

Atlantic States Marine Fisheries Commission

**DRAFT ADDENDUM V TO AMENDMENT 6
TO THE ATLANTIC STRIPED BASS
INTERSTATE FISHERY MANAGEMENT PLAN**



This draft document was developed for Management Board review and discussion only. This document is not intended to solicit public comment as part of the Commission/State formal public input process. Comments on this draft document may be given at the appropriate time on the agenda during the scheduled meeting. If approved, a public comment period will be established to solicit input on the issues contained in the document.

**ASMFC Vision:
Sustainably Managing Atlantic Coastal Fisheries**

May 2017

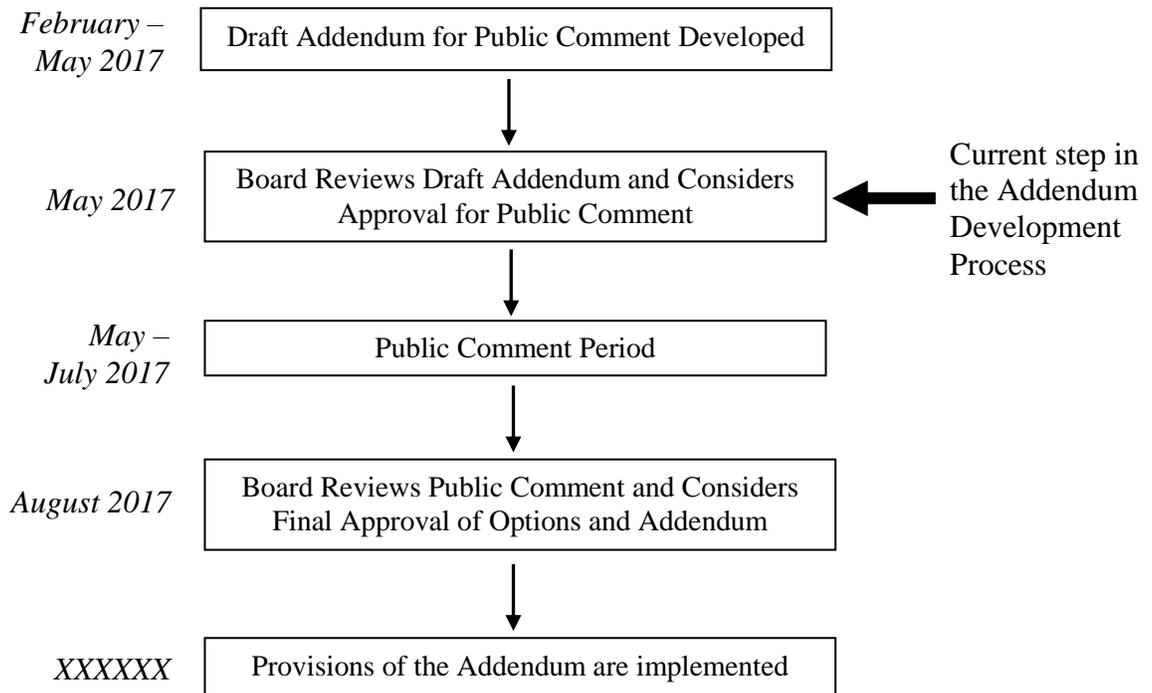
Public Comment Process and Proposed Timeline

In February 2017, the Atlantic Striped Bass Management Board initiated an addendum to Amendment 6 to the Interstate Fishery Management Plan for Atlantic Striped Bass to consider changes to coastwide commercial and recreational regulations. This draft addendum presents background on the Atlantic States Marine Fisheries Commission’s management of striped bass, the addendum process and timeline, a statement of the problem, and proposed management options.

The public is encouraged to submit comments regarding this document at any time during the addendum process. **The final date comments will be accepted is 5pm on [Month Day], 2017.** Comments may be submitted by mail, email, or fax. If you have any questions or would like to submit comment, please use the contact information below.

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1.0 Introduction

Atlantic striped bass are managed through the Atlantic States Marine Fisheries Commission (Commission) in state waters (0-3 miles) and through NOAA Fisheries in federal waters (3-200 miles). The management unit includes the coastal migratory stock between Maine and North Carolina. Atlantic striped bass are currently managed under Amendment 6 (2003) to the Interstate Fishery Management Plan (FMP) and Addenda I–IV.

At its February 2017 meeting, the Board initiated the development of Draft Addendum V to Amendment 6 to the Atlantic Striped Bass FMP to consider a relaxation of the coastwide commercial and recreational regulations to bring fishing mortality to the target-level based on the 2016 stock assessment update. The Board’s action responds to concerns raised by Chesapeake Bay jurisdictions regarding continued economic hardship endured by its stakeholders since the implementation of Addendum IV and information from the 2016 stock assessment update indicating that fishing mortality in 2015 (the terminal year of the assessment) is below the target.

2.0 Overview

2.1 Statement of the Problem

According to the results of the 2016 stock assessment update, the Atlantic striped bass stock is not overfished and overfishing is not occurring. Furthermore, implementation of Addendum IV successfully reduced fishing mortality (F) below the F target of 0.18; F in 2015 was estimated to be 0.16. However, stakeholders from the Chesapeake Bay jurisdictions, especially from the for-hire sector (e.g., charter boats), have expressed economic hardship due to the implementation of more restrictive measures required by Addendum IV. To address this issue, and based on results of the 2016 assessment update indicating F is below the target, the Board determined that coastwide commercial and recreational regulations could be relaxed to increase F to the target-level and provide more opportunities for fishermen to retain fish. As such, Draft Addendum V proposes alternative management measures aimed to increase removals by 10% compared to 2015-levels in order to achieve F target. However, the issue of relaxation becomes confounded as length-frequency data from the catch in 2015 indicates a strong presence of the 2011 year class which is anticipated to join the coastal spawning population this year, and conservation of the 2011 year class was an objective of Addendum IV.

2.2 Background

2.2.1 Management History

For centuries, Atlantic striped bass (*Morone saxatilis*) have formed the basis of one of the most important fisheries on the U.S. Atlantic coast. The Commission first developed an FMP for Atlantic striped bass in 1981 in response to declining landings and juvenile recruitment in the 1970’s. However, overfishing and poor environmental conditions led to the collapse of the fishery in the 1980s and many Atlantic coast states imposed complete moratorium on harvest beginning with

Maryland and Delaware in 1985¹. The fisheries reopened in 1990 under Amendment 4 which implemented regulations designed to rebuild the resource rather than maximize yield. Commercial fisheries were limited to 20% of the average landings from the 1972-1979 base period, and recreational fisheries implemented a one fish bag limit and a 28 inch minimum size limit along the coast and 18 inch minimum size limit in producer areas (i.e., the Hudson River and Chesapeake Bay), however, states could implement alternative management measures as long as F remained below the target. In 1995, when the fishery was declared restored, Amendment 5 increased the F target and put in place regulations to achieve that F target including an increase in the coastal recreational bag limit from one fish to two, and an increase in the commercial harvest to 70% of that during the base period.

Since Amendment 4, the foundation of the striped bass management program has been to maintain harvest at or below an F target. Amendment 6, implemented in 2003, modified the F targets and thresholds, and introduced a new set of biological reference points (BRPs) based on the 1995 estimate of female spawning stock biomass (SSB), the year the stock was declared restored, as well as a list of management triggers based on the BRPs, (i.e., SSB and F targets and thresholds). These new reference points and management triggers have enabled the Board to be more responsive to changes in the stock.

Amendment 6 also phased in new regulations for both the commercial and recreational fisheries. Coastal commercial fisheries (i.e., fisheries that operate in ocean waters) were managed by a 28 inch minimum size limit (with the exception of the Delaware Bay fishery) and state-specific quota allocations, which were restored to 100% of the states' average landings during the 1972-1979 base period. Additionally, states could implement lower size limits through conservation equivalency often resulting in a reduced quota for that state. The Chesapeake Bay commercial fisheries were managed by an 18 inch minimum size limit and an annually adjusted quota based on changes in exploitable stock biomass, and split between the jurisdictions of Maryland, Virginia and the Potomac River Fisheries Commission (PRFC). The Chesapeake Bay commercial fishery measures aimed to maintain fishing mortality at or below the Chesapeake Bay-specific F target (0.27).

For the recreational fisheries, Amendment 6 required all states to implement a two fish bag limit and a 28 inch minimum size limit. The Chesapeake Bay and Albemarle Sound/Roanoke River (A/R) regulatory programs differed from the coastal migratory program because these programs were predicated on a more conservative F target. Accordingly, these jurisdictions were able to implement separate seasons, harvest caps, and size and bag limits as long as they remained under the F target for those areas.

Approved in 2007, Addendum I to Amendment 6 established a bycatch monitoring and research program to increase the accuracy of data on striped bass discards and also recommended development of a web-based angler education program. Addendum II was implemented in 2010

¹ Connecticut, New York, New Jersey, Virginia and the Potomac River Fisheries Commission followed suit between 1986 and 1989 (North Carolina closed their ocean fishery in 1984, but still allowed striped bass landings in inland waters).

and established a new definition of recruitment failure. In 2012, Addendum III was approved. The Addendum requires states and jurisdictions with commercial striped bass fisheries to implement a commercial harvest tagging program. The Addendum was initiated in response to significant poaching events in the Chesapeake Bay and aims to limit illegal harvest of striped bass.

Federal waters, also known as the exclusive economic zone (EEZ), has been closed to the harvest, possession, and targeting of striped bass since 1990, with the exception of a defined transit zone within Block Island Sound, to provide additional protection to striped bass and ensure the effectiveness of state regulations. A recommendation was made in Amendment 6 to re-open federal waters to commercial and recreational fisheries. However, NOAA Fisheries concluded opening the EEZ to striped bass fishing was not warranted at that time.

Implementation of Addendum IV

In October 2014, the Commission approved Addendum IV. The Addendum established one set of F reference points for the coastal migratory population in all management areas because modeling and data limitations precluded the ability to estimate separate stock specific reference points (i.e., coastal and Chesapeake Bay F reference points as previously used). Additionally, the 2013 benchmark stock assessment indicated that SSB was below the target for two consecutive years and F was above the target in at least one of those years, triggering management action (ASMFC 2003). While the SSB was not below its threshold nor F above its threshold, a decline in SSB has been observed since 2003. Accordingly, the Addendum also required a reduction in removals in order to reduce F to a level at or below the new F target. To achieve this, starting in 2015, coastal commercial state quotas were reduced by 25 percent from the Amendment 6 allocation, and the Chesapeake Bay commercial quota was set at its 2012 harvest level less 20.5%. For the recreational sector, coastal states reduced to a one fish bag limit and maintained a 28 inch minimum size limit to achieve a 25% reduction in removals from 2013 harvest levels. The Chesapeake Bay jurisdictions implemented a two fish bag limit with a slot limit from 20-28 inches or a two fish bag limit with one fish in the 20-28 inch slot and one fish over a 28 inch minimum size limit to achieve a 20.5% reduction in removals from 2012 harvest levels. Some states elected to implement alternative management measures through the FMPs conservation equivalency process.

Since the A/R stock was deemed by the Commission to contribute minimally to the coastal migratory population, Addendum IV also formally defers management of the A/R stock to the State of North Carolina using reference points from the latest North Carolina A/R stock assessment accepted by the Technical Committee (TC) and approved for management use by the Board. Accordingly, the recreational and commercial fisheries in the A/R operate under North Carolina's FMP while the North Carolina recreational and commercial fisheries in the Atlantic Ocean continue to operate under the Commission's management measures for the rest of the coastal fisheries.

2.2.2 Status of the Stock

The 2013 benchmark stock assessment for coastal migratory Atlantic striped bass was peer-reviewed at the 57th Northeast Regional Stock Assessment Workshop (SAW), and approved by the Board for management use in October 2013. Among other changes, the statistical catch-at-

age (SCA) model – which produces estimates of F, SSB, abundance and recruitment – was generalized to allow specification of multiple fleets, different stock-recruitment relationships, and year- and age-specific natural mortality rates. New F reference points were chosen to link the target and threshold F with the target and threshold female SSB, which is that level of SSB estimated in 1995 (the year the Commission originally declared coastal and Chesapeake Bay striped bass stocks restored). Additionally, the SAW Review Committee identified high priority items for consideration in future assessments including continued improvement of the spatial modeling of the stock and incorporating tagging data to better account for population dynamics.

The Atlantic striped bass stock assessment is updated with the most recent catch and survey data roughly every two years to provide annual estimates of SSB and F. The assessment was most recently updated in 2016 using catch and survey data through 2015 (ASMFC 2016a). The striped bass stock is said to be overfished when female SSB falls below the SSB threshold, and overfishing is occurring when F is estimated to be above the F threshold. In 2015, the Atlantic striped bass stock was not overfished or experiencing overfishing. SSB has declined since 2003 while total F has fluctuated between 0.18 and 0.27 from 2003 to 2014. In 2015, SSB was estimated at 58,853 metric tons (129 million pounds) which is below the SSB target of 72,032 metric tons and just above the SSB threshold of 57,626 metric tons (Figure 1). Total F was estimated at 0.16 in 2015 which is below the F threshold of 0.22 and below the F target of 0.18 (Figure 2). However, the TC stresses that although the assessment is very good, it may not be able to distinguish between F point estimates of 0.16 and 0.18. In other words, the upper and lower bounds of the confidence intervals for both F estimates would essentially overlap.

2.2.3 Status of the Fishery

Commercial Fishery Status

From 2003 to 2014, under the Amendment 6 quota management system, total and state-specific commercial harvest of striped bass has varied little from year-to-year, ranging from an estimated 2.4 to 3.1 million pounds for coastal fisheries (Table 1 and Figure 3) and 3.3 to 4.4 million pounds for Chesapeake Bay fisheries (Table 2 and Figure 3). Massachusetts and New York account for the majority of coastal commercial landings with a combined average of 67% annually. In 2015, through the implementation of Addendum IV, the coastal commercial quota was reduced by 25% resulting in an estimated harvest of 1.9 million pounds, and the Chesapeake Bay commercial quota was set at 3,120,247 pounds (a 20.5% reduction from the 2012 harvest estimate) resulting in an estimated harvest of 2.9 million pounds. Within the A/R management area, commercial harvest (Albemarle Sound only) from 2003 to 2015 ranged from 68,214 to 273,636 pounds and was estimated at 113,475 pounds in 2015 (Table 3).

Commercial dead discards continue to be a source of uncertainty in the Atlantic striped bass stock assessment, and estimates vary considerably from year to year making it difficult to account for commercial dead discards during development of potential alternative management measures. To estimate commercial releases, the assessment uses the ratio of tags returned from the recreational fishery to those returned from the commercial fishery, and then apportions the releases among gears based on gear-specific tag-returns. Commercial dead discards are then estimated via gear-specific post-release mortality rates. In 2015, total commercial dead discards

were estimated at 299,566 fish, a 68% decrease from 2014 (931,391 fish) and the lowest estimate since 2010 (Table 4).

Unlike the Chesapeake Bay commercial fishery, the coastal commercial fishery has regularly underachieved its quota by roughly 20% annually since 2003 (Table 1). The coastal quota underage is mainly attributed to game fish status in several states. Accordingly, commercial fishing for striped bass in Maine, New Hampshire, Connecticut, and New Jersey is prohibited. Together, these four states are allocated 9% of the total coastal commercial quota. Furthermore, the underage has increased in recent years since migratory striped bass have not been available to the ocean fishery in North Carolina resulting in minimal harvest. However, it is important to note that the anticipated arrival of the 2011 year class along the coast could impact the availability of striped bass to North Carolina ocean fisheries (see section on *availability of the 2011 year class* below).

Recreational Fishery Status

From 2003 to 2014, total coastal recreational harvest has ranged from a high of 26.6 million pounds in 2008 to a low of 16.7 million pounds in 2012 (Table 5 and Figure 3). In 2015, following implementation of Addendum IV, coastal recreational harvest was estimated at 13.3 million pounds, a 33% decrease from 2014. Harvest from New York (30%), New Jersey (24%) and Massachusetts (23%) accounted for 77% of the annual coastal recreational harvest since 2003.

From 2003 to 2014, recreational harvest from the Chesapeake Bay has fluctuated from a high of 6.4 million pounds in 2006 to a low of 2.5 million pounds in 2013 (Table 2 and Figure 3). However, the annual harvest has dropped from an average of 5.4 million pounds (2003 to 2009) to 3.1 million pounds (2010 to 2015). In 2015, following implementation of Addendum IV, Chesapeake Bay recreational harvest was estimated at 3.5 million pounds, a 6% decrease from 2014.

In the A/R, a recreational fishery quota is divided equally between the two management areas. From 2003-2014, the A/R recreational quota was set at 275,000 pounds and average harvest was 106,513 pounds. In 2015, the quota was set at 137,500 pounds and harvest was estimated at 126,970 pounds (Table 3).

From 2003 to 2008, the number of fish released alive averaged 17.0 million fish, resulting in an average estimated dead discards of 1.5 million fish (Table 4). Since then the number of fish released has been much lower, averaging 7 million fish from 2009 to 2015 and resulting in an annual average estimated dead discards of 637,370 fish. Reasons for the decline may include, but are not limited to, a reduction in stock size from the peak in 2003, a decreased availability of fish in nearshore areas, and changes in angler behavior in response to socioeconomic factors.

2.2.4 Performance of Addendum IV Regulatory Measures in 2015

Following the first full year of Addendum IV implementation, the Atlantic Striped Bass Plan Review Team (PRT) conducted a preliminary analysis on the performance of Addendum IV regulatory measures by comparing actual harvest in 2015 to the reference period (2013 for the ocean and 2012 for the Chesapeake Bay). The PRT determined that at the coastwide-level, the predicted harvest reduction for 2015 was nearly the same as the observed harvest; the estimated

and realized reduction in harvest across all regions and fisheries was 25.8% and 25.9%, respectively (ASMFC 2016b). Also, the commercial harvest reduction for both the coastal (24.9%) and Chesapeake Bay (25.1%) fisheries was close to the predicted reductions (Table 6). However, the recreational fisheries along the coast and in the Chesapeake Bay diverged significantly from the predicted values (Table 7 and Table 8).

As a result of these findings, the Board tasked the TC to identify the variables contributing to the large differences in the recreational fishery between the observed harvest and those estimated by the TC during development of Addendum IV.

Availability of the 2011 year class

The TC concluded that changes in effort, changes in the size and age structure of the population, and the distribution of the 2011 year class along the coast relative to the Chesapeake Bay were the most significant variables contributing to the large differences in the realized harvest compared to those estimated by the TC (ASMFC 2016c). The 2011 year class was the largest recruitment event since 2004, and was nearly fully available to the Chesapeake Bay recreational fisheries in 2015 (age 4), whereas these fish were only partially available to the ocean recreational fisheries (i.e., due to age at first migration, there was a greater proportion of the 2011 year class in the Chesapeake Bay relative to the ocean in 2015). The population dynamics at this age, coupled with the length of those fish in 2015 relative to the Chesapeake Bay's and ocean's minimum size limits, led to increased catch rates and harvest of striped bass in the Chesapeake Bay.

Based on the accepted age at first migration (Secor and Piccoli 2007), individuals from the large 2011 year class are currently migrating out of the Chesapeake Bay to join the coastal migratory population. Accordingly, these fish are anticipated to become increasingly available to coastal recreational fisheries over the next few years. Furthermore, based on state submitted catch at length data, it is not uncommon for age six striped bass to be of harvestable size (i.e., 28" or greater) and are therefore likely to be the target of coastal fisheries this year (ASMFC 2016a).

Preliminary 2016 Recreational Removals Estimate

In 2015, total recreational removals (harvest and dead discards from Atlantic coastal and Chesapeake Bay fisheries) were estimated at 2,100,094 fish (ASMFC 2016a). According to the Marine Recreational Information Program (MRIP), the 2016 preliminary removals estimate (harvest and dead discards) is 2,668,887 fish, which is a 27% increase from 2015 or an increase of 568,793 fish. It is important to note that this addendum aims to achieve an increase in total removals (i.e., commercial and recreational harvest plus dead discards) by 10%, or approximately 327,000 fish relative to 2015 total removals. In other words, under status quo regulations (i.e., current recreational and commercial regulations), target F could be achieved or exceeded in 2017. Refer to Appendix 1 for recreational fishery regulations by state and fishery.

2.2.5 Socioeconomic Impacts

Overall benefits of increasing catch are expected to benefit direct users with providing more fish to them with the following further pluses. For commercial fishermen this means expected increased incomes provided that substitute fish such as farmed striped bass are not filling the

market. For recreational fishermen, including for-hire participants, this means increased numbers of trips and/or numbers of recreational fishermen, enhanced bait sales and further ancillary economic activity such as hotel rooms, and meals associated with trips, more tackle sales, and affiliated materials. However, short term gains in harvest could be negated by an overall decline in the future performance of the fishery given the uncertainties in the data.

3.0 Management Options

The coastwide area can be defined as the entire management unit (i.e., all coastal and estuarine areas of all states and jurisdictions from Maine through North Carolina) excluding the Albemarle Sound/Roanoke River management areas. For management purposes, the coastwide area is further divided into the Chesapeake Bay management area (i.e., Maryland, Potomac River Fisheries Commission, District of Columbia and Virginia fisheries that operate in inland waters) and the coastal management area which refers to ocean waters (i.e., all fisheries from Maine through North Carolina that operate in estuarine or ocean waters). Draft Addendum V does not propose alternative options for the Albemarle Sound/Roanoke River management areas managed by the State of North Carolina under the auspice of the Commission.

In October 2016, the TC was tasked to determine the percent liberalization in harvest that would increase F from the 2015 terminal year estimate of 0.16 to the FMP F target of 0.18. To do this, the TC performed a stock projection analysis using a constant F of 0.16 in 2015 and F of 0.18 in 2016 and 2017 to estimate total removals in 2016 and 2017 (ASMFC 2017). Results indicate that an estimated 10% increase from 2015 removals, or 3.33 million fish, would achieve F target (0.18) in 2017. It is important to note that estimated removals includes commercial harvest, recreational harvest, commercial dead discards and recreational dead discards. The TC also noted that according to the 2016 preliminary removals estimate (3,557,510 fish), a 6% decrease in removals would be required to achieve F target in 2017.

Accordingly, the following proposed management measures aim to increase removals by 10% relative to the 2015 removals estimate of 3,017,358 fish, as determined by the TC (ASMFC 2017), to achieve F target in 2017² (i.e., to increase removals to 3.33 million fish, including dead discards). Amendment 6 (Section 4.6) also allows states to submit alternative regulations that are conservation equivalents to regulations approved in this document for TC review and Board approval. Several states currently implement conservation equivalency programs in order to have management measures that meet the needs of their state's fishery (see Appendix 1). Additionally, states may voluntarily implement management programs that are more conservative than those required herein. If the Board approves changes to the current striped bass management program through this document, all states would need to re-submit conservation equivalency programs for Board approval.

² The TC projected removals through 2017. However, due to state regulatory processes, effective implementation of alternative management measures approved through this document would not occur until the end of 2017, or early 2018. Therefore, the Board should consider the effects of implementation of Addendum V beyond the timeframe of the projections.

This section would replace Section 3.1 in Addendum IV to Amendment 6.

3.1 Proposed Recreational Fishery Management Program

Recreational fisheries will be constrained by minimum size limits and bag limits. Jurisdictions may use additional regulations to ensure the target fishing mortality rate is not exceeded (i.e., fishing seasons or harvest caps). If a jurisdiction uses harvest caps in its recreational fishery, any amount over the cap shall be subtracted from the following year's recreational quota.

Option A: Status Quo

It is important to note that this addendum aims to achieve an increase in total removals (i.e., commercial and recreational harvest plus dead discards) by 10%, or approximately 327,000 fish, relative to 2015. Therefore, status quo regulations (i.e., current recreational and commercial regulations) could achieve or exceed target F in 2017 because 2016 preliminary removals are estimated to be greater than a 10% increase relative to 2015 levels. Refer to Appendix 1 for recreational fishery regulations by state and fishery.

Coastal Recreational Fishery

All coastal jurisdictions (excluding Chesapeake Bay and the Albemarle Sound/Roanoke River) will be constrained by a one fish bag limit and 28-inch minimum size limit. Any coastal jurisdiction submitting a proposal for conservation equivalency must demonstrate through quantitative analysis that its proposal achieves at least a 25% reduction in harvest (including estimated dead discards) from its coastal recreational fishery relative to 2013 harvest. All conservation equivalency proposals are subject to TC review and Board approval. Note: the Chesapeake Bay spring trophy fishery is part of the coastal fishery for management purposes.

Note: jurisdictions with approved conservation equivalency programs do not need to resubmit proposals. However, jurisdictions must follow the Commission's conservation equivalency process (Amendment 6 (Section 4.6) and the Conservation Equivalency Policy and Technical Guidance Document) in order to implement any future alternative regulations (i.e., regulations that differ from the one fish bag limit and 28 inch minimum size limit, or that differ from those currently implemented).

Chesapeake Bay Management Area Recreational Fishery (Maryland, Potomac River Fisheries Commission, District of Columbia and Virginia would implement)

The Chesapeake Bay jurisdictions will submit a management program that achieves at least a 20.5% reduction from 2012 harvest (including estimated dead discards) in the Chesapeake Bay recreational fishery for TC review and Board approval. The Chesapeake Bay fisheries reductions were based on 2012 harvest because the Bay-wide quota had already been reduced by 14% in 2013.

Note: jurisdictions with approved programs do not need to resubmit proposals. However, jurisdictions must follow the Commission's conservation equivalency process (Amendment 6 (Section 4.6) and the Conservation Equivalency Policy and Technical Guidance Document) in order to implement any future alternative regulations (i.e., regulations that differ from those currently implemented).

Option B: relax recreational fishery regulations

The tables below provide a suite of options for both the coastal and Chesapeake Bay recreational fisheries. When providing input on these options, please identify one preferred option each for the coastal and Chesapeake Bay fisheries. All size limits are in total length (TL). Estimated total removals include dead discards.

Coastal Recreational Fishery (All jurisdictions would implement)

The following alternative management measures would apply to all coastal recreational fisheries. For Option B1, 2015 jurisdiction-specific measures (i.e., bag limits, and upper bound of any slot limits) would also apply (refer to Appendix 1).

Option	Bag Limit*	Size Limit*	Season*	% Diff From 2015 Removals	Estimated Total Removals (number of fish)
B1	1	27 inch minimum	<i>(see Appendix 1)</i>	+12	1,360,566
B2	Submit a program that achieves no more than a 10% increase from 2015 removals (including estimated dead discards) for TC review and Board approval				

* Additional jurisdiction-specific restrictions, or exceptions through conservation equivalency, may apply (refer to Appendix 1).

Chesapeake Bay Management Area Recreational Fishery (Maryland, Potomac River Fisheries Commission, District of Columbia and Virginia would implement)

The following alternative management measures would apply to Chesapeake Bay recreational fisheries. Bag limits and size limits under Options B3 and B4 would apply to the specific dates listed and 2015 jurisdiction-specific measures (i.e., bag limits, and minimum size and slot limits) would apply to all other time periods (refer to Appendix 1).

Option	Bag Limit	Size Limit*	Season	% Diff From 2015 Removals	Estimated Total Removals (number of fish)
B3	2	19-28 inch slot	September 1 - October 31	+9	881,885
B4	2	19-28 inch slot	May 16 - August 31	+9	884,695
B5	Submit a program that achieves no more than a 10% increase from 2015 removals (including estimated dead discards) for TC review and Board approval				

* One of the two fish possession limit can be greater than 28 inches. Additional jurisdiction-specific restrictions, or exceptions through conservation equivalency, may apply (refer to Appendix 1).

This section would replace Section 3.2 in Addendum IV to Amendment 6.

3.2 Proposed Commercial Fishery Management Options

In the tables below all quota options and harvest estimates are in pounds. It is important to note that total estimated harvest does not include dead discards. See Section 2.2.3 for more information on commercial dead discard estimates.

Option A: Status Quo

Coastal Commercial Fishery

No change to the Addendum IV coastal commercial quota of 2,854,709 pounds and the state-specific coastal commercial quota allocations. These quotas reflect a 25% reduction from the previous Amendment 6 quotas. *Note: jurisdictions with approved conservation equivalency programs do not need to resubmit proposals.*

Chesapeake Bay Management Area Commercial Fishery (Maryland, Potomac River Fisheries Commission and Virginia would implement)

No change to the Addendum IV Chesapeake Bay commercial quota of 3,120,247 pounds. This quota represents a 20.5% reduction from 2012 Chesapeake Bay commercial harvest.

	For Reference	OPTION A Status Quo
	2015 Harvest	Addendum IV Quota
Chesapeake Bay Total	2,942,522	3,120,247
Coastal Total	1,886,522	2,854,709
State-Specific Coastal Commercial Quota Allocations		
Maine*	-	188
New Hampshire*	-	4,313
Massachusetts	865,753	869,813
Rhode Island	188,475	182,719
Connecticut**	-	17,813
New York	515,459	795,795
New Jersey**	-	241,313
Delaware	144,068	145,085
Maryland	34,626	98,670
Virginia	138,141	138,640
North Carolina	0	360,360
Total Estimated Harvest⁺	4,829,044	5,350,969 (5,711,329)
% Diff From 2015 Harvest⁺	0%	+11% (+18%)

* Commercial harvest/sale prohibited, with No re-allocation of quota to the recreational fishery

** Commercial harvest/sale prohibited, with re-allocation of quota to the recreational fishery

⁺ For Option A, total estimated harvest assumes no commercial harvest for game fish states (i.e., Maine, New Hampshire, Connecticut, and New Jersey) and North Carolina. Total estimated harvest in parenthesis assumes no commercial harvest for game fish states only.

Option B: applies a 10% increase to the Addendum IV quota.

Coastal Commercial Fishery

The coastal commercial quota will be 3,140,180 pounds and will be allocated to coastal jurisdictions following the state-specific quota allocation percentages in Amendment 6 and Addendum IV.

Chesapeake Bay Management Area Commercial Fishery (Maryland, Potomac River Fisheries Commission and Virginia would implement)

The Chesapeake Bay commercial quota will be 3,432,272 pounds.

	For Reference	OPTION B
	2015 Harvest	10% Increase to Add IV Quota
Chesapeake Bay Total	2,942,522	3,432,272
Coastal Total	1,886,522	3,140,180
State-Specific Coastal Commercial Quota Allocations		
Maine*	-	207
New Hampshire*	-	4,744
Massachusetts	865,753	956,794
Rhode Island	188,475	200,991
Connecticut**	-	19,594
New York	515,459	875,375
New Jersey**	-	265,444
Delaware	144,068	159,594
Maryland	34,626	108,537
Virginia	138,141	152,504
North Carolina	0	396,396
Total Estimated Harvest⁺	4,829,044	5,886,067 (6,282,464)
% Diff From 2015 Harvest⁺	0%	+22% (+30%)

* Commercial harvest/sale prohibited, with No re-allocation of quota to the recreational fishery

** Commercial harvest/sale prohibited, with re-allocation of quota to the recreational fishery

⁺ For Option B, total estimated harvest assumes no commercial harvest for game fish states (i.e., Maine, New Hampshire, Connecticut, and New Jersey) and North Carolina. Total estimated harvest in parenthesis assumes no commercial harvest for game fish states only.

4.0 Compliance Schedule

If approved, states must implement Addendum V according to the following schedule to be in compliance with the Atlantic Striped Bass Interstate Fishery Management Plan:

XXXXXX: States submit proposals to meet requirements of Addendum V.

XXXXXX: Management Board reviews and takes action on state proposals.

[Month Day, Year]: States implement regulations.

5.0 Literature Cited

- Atlantic States Marine Fisheries Commission (ASMFC). 2003. Amendment 6 to the Interstate Fishery Management Plan for Atlantic Striped Bass. Washington (DC): ASMFC. Fisheries Management Report No. 41. 63 p.
- Atlantic States Marine Fisheries Commission (ASMFC). 2013. Update of the Striped Bass Stock Assessment using Final 2012 Data. A report prepared by the Atlantic Striped Bass Technical Committee. 74 p.
- Atlantic States Marine Fisheries Commission (ASMFC). 2014. Addendum IV to Amendment 6 to the Interstate Fishery Management Plan for Atlantic Striped Bass. ASMFC. Fisheries Management Report No.
- Atlantic States Marine Fisheries Commission (ASMFC). 2016a. Update of the Striped Bass Stock Assessment. A report prepared by the Atlantic Striped Bass Technical Committee. M16-088. 101 p.
- Atlantic States Marine Fisheries Commission (ASMFC). 2016b. 2016 Review of the Atlantic States Marine Fisheries Commission Fishery Management Plan for Atlantic Striped Bass. Approved August 3, 2016. 37 p.
- Atlantic States Marine Fisheries Commission (ASMFC). 2016c. Performance Evaluation of Addendum IV Regulatory Measures in 2015. A memorandum prepared by the Atlantic Striped Bass Technical Committee to the Atlantic Striped Bass Management Board. October 5, 2016. M16-087. 14 p.
- Atlantic States Marine Fisheries Commission (ASMFC). 2017. Percent Liberalization in Harvest (0.16 to 0.18) and Dataset Recommendation for Conservation Equivalency Proposals. A memorandum prepared by the Atlantic Striped Bass Technical Committee to the Atlantic Striped Bass Management Board. January 13, 2017. M17-011. 4 p.
- Secor, D.H. and P.M. Piccoli. 2007. Oceanic migration rates of Upper Chesapeake Bay striped bass (*Morone saxatilis*), determined by otolith microchemical analysis. Fisheries Bulletin 105: 62-73.
- Southwick Associates. 2005. The Economics of Recreational and Commercial Striped Bass Fishing. Report for Stripers Forever. Available online at: <https://www.stripersforever.org/wp-content/uploads/2013/01/Stripers.pdf>

6.0 Tables and Figures

Table 1. Total coastal commercial harvest of Atlantic striped bass by state (pounds) and percent of quota utilized, 2003-2015.
Source: ASMFC State Compliance Reports.

Year	Coastal Commercial Harvest by State							Total Coastal Commercial Harvest	Coastal Commercial Quota	Percent Quota Utilized
	MA	RI	NY	DE	MD [^]	VA [^]	NC ^{*^}			
2003	1,055,439	246,312	753,261	188,419	98,149	159,786	434,369	2,935,735	3,414,258	86%
2004	1,206,305	245,204	741,668	181,974	115,453	160,301	421,645	3,072,550	3,515,882	87%
2005	1,104,737	242,303	689,821	173,815	46,871	184,734	454,521	2,896,802	3,467,748	84%
2006	1,312,168	238,797	688,446	185,987	91,093	194,934	352,036	3,063,461	3,524,083	87%
2007	1,040,328	240,627	729,743	188,668	96,301	165,587	424,723	2,885,977	3,362,332	86%
2008	1,160,122	245,988	653,100	188,719	118,005	164,400	299,162	2,829,496	3,491,171	81%
2009	1,138,291	234,368	789,891	192,311	127,327	140,420	189,995	2,812,603	3,484,774	81%
2010	1,224,356	249,520	782,402	185,410	44,802	116,338	272,632	2,875,460	3,510,897	82%
2011	1,163,865	228,163	854,731	188,620	21,401	158,811	242,600	2,858,191	3,441,327	83%
2012 [†]	1,219,665	239,913	681,399	194,324	77,551	170,788	6,226	2,589,866	3,406,527	76%
2013	1,002,519	231,280	823,801	191,424	93,532	182,427	0	2,524,983	3,372,173	75%
2014	1,138,507	217,037	531,456	167,902	120,923	183,668	0	2,359,493	3,764,770	63%
2015	865,753	188,475	509,135	144,068	34,626	138,141	0	1,880,198	2,854,706	66%

* NC values represent harvest during the December 1- November 30 fishing year

[^] MD, VA, and NC harvest from ocean only. Does not include harvest from the Chesapeake Bay or Albemarle Sound/Roanoke River

[†]The impacts of hurricane Sandy may have caused lower harvest in 2012 in some states

Table 2. Total recreational and commercial harvest of Atlantic striped bass from the Chesapeake Bay in pounds, 2003-2015. Source: ASMFC State Compliance Reports and Marine Recreational Information Program (MRIP) queried March, 2017.

Chesapeake Bay Harvest			
Year	Commercial	Recreational	Total Harvest
2003	4,169,585	5,129,482	9,299,067
2004	4,156,977	4,337,252	8,494,229
2005	4,102,804	6,185,654	10,288,458
2006	4,008,349	6,420,077	10,428,426
2007	4,206,503	5,555,408	9,761,911
2008	4,369,971	4,286,008	8,655,979
2009	4,403,215	6,055,353	10,458,568
2010	4,092,654	2,981,647	7,074,301
2011	3,925,048	3,508,349	7,433,397
2012	3,924,839	2,756,875	6,681,714
2013	3,293,337	2,531,108	5,824,445
2014	3,578,178	3,724,504	7,302,682
2015	2,940,291	3,517,462	6,457,753

Table 3. Total recreational and commercial harvest of Atlantic striped bass from the Albemarle Sound and Roanoke River Management Areas in pounds, 2003-2015. Source: North Carolina Department of Marine Fisheries.

Albemarle Sound and Roanoke River Management Area Harvest				
Year	Commercial		Recreational	
	Quota	Harvest	Quota	Harvest
2003	275,000	266,555	275,000	90,964
2004	275,000	273,636	275,000	187,288
2005	275,000	232,693	275,000	171,007
2006	275,000	186,399	275,000	120,518
2007	275,000	171,683	275,000	89,125
2008	275,000	74,921	275,000	64,353
2009	275,000	96,134	275,000	106,894
2010	275,000	199,829	275,000	83,507
2011	275,000	134,538	275,000	114,097
2012	275,000	115,940	275,000	159,727
2013	275,000	68,214	275,000	40,094
2014	275,000	71,372	275,000	50,584
2015	137,500	113,475	137,500	126,970

Table 4. Total (coastal and Chesapeake Bay) commercial and recreational dead discards in number of fish, 2003-2015. Source: ASMFC 2016a.

Total Dead Discards by Sector				
Year	Recreational Releases (B2)	Recreational Dead Discards (9% of B2)	Commercial Dead Discards	Total Dead Discards
2003	14,611,333	1,315,020	261,974	1,576,994
2004	17,053,333	1,534,800	465,642	2,000,442
2005	18,078,899	1,627,101	798,544	2,425,645
2006	23,343,299	2,100,897	194,524	2,295,421
2007	16,110,023	1,449,902	606,599	2,056,501
2008	12,510,987	1,125,989	308,715	1,434,704
2009	7,970,813	717,373	611,944	1,329,317
2010	6,258,081	563,227	254,841	818,068
2011	5,932,480	533,923	617,457	1,151,380
2012	5,191,891	467,270	792,861	1,260,131
2013	8,539,986	768,599	525,581	1,294,180
2014	7,282,547	655,429	931,391	1,586,820
2015	8,397,456	755,771	299,566	1,055,337

Table 5. Total coastal recreational harvest (pounds) of Atlantic striped bass by state, 2003-2015. Source: Marine Recreational Information Program (MRIP) queried March, 2017.

Year	Coastal Recreational Harvest by State											Total Coastal Harvest
	ME	NH	MA	RI	CT	NY	NJ	DE	MD	VA*	NC	
2003	253,911	281,548	4,889,035	1,502,454	1,251,538	3,409,573	4,258,557	292,168	15,744	440,045	841,063	17,435,636
2004	224,925	96,412	6,235,558	1,372,679	1,714,526	3,735,780	5,534,805	330,633	41,127	871,501	4,833,046	24,990,992
2005	380,367	281,940	5,119,345	1,760,248	2,174,578	5,383,146	5,887,184	288,596	17,351	437,684	2,164,859	23,895,298
2006	322,599	180,775	4,861,391	891,453	2,055,320	6,068,519	6,922,320	260,192	2,717	1,121,379	1,729,663	24,416,328
2007	234,077	68,393	5,099,862	1,677,132	1,474,178	7,900,930	3,666,723	99,216	0	274,650	835,145	21,330,306
2008	267,642	83,703	5,720,651	823,287	1,751,665	10,997,906	4,876,106	348,328	0	1,160,098	522,708	26,552,094
2009	328,259	115,461	4,795,791	1,039,173	846,014	5,032,805	4,201,610	275,052	43,684	40,945	160,922	16,879,716
2010	105,734	68,912	4,277,990	1,094,343	1,253,639	6,991,705	5,341,095	246,407	102,616	72,023	435,756	19,990,220
2011	91,705	370,798	3,504,603	1,257,302	758,216	8,969,767	6,197,026	241,149	2,590	249,452	2,042,981	23,685,589
2012†	55,890	162,982	5,441,893	913,874	843,443	6,486,256	2,448,032	361,170	28,688	4,162	0	16,746,390
2013	102,877	226,689	4,193,416	3,025,818	2,242,037	8,624,422	6,039,027	253,062	183,572	23,208	0	24,914,128
2014	100,213	78,310	4,397,183	2,161,265	1,717,083	7,169,999	4,129,807	107,421	22,782	0	0	19,884,063
2015	63,878	30,614	2,701,724	798,394	1,362,279	3,189,222	5,145,204	34,808	13,848	0	0	13,339,971

*Does not include Technical Committee estimates of wave 1 harvest

†the impacts of hurricane Sandy may have caused lower harvest in 2012 in some states.

Table 6: Estimated and realized harvest reductions for striped bass commercial fisheries. Source: ASMFC 2016b.

Ocean (Commercial – Pounds of fish)							
	Amd. 6 2013 Quota	2013 Harvest	Add. IV 2015 Quota	2015 harvest	Estimated Reduction from 2013 Quota	Actual Reduction from 2013 Quota	Actual Reduction from 2013 Harvest
Ocean Total	3,806,275	2,532,870	2,854,706	1,902,363	-25.0%	-50.0%	-24.9%
Chesapeake Bay (Commercial – Pounds of fish)							
		2012 Harvest	Add. IV 2015 Quota	2015 harvest	Estimated Reduction from 2012 Harvest	Actual Reduction from 2012 Harvest	
Chesapeake Bay Total		3,924,372	3,120,247	2,940,291	-20.5%	-25.1%	

Table 7: Estimated and realized changes in removals for striped bass recreational fisheries. Removals includes angler harvest (A + B1) plus dead discards (9% of B2). Source: ASMFC 2016b.

Recreational Fisheries (Numbers of fish)					
Region	Reference Removals Estimate*	2015 Removals Estimate	2015 Removals	Estimated Change in Removals	Actual Change in Removals
Ocean	2,153,773	1,517,063	1,141,556	-29.6%	-47.0%
Chesapeake Bay	538,111	419,726	852,524	-22.1%	+58.4%

* 2013 for Ocean, 2012 for Bay

Table 8: Realized changes in removals for striped bass recreational fisheries. Source: ASMFC 2016b.

Region	Sector	Reference Level	2015 Removals	Change in Removals
Chesapeake Bay	Recreational Harvest (A+B1)	330,380	500,465	+51%
	Recreational Release Mortality (9% B2)	207,731	352,059	+69%
Ocean	Recreational Harvest (A+B1)	1,618,015	735,438	-55%
	Recreational Release Mortality (9% B2)	535,758	406,118	-24%

Figure 1. Atlantic striped bass female spawning stock biomass (SSB) relative to the SSB reference points, 1982-2015. Source: ASMFC 2016a.

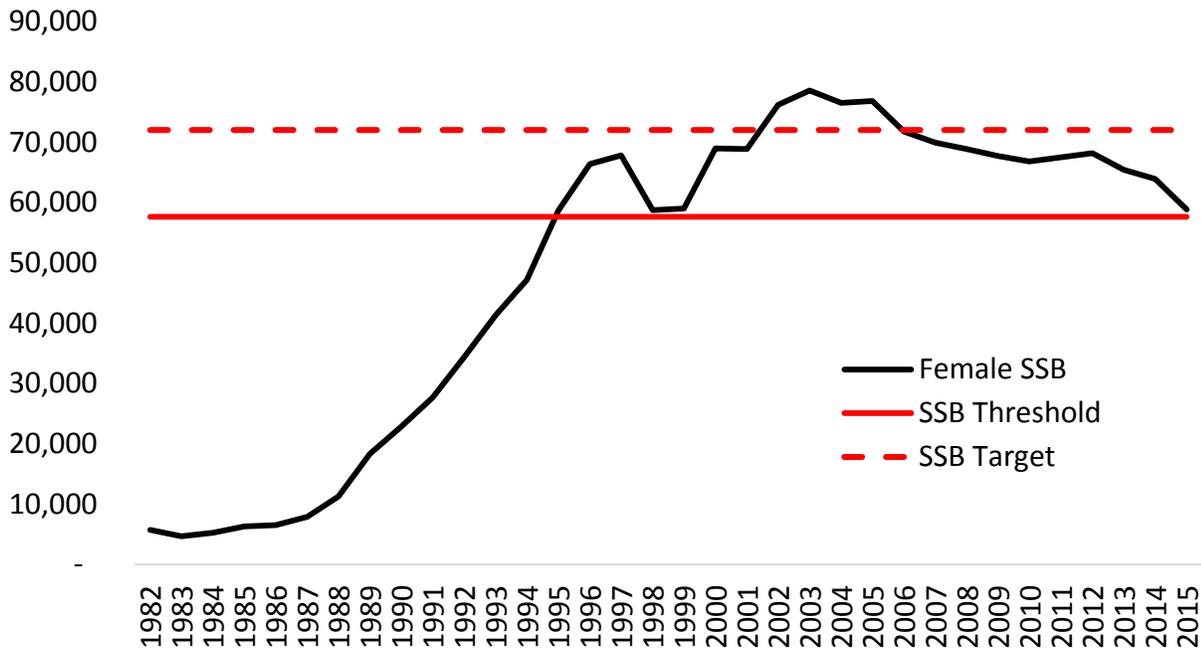


Figure 2. Atlantic striped bass fishing mortality (F) relative to the F reference points, 1983-2015. Source: ASMFC 2016a.

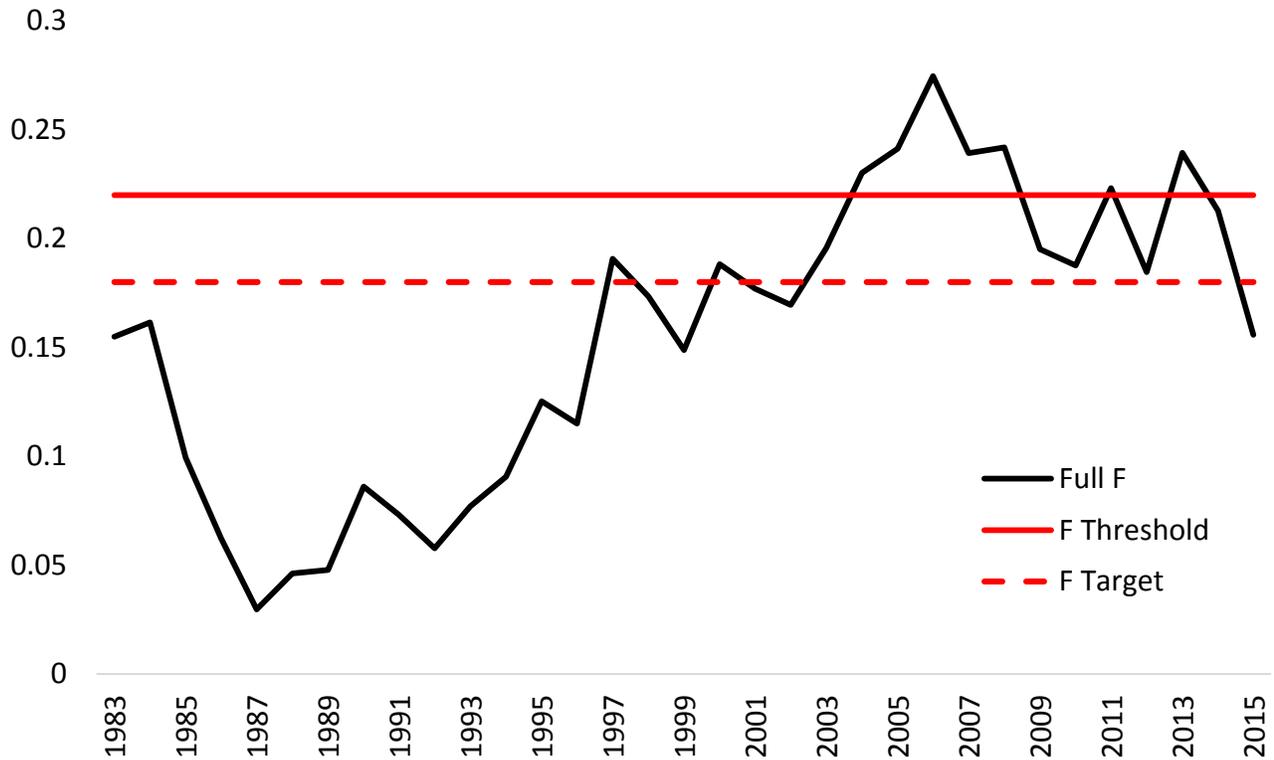
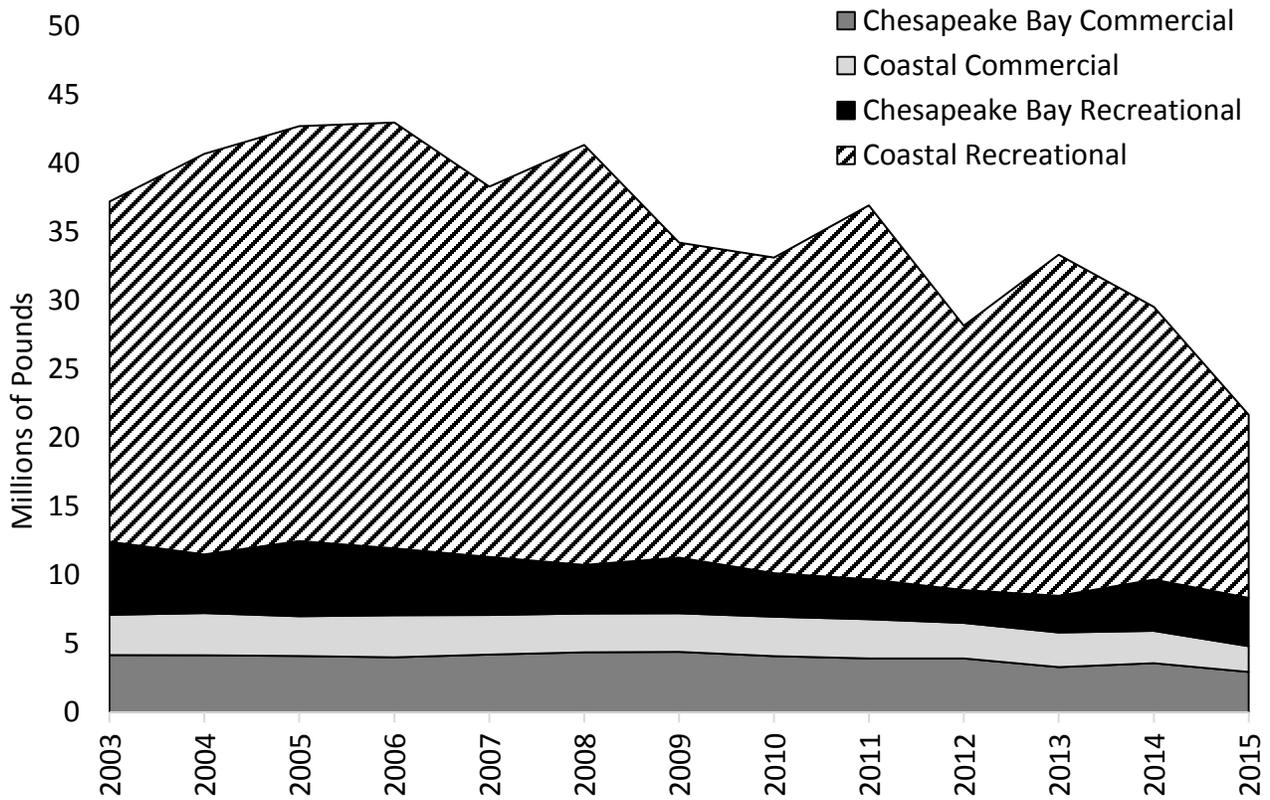


Figure 3. Commercial and recreational directed harvest (i.e., does not include dead discards) from the Chesapeake Bay and along the coast by sector, 2003-2015. Source: ASMFC 2016a.



7.0 Appendix 1

Summary of Atlantic Striped Bass Commercial Regulations in 2015. Source: Annual State Compliance Reports. ^Conservation equivalency

STATE	SIZE LIMITS	SEASONAL QUOTA	OPEN SEASON
ME	Commercial fishing prohibited		
NH	Commercial fishing prohibited		
MA	34" TL min size	869,813 lbs. Hook & line only	6.23 until quota reached; 15 fish/day for fishers with a commercial lobster or boat permit; 2 fish/day for fishers with a commercial individual or rod and reel permit (striped bass endorsement required with all permits)
RI	Floating fish trap: 26" min General category (mostly rod & reel): 34" min.	Total: 181,572^ lbs., split 39:61 between trap and general category. Gill netting prohibited.	Trap: 4.1 – 12.31, or until quota reached; unlimited possession limit until quota reached General Category: 6.8-8.31, 9.8-12.31, or until quota reached. Closed Fridays and Saturdays during both seasons. 5 fish/vessel/day possession limit.
CT	Commercial fishing prohibited		
NY	28-38" TL min size Ocean only (Hudson River closed to commercial harvest)	795,795 lb. Pound nets, gill nets (6-8" stretched mesh), gill nets (<6" or >8" stretched mesh (by-catch only, 7 fish/trip), hook & line, otter trawl (by-catch only 21 fish/trip).	6.1 – 12.15, or until quota reached. Limited entry permit only.
NJ	Commercial fishing prohibited		
PA	Commercial fishing prohibited		

(Continued – Summary of commercial regulations in 2015). ^Conservation equivalency

STATE	SIZE LIMITS	SEASONAL QUOTA	OPEN SEASON
DE	Gillnet: 20" min in DE Bay/River during spring season. 28" in all other waters/seasons. Hook and Line: 28" min	Gillnet: 137,831 lbs. Hook and line: 14,509 lbs.	Gillnet: 2.15-5.31 (2.15-3.31 for Nanticoke River) & 11.15-12.31; drift nets only from 2.15-28 (str. Mesh >4") & 5.10-31; no fixed nets in DE or Nanticoke Rivers; Hook and Line: 4.1–12.31
MD	Bay and Rivers: 18-36" Ocean: 24" minimum	Bay and River: 1,471,888 lbs. (part of Bay- wide quota). Gear specific quotas and landing limits. Ocean: 90,727^ lbs.	Bay Pound Net: 6.1-12.31, Mon-Sat Bay Haul Seine: 6.1-11.27, Mon-Fri Bay Hook & Line: 6.1-11.26, Mon-Thu Bay Drift Gill Net: 1.1-3.13, 12.1-12.31 Ocean Drift Gillnet & Trawl: 1.1-4.30, 11.1-12.31, Mon- Fri
PRFC	18" min all year 36" max 2.15–3.25	583,362 lbs (part of Bay-wide quota). Allocated by gear and season.	Hook & line: 2.15-3.25, 6.1-12.31 Pound Net & Other: 2.15-3.25, 6.1-12.15 Gill Net: 1.1-3.25, 11.9-12.31
DC	Commercial fishing prohibited		
VA	Bay and Rivers: 18" min, and 28" max size limit 3.26–6.15 Ocean: 28" min	Bay and Rivers: 1,064,997 lbs Ocean: 138,640 lbs. (ITQ- system for both areas)	Bay and Rivers: 1.16-12.31 Ocean: 1.16-12.31
NC	Ocean: 28"	360,360 lbs. (split between gear types). Number of fish allocated to each permit holder. Allocation varies by permit.	Beach seine: 1.1-3.31 Gill net: 1.1-2.14 Trawl: 1.20-3.31 Mon-Thur

Summary of Atlantic Striped Bass Recreational Regulations in 2015. Source: Annual State Compliance Reports.

STATE	SIZE LIMITS	DAILY BAG LIMIT	OTHER	OPEN SEASONS
ME	28" min	1 fish	Hook & line only	All year, except spawning areas closed 12.1 – 4.30 and catch and release only 5.1 – 6.30
NH	28" min	1 fish	No netting; no gaffing; no culling	All year
MA	28" min	1 fish	Hook & line only	All year
RI	28" min	1 fish/person *	None	All year
CT	28" min Striped Bass Bonus Program: 22-28" slot	1 fish (SBBP: 1 fish, limit of one voucher per angler per year)	Hook & line only; no spearing; no gaffing. SBBP Quota: 3,018 fish**	All year. SBBP 5.1 – 12.31; all state waters
NY	Ocean and DE River: 28" min Hudson River: 18-28" slot limit, or ≥40"	1 fish	Angling only. Spearing permitted in ocean waters. Catch and release only during closed season in ocean waters.	Ocean: 4.15 – 12.15 Hudson River: 4.1 – 11.30 Delaware River: All year
NJ	1 fish at 28 to < 43", and 1 fish ≥43" (Striped Bass Bonus Program: 1 fish 24 - <28" slot, limit of one permit per angler per day)		SBBP Quota: 215,912 lbs **	Closed 1.1 – 2.28 in all waters except in the Atlantic Ocean, and 4.1 – 5.31 in the lower Delaware River and tributaries (spawning ground closure)
PA	28" min	1 fish	Hook & line only; three rods per individual	All year, except 4.1 – 5.31, two fish bag limit and a 21-25" slot limit from the PA/DE state line upstream to the Calhoun Street Bridge
DE	28" min, no harvest 38-43" (inclusive).	2 fish	Hook & line, spear (for divers) only. Circle hooks required in spawning season.	All year except 4.1-5.31 in spawning grounds (catch & release allowed). In Del. River, Bay & tributaries, may only harvest 20-25" slot from 7.1-8.31

*regulation went into effect on April 6, 2015.

** Commercial quota reallocated to recreational fishery

Draft Document for Board Review. Not for Public Comment.

(Continued – Summary of recreational regulations in 2015)

STATE	SIZE LIMITS	DAILY BAG LIMIT	OTHER	OPEN SEASON
MD	Ocean: 28" min CB Trophy: 28 to ≤36" slot, OR ≥40" CB Summer/Fall: (2) 20-28" slot OR (1) 20-28" slot, (1) > 28" min	Ocean: 1 fish Bay Trophy: 1 fish Bay Summer/Fall: 2 fish	See compliance report for specifics.	Ocean: All year SF: 1.1-5.3 Bay Trophy: 4.18-5.15 Bay Summer/Fall: 5.16-12.15
PRFC	Trophy: 28-36" slot or > 40" Summer/Fall: 20" min with 1 fish > 28"	Trophy: 1 fish Summer/Fall: 2 fish	No more than two hooks or sets of hooks for each rod or line	Trophy: 4.18 -5.15 Summer/Fall: 5.16-12.31
DC	≥ 20", only one fish >28"	2 fish	Hook & line only	5.16-12.31
VA	Ocean: 28" Bay/Coastal Trophy: 36" min (28" max in tribs) CB Spring: (2) 20-28" slot OR (1) 20-28" slot, (1) > 36" min CB Fall: (2) 20-28" slot OR (1) 20-28" slot, (1) > 28" min	Ocean: 1 fish Bay/Coast Trophy: 1 fish Bay Spring/Fall: 2 fish	Hook & line, rod & reel, hand line only. Gaffing is illegal in Virginia marine waters.	Ocean: 1.1-3.31, 5.16-12.31 Bay/Tribs Trophy: 5.1-6.15 Coastal Trophy: 5.1-5.15 Bay Spring: 5.16-6.15 Bay Fall: 10.4-12.31
NC	Ocean: 28" min size	Ocean: 1 fish/day	No gaffing	Ocean: All year



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MEMORANDUM

May 1, 2017

To: Atlantic Striped Bass Management Board
From: Atlantic Striped Bass Technical Committee
RE: Comments on proposed options in Draft Addendum V to Amendment 6 to the Atlantic Striped Bass Fishery Management Plan

In February 2017, the Atlantic Striped Bass Board (Board) tasked the Plan Development Team (PDT) to develop an addendum that considers the relaxation of coastwide commercial and recreational regulations to bring fishing mortality to the target based on information from the 2016 stock assessment update. The Atlantic Striped Bass Technical Committee (TC) reviewed draft Addendum V, and has the following comments:

- In October 2016, the Board tasked the TC to determine the percent liberalization in harvest that would increase fishing mortality (F) from the 2015 terminal year estimate of 0.16 to the FMP target value of 0.18. To accomplish this, the TC completed several population projections and determined that a 10-11% increase in removals from 2015 levels would increase F to 0.18 in 2017. Due to the timing required for developing and adopting an addendum through the Commission, and the time required by states to promulgate and adopt new regulations, it is likely that any management options adopted by the Board through Draft Addendum V would not be effective until late 2017 or early 2018. As a result, the Board should consider the fact that the 10-11% liberalization was applied to 2017 removals, not 2018, which is the year that Draft Addendum V regulations would most likely be implemented.
- Developing options that increase bag limits or decrease minimum size limits, requires some level of knowledge regarding the length frequency of discarded fish under the current regulations. For Atlantic striped bass, two main data sources that collect such data¹ are the American Littoral Society (ALS) fish tagging program and the Marine Recreational Information Program (MRIP). The TC has concerns with these data sources given that both can be variable from year to year regarding the number of fish tagged and the level of sampling that occurs. Additionally, recent changes in MRIP methodology may also impact the discard estimates used in the development of Draft Addendum V proposed options.
- The change in distribution and length frequency of available fish is another factor that can change substantially from year to year, and is not accounted for in the draft Addendum V proposed options. The 2011 year class has had a strong presence in the Chesapeake Bay (CB)

¹ Some states (e.g., Maryland) also collect length information on discarded fish, among other data, through volunteer angler reporting programs.

in recent years. As this year class becomes older and more mature, a larger proportion of those fish will leave the CB and migrate to the coast, where they will become part of the coastal fishery. The movement of fish out of the CB and into the coastal fishery is expected to result in changes in the level of catch, harvest, and dead discards, in both the CB and coastal fisheries. However, it is still poorly understood what the magnitude of these changes will be and therefore was not accounted for in the Draft Addendum V proposed options.

- Angler behavior is a variable that can greatly affect harvest estimates from year to year and with changing regulations, but that cannot be accounted for. The proposed options in Draft Addendum V assume angler behavior will be identical to that observed in 2015, the first year under new Addendum IV regulations.
- The TC highlighted similar concerns as those listed above during the development (and implementation) of Draft Addendum IV. In 2016, after Addendum IV regulations had been in place for a full year, the Plan Review Team (PRT) conducted a preliminary analysis on the performance of Addendum IV regulatory measures by comparing 2015 harvest estimates to those predicted by the TC, by sector and region. The PRT found that on a coastwide scale, the 2015 harvest estimate and the predicted harvest were very close. However, for the recreational fishery in the ocean and the CB, the harvest estimates differed significantly from that predicted. Further investigation by the TC revealed recreational fisheries in the ocean saw a greater reduction than predicted, and recreational fisheries in the CB experienced an increase in harvest relative to the reference period. The most significant variables found to contribute to these large differences were changes in effort and changes in the size, age structure, and the distribution of the 2011 year class along the coast relative to the Chesapeake Bay. As the proposed options in Draft Addendum V make similar assumptions to those used in developing Addendum IV, the TC cautions the Board that the estimated increases could be significantly under or over predicting harvest.
- The motion made by the Board at their February 2017 meeting was based on the information presented in the 2016 stock assessment update (which contains data through 2015) and a projection analysis that estimated a 10% increase in removals from 2015 would increase F from 0.16 in 2015 to 0.18 (target F) in 2017. Preliminary 2016 removals however, were estimated to be ~18% greater than 2015 removals under Addendum IV regulations with no additional changes. As a result, the TC cautions the Board that using data through 2015 for the development of proposed options for Draft Addendum V, and not accounting for the increase in removals estimated for 2016, could result in an F different than F target in 2017. Additionally, the projections presented to the Board were through 2017 only. If Addendum V were to be approved by the Board in 2017, most states would be unable to implement changes until 2018, thus adding to the uncertainty of the proposed measures achieving F target.