMC 2015). The Committees, and subsequently the Council and Board, indicated that further exploration of some of these measures may be justified. Specifically, for black sea bass, this included assessing the feasibility of a common minimum mesh size for summer flounder, scup, and black sea bass, as well as summarizing past studies on mesh sizes and pot/trap configuration requirements for all three species. Stemming from this discussion, the Council funded a proposal received under the Council's 2016-2017 Collaborative Fisheries Research Program. This project proposes to analyze 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. The results of this study should be available in mid-2017 and may inform future consideration of adjustments to the black sea bass, scup, and/or summer flounder mesh sizes. At this time, staff do not recommend any changes to the current commercial measures, including the 11-inch minimum fish size, seasonal mesh size requirements and thresholds (4.5-inch mesh with 500-pound trigger from January-

March and 100-pound trigger from April-December), or other gear requirements (current pot/trap vent requirements detailed above).

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Black Sea Bass 2016 Catch and Survey Information for Stock North of Cape Hatteras, NC

Report to the Mid-Atlantic Science and Statistical Committee

NOAA Fisheries Service
Northeast Fisheries Science Center
166 Water Street
Woods Hole, MA
July, 2017



Commercial Fishery

Landings in 2016 were 1,133 mt, predominately from otter trawls and fish pots, an increase from 1,113 mt in 2015. The majority of landings were reported from the Mid-Atlantic statistical areas between New York and Delaware.

Table 1. Commercial black sea bass landings (mt) by market category and region.

	unclassified	jumbo	large	medium	small	Grand Total
North	29.7	344.6	372.6	74.4	4.9	826.2
South	12.3	67.0	86.9	120.1	20.9	307.1
Grand Total	42.0	411.7	459.4	194.5	25.8	1,133.4

Table 2. Commercial black sea bass landings (mt) by gear type, and region.

	Handline	Trawl	Pot	Other	Total
North	61.7	507.5	163.3	93.8	826.2
South	14.2	102.5	145.6	44.9	307.1
Total	75.9	610.0	308.8	138.7	1133.4
North %	7%	61%	20%	11%	
South %	5%	33%	47%	15%	

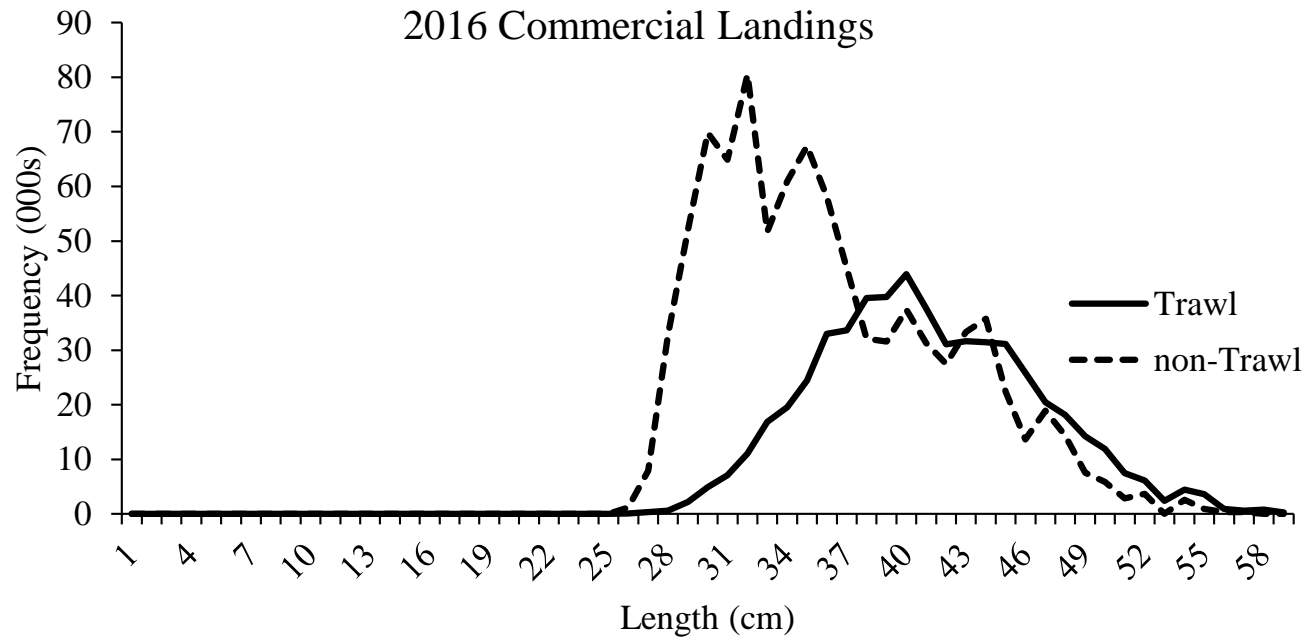


Figure 1. Length frequency of 2016 black sea bass commercial landings by gear category.

Commercial Discards

Commercial discards from otter trawls were estimated from Northeast Fisheries Observer trips discard to kept all ratios. All other gears were estimated from discarded sea bass recorded in Vessel Trip Reports by gear and are likely underestimates. Discard mortality rates as in previous assessment, with 100% from trawls and gillnets and 15% for pots and handlines.

Table 3. Commercial black sea bass discards (mt) by gear and region from 2016.

2016	Source	NEGEAR	MT
NORTH	OBS	Otter trawl	62.2
	VTR	Handline	1.6
	VTR	Fish pots	17.4
	VTR	Other pots	0.7
SOUTH	OBS	Otter trawl	368.9
	OBS	Gillnet	4.5
	VTR	Handline	0.4
	VTR	Fish pots	4.0
	VTR	Other pots	0.6
TOTAL			460.3

Recreational Fishery

Recreational landings in 2016 for Maine through Cape Hatteras, NC were 2.543 million fish equal to 2,352 mt. Total discards (B2 only) were 11.595 million fish. Assuming a discard mortality rate of 15%, discard losses equal 1.739 million fish and 551 mt. Black sea bass catch from vessel trip reports for January-February party/charter vessels was negligible. Recreational catch split into North and South regions as used in the assessment show the majority of the landings and discards occurred in the north (NY and north as a proxy for north of Hudson Canyon).

Table 4. Recreational black sea bass catch (number) by year. A mortality rate of 15% applied to live discards (B2).

	number	kg
NorthAB1	2,115,172	2,077,981
North B2 * 0.15	1,163,417	439,884
South AB1	428,207	274,246
South B2 * 0.15	575,892	110,791
Total	4,282,688	2,902,903

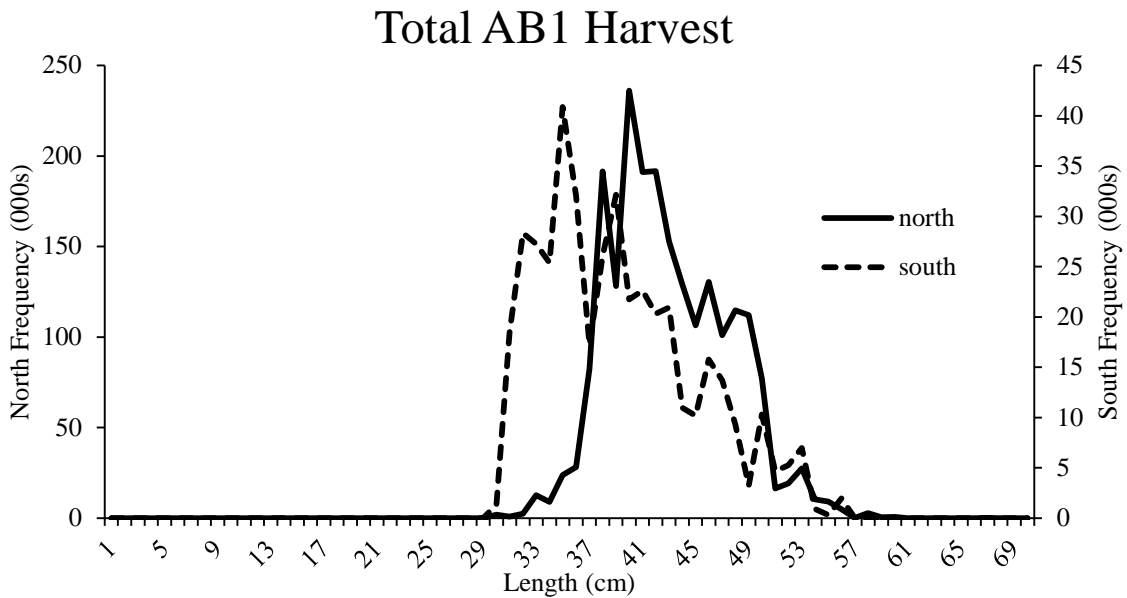


Figure 2. Length frequency (TL cm) of 2016 black sea bass recreational harvest (AB1), by region (Cape Hatteras, NC –NJ, NY-ME). Note that minimum sizes south of New Jersey are 12”.

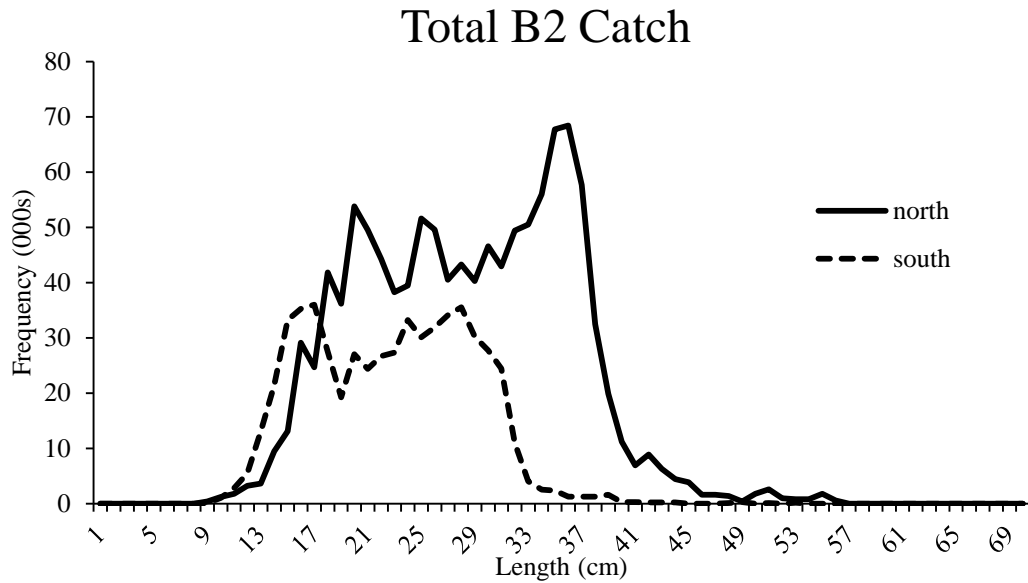


Figure 3. Length frequency (TL cm) of 2016 black sea bass recreational discards (B2*15%), by region (Cape Hatteras, NC-NJ, NY-ME).

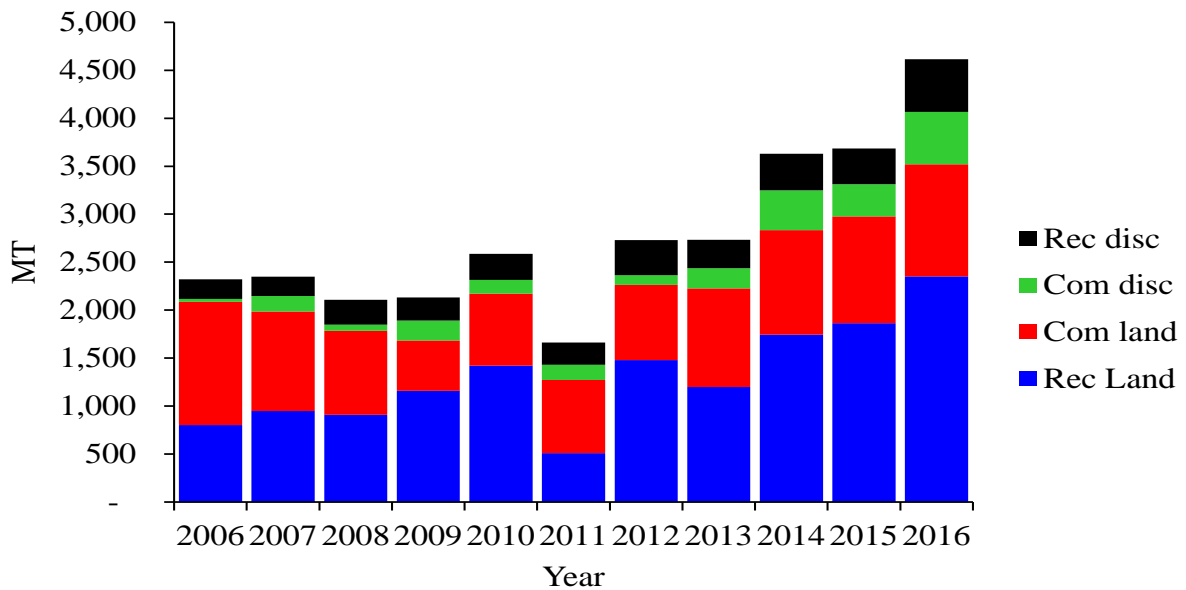


Figure 4. Black sea bass catch, Maine to Cape Hatteras, North Carolina 2006-2016.

Table 5. Summary of black sea bass total catch (mt), 2006-2016.

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Min	Max
Commercial landings	1,285	1,037	875	523	751	765	782	1,027	1,088	1,113	1,133	523	1,285
Commercial discard	30	164	66	209	142	157	103	211	416	335	460	30	460
Recreational landings	802	947	909	1,159	1,421	507	1,480	1,198	1,745	1,864	2,352	507	2,700
Recreational discards	203	200	257	241	273	232	364	296	382	371	551	200	551
Total Catch	2,320	2,349	2,107	2,132	2,587	1,662	2,729	2,733	3,631	3,683	4,496	1,662	4,844
Spawning stock biomass	4,551	4,072	5,594	6,460	8,215	8,258	9,878	12,833	17,158	16,552	-	2,485	17,158
Recruitment (age 1, millions)	19.7	22.2	27.5	22.4	22.6	22.1	68.9	27.6	17.8	24.9	-	11.9	68.9
F full ¹	0.66	0.78	0.57	0.50	0.45	0.30	0.35	0.33	0.29	0.24	-	0.24	1.34

¹ F on fully selected ages 4-7. Note that table values are not retro adjusted.

Survey data is presented for the northern and southern regions as defined in the SARC62 black sea bass stock assessment (<https://www.nefsc.noaa.gov/publications/crd/crd1703/>). The strong 2011 cohort which was dominant in the northern region continues to be a large component of surveys north of Hudson Canyon. The abundance indices from the NEFSC surveys show increasing abundance in the north and below average indices in the southern region, although increasing in 2017. The 2015 cohort appears to be above average to strong in many of the state surveys, (with the exception of NJ and VA) as well as the preliminary 2017 NEFSC survey.

NEFSC Survey – Northern Region

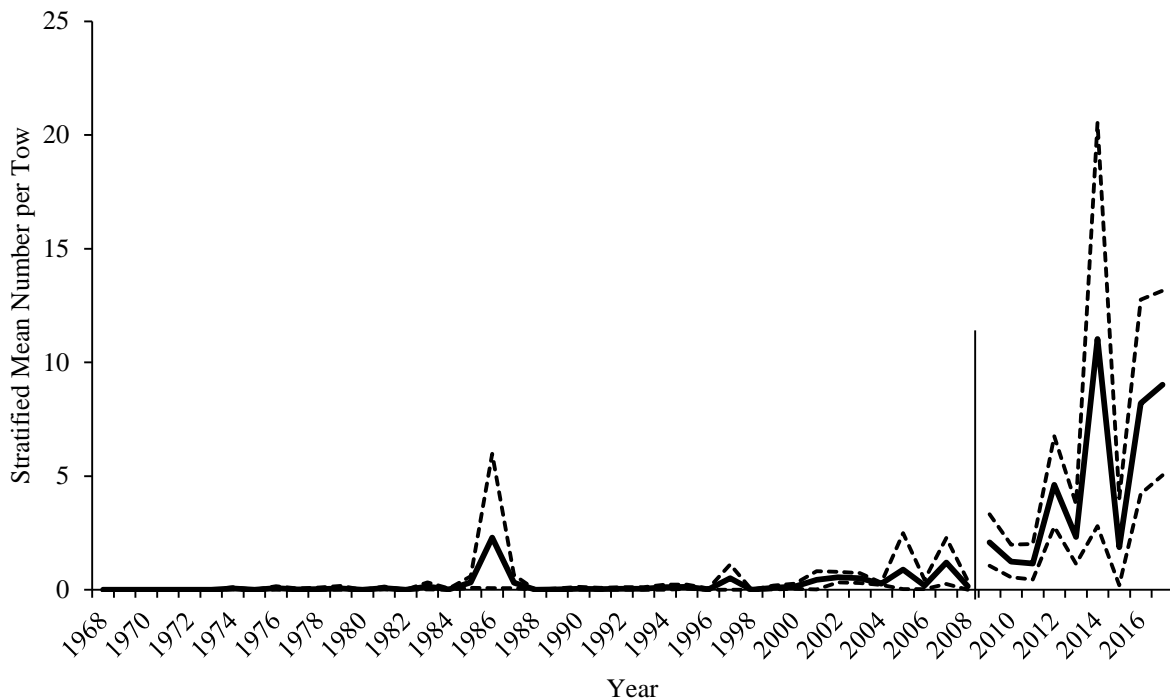


Figure 8. NEFSC spring north offshore stratified mean number per tow (\pm 90% CI) of black sea bass, 1968-2017. Vertical line identifies split between the Albatross and Bigelow survey series. Bigelow data presented as separate series for 2009-2017.

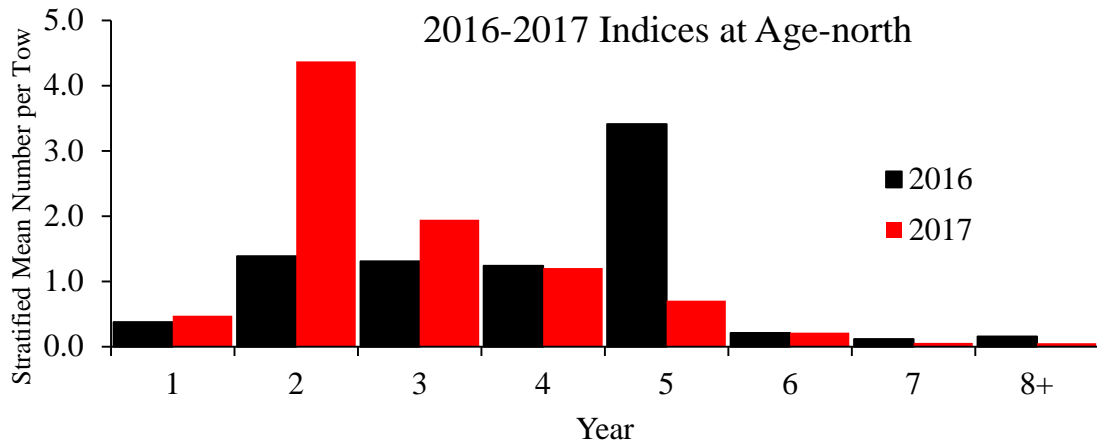


Figure 9. NEFSC spring indices at age from northern region. 2017 ages based on application of multi-year age length key.

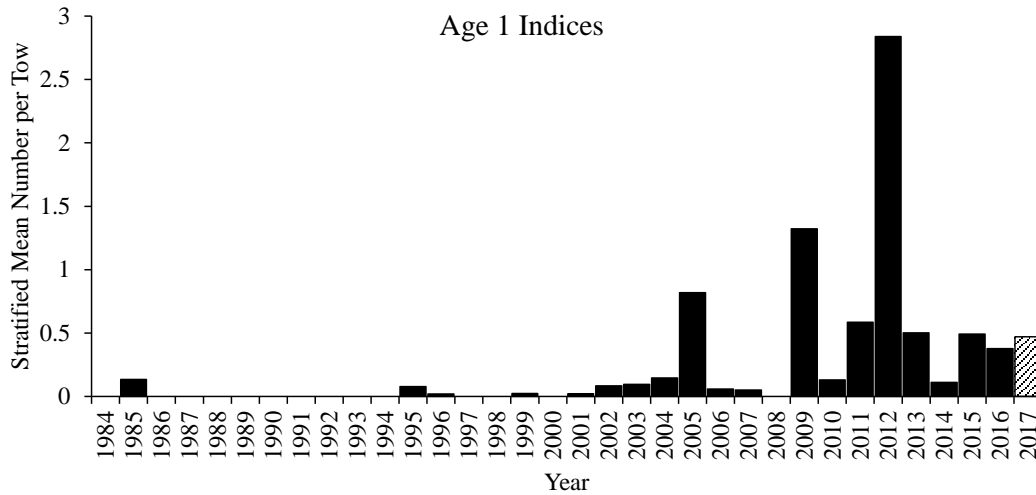


Figure 10. Indices of black sea bass recruitment (mean #/tow, age 1) in northern region from NEFSC spring offshore survey, 1984-2017. Bigelow indices from 2009-2017 not calibrated to Albatross units. 2017 age based on application of multi-year age length key.

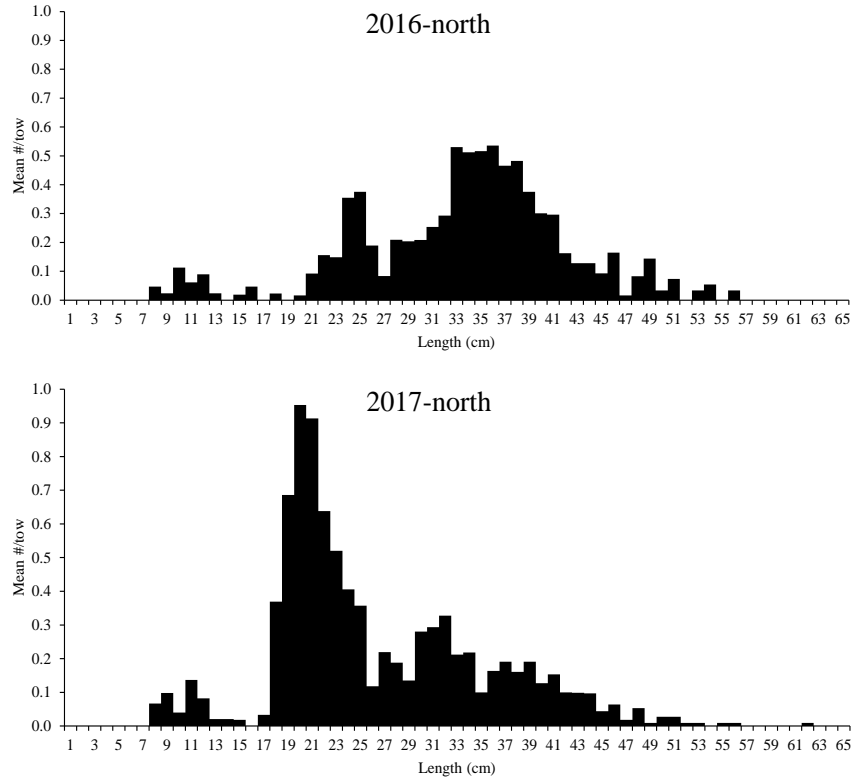


Figure 11. Length composition of NEFSC spring survey in northern region, 2016 and 2017.

NEFSC Survey – Southern Region

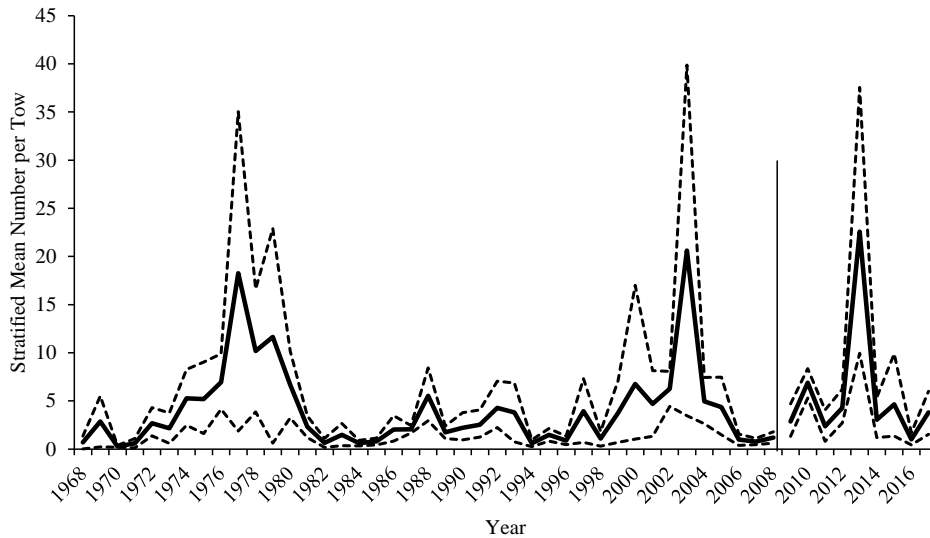


Figure 12. NEFSC spring south offshore stratified mean number per tow (\pm 90% CI) of black sea bass, 1968-2017. Vertical line identifies split between the Albatross and Bigelow survey series. Bigelow data presented as separate series for 2009-2017.

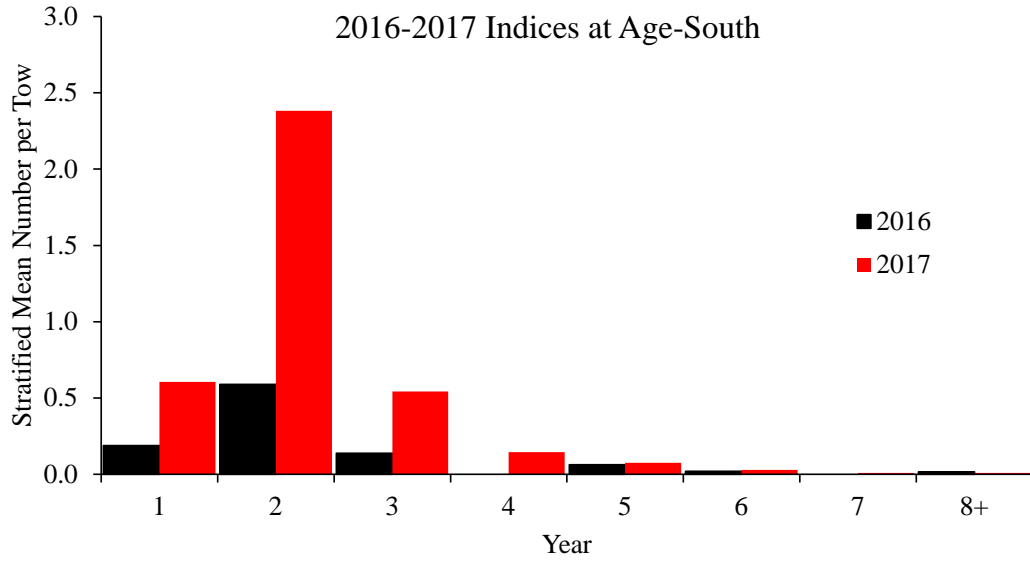


Figure 13. NEFSC spring indices at age from southern region. 2017 ages based on application of multi-year age length key.

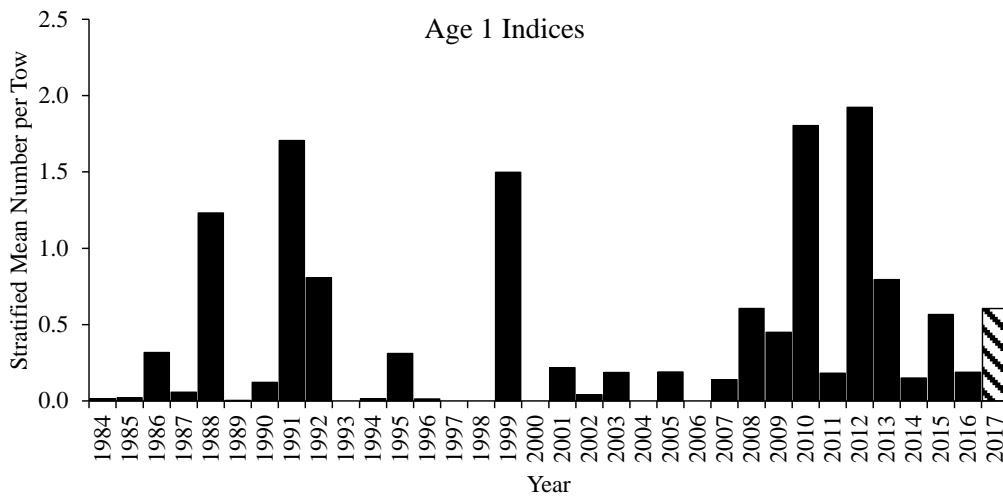


Figure 14. Indices of black sea bass recruitment (mean #/tow, age 1) in southern region from NEFSC spring offshore survey, 1984-2017. Bigelow indices from 2009-2017 not calibrated to Albatross units.

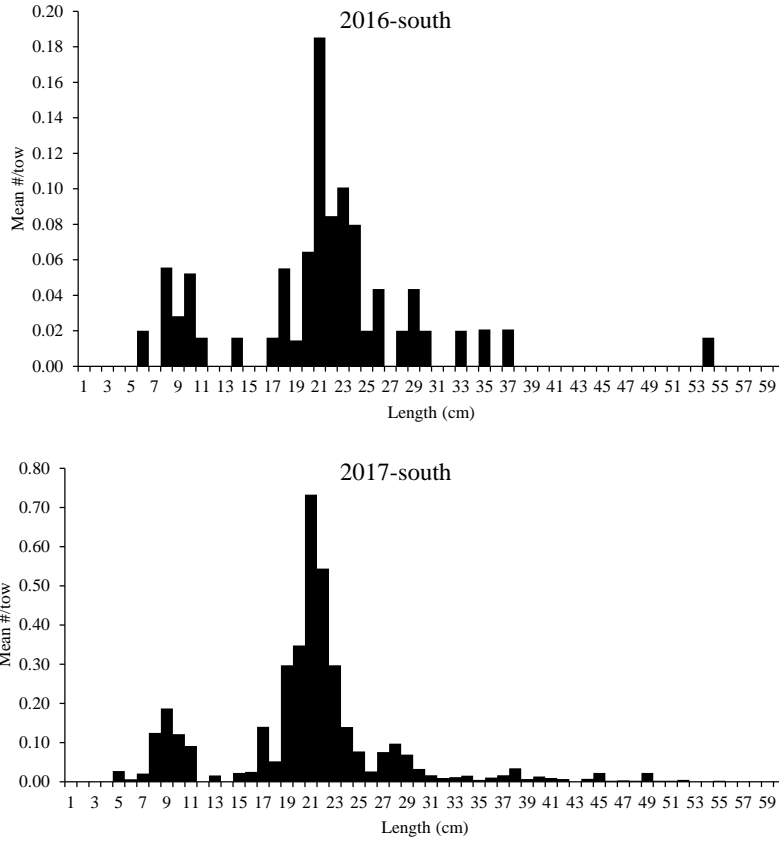


Figure 15. Length composition of NEFSC spring survey in southern region, 2016 and 2017.

NEAMAP Survey-Northern Region

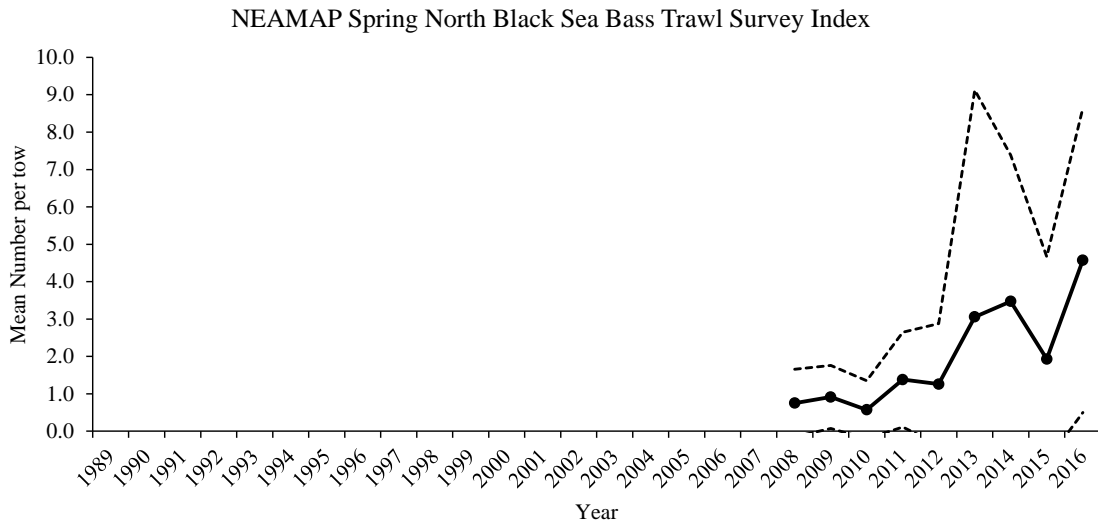


Figure 16. NEAMAP spring Northern stratified mean number per tow (\pm 90% CI) of black sea bass, 2008-2016.

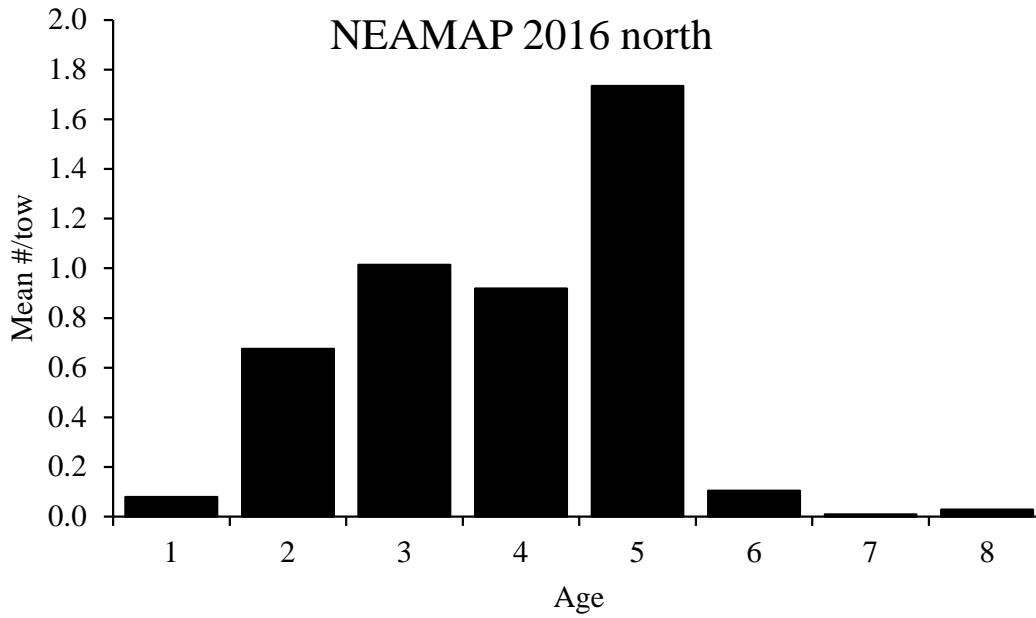


Figure 17. NEAMAP 2016 spring Northern stratified mean number per tow at age of black sea bass.

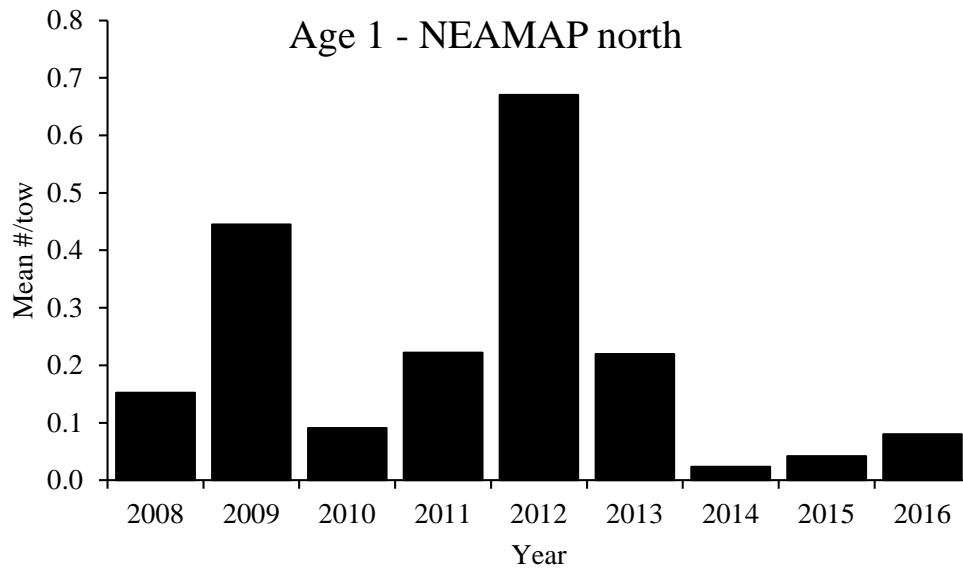


Figure 18. NEAMAP spring Northern stratified mean number per tow at age one of black sea bass, 2008-2016.

NEAMAP Survey-Southern Region

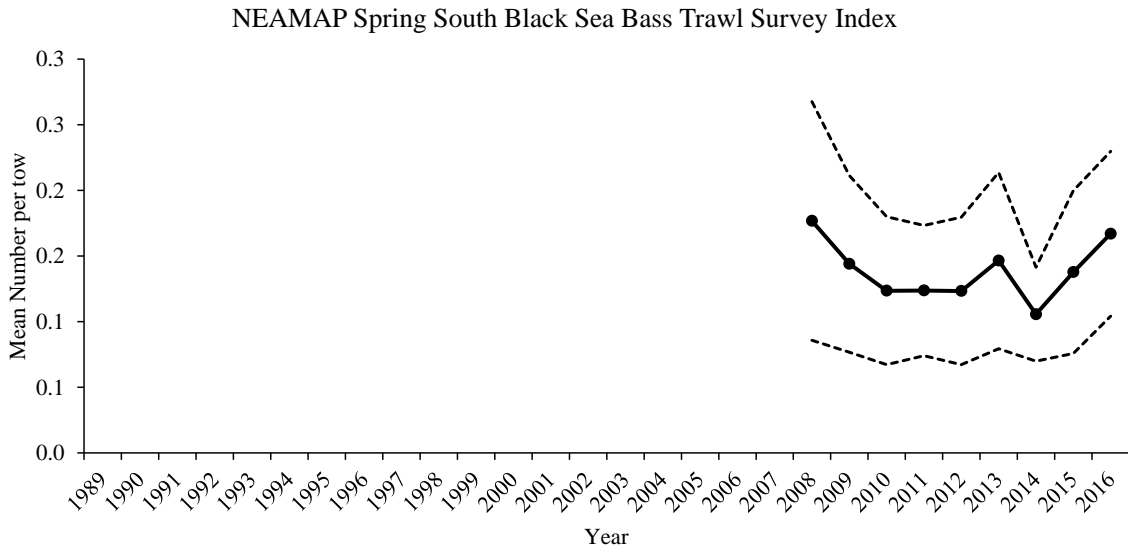


Figure 19. NEAMAP spring Southern stratified mean number per tow (\pm 90% CI) of black sea bass, 2008-2016.

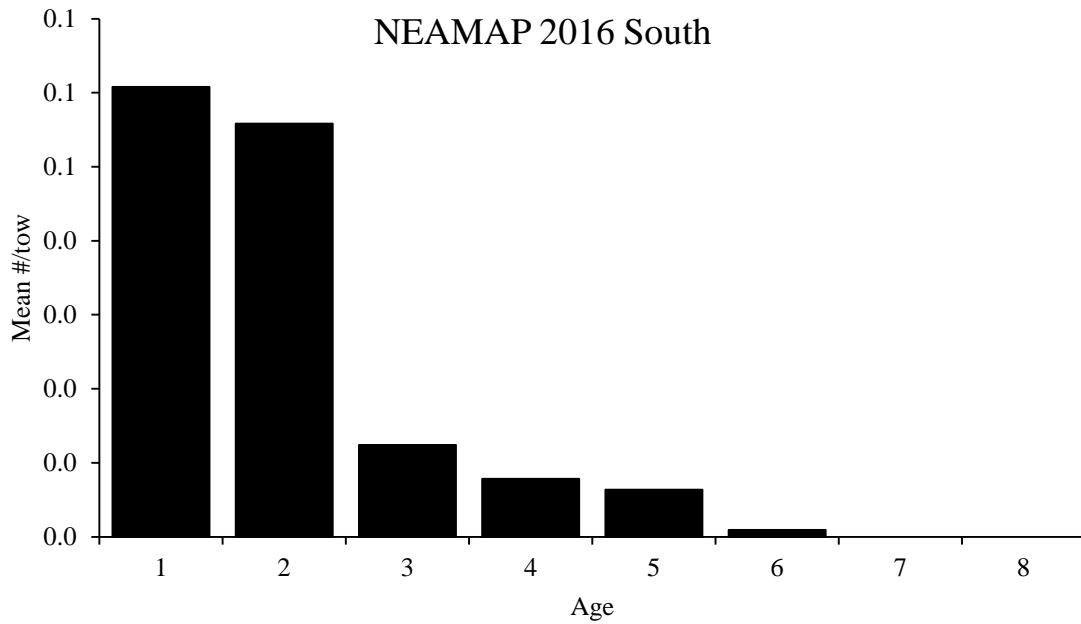


Figure 20. NEAMAP 2016 spring Southern stratified mean number per tow at age of black sea bass.

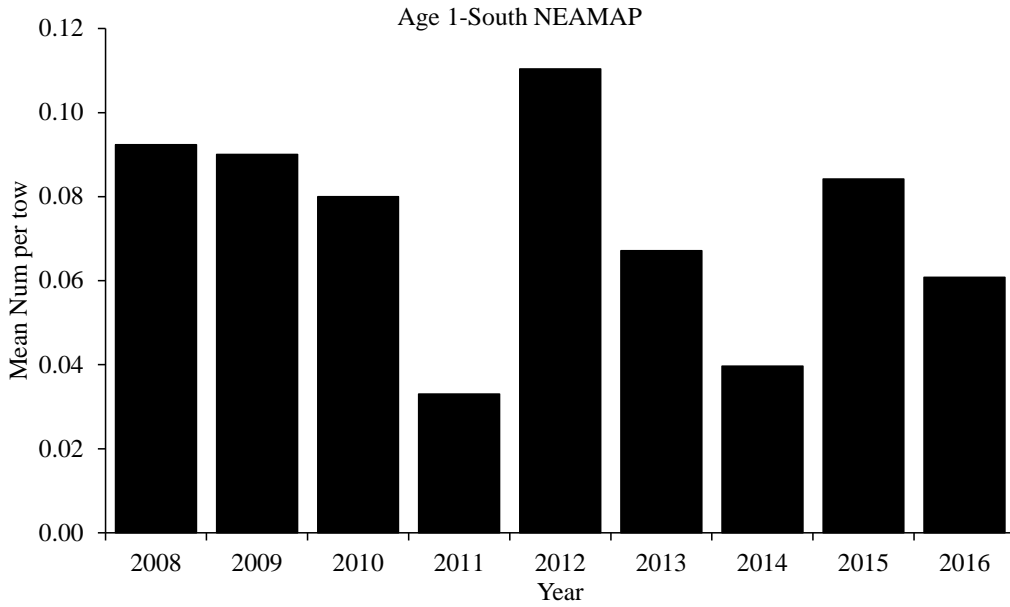


Figure 21. NEAMAP spring Southern stratified mean number per tow at age one of black sea bass, 2008-2016.

State Surveys- Northern Region

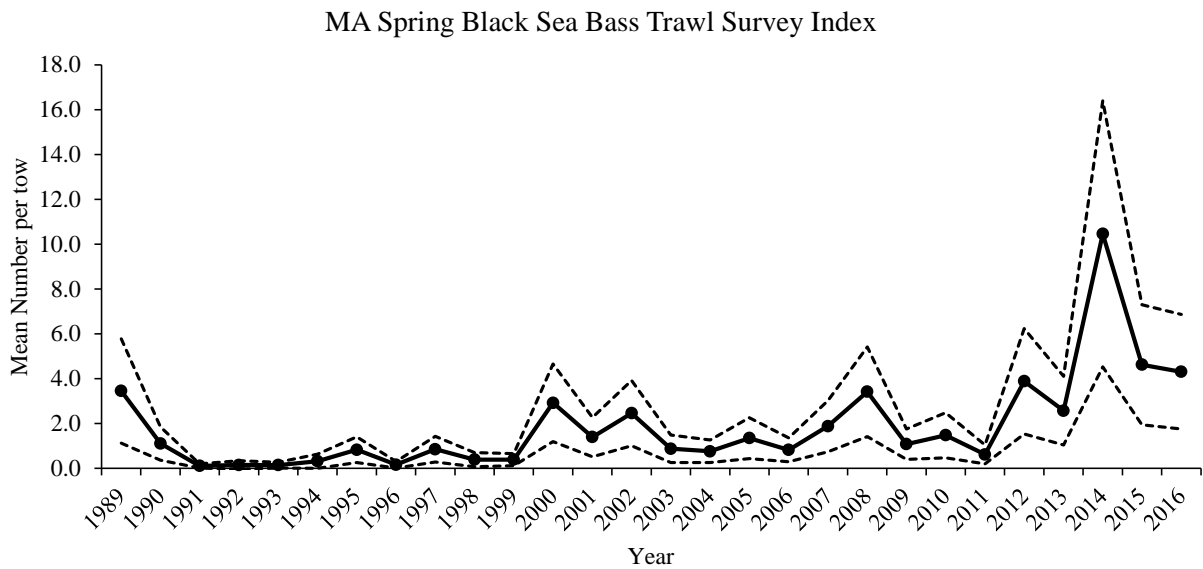


Figure 22. MADMF spring stratified mean number per tow (\pm 90% CI) of black sea bass, 1989-2016.

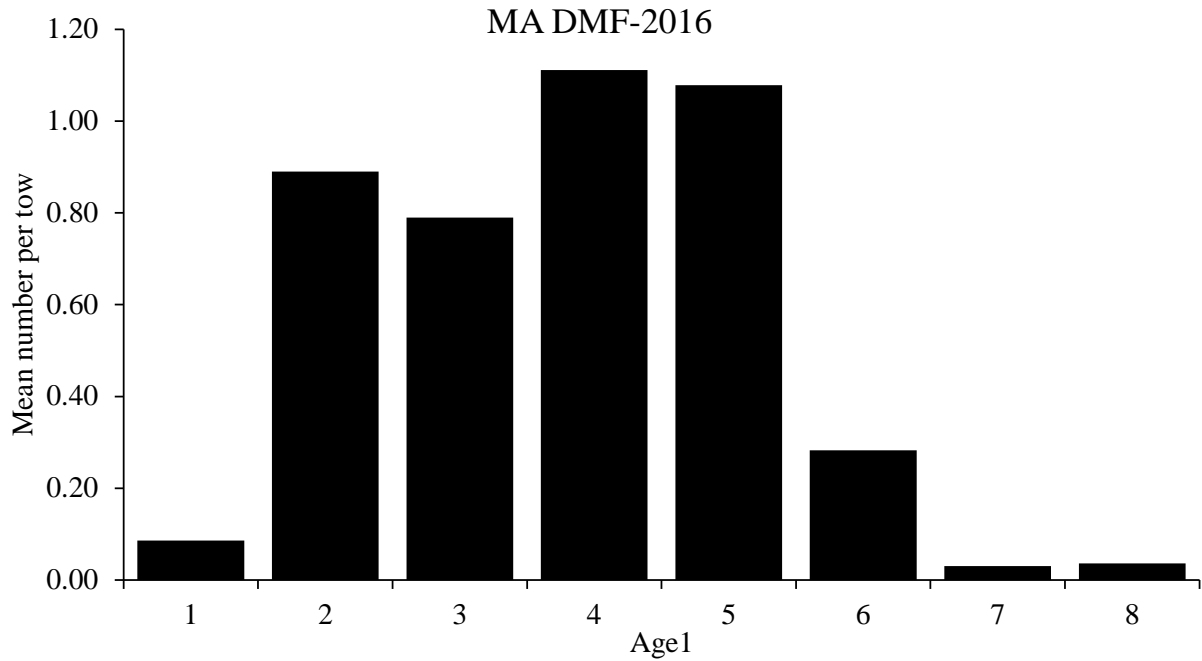


Figure 23. MADMF 2016 spring stratified mean number per tow at age of black sea bass.

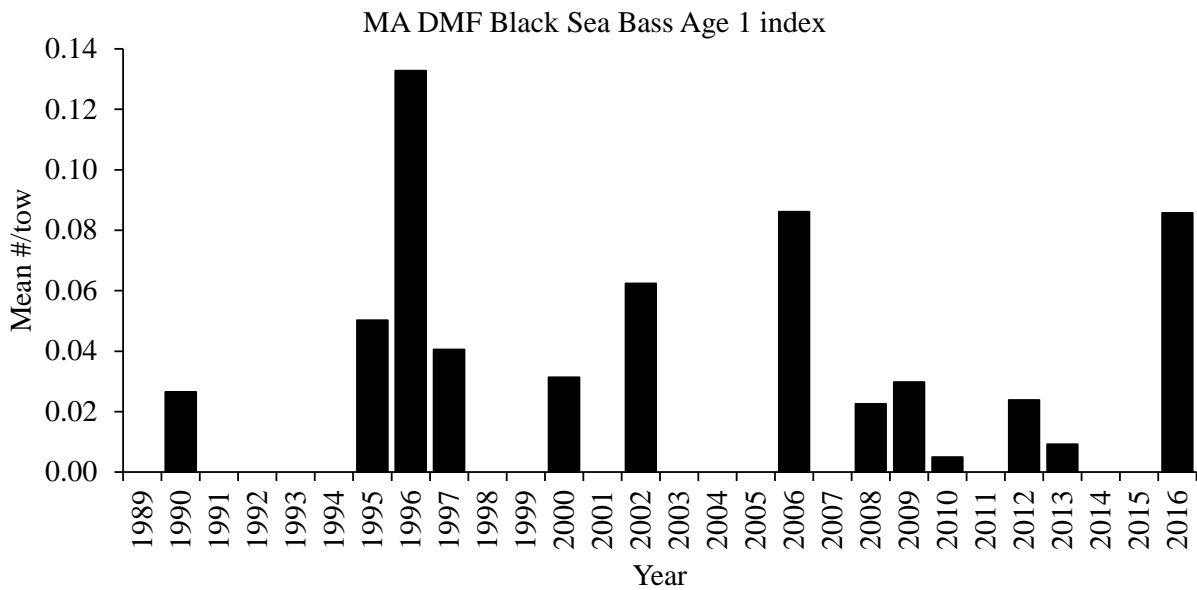


Figure 24. MADMF spring stratified mean number per tow at age one of black sea bass, 2008-2016.

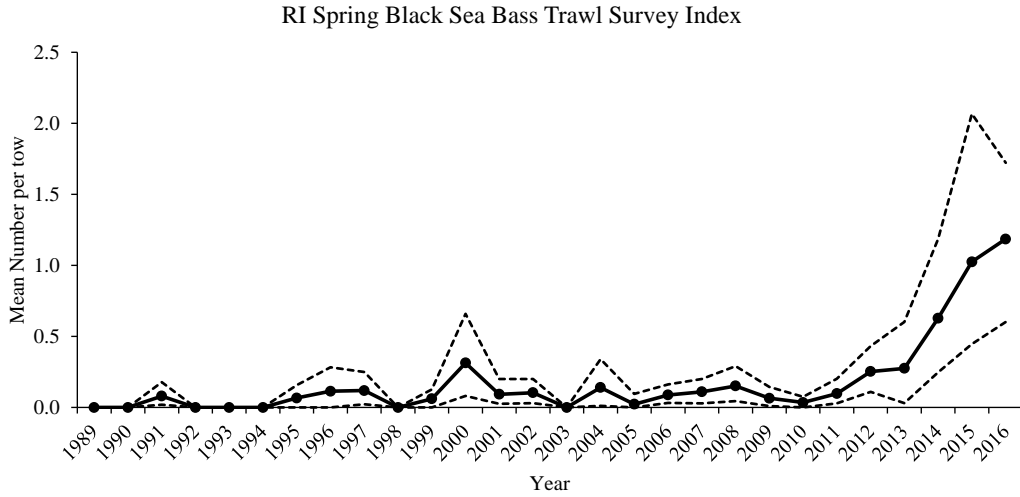


Figure 25. RIDEM spring stratified mean number per tow (\pm 90% CI) of black sea bass, 1989-2016.

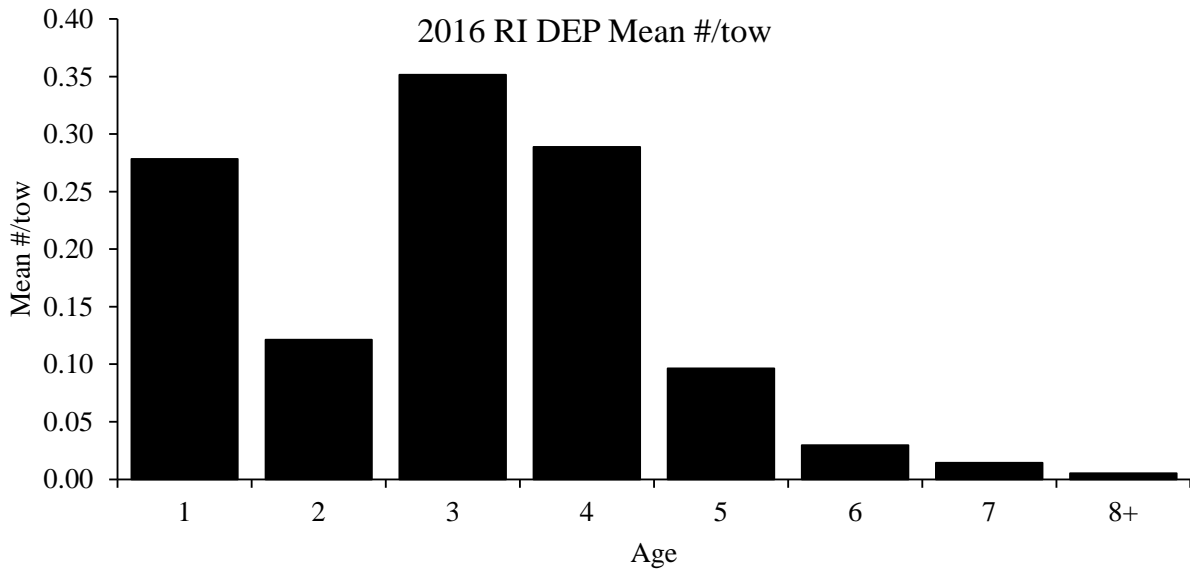


Figure 26. RI DEM 2016 spring stratified mean number per tow at age of black sea bass.

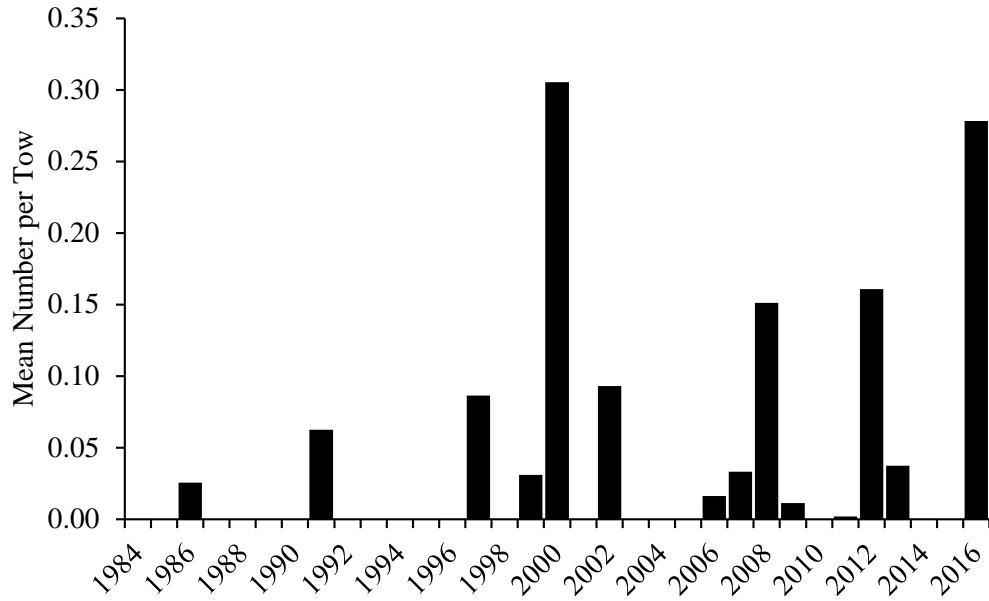


Figure 27. RI DEM spring stratified mean number per tow at age one of black sea bass, 1984-2016.

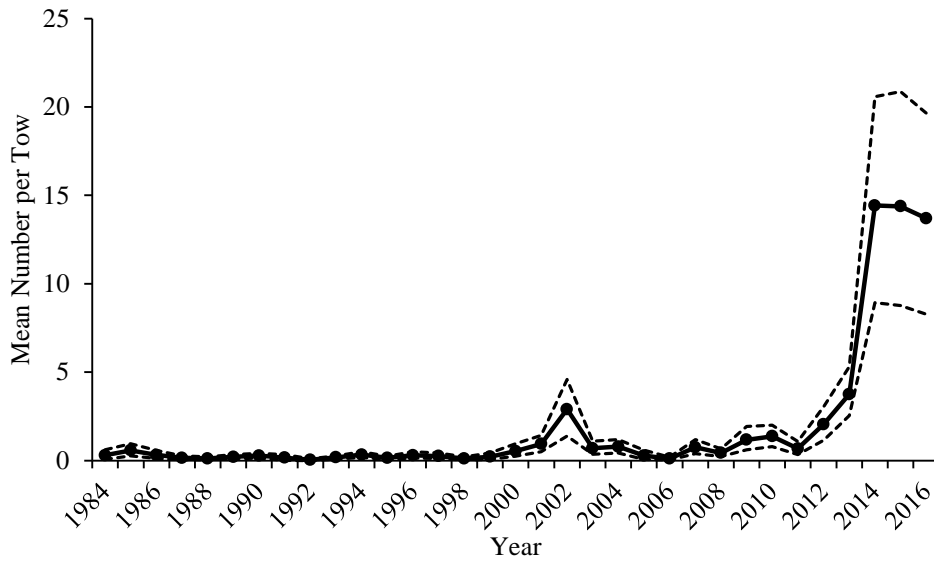


Figure 28. CT DEP spring stratified mean number per tow (\pm 90% CI) of black sea bass, 1984-2016.

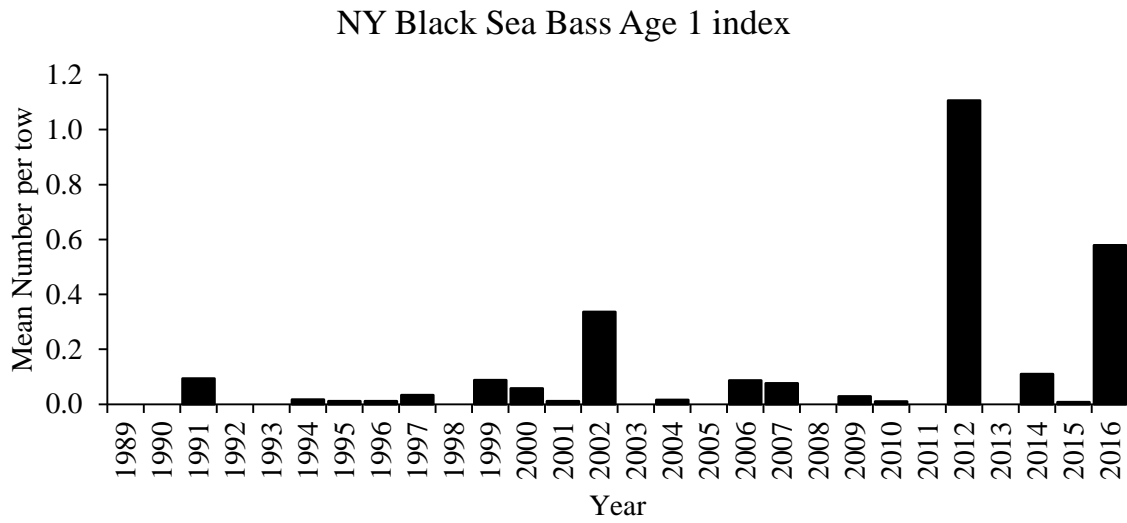


Figure 29. NY DEC spring stratified mean number per tow at age one of black sea bass, 1989-2016.

State Surveys- Southern Region

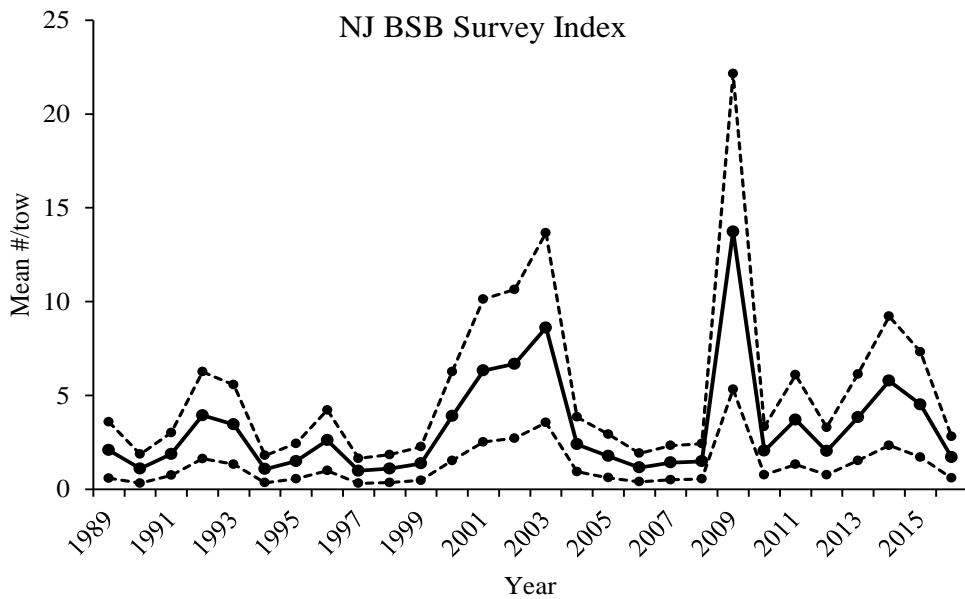


Figure 30. NJ DEP spring stratified mean number per tow (\pm 90% CI) of black sea bass, 1989-2016.

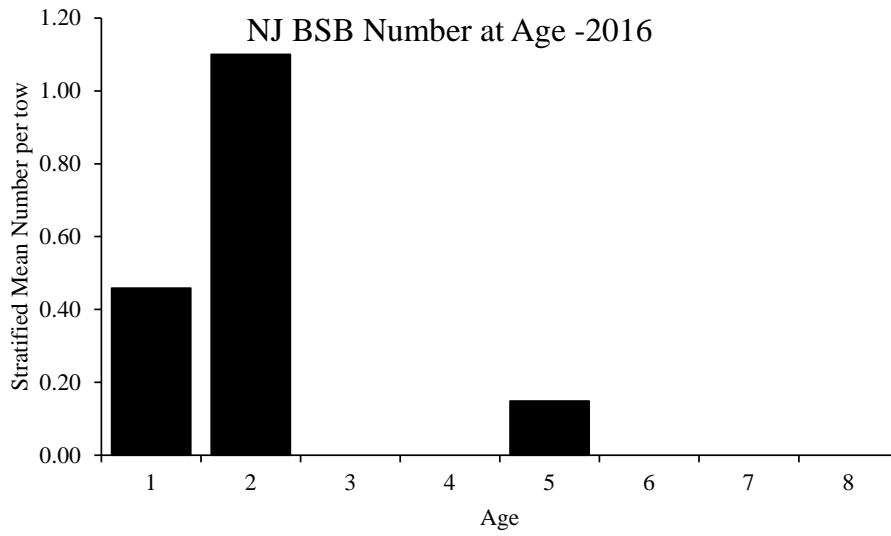


Figure 31. NJ DEP 2016 spring stratified mean number per tow at age of black sea bass.

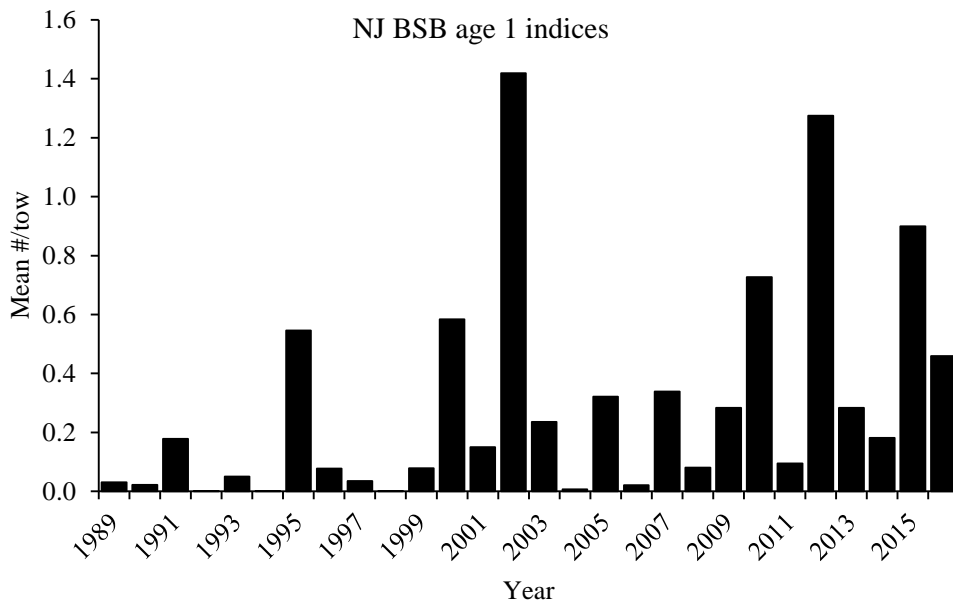


Figure 32. NJ DEP spring stratified mean number per tow at age one of black sea bass, 1989-2016.

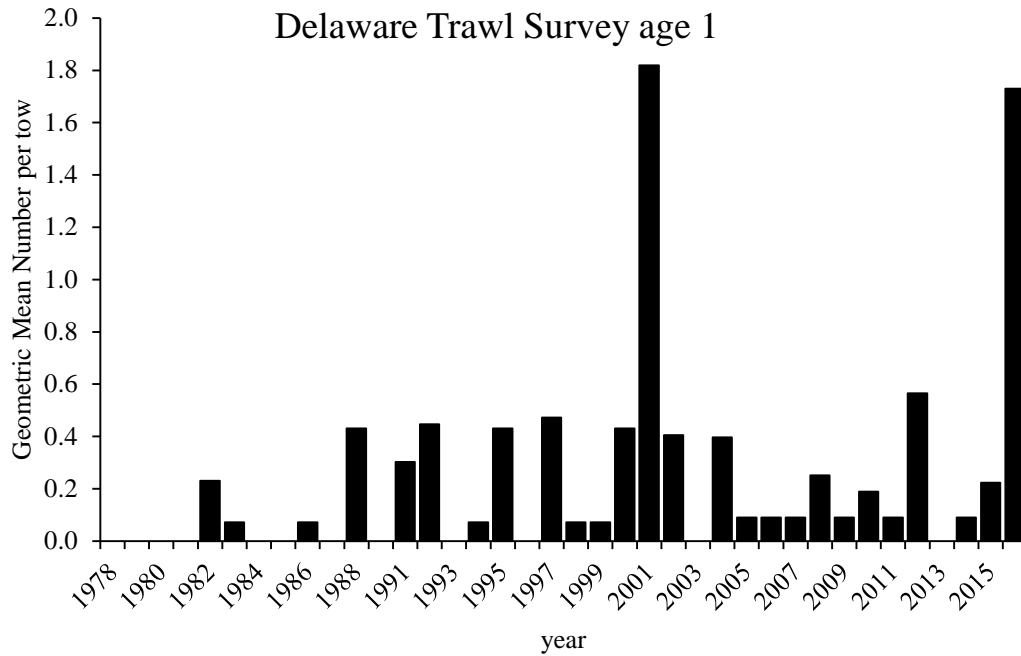


Figure 33. DE DFW spring stratified mean number per tow at age one of black sea bass, 1978-2016.

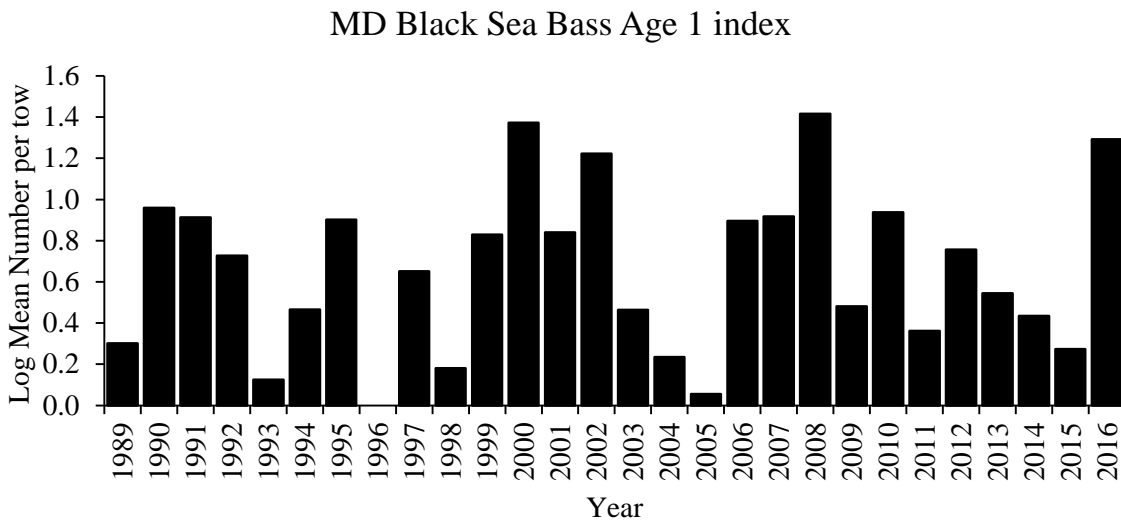


Figure 34. MD DNR spring stratified mean number per tow at age one of black sea bass, 1989-2016.

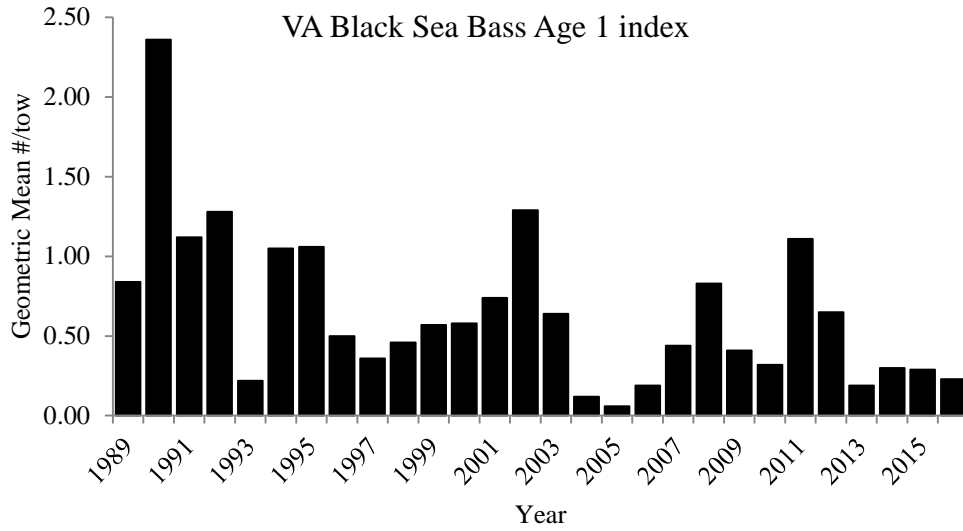


Figure 35. VIMS spring stratified mean number per tow at age one of black sea bass, 1989-2016.

Recreational Catch per Angler Trip

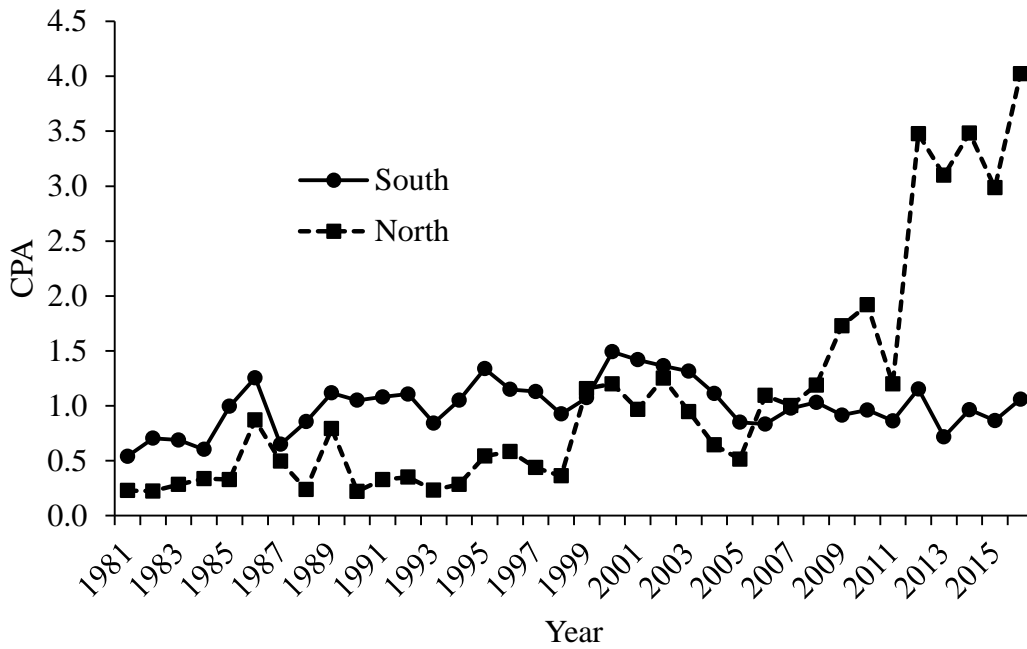
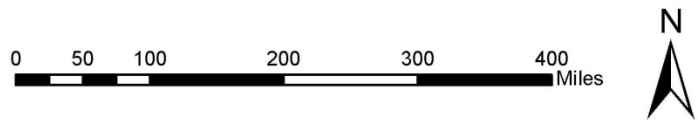
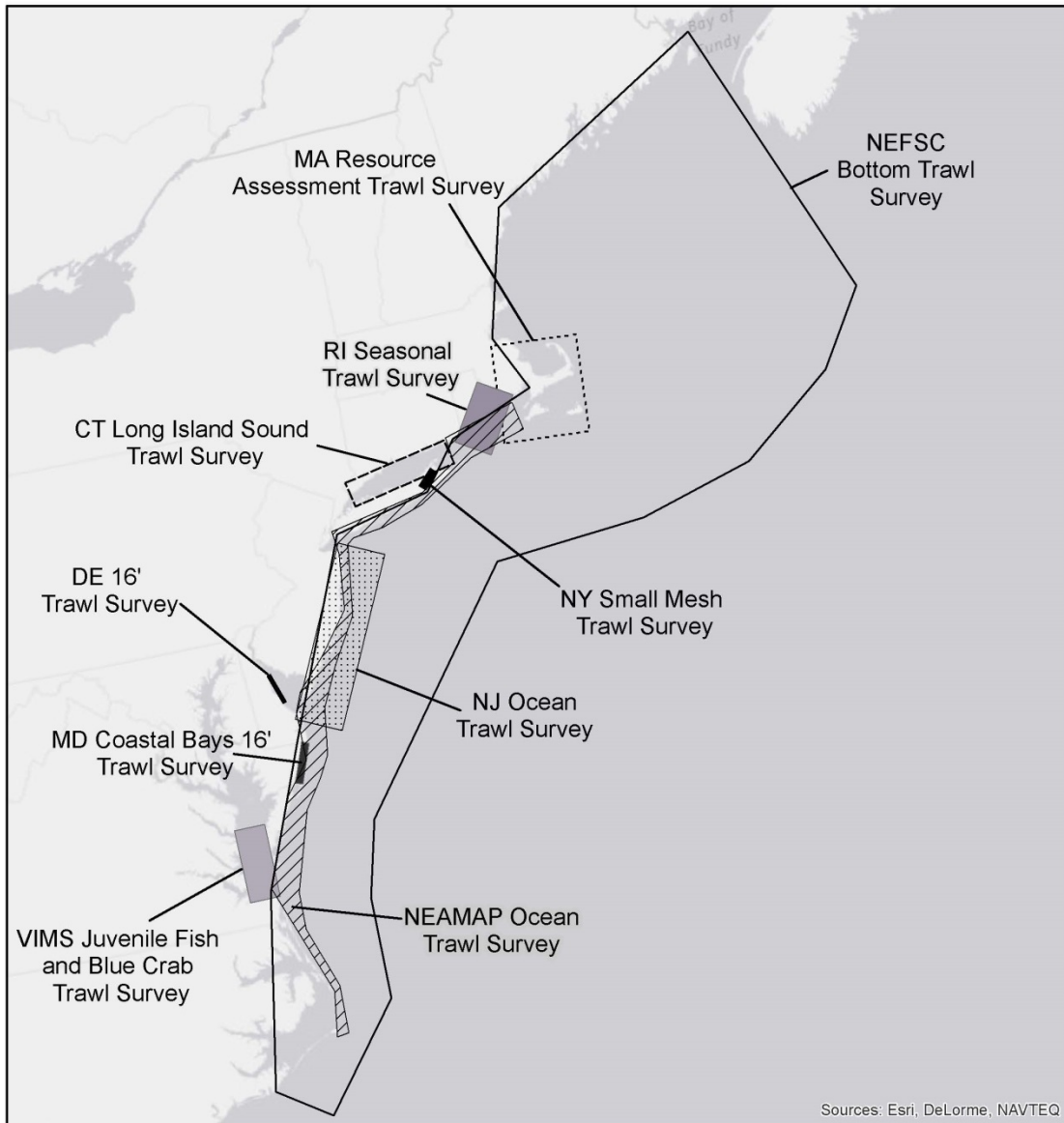


Figure 36. MRIP recreational catch (AB1B2) per angler for northern and southern regions, 1981-2016.

Acknowledgments

NEAMAP information courtesy of Jim Gartland, VIMS. NEFSC age information developed by Josh Dayton, NEFSC. Data contributions from MADMF, RI DEM, CT DEP, NY DEC, NJ DEP, DE DFW, MD DNR, VIMS

Spatial extent of state and federal surveys contributing to the assessment





Summer Flounder, Scup, and Black Sea Bass Fishery Performance Reports

June 2017

The Mid-Atlantic Fishery Management Council's (Council) Summer Flounder, Scup, and Black Sea Bass Advisory Panel (AP) met jointly with the Atlantic States Marine Fisheries Commission's (Commission) Summer Flounder, Scup, and Black Sea Bass AP on June 28, 2017. Advisors reviewed Fishery Information Documents for all three species and developed Fishery Performance Reports based on advisor perspectives on catch and landings and other trends in these fisheries. **Please note:** Advisor comments described below are not necessarily consensus or majority statements.

Council Advisory Panel members present: Meade Amory* (VA), Carl Benson (NJ), Bonnie Brady (NY), Denny Dobbins (VA), Skip Feller (VA), James Fletcher (NC), Ross Pearsall (RI), Michael Plaia* (CT/RI), Harvey Yenkinson (PA/NJ)

Commission Advisory Panel members present: Meade Amory* (VA), Greg DiDomencio (NJ), Marc Hoffman (NY), James Lovgren (NJ), Bob Meimbresse (NJ), Michael Plaia* (RI), Bill Shillingford (NJ), James Tietje (MA), Wes Townsend (DE, and Council member), David Bush (ASMFC Board proxy for NC/AP proxy for Michael Ireland)

Others present: Julia Beaty (MAFMC Staff), Kiley Dancy (MAFMC Staff), Brandon Muffley (MAFMC Staff), Kirby Rootes-Murdy (ASMFC Staff)

*Serves on both Council and Commission Advisory Panels.

General Comments

One advisor requested that the Northeast Fisheries Science Center (NEFSC) provide annual assessment updates for all three species to help the Council and Commission understand the status of the stocks each year and adjust management measures accordingly.

Multiple advisors noted that the Marine Recreational Information Program (MRIP) data for some states, waves, and/or mode combinations can be highly imprecise. Several advisors expressed frustration that recreational management measures for all three species are based these imprecise data. One advisor requested that the Council and Commission regularly examine the methodology used to generate MRIP estimates each year, including the number and locations of intercepts in each wave. In some cases, a small number of intercepts from one or a few locations have driven harvest estimates in certain waves.

At least one advisor supported requiring all recreational anglers to report all catch through a smartphone app. He said MRIP could be eliminated if recreational anglers were required to report all their catch, as is required for commercial fishermen.

One advisor said the new eVTR systems for for-hire fisheries could be improved if they were vessel-specific as opposed to operator-specific. Multiple captains operate his boat. The current eVTR system stores records for each captain separately and all the records for the boat cannot be viewed simultaneously. Besides this issue, he said the new systems require some getting used to, but should work well.

Research Recommendations for All Three Species

Multiple advisors recommended that research be carried out on the factors influencing recruitment for all three species. A few advisors said trends in spawning stock biomass (SSB) and recruitment for all three species suggest that recruitment is higher when SSB is low.

Several advisors agreed that the number of participants in recreational fisheries has declined in recent years, especially in the for-hire sector. Multiple advisors requested an evaluation of trends in the number of federal and state for-hire permits, recreational fishing licenses, and boat registrations to quantify this trend. One suggestion was for states to report this information annually through the Commission's compliance reports.

Black Sea Bass

Market and Economic Issues

One advisor said the combination of high black sea bass availability, high prices, and high demand during commercial fishery closures makes poaching and illegal sales very tempting for some commercial and recreational fishermen. Some restaurants and other buyers are willing to purchase black sea bass illegally. In some cases, recreational fishermen are illegally selling their catch. One advisor said the scale of illegal landings has increased in recent years. Some advisors said poaching will occur regardless of management measures. Others said less poaching occurs when markets have a steady supply of black sea bass.

One advisor said the price for black sea bass is lower this year because there are more black sea bass on the market. Massachusetts typically contributes a notable amount of commercial landings; however, the commercial season in Massachusetts is currently closed. The price may decrease even farther once the fishery re-opens.

General Management Issues

One advisor said some level of non-compliance (e.g., high grading, poaching) is inevitable when regulations are unnecessarily restrictive, as has been the case with black sea bass in recent years. He argued that if a new stock assessment had been available earlier, management measures could have been updated earlier to reflect changes in stock status and non-compliance would be less of an issue.

Four advisors requested greater stability in management measures for both commercial and for-hire black sea bass fisheries. Multiple advisors agreed that management should not be so reactive to changes in data. One advisor said that if management measure are set for 3-5 years, they should only be modified in the terminal year, if at all. One advisor said constant quotas could lead to negative impacts on the stock in some years, but over the long-term the stock would not be harmed. Another advisor agreed, saying that the current system of deriving quotas and RHLs is already

conservative and accounts for uncertainty, which provides some buffer against potential negative impacts in any given year from stable management measures. One advisor said market stability is also needed.

An AP proxy for the Commission said he supports stability in management measures, but also thought the measures should be adaptable. For example, the Council and Commission could allow for minor changes in annual quotas and RHLs in response to new information.

Commercial Management Issues

Advisors discussed the contribution of various gear types to the commercial fishery. Bottom trawls have accounted for a greater proportion of commercial landings in recent years. A few advisors said the contribution of the pot fishery has declined in recent years because trawls are more efficient and trawl-caught black sea bass can be sold for a decent price. One advisor said the few remaining pot fishermen are getting older and those who can are switching to trawls because they are not as physically demanding to operate.

Recreational Management Issues

Many advisors said the wave 5 and 6 MRIP estimates from 2016 were impossibly high and were based on flawed sampling methodology (e.g., a small number of intercepts in a small number of locations). Two advisors said it is not possible that most of the wave 6 (i.e., November and December) landings came from private boats as most private anglers do not fish at that time of year. Many advisors agreed that the Council and Commission should not adjust management measures based on data that MRIP staff, Technical Committee members, and other experts have said is inaccurate (e.g., New York wave 6 data for 2016). One advisor emphasized that restrictions based on flawed data can have major negative impacts on the livelihoods of for-hire captains and also negatively impact support businesses such as bait and tackle shops.

Two advisors recommended eliminating the September and October closure of the recreational fishery in federal waters. One advisor said some areas, such as southern New Jersey, do not have inshore black sea bass fisheries during that time of year and the federal waters closure leaves many vessels tied to the dock. Another advisor supported eliminating that closure because it occurs during the peak of black sea bass abundance in federal waters off Rhode Island and between Montauk and Rhode Island.

One advisor said that as the recreational black sea bass season has become shorter and shorter over the past two to three years in an attempt to restrict landings to the RHL, discards have increased. For example, the fishery is now closed during certain times of year when black sea bass are available and the recreational summer flounder fishery is open. Anglers targeting summer flounder are catching black sea bass, but are forced to discard them.

One advisor said low trip limits coupled with high availability decreases angler satisfaction. In recent years, it is not unusual for every angler on for-hire trips to quickly catch their limit of black sea bass.

Three advisors supported establishing state-by-state recreational black sea bass allocations. One advisor said allocations should be based on the number of recreational fishing licenses in each

state rather than MRIP data. He added that the recreational black sea bass fishery in southern New Jersey is declining and state-by-state allocations could help protect the interests of that fishery.

One advisor said that if regional, rather than state-by-state, allocations were established, the Council and Commission should aim for uniform bag limits, minimum fish sizes, and seasons within regions, while accounting for differences in the seasonal distribution of black sea bass in different states. For example, in Massachusetts, the black sea bass fishery has traditionally occurred in the spring, while in neighboring states the fishery tends to take place in the summer and fall. This could pose challenges for establishing a uniform set of management measures if Massachusetts were included in a region with neighboring states.

At least two advisors supported opening the wave 1 (January-February) recreational fishery. One advisor said wave 1 was very important for southern states. Two advisors said wave 1 was traditionally dominated by for-hire boats, with very few private anglers participating. One advisor said harvest during wave 1 was low but was nonetheless very beneficial for the for-hire industry in certain areas.

Harvey Yenkinson comments, 6-26-17

To give you a report on the status of recreational fisheries in southern New Jersey, I would report the following:

My marina, the largest in New Jersey has about 20% slip vacancy with boats staying in the water for shorter periods of time. Many fewer people fishing compared to previous years. Catch of striped bass (90% decrease), drum (50% decrease), fluke (70% decrease) all less than previous several years. Sea bass catch good but many boats running 20-30 miles. Almost no scup caught in south Jersey. Regulatory compliance not good.

I would like to submit the following comments which I believe are at the crux of our inability to rebuild the summer flounder population

1. As I have previously mentioned, we need to manage E-W migrating stocks differently than we do N-S migrating stocks. For a species that migrates N-S, it makes little difference where on its migratory pathway it is harvested. The same is not true for an E-W migratory species. Here over harvest in one area can cause localized depletion in the area off of a group of states.

A prime example of this problem is the shift of the epicenter of the fluke population over 60 miles to the north in the last several decades, a shift too great to be explained by the few tenths of degree of ocean warmth that has occurred in that same time frame. The commercial fleet from the southern states, holding nearly 50% of the commercial quota, has caused depletion of their own fluke stocks and now must fish hundreds of miles to the north to fill their quotas, causing the epicenter of the fluke stock to shift further and further north.

Magnuson demands that we provide equitable resource to all components of the fishing industry. The failure to put restrictions on regional harvest will inevitably continue to worsen regional stock depletion. Commercial overexploitation, particularly in the winter months, will cause localized depletions for the recreational fleets dependent on the inshore migration of those fish.

2. We need to rethink the basics of our fish stock parameters and cease considering that a pound of fish of one sex (and its state of fecundity) hold the same parity status of a pound in a dissimilar status. I recommend and have sent such recommendation to our SSC, that we come up with a reproductive efficiency model (REM) for harvesting parameters. With our stock knowledge, complex fish formulas, and computer capabilities, we can surely come up with better formulas to consider fish at different sizes, sexes, and reproductive status as having different worth for replenishing the stock. Reduced pressure on spawning stocks is ever so important when a stock nears an over fished status. Regulating fisheries on a poundage basis alone is an archaic system that needs revamping.

The entirety of the recreational catch and a majority of the commercial catch targets the potential spawning population. With a stock averaging low recruitments and declining SSB, continued exploitation of the component of the stock (spawning females) that is best capable of restoring the stock, is a very bad management practice.

Another example occurs in the commercial fishery where more and more of the quota is caught

in the fall-winter spawning season (80% of quota caught between Sept-April). A harvest of a million pounds of spawning females is far more detrimental to the stock than a harvest of a million pounds of post spawning females. Both regional and temporal regulation is desperately needed to allow stock replenishment. Area closures and regional closures should occur to allow the SSB to spawn successfully. Regional closures should occur in the southern range of the species and the hard hit midAtlantic wintering areas. Temporal closures should occur when the stock is spawning in that time frame in that locale.

By restricting catch on the spawning group, in essence, we increase the SSB. For example, if the average fluke lives long enough to spawn 5 times, and we allow it to spawn 6 times, we have mathematically increased the SSB by 16.0%!

3. We need to examine how our regulations interact to the detriment of the fisheries and the stock.

I consider the following model to think about this process. I picture a bucket with four holes in the bottom to show the status of our fishery.

At the top is a funnel feeding the bucket.....The size of the funnel openings is reflective of the SSB and recruitment

- a. One hole in the bottom is M, the natural mortality of members of the stock caused by natural mortality and predation. Not paying attention to commingled predators (like dogfish) can effect the size of this hole.
- b. The second hole is F, our regulations hole effected by size, season, and bag limits.
- c. The third hole is loss of fish due to discards, effected by the same parameters above, along with other factors like closed seasons, high grading, wasteful practices, small hook size, etc
- d. The fourth hole is fish loss by illegal fishing.

This problem with these "holes" is that by changing one hole size, other hole sizes are changed, sometimes in a way which we know exists but don't attempt, or don't accurately know how, to add to our fisheries formulas.

For example, we know if we increase the size limit, we will increase the discard loss. In the recreational fishery, many fishermen go home empty handed having caused a large discard loss while retaining few to any fish. The consequence of such management is we stay within Magnuson parameters but provide little incentive to the recreational fishing industry.

A second example, is the tighter the restriction in size and quota, the more illegal fisheries will occur. I liken this to the gun control debate where only criminals will have guns if regulations are not crafted carefully. My own observations, fishing for fluke for over 40 years, is that anglers have gone from almost always compliant (since regulations began in 1989) to less than 20% compliant now. As Dr. Bill Holgarth, former NOAA head said to me, "If we make the

regulations too restrictive, people won't follow them." We know this problem exists and I know the monitoring committee tries to compensate for this, but I think we need to put this in our fishery calculations. I suggest the NEFSC, or other agencies contract a study on this problem so that we can have a formulation to consider when setting quotas and size limits. I fear what we think we are accomplishing by tightening regulations may be accomplishing just the opposite.

4. We need to make high grading an illegal practice in the recreational and commercial industries

An example of this occurs in the commercial fishery where the larger fish, worth more per pound, are kept, with legal size fish being discarded. Additional tows result in more fish kill when the allowed poundage quota could have already been filled.

5. We should stop trying to manage our recreational fisheries on an annual basis

Recent data shows wide ranges in recreational harvest despite changes in bag, size, and season limits. While each change should help, our data shows we may be accomplishing little. Our current data collection methods are so poor that we should only look at them over a time frame of several years at a minimum. Our SSC struggles with time constraints on data input trying to come up with recommendations on an annual basis further complicating annual regulatory changes.

Our fisheries sorely need a more consistent quota on a yearly basis instead of such drastic swings from year to year. If the federal reserve changed interest rates the same as we change fishery quotas, the world's economies would be in shambles. Our fisheries are a smaller microcosm of the same type of process and much harm is done by this lack of consistency.

6. Stop regionalized conservation equivalency

The disparity of size and density of the fluke population, and its ever shifting status, creates unnecessary damaging effect to our recreational fleets by cojoining states as a single region. Just as we realized a coastwide equivalency formulation is neither fair nor appropriate, so to is joining states for regulatory purposes when the regions stock status is nonuniform.

7. States appropriate recreational quotas

I would argue that a states recreational fluke quota should be based on the current effort of that state's fishing population. The current system based on 1998 quotas is outdated and unfair. My suggestion would be to use the number of registered recreational private and charter boats along with the number of registered saltwater anglers who pursue that species. A simple and easy to obtain piece of data is to ask anglers what species of fish they fish for and how often, when they complete their annual recreational saltwater registry. Quotas would then be allocated to states based on the number of party and charter boats (capacity/day) combined with the number of recreational anglers fishing for that species in that state. This type of system would result in a fair allocation of the resource to the angling public.

8. Institute slot parameters in our fluke FMP.

Our federal regulations should allow for slot sizes, not just the current minimum size limits. Our recreational fisheries would function much better under such a program where more breeders would be spared and angler could fish more heavily on the male component of the stock.

9. We need to pay attention to how our fishery regulations impact one another.

An example occurs in the recreational industry in our area. When we close fluke fishing in September, we concurrently have federal waters sea bass in a closed status as well. In southern New Jersey where I fish, there is a two month season where charter and private boats sit at the dock with a vast downturn in all fishery related businesses in the area.

Sea bass recommendations

1. I would recommend that the recreational catch be a male only catch. With studies showing the relative unimportance of super males in procreation for this species, harvest should be directed for those members, preserving the more important females and subordinate males.

2. I would recommend requiring recreational venting or other techniques when fishing in water over 75 feet when returning sea bass. Many fish are seen floating around recreational fleets in deep water.

3. I would eliminate the federal waters closure on sea bass currently between 9/21 and 10/22. With fluke closed then, there is little for the recreational fleet to go for.

Research studies proposed for fluke

1. Do additional studies on what slot size parameters would be most effective for the recreational fleet.

2. Do additional studies on prime spawning periods in different latitudes to consider seasonal closure of areas during the winter months.

3. Do additional tagging studies to document inshore-offshore fluke migration patterns to consider spatial closures so as not to cause spatial depletions of our fluke populations.

4. Do studies to try and reduce mortality on discards

a. hook size and type recreational fleet

b. methodology to reduce 80% dead discard rate in the commercial fishery...net modifications, shorter tow times, methodology to reduce crushing of fish when net pulled out of the water.

5. Do studies to consider how other fisheries (scallop, sea bass, skate) impact the discard rate for fluke.

6. Data is much needed to understand how our regulatory constraints contribute to the illegal fisheries. What parameters contribute most to increasing the illegal catch.....Size limit, seasonal closures, ever changing regulations, lack of confidence in our fisheries management, lack of knowledge, poor dissemination of state regulations, etc.

7. Studies that may help us understand why our fluke stock is not rebuilding despite ever decreasing quotas

Research studies for sea bass

1. Is a federally closed season, from late Sept till late October, effecting local fisheries economics and is it at all beneficial

2. How would a male directed fishery effect the stock

3. How to reduce tremendous dead discard rate in the commercial fishery as it trends away from a pot based fishery.

4. Ways to improve potting of sea bass

Brady Lybarger: Comments provided to Kiley Dancy by phone, 6/27/2017

- On New Jersey's recreational non-compliance finding for summer flounder, from a commercial standpoint is frustrating. The commercial numbers are highly regulated. We can't come up with whatever measures we want like the recreational fishery seems to be able to.
- Looking for more detail on which summer flounder migrate north/south vs. east/west? New Jersey is kind of in the middle where they see two different migrations. This is seen in the commercial fishery – fish suddenly start to go east, and you can tell they're not coming from the south. Around January you can see those fish move from the south and no more fish moving in from the west. Curious where that migration line is drawn exactly. We're in the strange pocket of NJ where some go each way.
- For scup, we haven't seen over the last two years large numbers of scup below the Hudson Canyon – they are not as high as in the past. The last couple of years, they have been more above the Hudson Canyon line and east-northeast, and haven't come down as far. Not sure if this shows up in the spatial fishery information the Council reviews such as VTRs. Cape May boats generally haven't gone after scup in the last couple of years because they've been out of reach.
- There were not a lot of scup landings in Cape May this past winter. Point Pleasant and north had a fair amount of landings. Hearing they are more on the northeastern side of Hudson Canyon. It's not very appealing to go out there for Cape May guys because of the potential to catch sea bass and fluke, when you can't necessarily land it up there. Once you get that bycatch, you're limited in where you can go. Scup landings for Cape May boats in 2016 dropped off compared to 2015, and then in 2017 were very few (for boats fishing primarily south of Hudson Canyon). It seems like the very juvenile fish come down here – maybe they need warmer waters, and the larger more mature fish can withstand colder waters up north, or maybe it's food related.
- I support developing landings flexibility in the summer flounder amendment. We need more flexibility to land where convenient with each trip. We would like to be able to offload scup in Rhode Island, but have on board our quota for fluke, and not offload them, then travel to New Jersey to unload them. We would like to have the flexibility to bump down the coast and land in different ports. We should have the ability to separate different limits of fish in the hold and offload them where we'd like.
- If moving toward a scup quota model for summer flounder, we might have to make sea bass the same system for consistency. Many are using fluke and sea bass profits together to fund a trip. The scup model may make the fluke fishery a derby fishery in the winter. Right now, it isn't like that for scup because the price isn't there. If you made this system for fluke, wouldn't you be creating a derby fishery in the winter? If the winter fishery closed for fluke, would there be a bycatch amount allowed or would all landings be closed?
- Virginia's program for bycatch management of fluke is pretty good. Once it closes the limit goes to 10% of your catch. We should have some kind of bycatch allowance set-aside for when the coastwide fishery closes. When you're done catching flounder, you're not using a flounder net, but you can still have flounder bycatch.

From: Conway Jr, JACK D [mailto:jack.d.conway.jr@lmco.com]
Sent: Wednesday, June 28, 2017 10:52 AM
To: Kirby Rootes-Murdy <krootes-murdy@asmfc.org>
Subject: Comments from the CT

My comments are based on recreational fishing in CT (versus commercial landings) and my comments are focused on the largest user group in the recreational community (the private boat based angler). This group tends to be underrepresented in AP process.

1. What factors have influenced catch in recent years for summer flounder, scup, and black sea bass?

From my perspective summer flounder fishing has been very poor, while CT recreational landing estimates conflict with my perception I stand by my conclusions which are based on conversations with anglers across the state. 2017 landings in Central Long Island Sound (my home waters) are shockingly low so far this year. The CT fishing community has basically switched gears to target black sea bass (BSB) which are abundant in the early season in Western and Central Long Island Sound. To be blunt, for the most part fishing opportunities in Central Long Island Sound would be non-existent without an early BSB season. In my chats with the recreational fishing community, one of my jokes is that our landings reflect the stock status (we aren't catching summer flounder because they are not available). To further the discussion, CT used to have a great spring striped bass fishery (in the open waters of Long Island Sound), that fishery is a shadow of what it once was, BSB have replaced striped bass as the "go to" fish in May/June of the year.

In a similar fashion, scup have filled the niche left open by the lack of summer flounder and striped bass. Once scup settle into Long Island Sound in July (and remain until October), scup provide angling opportunity and have become much more popular among the general public. They also provide an alternative to tautog fishing (a fishery in big trouble in Long Island Sound). Management of scup to allow a long season and somewhat high bag limit in Long Island Sound is incredibly important to the recreational community.

The bottom line is that there has been a major shift in efforts and landings in CT to coincide with stock abundance, with BSB and scup being the "go to" species in CT.

2. Research Recommendations

I believe there should be an effort to understand spawning in BSB. The Central LIS BSB fishery I discussed above is on a spawning population. I'm not certain if LIS spawning is important to recruitment or if it's just an interesting phenomena that provides angling opportunity, and/or if BSB actually favor spawning in inshore waters (although in this case the water in question is approximately 100 feet deep) and in a variety of areas (outside of LIS).

Apologies on missing the meeting.

Jack Conway

Kiley Dancy

From: Jeff <jgutman28@comcast.net>
Sent: Wednesday, July 05, 2017 10:33 AM
To: Kiley Dancy
Subject: Re: Draft Summer Flounder, Scup, and Black Sea Bass Fishery Performance Reports

Kiley,

I'm sorry I could not make the meeting but I was offshore on a 2-Day trip. I have inserted my comments in Red into your draft text below.

Thanks,
Jeff Gutman

General Comments

One advisor requested that the Northeast Fisheries Science Center (NEFSC) provide annual assessment updates for all three species to help the Council and Commission understand the status of the stocks each year and adjust management measures accordingly.

Multiple advisors noted that the Marine Recreational Information Program (MRIP) data for some states, waves, and/or mode combinations can be highly imprecise. Several advisors expressed frustration that recreational management measures for all three species are based these imprecise data. One advisor requested that the Council and Commission regularly examine the methodology used to generate MRIP estimates each year, including the number and locations of intercepts in each wave. In some cases, a small number of intercepts from one or a few locations have driven harvest estimates in certain waves.

At least one advisor supported requiring all recreational anglers to report all catch through a smartphone app. He said MRIP could be eliminated if recreational anglers were required to report all their catch, as is required for commercial fishermen.

One advisor said the new eVTR systems for for-hire fisheries could be improved if they were vessel-specific as opposed to operator-specific. Multiple captains operate his boat. The current eVTR system stores records for each captain separately and all the records for the boat cannot be viewed simultaneously. Besides this issue, he said the new systems require some getting used to, but should work well. **I have just started using the E-VTR and I have run across this issue already with multiple captains. The system is good but not perfect as I do not have any Wi-Fi at the boat it is hard to get the app started before leaving the dock, and if you turn it off by accident you can't re-start it without internet and I am usually 100 miles offshore.**

I once again question whether the council pays any mind to the AP suggestions. We continue to urge the council to try and limit discards but they continue policies that do not. We should have smaller size limits so that discards and discard mortality are limited. We throw too many valuable fish back dead! The council can manage species such as scup and sea bass on a mortality basis if they want to as opposed to a poundage quota. They can stop the practice of setting the RHL in pounds, then shifting the regs to #'s of fish which are then converted back to pounds. This is an action the council can correct yet they would rather not deal with

it until the time each year when they set specs and the recreational sector exceeds the RHL because the pounds per fish is higher than the prior year and they have caught fewer fish but more pounds.

I would also urge the council to allow more time for public comment and more time on the agenda for items they know will be contentious (i.e. sea bass). There is no worse feeling than seeing your livelihood discussed and dismantled in 1.5 hours because we "have to move on".

Research Recommendations for All Three Species

Multiple advisors recommended that research be carried out on the factors influencing recruitment for all three species. A few advisors said trends in spawning stock biomass (SSB) and recruitment for all three species suggest that recruitment is higher when SSB is low.

Several advisors agreed that the number of participants in recreational fisheries has declined in recent years, especially in the for-hire sector. Multiple advisors requested an evaluation of trends in the number of federal and state for-hire permits, recreational fishing licenses, and boat registrations to quantify this trend. One suggestion was for states to report this information annually through the Commission's compliance reports. **I agree that participation is way down, especially in the for-hire sector.**

Scup

Environmental and Ecological Issues

Multiple advisors said many large scup are being caught in both the commercial and recreational fisheries. One advisor asked about scup size at age for older ages and said it may no longer be true that few scup older than 7 years are caught in the Mid-Atlantic, as is stated in the Fishery Information Document.

One advisor said the recent downward trend in scup SSB may simply be the result of the population reaching its environmental carrying capacity. Many advisors agreed that scup are currently very abundant.

A few advisors described recent changes in the distribution of scup. One advisor said that the size of scup south of Cape Cod has increased and they have been staying in the area longer. Other advisors said there were few adult scup south of Hudson Canyon this past winter.

One advisor said some commercial fishermen don't target scup during certain times of year due to high abundances of dogfish.

Market and Economic Issues

A few advisors said commercial scup landings are heavily influenced by price. One advisor said the price of scup is driven by imported fish, especially tilapia. He argued that unnecessarily restrictive scup management measures have given tilapia a market advantage. Another advisor said the 50,000-pound Winter I trip limit has a greater influence on price. With such a high trip limit, one or two trips can easily flood the market, causing the price to decrease. In the past, the price has fallen so low that fishermen temporarily stopped targeting scup. He said this was not an issue in New Jersey this past winter as fewer scup were caught south of Hudson Canyon. One advisor said price has not been as much of a problem in New York even though at least one vessel regularly lands the full 50,000-pound trip limit. In her opinion, price is more dependent on the quality of

the product, which is dependent on the methods used to catch and store scup.

General Management Issues

One advisor said it is illogical that the commercial quotas and recreational harvest limits (RHLs) are declining even though landings have been well below these limits in recent years and SSB is well above the target.

Commercial Management Issues

One advisor noted that although the commercial fishery is predominantly a bottom trawl fishery, there is a substantial floating trap component to the fishery in Rhode Island.

Advisors held differing opinions on whether the commercial minimum fish size should be reduced from 9 to 8 inches. One advisor said the minimum size should be reduced to reduce fishing pressure on sexually mature individuals. Three other advisors said they did not support changing the minimum size. One advisor suggested that the regulations could be modified to allow a small percentage of retained scup to be below the minimum size. Two advisors said it has not been difficult to catch scup that are at least 9 inches in recent years.

Advisors also held different opinions of the 50,000-pound Winter I trip limit. One advisor said he did not like this trip limit as it allows the market to be flooded, which can lead to a decrease in price. Another advisor said the high trip limit helps create a consistent supply of scup, which is necessary to grow markets and can help the fishery compete against substitutes such as tilapia.

An AP proxy for the Commission thought a change in the start date of the Summer quota period, as considered during a recent framework and addendum, warrants further consideration. Specifically, if the Winter I period were extended into the month of May, commercial fishermen would be able to land more scup under the higher Winter I possession limit.

One advisor thought the scup Gear Restricted Areas have been very beneficial for the stock and that this type of management strategy should be used more often.

Recreational Management Issues

A few advisors agreed that private anglers are, for the most part, not targeting scup. Scup are not as desirable as other species because they have many small bones and only the largest fish can be easily filleted. Multiple advisors said anglers appreciate the ability to catch scup as more desirable species such as summer flounder and striped bass have become less abundant or the regulations have become more restrictive.

A few advisors said they believed the MRIP data showing a higher proportion of private landings compared to for-hire landings to be inaccurate. A few advisors said anglers on for-hire boats tend to land more scup than private anglers because paying customers typically want to catch a lot of fish, as is possible with high scup abundance and possession limits.

One advisor said that some anglers use undersized scup as bait for striped bass.

MRIP data show that in recent years, recreational scup discards have exceeded recreational landings. A few advisors said the Council and Commission should work to reduce recreational discards. Other advisors said that since scup are not a highly desirable species, discards are inevitable. One advisor said recreational

discards could be reduced if all states had the same 9-inch recreational minimum size limit as federal waters (as opposed to 10-inches in many states currently). One advisor said that scup discards may vary by season, with the highest discards likely occurring in the summer when participation by private anglers (as opposed to anglers on for-hire trips) is highest.

Overall scup are abundant. The biomass is extremely high compared to "target". There is no reason that the RHL should go down or the bag limit should be reduced when the reduction of the high bag limit does virtually nothing to prevent exceeding the RHL. More so, we should look at the division between recreational and commercial as it seems we have been bending over backwards to find ways for commercial fisherman to catch their 78% of the quota while trying to clamp down on recreational landings. Scup should be open at a smaller limit with a high bag limit (i.e 50pp). The recreational sector needs something to fall back on while other species recover.

Research Recommendations

One advisor requested an analysis comparing seasonal tilapia prices to seasonal scup prices, as well as a comparison of the seasonal variation in the volume of tilapia imports compared to commercial scup landings.

Advisors discussed the possibility that regulations are focusing fishing effort on large females. Female and male scup are not known to have different growth rates or substantial differences in maturity; therefore, the scup regulations may not impact females and males differently. Some advisors recommended an analysis of changes in growth rates over time and differences in growth rates and maturity between the two sexes.

Black Sea Bass

Market and Economic Issues

One advisor said the combination of high black sea bass availability, high prices, and high demand during commercial fishery closures makes poaching and illegal sales very tempting for some commercial and recreational fishermen. Some restaurants and other buyers are willing to purchase black sea bass illegally. In some cases, recreational fishermen are illegally selling their catch. One advisor said the scale of illegal landings has increased in recent years. Some advisors said poaching will occur regardless of management measures. Others said less poaching occurs when markets have a steady supply of black sea bass.

One advisor said the price for black sea bass is lower this year because there are more black sea bass on the market. Massachusetts typically contributes a notable amount of commercial landings; however, the commercial season in Massachusetts is currently closed. The price may decrease even farther if the fishery re-opens.

General Management Issues

With the stock at all time high levels BSB needs to carry some of the fishing burden from other species in possible decline. They are abundant and frequently caught while fishing for virtually all other inshore fish in the Mid-Atlantic region (i.e fluke/sea bass, scup/sea bass, Ling/sea bass, cod/sea bass). We should keep more of these fish when encountered and reduce discard mortality as mentioned with scup above.

One advisor said some level of non-compliance (e.g., high grading, poaching) is inevitable when regulations

are unnecessarily restrictive, as has been the case with black sea bass in recent years. He argued that if a new stock assessment had been available earlier, management measures could have been updated earlier to reflect changes in stock status and non-compliance would be less of an issue.

Four advisors requested greater stability in management measures for both commercial and for-hire black sea bass fisheries. Multiple advisors agreed that management should not be so reactive to changes in data. One advisor said that if management measures are set for 3-5 years, they should only be modified in the terminal year, if at all. One advisor said constant quotas could lead to negative impacts on the stock in some years, but over the long-term the stock would not be harmed. Another advisor agreed, saying that the current system of deriving quotas and RHLs is already conservative and accounts for uncertainty, which provides some buffer against potential negative impacts in any given year from stable management measures. One advisor said market stability is also needed.

An AP proxy for the Commission said he supports stability in management measures, but also thought the measures should be adaptable. For example, the Council and Commission could allow for minor changes in annual quotas and RHLs in response to new information.

As mentioned above, the size limit should be decreased because we are in a downward spiral where fish get larger and it takes fewer fish to reach the RHL even when it is higher. This flies in the face of the premise that "if you cut back today, you will be allowed more tomorrow" because regulations get tighter with higher abundance. Because people see this now, they have lost faith in management and are more prone to totally disregard any regulation as they feel they have sacrificed size, season, and bag limit for too long. If you are allowed fewer fish when the stock is at 2.4x target then when will things liberalize? If fishermen never get any "real" relief that they can see in their buckets or time allowed to fish then this exercise of management has failed. The more disconnected that regulations get from reality the less people will be inclined to follow them. For example, there would be a lot of cars speeding on I-95 if the limit was 40 miles per hour the whole way, it is just how it is.

Commercial Management Issues

Advisors discussed the contribution of various gear types to the commercial fishery. Bottom trawls have accounted for a greater proportion of commercial landings in recent years. A few advisors said the contribution of the pot fishery has declined in recent years because trawls are more efficient and trawl-caught black sea bass can be sold for a decent price. One advisor said the few remaining pot fishermen are getting older and those who can are switching to trawls because they are not as physically demanding to operate.

Recreational Management Issues

Many advisors said the wave 5 and 6 MRIP estimates from 2016 were impossibly high and were based on flawed sampling methodology (e.g., a small number of intercepts in a small number of locations). Two advisors said it is not possible that most of the wave 6 (i.e., November and December) landings came from private boats as most private anglers do not fish at that time of year. Many advisors agreed that the Council and Commission should not adjust management measures based on data that MRIP staff, Technical Committee members, and other experts have said is inaccurate (e.g., New York wave 6 data for 2016). One advisor emphasized that restrictions based on flawed data can have major negative impacts on the livelihoods of for-hire captains and also negatively impact support businesses such as bait and tackle shops.

MRIP has continued to be wrong and continually demonstrates that numbers are more like powerball

numbers than science. I have a 100' vessel that lost 33% of my trips in November and December last year as the weather was terrible. There were a few trips I made that I probably shouldn't have as they were that rough. That being said, according to MRIP, small private boats were out there all of the time out fishing larger boats. It just didn't happen. Even the TC cannot adequately explain how MRIP comes up with the extrapolations that they do. The TC doesn't believe it, the AP doesn't believe it, the RA doesn't believe it, the states don't believe it and the Council doesn't believe it. The Council should take a stand and not use the wave 6 numbers just because they "best available science". It seems like a coin flip would almost be as good.

Two advisors recommended eliminating the September and October closure of the recreational fishery in federal waters. One advisor said some areas, such as southern New Jersey, do not have inshore black sea bass fisheries during that time of year and the federal waters closure leaves many vessels tied to the dock. Another advisor supported eliminating that closure because it occurs during the peak of black sea bass abundance in federal waters off Rhode Island and between Montauk and Rhode Island.

One advisor said that as the recreational black sea bass season has become shorter and shorter over the past two to three years in an attempt to restrict landings to the RHL, discards have increased. For example, the fishery is now closed during certain times of year when black sea bass are available and the recreational summer flounder fishery is open. Anglers targeting summer flounder are catching black sea bass, but are forced to discard them.

One advisor said low trip limits coupled with high availability decreases angler satisfaction. In recent years, it is not unusual for every angler on for-hire trips to quickly catch their limit of black sea bass.

Three advisors supported establishing state-by-state recreational black sea bass allocations. One advisor said allocations should be based on the number of recreational fishing licenses in each state rather than MRIP data. He added that the recreational black sea bass fishery in southern New Jersey is declining and state-by-state allocations could help protect the interests of that fishery. **I believe we should have a state by state management for BSB. I'm not sure how allocations should work but regionalization has proved ineffective as NY continues policies that guaranty they will exceed the RHL and that 4 other states will have to pay for it. It also disadvantages NJ as we have a Federal fishery (85%) with smaller fish but we are lumped into a group with access to large fish in state waters. Northern states want NJ in the northern group so they can lay off their overages and southern states don't want NJ in their region as NJ lands more fish than the entire group and could negatively effect their regs. NJ should be a stand alone region as evidenced by the stock assessment and the technical committee recommendations. If not we should move to state by state conservation equivalency for all so that states take responsibility for their own overages.**

One advisor said that if regional, rather than state-by-state, allocations were established, the Council and Commission should aim for uniform bag limits, minimum fish sizes, and seasons within regions, while accounting for differences in the seasonal distribution of black sea bass in different states. For example, in Massachusetts, the black sea bass fishery has traditionally occurred in the spring, while in neighboring states the fishery tends to take place in the summer and fall. This could pose challenges for establishing a uniform set of management measures if Massachusetts were included in a region with neighboring states.

At least two advisors supported opening the wave 1 (January-February) recreational fishery. One advisor said wave 1 was very important for southern states. Two advisors said wave 1 was traditionally was dominated by for-hire boats, with very few private anglers participating. One advisor said harvest during wave 1 was low but was nonetheless very beneficial for the for-hire industry in certain areas. **Wave 1 should be open! The only**

reason it was ever closed was because there was no catch data because NMFS was too cheap to do it and the catch was deemed de minimis. It is inconsistent to say that few private anglers participate in this fishery AND that it is dominated by for-hire vessels. For-Hire vessels are the way that recreational anglers access the winter fishery. The for-hire fleet is taking out recreational anglers and would not be a "for-hire" fleet without them. Many of the participants are private recreational anglers who have put their boats away for the winter and still want to fish.

This fishery also fills the void left by other now, non-existent fisheries such as cod in the mid-Atlantic. Without the wave 1 fishery the for-hire fleet basically has nothing to fish for until the beginning of May. Please note that this fishery was rebuilt with regulations that were, at times, 25 fish/11"/365 day season. With a stock at 2.4X target there is no reason not to open this fishery. Many people I know wait all year for the winter fishery and still do not understand why it has not re-opened. We should move ahead with Tony DiLernia's proposal.

Summer Flounder

Environmental and Ecological Issues

At least one advisor said the retrospective pattern in the stock assessment needs to be investigated. Specifically, why age 0 fish are not recruiting into the population in large numbers. This advisor stated that density dependence needs to be properly considered. He believed that when SSB is low, the fish reproduce more, and vice versa.

Two advisors mentioned that the water was cold this past year, off New Jersey, Rhode Island, and New York in particular. Off New Jersey, around the Hudson Canyon, vessels were catching summer flounder and black sea bass until June, a month later than usual for this area. Fish came inshore much later than usual and in general were less available in nearshore areas than usual. He added that in nearshore areas off Monmouth County, NJ, they are seeing a lot of medium sized (14"-16") fish with few jumbos available.

One advisor suggested that instead of managing for catch limits in pounds, managers should evaluate regulations based on the reproductive efficiency of the fish; for example, considering allowing harvest of different sized fish at different times of the year to minimize impacts to spawning populations.

One advisor said he did not see as many large summer flounder in the commercial fishery off New York last year as he has in the past, though he did see evidence of good recruitment. Another advisor described a much larger biomass of summer flounder off New York in recent years.

Market and Economic Issues

An advisor said he has never seen an economic impact study on the drastic impacts recent quota cuts are having, particularly in southern New Jersey. Staff responded that economic analyses are completed each time the quota or management measures are revised. Several advisors agreed that it would be useful to have a cumulative socioeconomic study over several years, instead of evaluating likely impacts in individual years. One suggestion was to obtain state vessel registration information and evaluate participation trends in the recreational fishery over time.

Commercial Management Issues

Several advisors agreed that commercial catch rates are primarily influenced by regulations, especially quota cuts.

One advisor expressed concern about high grading in the commercial fishery. He said vessels are catching all sizes of summer flounder, but few of the landed fish are less than 14", suggesting high grading. He thought this may be especially true for vessels in states with the option of a higher weekly limit instead of a lower daily limit. Another advisor said this is due to the minimum mesh size, not high grading.

Recreational Management Issues

Several advisors expressed frustration with very restrictive management measures. There was particular frustration with the data used to manage the recreational fishery and the negative impacts it is having on recreational businesses. These advisors believed that underages and overages of the RHL in recent years are partially due to the imprecision of the MRIP estimates.

One advisor noted that according to MRIP, the number of directed summer flounder recreational trips in recent years has exceeded the number of pounds in the RHL, which is a problem; there is too much effort relative to the current RHL for reasonable regulations.

At least six advisors raised concerns around increasing size limits and how this leads to targeting larger females in the recreational fishery. Because the fishery is managed with weight-based harvest limits, it is much easier to exceed these limits when most landed fish are large. Advisors were also concerned about high recreational discards. Several advisors said the current assumed recreational discard mortality rate (10%) may be an underestimate. **This is a major problem that I agree with and we need an age/sex model for management.**

Multiple advisors requested that the Council and Commission work to reduce discards by considering management measures such as a lower minimum fish size or a slot limit. One slot limit suggestion was to use 13-18" to reduce mortality on females. Three advisors recommended a total length allowance (i.e., keeping all fish up to a certain total number of inches), with mandatory retention. One advisor suggested allowing for varying size limits or varying slot limits at different times of years to spread fishing mortality over more sizes and year classes of fish.

One advisor requested elimination of the current regional management regime, stating that it has not been good for New Jersey. Another advisor said Northern and Southern New Jersey have very different summer flounder populations, with fish that tend to be smaller in the south. **This is a major problem that I also agree with. We need to go back to stste by state conservation equivalency and stay away from unrealistic regionalization.**

Research Recommendations

For summer flounder, advisors suggested the following research recommendations:

- Evaluate the impacts of higher fishing mortality on certain size/sex combinations compared to others, and the benefits of spreading fishing mortality more evenly among different age classes;
- Re-evaluate the 10% recreational discard mortality assumption;
- Evaluate the potential impacts of a total length limit on recreational discards;
- Evaluate cumulative economic impacts of quota cuts and management measure restrictions over

Kiley Dancy

From: Fishthewizard <fishthewizard@aol.com>
Sent: Wednesday, July 05, 2017 10:11 AM
To: Kiley Dancy
Subject: Black Sea Bass Fishery Performance Report

Re: Commercial Sea Bass Fishery

The uncertainty with quotas and management measures makes it difficult for potters to plan their season. If a boat sets out pots according to expected quotas and trip limits, it isn't quick or easy to get more pots out, especially in the summer when docks are busy in NJ. Because the 2017 increased quota wasn't implemented until mid-June, it is hard to take advantage of the more than doubled quota until more pots are set. This was after the original 2017 quota was supposed to be cut by over 30%. And the quota for 2018 is set to be less than 2017.

Joan Berko

Kiley Dancy

From: Monty Hawkins <capt.montyhawkins@gmail.com>
Sent: Tuesday, June 27, 2017 8:35 AM
To: Kiley Dancy
Subject: Comment

Categories: SFSCBSB

Hi Kiley,

As it happens I must earn my living in a shorter period of time than I once did. Making every single day of sea bass season count is vital to continuing as a business ..and our season is longer than others.

Where we once witnessed magnificent stock growth with no closed season, no bag limit, and only a small size limit; I believe management's continued use of MRIP and its disastrous consequences on the human side of the sea bass fishery an amazing stretch of "best scientific information available" ..

How can we accept as 'science' that which no one believes?

..and how can we possibly expect good result from regulation whose foundation is falsehood?

No, whether summer flounder or sea bass -- any species managed via catch restriction and yet no real idea of catch - our task is to demand managers find a way forward without MRIP.

Cheers,

Monty

Sent from my iPhone



Black Sea Bass Fishery Information Document

June 2017

This document provides a brief overview of the biology, stock condition, management system, and fishery performance for black sea bass with an emphasis on 2016, the most recent complete fishing year.

1. Biology

Black sea bass (*Centropristis striata*) are distributed from the Gulf of Maine through the Gulf of Mexico, but fish north of Cape Hatteras, North Carolina are considered one unit stock. Adults and juveniles 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 prefer to be near structures such as rocky reefs, coral patches, cobble and rock fields, mussel beds, and shipwrecks. Adults in the Mid-Atlantic show strong site fidelity during the summer but migrate to offshore wintering areas south of New Jersey when water temperatures decrease in the fall. Adults in the South Atlantic and Gulf of Mexico do not migrate during the winter.¹

Black sea bass are protogynous hermaphrodites, meaning the majority are born female and then 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 nuchal hump during the spawning season. About half of black sea bass are sexually mature by 2 or 3 years of age and about 20 cm (about 8 inches) in length. Most black sea bass greater than 19 cm (about 7.5 inches) are either in a transitional stage between female and male or have fully transitioned to the male stage. Results from a simulation model highlight the importance of subordinate males, and therefore less reliance on dominant males, in the spawning success of sea bass improving its resiliency to exploitation compared to other species with a typical protogynous life history. Black sea bass reach a maximum size of about 60 cm (about 24 inches) and a maximum age of about 12 years.^{1,2}

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 complex coastal habitats with tautog, hakes, conger eel, sea robins and other migratory fish species. Essential Fish Habitat (EFH) 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. Juvenile and adult black sea bass 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, and monkfish as predators of black sea bass.¹

2. Status of the Stock

A benchmark stock assessment for black sea bass was peer-reviewed and approved at the 62nd Stock Assessment Review Committee (SARC 62) in December 2016. The protogynous life history, structure-orienting behavior and potential spatial stock structure of black sea bass have

posed challenges for prior analytical assessments of this species. The benchmark stock assessment was successful at evaluating, addressing and incorporating many of the concerns and greatest sources of uncertainty that had plagued prior stock assessments. The 2016 benchmark stock assessment working group spent a great deal of time analyzing and simulating various datasets to gain a better understanding on how these life history characteristics impact the assessment and the black sea bass population. As the result of this new information and changes to the modelling approaches, new biological reference points were developed as part of the assessment.^{3,4}

The 2016 benchmark assessment indicated that the black sea bass stock north of Cape Hatteras, North Carolina was not overfished and overfishing was not occurring in 2015, the terminal year of the assessment. Spawning stock biomass (SSB) averaged around 6 million pounds from the late 1980's and early 1990's and then steadily increased from 1997 to 2002 when it reached 18.7 million pounds. There was then a decline in SSB until 2007 (8.9 million pounds), followed by a steady increase through 2015 with SSB at its highest estimated level (Figure 1). The model-estimated SSB in 2015 was 48.89 million pounds (22,176 mt), 2.3 times SSB at maximum sustainable yield, $SSB_{MSY} = 21.31$ million pounds (9,667 mt).⁴

The fishing mortality rate (F) in 2015 was 0.27, below the fishing mortality threshold reference point ($F_{MSY\ PROXY} = F40\%$) of 0.36 (Figure 2). Fishing mortality was very high in the early 1990's, typically greater than 1.0, but declined and stabilized after 1997 once black sea bass was added to the summer flounder and scup management plan. Fishing mortality has been below the $F_{MSY\ PROXY}$ reference point for the last five years. Model estimated recruitment was relatively constant throughout the time series except for large peaks from the 1999 and 2011 year classes. Average recruitment of age 1 black sea bass from 1989 – 2015 equaled 24.3 million fish with the 1999 year class estimated at 37.3 fish and the 2011 year class estimated at 68.9 million fish. Since 2012, recruitment has been average with the latest cohort (2014 year class) estimated to be 24.9 million fish. There is some evidence there may be a strong 2015 year class but additional catch and survey information is needed to determine its status.⁴

A data update with information through 2016, including recent estimates of commercial and recreational fishery catch and fishery independent indices, will be provided by the NEFSC in July 2017.

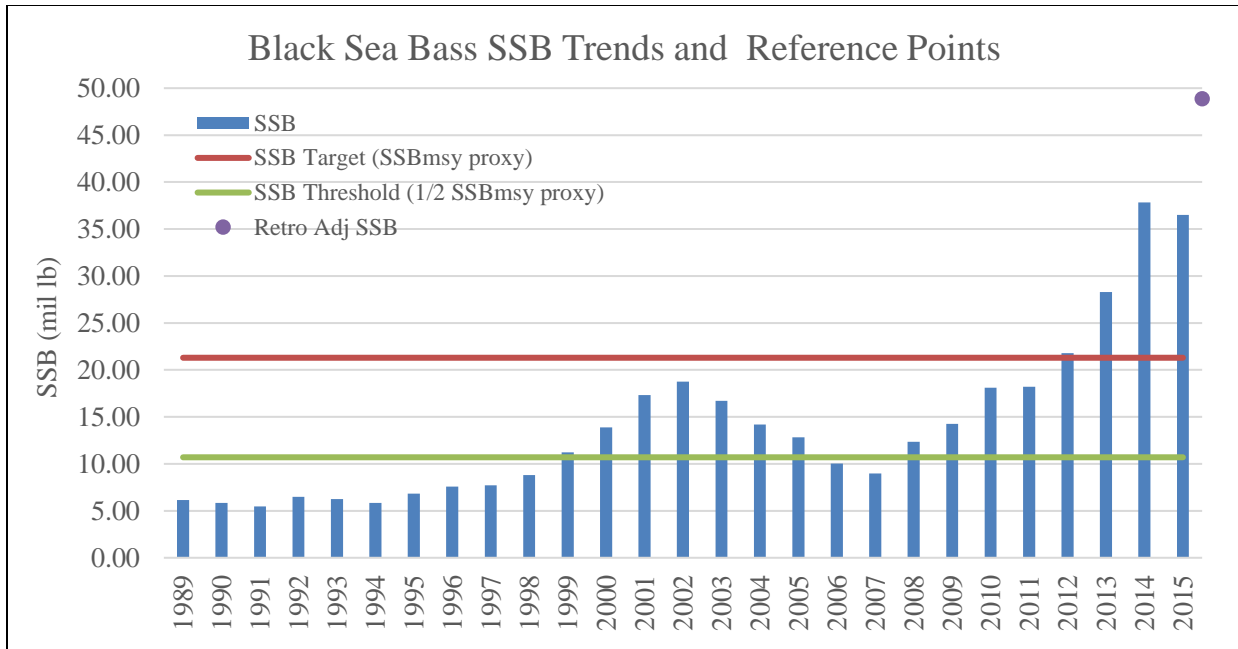


Figure 1: Spawning stock biomass, both mature male and female biomass, of black sea bass from 1989 to 2015 and biomass reference points from the 2016 benchmark stock assessment. The 2015 retro-adjusted spawning stock biomass value was generated to correct for the retrospective bias present in the assessment model and is used as the estimate to compare to the reference points.⁴

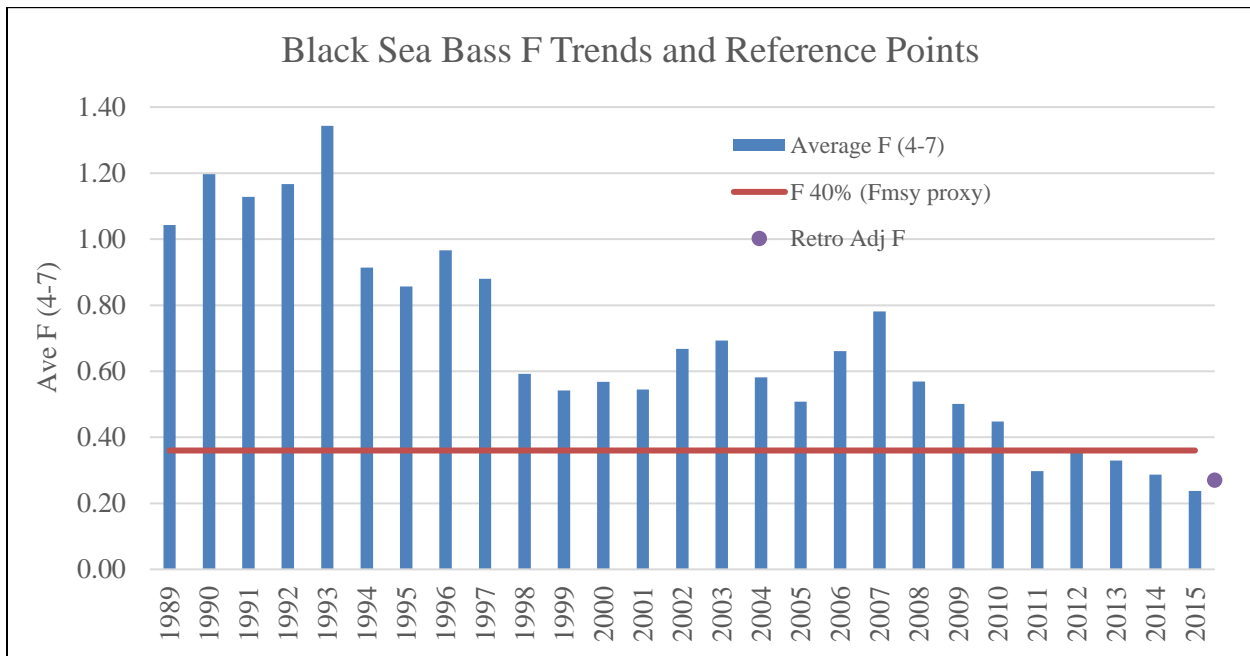


Figure 2: Fishing mortality rate on black sea bass ages 4-7 and the F_{MSY} PROXY reference point from the 2016 benchmark stock assessment. The 2015 retro-adjusted fishing mortality rate value was generated to correct for the retrospective bias present in the assessment model and is used as the estimate to compare to the reference points.⁴

In January 2017, the Mid-Atlantic Fishery Management Council's (Council's) Scientific and Statistical Committee (SSC) reviewed the most recent black sea bass benchmark stock assessment and peer review results. The SSC recognized the substantial improvement in the black sea bass stock assessment and accepted the OFL estimates produced by the stock assessment for management use.

3. Management System and Overall Fishery Performance

The Council and the Atlantic States Marine Fisheries Commission (Commission) work cooperatively to develop fishery regulations for black sea bass from Maine through Cape Hatteras, North Carolina. The Council and Commission work in conjunction with the National Marine Fisheries Service (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, also known as the Exclusive Economic Zone or EEZ). The management unit for black sea bass includes U.S. waters from Cape Hatteras, North Carolina to the U.S.-Canadian border.

The Council has managed black sea bass since 1997 when it amended the Summer Flounder and Scup Fishery Management Plan (FMP) to include black sea bass. The original FMP and subsequent amendments and frameworks 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, minimum fish sizes, gear regulations, permit requirements, and other provisions as prescribed by the FMP. The Council allocates 49% of the total allowable landings of black sea bass to the commercial fishery as a commercial quota and 51% of allowable landings to the recreational fishery as a recreational harvest limit.

The Council's SSC recommends annual Acceptable Biological Catch (ABC) levels for black sea bass, which are then approved by the Council and Commission and submitted to NMFS for final approval and implementation. The ABC is divided into commercial and recreational Annual Catch Limits (ACLs), based on the landings allocation prescribed in the FMP and the recent distribution of discards between the commercial and recreational fisheries. The Council first implemented recreational and commercial ACLs, with a system of overage accountability, in 2012. Both the ABC and the ACLs are catch limits (i.e., include both projected landings and discards), while the commercial quota and the recreational harvest limit are landing limits.

Table 1 shows black sea bass catch and landings limits from 2008 through 2018, as well as commercial and recreational landings through 2016. Total black sea bass landings (commercial and recreational) peaked in 1986, when approximately 15.8 million pounds of black sea bass were landed. About 7.70 million pounds of black sea bass were landed by commercial and recreational fishermen from Maine through Cape Hatteras, North Carolina in 2016 (Figure 3).^{5,6}

Table 1: Summary of catch limits, landings limits, and landings for commercial and recreational black sea bass fisheries and landings from Maine through Cape Hatteras, NC 2008 through 2018.

Management measures	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018 ^d
ABC (mil. lb) ^a	--	--	4.50	4.50	4.50	5.50	5.50	5.50	6.67	10.47	8.94
Commercial ACL (mil. lb) ^a	--	--	--	--	1.98	2.60	2.60	2.60	3.15	5.09	4.35
Commercial quota (mil. lb) ^b	2.03	1.09	1.76	1.71	1.71	2.17	2.17	2.21	2.71	4.12	3.52
Commercial landings (mil. lb)	1.93	1.18	1.68	1.69	1.72	2.26	2.18	2.29	2.59 ^c	--	--
% of commercial quota landed	95%	108%	95%	99%	101%	104%	100%	104%	96%	--	--
Recreational ACL (mil. lb) ^a	--	--	--	--	1.86	2.90	2.90	2.90	3.52	5.38	4.59
Recreational harvest limit (mil. lb) ^b	2.11	1.14	1.83	1.78	1.32	2.26	2.26	2.33	2.82	4.29	3.66
Recreational landings (mil. lb)	2.03	2.56	3.19	1.17	3.19	2.46	3.60	3.79	5.19	--	--
% of recreational limit harvested	96%	225%	174%	66%	242%	109%	159%	163%	184%	--	--

^a The ABC is the annual Acceptable Biological Catch for the entire black sea bass fishery, and is divided into sector-specific Annual Catch Limits (ACLs) for the commercial and recreational fisheries. The ABC and ACLs include both landings and discards.

^b Commercial quotas and recreational harvest limits reflect the removal of projected discards from the sector-specific ACLs. For 2006-2014, these limits are also adjusted for Research Set Aside (RSA). Quotas and harvest limits for 2015-2018 do not reflect an adjustment for RSA due to the suspension of the program in 2014.

^c Preliminary.

^d Currently implemented; subject to change based on SSC review and subsequent Council and Commission review in July/August 2017.

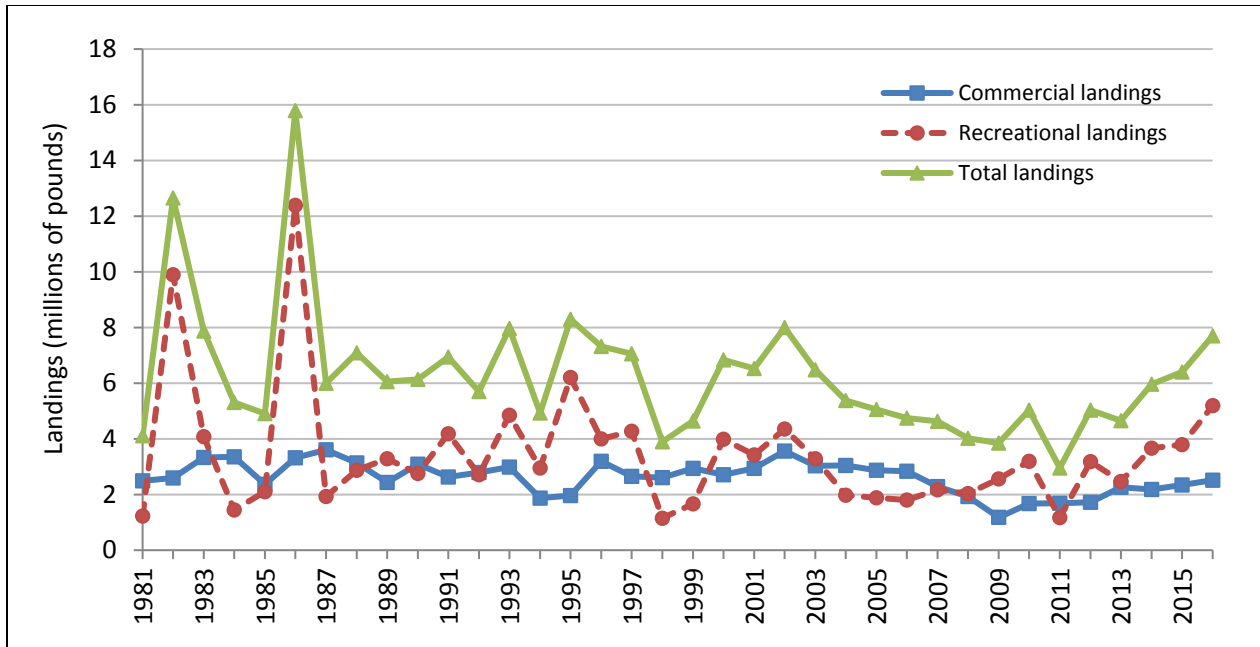


Figure 3: Commercial and recreational black sea bass landings in millions of pounds from Maine through Cape Hatteras, North Carolina, 1981-2016.^{5,6}

4. Commercial Black Sea Bass Measures and Fishery Performance

Commercial landings of black sea bass peaked in 1987 at 3.61 million pounds, and reached a low of 1.18 million pounds in 2009 (Figure 3). In 2016, commercial fishermen landed approximately 2.59 million pounds of black sea bass (corresponding to 96% of the commercial quota), an increase from 2.29 million lb in 2015 which corresponds to an increase in the 2016 quota.⁶

A moratorium permit is required to fish commercially for black sea bass in federal waters. In 2016, 673 vessels held federal commercial black sea bass permits.⁷

The minimum commercial size limit for black sea bass of 11 inches total length has been in place since 2002. The Commission divides the black sea bass commercial quota among the states based on the allocation percentages given in Table 2, and states set measures to achieve their state-specific commercial quotas.

Table 2: Allocation of commercial black sea bass quota among states established in 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

Vessel Trip Report (VTR) data for 2016 indicate that 65% of the commercial black sea bass caught by federal permit holders from Maine to North Carolina was caught with bottom otter trawl gear. About 22% were caught with fish pots and traps, 5% in offshore lobster traps, 4% with hand lines and 2% assigned to beam otter trawls. Other gear types accounted for just over 1% each of total commercial landings.⁸

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 target black sea bass commercially must have two escape vents with degradable hinges in the section known as 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.

A review of the VTR data suggest that statistical area 616 was responsible for the largest percentage of commercial black sea bass catch in 2016 (Table 3, Figure 4). While statistical area 539 accounted for only 4.6% of 2016 black sea bass catch, this area had the highest number of trips that caught black sea bass (1,378 trips), accounting for 16.3% of all trips.⁸ It should be noted that discards on VTR’s are self-reported.

Table 3: Statistical areas that accounted for at least 5% of the total commercial black sea bass catch in 2016, with associated number of trips.⁸

Statistical Area	Percent of 2016 Commercial Black Sea Bass Catch	Number of Trips
616	34%	492
621	11%	318
613	11%	933
537	9%	921
615	8%	158

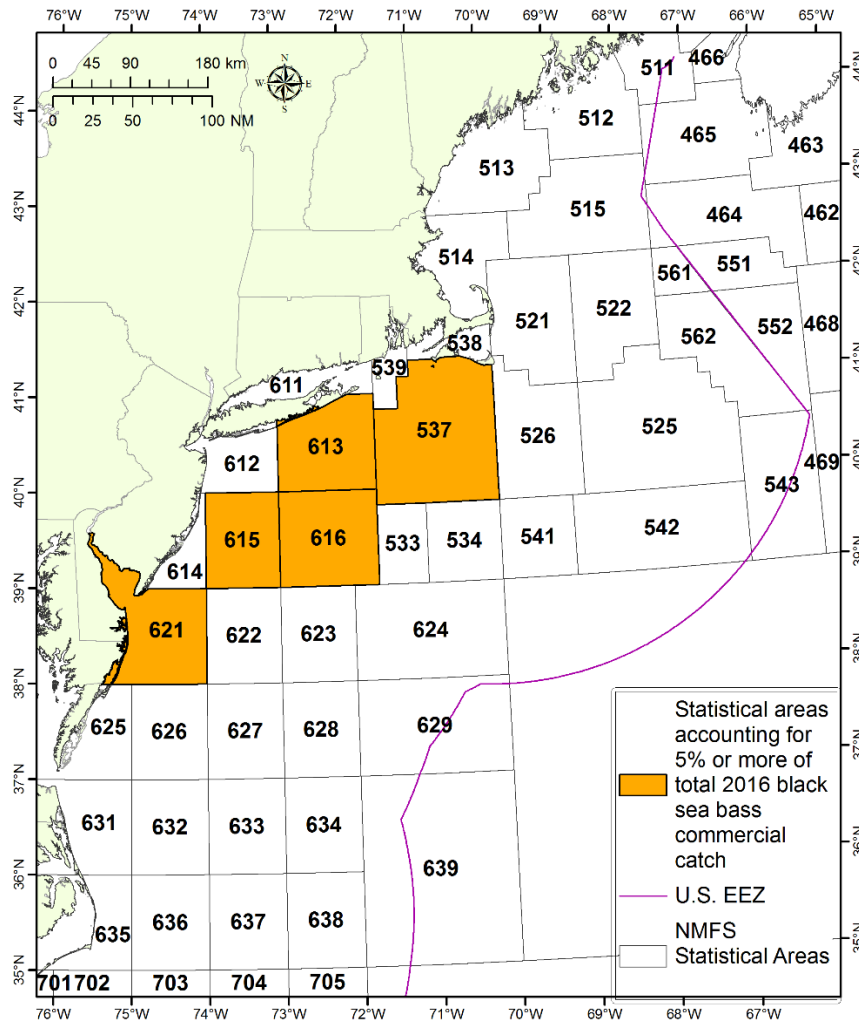


Figure 4: NMFS Statistical Areas, highlighting those that each accounted for more than 5% of the commercial black sea bass catch in 2016.⁸

Over the past two decades, total black sea bass ex-vessel value (adjusted to 2016 dollars to account for inflation) from Maine to North Carolina has ranged from a low of \$3.33 million in 1994 and

reached a time series high in 2016 with an ex-vessel value of \$9.26 million. Black sea bass reached its lowest adjusted average annual price per pound in 1996, at \$1.65 (\$1.14 in 1996 dollars), and its highest adjusted average annual price per pound in 2016, at \$3.58 (Figure 5).⁶

In 2016, 2.59 million pounds of black sea bass were landed in the commercial fishery, generating \$9.26 million in revenues at an average price of \$3.58 per pound (Figure 5). Landings, ex-vessel value and price per pound are all increases from 2015.⁶

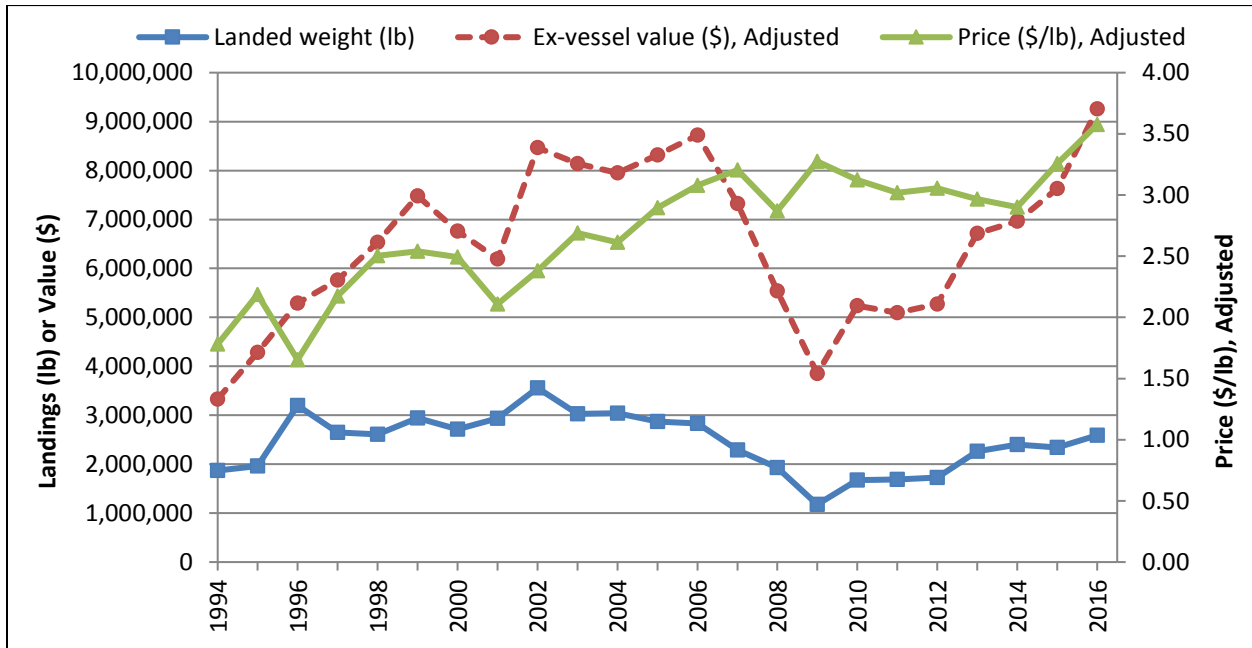


Figure 5: Landings, ex-vessel value, and price for black sea bass, from Maine through North Carolina, 1994-2016. Ex-vessel value and price are adjusted to real 2016 dollars.⁶

At least 100,000 pounds of black sea bass were landed in each of nine ports in seven east coast states in 2016. These nine ports accounted for nearly 61% of all commercial black sea bass landings in 2016 (Table 4).⁶ Detailed community profiles developed by the NEFSC Social Science Branch can be found at www.mafmc.org/communities/.

Table 4: Ports reporting at least 100,000 lb of black sea bass landings in 2016, and corresponding percentage of total 2016 commercial black sea bass landings.⁶

Port name	Pounds of black sea bass landed	% of total commercial black sea bass landed	Number of vessels landing black sea bass
HAMPTON, VA	238,435	9.2	39
PT. PLEASANT, NJ	237,355	9.2	39
OCEAN CITY, MD	232,039	9.0	7
POINT JUDITH, RI	208,962	8.1	133
CAPE MAY, NJ	151,608	5.9	39
CHINCOTEAGUE, VA	141,663	5.5	10
NEW BEDFORD, MA	136,399	5.3	49
MONTAUK, NY	108,590	4.2	88
BEAUFORT, NC	104,916	4.1	47

207 federally-permitted dealers from Maine through North Carolina bought black sea bass in 2016, down slightly from 209 dealers purchasing black sea bass in 2015. More dealers bought black sea bass in New York than in any other state (Table 5). All dealers purchased approximately \$9.26 million worth of black sea bass in 2016.⁶

Table 5: Dealers, by state, who reported buying black sea bass in 2016.⁶

State	MA	RI	CT	NY	NJ	DE	MD	VA	NC
Number of dealers	32	32	13	46	32	3	8	16	25

5. Recreational Black Sea Bass Measures and Fishery Performance

Black sea bass support a sizable recreational fishery in the Mid-Atlantic region. Most recreational black sea bass landings occur in state waters when the fish migrate inshore during the warm summer months.

The Council develops coast-wide regulations for the recreational black sea bass fishery in federal waters, including a minimum size, a possession limit, and open seasons (Table 6). The Commission and member states develop recreational black sea bass regulations in state waters (Table 7).

Table 6: Federal recreational measures for black sea bass, north of Cape Hatteras, NC, 2007 through 2017.

Measure	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Min. size (inches, total length)	12	12	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5
Possession limit	25	25	25	25	25	25	20	15	15	15	15
Open season	1/1-12/31	1/1-12/31	1/1-10/5	5/22-10/11 and 11/1-12/31	5/22-10/11 and 11/1-12/31	5/19-10/14 and 11/1-12/31	5/19-10/14 and 11/1-12/31	5/19-9/18 and 10/18-12/31	5/15-9/21 and 10/22-12/31	5/15-9/21 and 10/22-12/31	5/15-9/21 and 10/22-12/31

Table 7: State waters black sea bass recreational fishing measures in 2017.

State	Minimum Size (inches)	Possession Limit	Open Season
Maine	13	10 fish	May 19-September 21; October 18-December 31
New Hampshire	13	10 fish	January 1-December 31
Massachusetts	15	5 fish	May 20-August 29
Rhode Island**	15	3 fish	May 25-August 31
		7 fish	September 1-21; October 22-31
		5 fish	November 1-December 31
Connecticut** (Private & Shore)	15	5 fish	May 1-December 31
CT Authorized Party/Charter Monitoring Program Vessels		8 fish	May 1-October 31
		5 fish	November 1-December 31
New York**	15	3 fish	June 27-August 31
		8 fish	September 1-October 31
		5 fish	November 1-December 31
New Jersey**	12.5	10 fish	May 26-June 18
		2 fish	July 1-August 31
	TBD*	TBD*	TBD*
Delaware	12.5	15 fish	May 15-September 21; October 22-December 31
Maryland	12.5	15 fish	May 15-September 21; October 22-December 31
Virginia	12.5	15 fish	May 15-September 21; October 22-December 31
North Carolina, North of Cape Hatteras (N of 35° 15'N)	12.5	15 fish	May 15-September 21; October 22-December 31

* New Jersey DFW has indicated the fall regulations are TBD

** On May 10, 2017, the possession limit was modified to 5 fish during Wave 6 (November/December) for the states of RI-NJ

Recreational data for 2004 and later are available from the Marine Recreational Information Program (MRIP). For years prior to 2004, recreational data were generated by the Marine Recreational Fishery Statistics Survey (MRFSS). Recreational black sea bass catch and landings peaked in 1986 when an estimated 28.95 million fish were caught and 21.74 million fish were landed by recreational fishermen from Maine to Cape Hatteras, North Carolina. Recreational catch reached a low of 3.43 million fish in 1984. Recreational landings were at their lowest in 2011, when 0.82 million fish were landed. In 2016, MRIP data indicate that an estimated 5.19 million pounds of black sea bass were landed recreationally from Maine through Cape Hatteras, North Carolina, corresponding to 184% of the 2016 recreational harvest limit (Tables 8 and 1, respectively).⁵

For-hire vessels carrying passengers in federal waters must obtain a federal party/charter permit. In 2016, 749 party and charter boats held federal recreational black sea bass permits. Many of these vessels also hold recreational permits for summer flounder and scup. The number of federal recreational black sea bass permits has steadily declined since a peak of 904 permits issued in 2009.⁷

Table 8: Estimated recreational black sea bass catch and landings from 1982 through 2016 from Maine through Cape Hatteras, North Carolina.⁵

Year	Catch (‘000 of fish)	Landings (‘000 of fish)	Landings (‘000 of pounds)
1982	11,386	10,045	9,894
1983	7,561	4,537	4,079
1984	3,428	1,780	1,447
1985	6,047	3,388	2,097
1986	28,946	21,742	12,392
1987	5,052	2,883	1,924
1988	8,186	3,088	2,869
1989	6,427	4,239	3,289
1990	9,135	3,881	2,761
1991	10,829	5,269	4,186
1992	7,722	3,592	2,706
1993	9,023	6,007	4,842
1994	7,166	3,430	2,948
1995	14,059	6,747	6,207
1996	8,143	3,624	3,993
1997	10,646	4,739	4,268
1998	5,146	1,148	1,152
1999	7,400	1,378	1,664
2000	16,927	3,629	3,988
2001	13,869	2,841	3,421
2002	14,703	3,351	4,349
2003	12,128	3,251	3,289
2004	7,238	1,531	1,973
2005	7,041	1,263	1,883
2006	7,602	1,286	1,800
2007	8,727	1,528	2,175
2008	10,653	1,294	2,031
2009	9,224	1,806	2,558
2010	9,964	2,207	3,190
2011	4,737	817	1,171
2012	12,536	1,874	3,185
2013	9,807	1,282	2,464
2014	10,870	2,118	3,667
2015	9,429	2,215	3,790
2016	14,139	2,543	5,187

In 2016, about 65% of black sea bass landed by recreational fishermen were caught in state waters, and about 35% in federal waters (Table 9). The majority of black sea bass were landed in New York, Connecticut and Massachusetts. These three states accounted for about 73% of all recreational landings from Maine to Cape Hatteras, North Carolina in 2016 (Table 10).⁵

Table 9: Estimated percentage of black sea bass recreational landings (in numbers of fish) in state vs. federal waters, from Maine through North Carolina, 2007 through 2016.⁵

Year	State waters	Federal waters
2007	34.8%	65.2%
2008	60.3%	39.7%
2009	67.5%	32.5%
2010	72.1%	27.9%
2011	63.8%	36.2%
2012	72.6%	27.4%
2013	66.6%	33.4%
2014	62.5%	37.5%
2015	67.3%	32.7%
2016	64.6%	35.4%
2007-2016 average	63.2%	36.8%
2014-2016 average	64.8%	35.2%

Table 10: State-by-state contribution (as a percentage) to total recreational landings of black sea bass (in number of fish), Maine through Cape Hatteras, North Carolina, in 2015 and 2016.⁵

State	2015	2016
Maine	0.0%	0.0%
New Hampshire	0.0%	0.0%
Massachusetts	15.5%	15.4%
Rhode Island	10.5%	10.0%
Connecticut	14.9%	17.1%
New York	39.6%	40.6%
New Jersey	14.0%	11.6%
Delaware	1.0%	1.0%
Maryland	2.6%	3.1%
Virginia	1.8%	1.1%
North Carolina	0.1%	0.0%

MRIP data indicate that about 79% of recreational black sea bass landings in 2016 were caught by anglers fishing on private or rental boats, about 18% from anglers aboard party or charter boats, and less than 3% from shore (Table 11).⁵

Table 11: The number of black sea bass landed (in numbers of fish) by recreational fishing mode, Maine through North Carolina, 1981-2016.⁵

Year	Shore	Party/charter	Private/rental
1981	452,103	1,440,169	841,478
1982	81,445	8,104,204	2,063,334
1983	222,012	4,005,707	1,403,508
1984	98,227	1,128,294	1,264,897
1985	163,448	2,393,049	1,659,700
1986	1,021,525	16,695,387	4,187,084
1987	71,956	1,157,243	2,238,159
1988	140,754	1,691,300	2,227,901
1989	237,970	1,991,672	2,419,654
1990	289,378	2,268,915	1,710,455
1991	250,675	2,586,145	2,621,271
1992	45,369	2,043,190	1,780,224
1993	54,676	4,579,662	1,562,227
1994	243,347	2,005,883	1,321,629
1995	275,982	5,197,231	1,413,571
1996	70,523	2,631,733	1,062,027
1997	8,337	3,950,336	908,836
1998	7,073	777,874	474,069
1999	19,231	621,354	771,260
2000	177,489	1,797,702	1,780,240
2001	14,035	1,826,852	1,164,977
2002	16,618	2,066,232	1,338,448
2003	10,760	2,073,132	1,308,493
2004	9,462	698,453	1,217,160
2005	13,110	605,932	869,467
2006	49,080	730,749	612,618
2007	9,865	909,869	709,901
2008	9,447	479,682	852,619
2009	23,992	442,107	1,442,842
2010	6,096	519,529	1,809,046
2011	8,177	310,760	561,730
2012	6,443	701,777	1,237,668
2013	12,246	274,269	1,035,601
2014	20,065	785,730	1,386,149
2015	3,284	936,006	1,343,013
2016	71,255	475,712	2,053,370
% of Total, 1981-2015	3.1%	58.7%	38.2%
% of Total, 2014-2016	1.3%	31.1%	67.6%

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- ⁶ Unpublished NMFS dealer data.
- ⁷ Unpublished NMFS permit data.
- ⁸ Unpublished NMFS Vessel Trip Report (VTR) data.