



Atlantic States Marine Fisheries Commission

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MEMORANDUM

November 20, 2014

To: Atlantic Striped Bass Technical Committee
From: Michael Waine, FMP Coordinator
RE: Technical Committee Criteria for Conservation Equivalency with Addendum IV

The Atlantic Striped Bass Technical Committee met via conference call on November 18, 2014 to discuss implementation plans for Addendum IV to Amendment 6. The Technical Committee established the following criteria for the development of conservation equivalency proposals.

Recreational Fishery

1.) States can choose any option from the B table below (options B1-B9) for their coastal recreational fishery without further analysis. Chesapeake Bay states can choose any option from Table B or C that achieves at least a 20.5% reduction for their Bay recreational fisheries (Chesapeake Bay tables were in Draft Addendum IV for Public Comment).

Option	Bag Limit	Size limit	Trophy fish	% reduction from 2013 harvest
B1	1	28" min	n/a	31%
B2	1	30" min	n/a	greater than 31% ³
B3	1	32" min	n/a	greater than 31% ³
B4	1	28-40" slot	n/a	greater than 31% ³
B5	2	33" min	n/a	29%
B6	2	28-34" slot	n/a	28%
B7	2 (1 slot, 1 trophy)	1 fish 28-34" slot	1 fish 36" min	28% ³
B8	2 (1 slot, 1 trophy)	1 fish 28-36" slot	1 fish 38" min	26% ³
B9	2 (1 slot, 1 trophy)	1 fish 28-37" slot	1 fish 40" min	26% ³

- 2.) If deviating from options in the B table, states need to submit a state specific analysis using state specific data that demonstrates their proposal meets at least a 25% reduction in total recreational removals. The TC created the following standards for treatment of datasets:
- Data years: pool three years of data, 2011-2013.
 - Treatment of sublegal harvest or trips that exceed the bag limit: Assume perfect compliance for 2015, but imperfect for 2013 (this is what the TC used for the coastwide analysis to create the B table options).
 - Post release mortality: Use 9% as default or an alternative if data exist to estimate it.
 - Supplemental data: If using supplemental data describe the source (e.g., voluntary angler surveys) and characteristics of the supplemental datasets (e.g., methods, sample size, other measures to help evaluate quality).
 - Justify the use of supplemental data in support of or to replace MRIP data.
 - Explain dataset applicability to the type of analysis you are completing.
- 3.) If treating modes separately (i.e., private and for-hire party/charter) states must submit mode-specific data analyses adhering to the data standards established in item 2.

- Note: State(s) must achieve at least a 25% reduction in total removals. This means private or party/charter modes may achieve less than a 25% reduction, but the total, state-wide reduction (weighted by mode-specific removals) must equal at least 25%.
- 4.) If treating seasons separately (e.g., different regulation between spring and fall) states must submit season-specific data and analysis adhering to the data standards established in item 2.
- 5.) Regional proposals can combine data from all states in the region, but if a state drops out of the regional proposal later on, the remaining states must redo the analysis to show they still achieve at least the 25% reduction.
- 6.) The TC also discussed Individual state methodologies as detailed below.

Recreational Fishery

- New Jersey is using SAS code from the analysis of options B7-B9 as previously done. The following is an approved dataset treatment that would apply to options that consider changes to both size and bag limits. Note this treatment is in addition to the data standards established in item 2.
 - Modification of MRIP data: distribute fish to individuals even if the fish caught was not by the individual interviewed. If MRIP can't identify whose fish it is they randomly distribute the fish to the individuals in the party until they run out. This expands the sample size of the dataset used to estimate the reduction in harvest.
 - Note: it is acceptable to use expanded MRIP data if there is only a change to the bag limit or size limit, not both.

Commercial Fishery

- 7.) If a state would like to maintain a previously approved conservation equivalency proposal for its commercial fishery the state needs to resubmit its proposal adjusting its conservation equivalency quota to the new Addendum IV quota baseline (highlighted below).

	For Reference	Addendum IV Quota
State	Am6 Quota (lbs)	25% reduction from Am6 Quota (lbs)
Maine	250*	188
New Hampshire	5,750*	4,313
Massachusetts	1,159,750	869,813
Rhode Island	243,625†	182,719
Connecticut	23,750**	17,813
New York	1,061,060†	795,795
New Jersey	321,750**	241,313
Delaware	193,447	145,085
Maryland	131,560†	98,670
Virginia	184,853	138,640
North Carolina	480,480	360,360
Coastal Total	3,806,275	2,854,706

* Commercial harvest/sale prohibited, with no re-allocation of quota.

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

† Quota reduced through management program equivalency; NY (828,293 pounds) and MD (126,396 pounds) beginning in 2004, RI (239,963 pounds) beginning in 2007.

- For example: Maryland reduced its coastal commercial minimum size limit from 28” to 24” which resulted in a reduced quota from 131,560 to 126,396 pounds using yield per recruit methodology. If Maryland chooses to maintain its 24” minimum size then it must re-submit a similar proposal that reduces its Addendum IV baseline quota (98,670 pounds) using a yield per recruit equivalency of 28” and 24” minimum size limits.
- If states with previously approved conservation equivalency choose to increase their minimum size back to 28” there is no conservation equivalency needed, even if they establish a maximum size, because they are choosing to be more conservative. This would result in a state reverting back to its new baseline Addendum IV quota shown in item 7.
- If states submit a conservation equivalency proposal to increase their commercial quota based on establishing an increased minimum size limit, then the TC recommends incorporating an estimation of dead discards into the analysis.

Maine Atlantic Striped Bass Addendum IV Implementation Plan

Summary of Proposed Measures

Recreational Fishery

State	Size Limits	Bag Limits	Open Season
Maine (all modes) – Option A	28” min	1	1/1-12/31
Maine (all modes) – Option B	24-26”	1	1/1-12/31

Commercial Fishery

No Commercial Fishery in Maine

Section 1: Coastal Recreational Fishery

1a.) Maine is still considering a 1 fish bag and 28” min as an option in addition to the slot (see Section 5).

1b.) 1 fish in 24-26” slot.

- Maine is proposing that all recreational fishing modes will implement 1 fish in the 24-26” slot.
- Our proposal meets the data standards established by the TC in the TC memo (M14-110).
- Our analysis includes 2011-2013 MRIP proportion at length landings data for all modes combined.
- Our analysis was conducted in an excel spreadsheet.
- The results are presented in Table 1; spreadsheet with data is attached.
- The data in Table 1 clearly identifies a 30% reduction in removals is achieved from pooled 2011-2013 data.

Note: The season is Jan 1 – Dec 31, but the fishery occurs from May through October. Regulations are not different by geographical area.

Section 2: Coastal Commercial Fishery

This section is not applicable to Maine.

Section 3: Chesapeake Bay Recreational Fishery (MD, VA, PRFC)

This section is not applicable to Maine.

Section 4: Chesapeake Bay Commercial Fishery (MD, VA, PRFC)

This section is not applicable to Maine.

Section 5: Timeline for Implementation

If the TC approves Maine’s proposed slot option, the Management Board will have to review and approve it (early Feb). DMR will then present the slot option along with option B1 (1 fish at 28 inches) at a public hearings (late Feb/early March). Rulemaking for the preferred option (B1 or 24-26” slot) will require 90-100 days, followed by approval by the DMR Advisory Council (sometime in early May). After approval, the rule becomes effective within five days. Maine’s fishery begins in May.

Table 1. Results from bag limit analysis for all modes using landings for 2011-2013. The data represents a reduced slot from the current slot of 20-26 inches total length (TL) or greater than 40 inches TL.

Slot	Expected landings	Dead discards (9%)	2011-2013		2011-2013 total losses	Reduction (# fish)	Reduction %
			Total 1	Release mort			
Current	51,176						
22-26"	38,650						
23-26"	28,366	2,188	30,554	69,395	99,949	122,071	22,122 0.18
23-25"	24,655	2,522	27,177	69,395	96,572	122,071	25,499 0.21
24-26"	13,009	3,570	16,579	69,395	85,974	122,071	36,097 0.30

New Hampshire - Atlantic Striped Bass Addendum IV Implementation Plan

Summary of Proposed Measures

Recreational Fishery

State	Size Limits	Bag Limits	Other	Open Season
New Hampshire	28"	1	No netting; no gaffing; must be landed with head and tail intact; no culling.	1/1 – 12/31

Commercial Fishery

State	Size Limits	Seasonal Quota	Open Season
No Comm Fishery	NA	NA	None

Section 1: Coastal Recreational Fishery

1a.) 1 fish @ 28" minimum size limit for all recreational fishing modes in New Hampshire State Waters, open season from January 1 to December 31 (*no closed season*).

Section 2: Coastal Commercial Fishery

2a.) New Hampshire is allocated a commercial quota of 4,313 lbs, which is a 25% reduction from Amendment 6 quota of 5,750 lbs. The commercial harvest and sale of striped bass is prohibited in New Hampshire, therefore the quota will not be used and re-allocation to the recreational fishery is not permitted.

Section 3: Chesapeake Bay Recreational Fishery (MD, VA, PRFC)

(Not Applicable)

Section 4: Chesapeake Bay Commercial Fishery (MD, VA, PRFC)

(Not Applicable)

Section 5: Timeline for Implementation

Implementation of these proposed management measures will begin January 1, 2015. Recreational fishing survey data have shown that striped bass effort and harvest does not begin annually in New Hampshire before May, allowing these management measure to be in place before the next fishing season.

Massachusetts Atlantic Striped Bass Addendum IV Implementation Plan

Summary of Proposed Measures

Recreational Fishery

State	Size Limits	Daily Bag Limits	Other	Open Season
Massachusetts (private, shore)	28"	1 fish		1/1-12/31
Massachusetts (for-hire) – Option A	28"	1 fish		1/1-12/31
Massachusetts (for-hire) – Option B	32"	2 fish		1/1-12/31
Massachusetts (for-hire) – Option C	1 @ 28-34" and 1 @ >40"	2 fish		1/1-12/31

Commercial Fishery

State	Size Limits	Seasonal Quota	Open Season
Massachusetts	34"	869,813 lbs	6/23-9/1

Section 1: Coastal Recreational Fishery

1a.) 1 fish @ 28 inches: private/rental boat and shore modes (analysis included because regulations are mode specific)

1b.) For-hire mode

Option A – 1 fish @ 28 inches

Option B – 2 fish @ 32 inches

Option C – 1 fish @ 28-34 inches and 1 fish 40 inches or greater.

- Massachusetts is proposing that our private and shore modes will implement 1 fish @ 28" and our charter mode will implement Option A, B or C (to be decided at public hearings) through conservation equivalency.
- Massachusetts meets the standards as established by the TC in the TC memo (M14-110).
- Our analysis includes pooled 2011-2013 MRIP landings data including raw data from the MRIP Trip, Catch and Size files for the bag limit and size limit analyses. Detailed analyses for each option is shown below.

Option A – 1 fish @ 28 inches for For-Hire Mode

If this regulation is accepted for the For-Hire mode, then no further analyses are needed because all modes will have the same regulations and the coast-wide reduction of about 31% as indicated in the TC memo is applied.

Option B – 2 fish @ 32 inches for For-Hire Mode

If this regulation is accepted for the For-Hire mode, then separate analyses for each mode are required and are shown below:

Shore Mode

The daily bag limit for anglers fishing from shore will be reduced to 1 fish @ 28 inches. To determine if this action will have the same reduction as the coast-wide equivalent, a bag limit analysis was conducted by using MRIP trip information of CNTRBTRS = 1 from 2011-2013 in waves 2-6 for anglers targeting striped bass (primary or secondary species code).

Shore				2 fish	1 fish
Harvest (no. fish)	2011	2012	2013	Total	Total
0	517	395	865	1777	1777
1	8	11	17	36	43
2	3	3	1	7	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	
6	0	0	0	0	
7	0	0	0	0	
8	0	0	0	0	
9	0	0	0	0	
10	0	0	0	0	

Harvest	50	43
Released		7
Total Dead		43.63
%Reduction		-12.74

The total removals in the Shore mode is expected decline by only 12.7% because most anglers only keep about one fish per day.

Private Boat Mode

The daily bag limit for anglers fishing from private/rental boats will be reduced to 1 fish @ 28 inches. Investigation of records with more than 2 fish per day being landed by an angler showed that some records are likely mistakes made by the MRIP interviewer; therefore, we deleted any record identified as a commercial trip and merged the remaining trips into the 2 fish category . To determine if this action will have the same reduction as the coast-wide equivalent, a bag limit analysis was conducted by using MRIP trip information of CNTRBTRS = 1 from 2011-2013 in waves 2-6 for those anglers targeting striped bass (primary or secondary species code).

Private/Rental Boats				2 fish	1 fish
Harvest (no. fish)	2011	2012	2013	Total	Total
0	709	671	1974	3354	3354
1	90	74	180	344	563
2	56	66	97	219	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	
6	0	0	0	0	
7	0	0	0	0	
8	0	0	0	0	
9	0	0	0	0	
10	0	0	0	0	

Harvest	782	563
Released		219
Total Dead		582.71
%Reduction		-25.4847

The total removals in the private/rental boat mode is expected decline by about 25.5%.

For-Hire

A size limit analysis was conducted by using the MRIP size frequency data for 2 fish @ 28 inches as was done for the coast-wide estimation. However, raw fork length data were converted to total length prior to calculation of numbers-at-length and binned by 1 inch for the analysis. Data included only charter boats since there was only 1 record of catching a striped bass on a head boat. But regulations will apply to both for-hires.

For-Hire

	2011	2012	2013	Total
Harvest (no.)	55,876	51,884	41,716	149,476
Releases (no.)	63,811	67,358	18,143	149,312
Dead Releases (no.)	5742.99	6062.22	1632.87	13438.08
Total Removals (no.)	61618.99	57946.22	43348.87	162914.08

TL Inches				Total	Prop	Cum Prop
	2011	2012	2013	2011-2013		
14	0	0	0	0	0	0
15	0	0	0	0	0	0
16	0	0	0	0	0	0
17	0	0	0	0	0	0
18	0	0	0	0	0	0
19	0	0	0	0	0	0
20	0	0	0	0	0	0
21	0	0	0	0	0	0
22	0	0	0	0	0	0
23	0	0	0	0	0	0
24	0	0	0	0	0	0
25	0	0	0	0	0	0
26	0	0	0	0	0	0
27	339.1050375	0	0	339.1050375	0.002268613	0.00226861
28	6117.16948	3904.1755	4108.4354	14129.7804	0.094528248	0.09679686
29	12623.96797	7677.1597	3225.481	23526.6087	0.157393041	0.2541899
30	8027.847562	5426.0822	7704.275	21158.2048	0.141548416	0.39573832
31	4991.715883	3938.1709	2183.7687	11113.6555	0.074350369	0.47008869
32	3535.940536	7608.2607	11990.456	23134.6571	0.154770884	0.62485957
33	4351.43812	3635.2009	3013.8579	11000.4969	0.073593338	0.69845291
34	4050.86977	3896.1103	502.30966	8449.28969	0.056525758	0.75497867
35	0	4856.5967	2803.6707	7660.26738	0.051247198	0.80622587
36	2338.797128	1430.4835	1589.5009	5358.78149	0.035850255	0.84207612
37	3683.877573	5403.5188	9.2169859	9096.6134	0.060856355	0.90293247
38	4192.384554	969.82448	0	5162.20903	0.034535185	0.93746766
39	1062.841039	569.61341	0	1632.45445	0.010921122	0.94838878
40	0	890.88839	0	890.888393	0.005960044	0.95434883
41	560.148872	0	3595.7431	4155.89194	0.027802922	0.98215175
42	0	0	46.07382	46.0738197	0.000308234	0.98245998
43	0	0	0	0	0	0.98245998
44	0	0	0	0	0	0.98245998
45	0	365.11255	0	365.112547	0.002442603	0.98490259
46	0	1313.2382	0	1313.23816	0.008785565	0.99368815
47	0	0	943.47513	943.475131	0.00631185	1
48	0	0	0	0	0	1
49	0	0	0	0	0	1
50	0	0	0	0	0	1
51	0	0	0	0	0	1
52	0	0	0	0	0	1

For-Hire

New Size Limit	29	30	31	32	33	34	35
Prop Har Red	0.0967969	0.254189902	0.3957383	0.4700887	0.62485957	0.698452909	0.75497867
New Harvest	135007.19	111480.7102	90322.619	79209.023	56074.4908	45074.05302	36624.8088
New Dead Rel	1302.1927	3419.576081	5323.8043	6324.0279	8406.13583	9396.175228	10156.6072
Old Dead Rel	13438.08	13438.08	13438.08	13438.08	13438.08	13438.08	13438.08
Total Removal	149747.47	128338.3663	109084.5	98971.131	77918.7066	67908.30825	60219.496
% Total Reducti	-8.081938	-21.22328144	-33.0417	-39.249492	-52.171902	-58.3164891	-63.0360396

It is expected that the for-hire total removals will decline by about 39.2 %. The combined total reduction is shown below:

Option B

Original Total Removals (2011-2013)			Percent Total Reduction			Adjusted Removals	% Reduction Total
Shore (2 @ 28")	Private (2 @ 28")	For-Hire (2 @ 28")	Shore (1 @ 28)	Private (1 @ 28)	For-Hire (2 @ 32")		
99,971	981,356	162,914	-12.74	-25.48	-39.25	917,466	-26.26

It is expected that the regulations changes under Option B will produce about a 26.3 % reduction in total removal for Massachusetts recreational fishery.

Option C – 1 fish @ 28-34 inches and 1 fish \geq 40” for For-Hire

Simulation analyses were conducted to examine the slot limit. Data available for all CNTRBTRS were used and lengths in a trip with multiple anglers were assigned to individual anglers.

The first step of the simulation was to resample the number of charter trips retaining 0, 1, and 2 fish from a multinomial distribution using the sum of the single angler trips for 2011-2013 (0 fish = 188 trips, 1 fish = 112 trips, and 2 fish =154 trips). Once the distribution of trips was selected, lengths retained by anglers were sampled with replacement from a pool of anglers keeping one fish and from a pool of anglers keeping two fish. The number selected was based on the number of trips retaining one and two fish. For anglers retaining one fish, a length was set to 0 if it was not in the slot or was not over trophy size. For anglers retaining two fish, lengths were set to 0 to maintain one fish within the slot and one \geq 40 inches trophy size. The percent reduction in harvest was calculated. The simulation was repeated 500 times and the mean percent harvest reduction was calculated. This mean value was then used in the calculation of percent reduction in total removals.

The estimated reduction in For-Hire mode harvest was -45.78% . The resulting reduction in total removals was -38.22%. Using the same analyses for Shore and Private/Rental modes as described in Option B, the combined total reduction for Option C is shown below:

Option C

Original Total Removals (2011-2013)			Percent Total Reduction			Adjusted Removals	% Reduction Total
Shore (2 @ 28")	Private (2 @ 28")	For-Hire (2 @ 28")	Shore (1 @ 28)	Private (1 @ 28)	For-Hire (1 @ 28-34,1 \geq 40)		
99,971	981,356	162,914	-12.74	-25.48	-38.22	919,138	-26.13

It is expected that the regulation changes under Option C will produce about a 26.1 % reduction in total removals for Massachusetts recreational fishery.

Section 2: Coastal Commercial Fishery

2a.) Massachusetts will be implementing the 25% reduction in Amendment 6 quota and will retain our current 34” minimum size limit. The quota for 2015 will be 869,813 lbs.

Section 3 & 4: Not applicable**Section 5: Timeline for Implementation**

Massachusetts Division of Marine Fisheries will be holding a public hearing in January on the proposed 2015 striped bass management. Following the Massachusetts Marine Fisheries Commission meeting in February or March and subsequent decision of our state Director, regulations will be implemented by April 1, 2015.

Rhode Island Addendum IV Implementation Plan for Atlantic Striped Bass

Summary of Proposed Measures

Recreational Fishery

State	Size Limits	Bag Limits	Other	Open Season
Rhode Island (private, shore)	28"	1		1/1 – 12/31
Rhode Island (for-hire) – Option A	28"	1		1/1 – 12/31
Rhode Island (for-hire) – Option B*	32"	2		1/1 – 12/31

Commercial Fishery

State	Size Limits	Seasonal Quota	Open Season
Rhode Island (general category)	34"	111,459 lbs** (70/30 split between seasons)	6/8 – 8/31; 9/8 – 12/31***
Rhode Island (fish trap) – Option A	26"	70,113 lbs**	4/1 – 12/31***
Rhode Island (fish trap) – Option B	28"	71,260 lbs**	4/1 – 12/31***

* If this option is approved by ASMFC RI may choose to implement this regulation as-is or a more conservative measure.

** Based on 39/61 split between the floating fish traps and general category respectively.

*** 2014 open seasons (RIMF, 2014). 2015 open seasons will be determined by the Rhode Island Marine Fisheries Council (RIMFC) in early 2015.

Section 1: Coastal Recreational Fishery

1a.) 1 fish @ 28": private and shore modes (analysis included because regulations are mode specific)

1b.) Option A – 1 fish @ 28": for-hire modes

- No further analyses needed because this is equivalent with the selected recreational management measure in Addendum IV.

Option B – 2 fish @ 32": for-hire modes

- RI is proposing that our private and shore modes will implement 1 fish @ 28" and our for-hire mode will implement 2 fish @ 32" through conservation equivalency.
- Our proposal meets the standards as established by the TC in the TC memo (M14-110).
- Our analysis includes average 2011-2013 MRIP landings data including raw data from the MRIP Trip and Catch files for the bag limit analyses and proportion at length and landings data for the size limit analysis.
- Our pooled 2011-2013 MRIP data sets used for the private and shore modes for the bag limit analysis included a total of 1,333 trips averaged across the three years.
- Our analysis was completed by using the methods of Gary Nelson that were used for Addendum IV for the bag limit and size limit analyses (G. Nelson, pers. comm., November 17, 2014).
- The results of the bag limit and size limit analyses are presented in Tables 1-3.
- The data presented in Tables 1-3 clearly identifies that a 30% reduction will result from the private and shore modes and a 28% reduction will result from the for-hire modes resulting in an average reduction of 29%.
- RI will explore the possibility of implementing mandatory trip-level reporting for the for-hire mode should this proposal be approved.

Section 2: Coastal Commercial Fishery

2a.) RI quota = 182,719 pounds (25% reduction from Amend 6).

- A 34" minimum size will be maintained for the general category commercial fishery (no quota adjustment).

2b.) Option A - A 26" minimum size for the commercial floating fish trap fishery through conservation equivalency.

- RI is proposing to take a 1.61% reduction to the commercial floating fish trap quota (currently 39% of the RI total commercial quota) to compensate for implementing a reduced minimum size of 26" for the floating fish trap fishery.
- Our proposal meets the standards as established by the TC in the TC memo (M14-110).
- Our analysis includes combined RI-MA 2013 age at length data as well as data taken from the 2013 striped bass benchmark stock assessment including maturity at age, natural mortality (M) at age, mean catch weight at age, and proportion of fishing mortality (F) and M before spawning (Table 4). Fishery selectivity or partial recruitment was calculated as the probability that a fish of a given age would be larger than the minimum length.
- 2013 age at length data included 1,504 samples.
- Our analysis was completed by using the methods used for the 2007 RI conservation equivalency proposal (Lee, 2007). The analysis estimated the level of fishing mortality that would achieve a level of %MSP as conservative as 28". The Yield Per Recruit version 3.3 from the NOAA Fisheries Toolbox (NOAA, 2013) as well as the Yield-Per-Recruit (YPR) Analysis and Spawning Stock Biomass-Per-Recruit (SPR) Analysis contained in the R Fishmethods package (Nelson, 2014) were used for the analysis and produced the same results.
- The results of the YPR/SPR analyses are presented in Table 5. (Input files and code used in R analysis can be supplied upon request)

The data presented in Table 5 clearly identifies that a 1.61% reduction to the floating fish trap quota is the compensation required to achieve conservation equivalency and permit the floating fish traps to implement a reduced minimum size of 26".

- This would reduce the total RI quota from 182,719 to 181,572 pounds. This is based on the floating fish traps being allocated 39% of the RI quota. Should this change through the RIMFC process, the 1.61% reduction would be applied to the new floating fish trap quota.

Option B - A 28" minimum size for the commercial floating fish trap fishery.

- RI quota = 182,719 pounds (25% reduction from Amend 6).
- No further analyses needed.

Sections 3 and 4 are not applicable to Rhode Island

Section 5: Timeline for Implementation

The RIMFC will be holding a public workshop and public hearing in February on the proposed 2015 striped bass management. Following a meeting of the RIMFC in March and subsequent decision of our state Director, regulations will be implemented by April 1, 2015.

Implementation Date Relative to Start of Fisheries

- RI's recreational fishery technically opens 1/1 however, the majority of fishing occurs after March. This is supported by intercept data from 2011-2013 which shows only 2 intercepts in March for that time period, both of which had a zero harvest.
- RI's commercial general category and fish trap does not start until after 4/1.
- RI's timeline includes extra time should delays occur, we anticipate regulations to be filed prior to 4/1.

REFERENCES

- Lee, Laura. Proposal for Conservation Equivalency in Rhode Island's Commercial Trap Net Fishery for Striped Bass. Report to the ASMFC Striped Bass Technical Committee, April 2007. 9 p.
- Nelson, Gary A. 2014. Fishmethods: Fishery Science Methods and Models in R. R package version 1.6-0. <http://CRAN.R-project.org/package=fishmethods>
- NOAA Fisheries Toolbox, 2013. Yield Per Recruit, Version 3.3. [Internet address: <http://nft.nefsc.noaa.gov>]
- RIMF (Rhode Island Marine Fisheries). 2014. Rhode Island Marine Fisheries Regulations—Part XII: Striped Bass. Adopted by the Rhode Island Department of Environmental Management, May 08, 2014, Providence, RI. 8 p.

Table 1. Results from bag limit analysis using private and shore modes with data averaged over 2011-2013. The data represents the number of trips with harvest at the various bag limits for two bag limit scenarios, the current rule (2 fish bag limit), and a proposed scenario (1 fish bag limit).

*Non-compliant trip.

Harvest (no. fish)	2 Fish Bag Limit	1 Fish Bag Limit
0	407	407
1	20	37
2	16	0
3	1*	0
4	0	0
5	0	0
6	0	0
7	0	0
8	0	0
9	0	0
10	0	0

Total Harvest	55	37
Released		18
Total Dead		38.62
%Reduction		-29.782

Table 2. RI average harvest from 2011-2013 broken down as numbers and proportion at length for size limit analysis using for-hire modes.

TL Inches	RI Numbers	Proportion	Cum Prop
28	23.57	0.00	0.00
29	449.21	0.03	0.04
30	450.52	0.03	0.07
31	3,151.05	0.24	0.31
32	3,788.85	0.29	0.60
33	615.54	0.05	0.65
34	1,341.09	0.10	0.75
35	666.62	0.05	0.80
36	127.04	0.01	0.81
37	95.61	0.01	0.82
38	695.43	0.05	0.87
39	205.62	0.02	0.89
40	539.58	0.04	0.93
41	216.09	0.02	0.94
42	123.11	0.01	0.95
43	606.37	0.05	1.00

Table 3. Results from size limit analysis using for-hire modes with data averaged over 2011-2013.

Old Harvest	13,095
Old Releases	3,111
Old Dead Releases	279.99
Old Total Removals	13374.99
Proposed Harvest Reduction	0.31
New Harvest	9020.74
New Dead Releases	366.68
Total Removal	9667.42
% Total Reduction	-27.72

Table 4. Data inputs for YPR/SPR analysis ($F_s = 0.1$ and $M_s = 0.33$). Mean weight, natural mortality and maturity at age as well as F_s and M_s were taken from the 2013 benchmark stock assessment. Selectivity was calculated as the probability that a fish of a given age would be larger than the minimum length.

Age	Mean Weight	Selectivity (28")	Selectivity (26")	Natural Mortality	Maturity
1	0.27	0	0	1.13	0
2	0.7	0	0	0.68	0
3	1.31	0	0	0.45	0
4	2.27	0.01	0.07	0.33	0.04
5	3.11	0.38	0.70	0.25	0.13
6	3.61	0.69	0.93	0.19	0.45
7	4.34	0.89	0.98	0.15	0.89
8	5.37	0.99	1	0.15	0.94
9	6.22	1	1	0.15	1
10	7.74	1	1	0.15	1
11	8.8	1	1	0.15	1
12	9.66	1	1	0.15	1
13+	12.51	1	1	0.15	1

Table 5. Results from YPR/SPR analysis.

MSL	YPR	SBPR	% MSP	F	Reduction
28"	0.185002	1.0245	33.56	0.18	
26"	0.182028	1.0077	33.01	0.16	1.61%

Connecticut Addendum IV Implementation Plan for Atlantic Striped Bass

Summary of Proposed Measures

Recreational Fishery-Preferred Option 1

State	Size Limits	Bag Limits	Other	Open Season
CT (private, shore)	28"	1	Option B1	1/1 – 12-31
CT (Party and Charter)	28"	1	Option B1	1/1 – 12-31

Recreational Fishery-Option 2

State	Size Limits	Bag Limits	Open Season
CT and RI (private, shore)	28"	1	1/1 – 12-31
CT and RI (Party and Charter)	32"	2	1/1 – 12-31

Commercial Fishery-Option 1

Option 1 maintains the one voucher – one fish program as in 2014, with a 25% reduction in available vouchers.

State	Size Limits	Bag Limits	Total Vouchers	Open Season
CT (with voucher)	22"	1 card per fish harvested	3,018 (25% fewer than in 2014)	1/1 – 12-31

Section 1: Coastal Recreational Fishery

Recreational Option 1: All recreational modes: 1 fish @ 28"TL. This option has been shown by the striped bass technical committee to achieve the required reduction from 2013 harvest, and does not require further analysis as stated by the memo provided.

Recreational Option 2: 1 fish @ 28"TL: private and shore modes. 2 fish @32TL: Party and Charter modes. This option would only be considered if both the states of RI and CT implemented the same management measures.

- Trips that caught above the creel limit were removed prior to any analysis. The calculated conservation benefit is lower when over creel limit trips are included in the analysis. Consequently, the resulting calculations may be slightly optimistic.
- The analysis includes Connecticut and Rhode Island 2011-2013 MRIP landings data from MRIP trip, catch and length files for creel and minimum length analysis.
- Data were separated by mode prior to the reduction calculations.
- The analysis performed on the private and shore modes included 196 trips. Analysis on the minimum length change to 32" for the party charter was based on 2,614 MRIP records for a full complement of the total harvest, however the total number of fish that were actually measure (length_imp=0) was 91 fish combined for both states.
- The reduction associated with increasing the minimum size from 28" to 32" for the states of Connecticut and Rhode Island for the Party and Charter modes (for-hire) is 50% (See table 1).
- The reduction associated with removing 1 fish from the creel limit for the states of Connecticut and Rhode Island for the private and shore mode is 23.4% (see table 2).
- Once these reductions are weighed by the 2013 harvest, the total reduction associated with option 2 is 25.2% which is above the required 25% reduction (see table 3).

Section 2: Coastal Commercial Fishery

Commercial Option 1: Continue with 2014 Conservation Equivalency with a 25% reduction in available voucher cards from 4025 to 3018.

By statute, the commercial harvest of striped bass is prohibited in Connecticut. In 2014, striped bass voucher cards allowing the harvest of 1 striped bass were distributed to recreational anglers. The maximum number of cards distributed was the equivalent to the Connecticut annual commercial quota. Each angler was allowed the opportunity to obtain one voucher for the entire year. Anglers who participated in the enhanced shore survey were also provided a voucher if requested. This continued until all voucher cards were distributed. All anglers were required to return their voucher card back to the state, providing the fish length and the date the fish was harvested.

At its February 2012 meeting, the Board approved an extension of Connecticut's bonus fish program to include both marine and inland waters.

Section 3: Chesapeake Bay Recreational Fishery (MD, VA, PRFC)

Not applicable to Connecticut.

Section 4: Chesapeake Bay Commercial Fishery (MD, VA, PRFC)

Not applicable to Connecticut.

Section 5: Timeline for Implementation

The state of Connecticut plans to bring the approved options forward for public hearing in February and have the 2015 management measure in place prior to the printing of the 2015 Connecticut Anglers Guide in March 2015.

Table 1. Connecticut and Rhode Island Harvest by length 2011-2013 for Party and Charter Modes

TL (inches)	Harvest	Count
21	133.18	5
22	849.12	3
24	352.34	4
25	249.35	7
26	841.86	9
27	49019.15	98
28	81966.11	184
29	56640.81	271
30	113871.23	280
31	149382.33	383
32	71733.47	268
33	44140.48	221
34	49439.82	127
35	39395.35	130
36	22707.45	72
37	17614.88	75
38	11253.61	66
39	23887.75	69
40	24159.58	62
41	82342.39	100
42	14065.48	36
43	32427.4	79
44	30170.82	34
45	4951.27	25
47	457.35	3
48	106.19	1
50	254.95	2
Grand Total	922413.72	2614

Table 2. Connecticut and Rhode Island Harvest by Creel limit

RI and CT (2011 - 2013) Private Mode

Creel	Trips	harvest 2 fish	Harvest 1 fish
0.853	1	0.853	0.853
0.859	3	2.577	2.577
0.881	1	0.881	0.881
0.884	1	0.884	0.884
0.953	2	1.906	1.906
0.961	2	1.922	1.922
0.99	2	1.98	1.98
1	103	103	103
1.005	1	1.005	1
1.007	1	1.007	1
1.017	2	2.034	2
1.022	1	1.022	1
1.207	1	1.207	1
1.643	1	1.643	1
1.728	2	3.456	2
1.878	1	1.878	1
1.891	1	1.891	1
1.976	1	1.976	1
2	59	118	59
	186	249.122	185.003
		% Reduction=	0.25738
			64.119
			5.77071
			190.7737
		Reduction w/ dead discards	0.234216

Table 3. Connecticut and Rhode Island 2013 Harvest Reductions by Proportion

	Harvest	Proportion
P/C	23,509	0.065320196
Private	323,609	0.899153663
Total	347,118	
		Reduction in
	%reduction	Fish
P/C	0.5	11,755
Private	0.234	75,725
		<hr/>
		87,479
	All Modes Reduction=	0.252015182

New York Addendum IV Implementation Plan for Atlantic Striped Bass

Current Management Regulations:

Current Marine Recreational Fishery

State	Season	Bag Limit	Minimum Size	Special Conditions	License
NY	Marine: April 15 - Dec 15;	Marine: 2 fish/day;	Marine party/charter: 28" TL; Marine others: 1 fish 28 - 40" TL slot and 1 fish >40" TL;	Fish may be taken only by angling or spearing. Catch and release angling allowed during closed season.	Marine Angler Registry

Current Commercial Fishery

State	Season	Annual Quota (2014)	Trip Limit	Minimum Size	Reporting requirement	# of participants
NY	July 1 - Dec 15	828,293 lbs. Only occurs in Marine District	season may close if projected quota is exceeded	24- 36" TL slot	trip reports	478

Summary of Proposed Measures - Marine

Proposed Recreational Fishery – Marine Section 1, Option 1

State	Size Limits	Bag Limits	Other	Open Season
New York (private, shore) marine	28"	1	Option B1	4/15 – 12/15
New York (for-hire) marine	28"	1	Option B1	4/15 – 12/15

Proposed Recreational Fishery – Marine Section 1, Option 2

State	Size Limits	Bag Limits	Other	Open Season
New York (private, shore) marine	28"	1		4/15 – 12/15
New York (for-hire) marine	32"	2		4/15 – 12/15

Proposed Recreational Fishery – Marine Section 1, Option 3

State	Size Limits	Bag Limits	Other	Open Season
New York (private, shore) marine	1 @ 28-34" slot, 1 ≥ 36"	1 + trophy	Option B7	4/15 – 12/15
New York (for-hire) marine	1 @ 28-34" slot, 1 ≥ 36"	1 + trophy	Option B7	4/15 – 12/15

Proposed Recreational Fishery – Marine Section 1, Option 4

State	Size Limits	Bag Limits	Other	Open Season
New York (private, shore) marine	1 @ 28-36" slot, 1 ≥ 38"	1 + trophy	Option B8	4/15 – 12/15
New York (for-hire) marine	1 @ 28-36" slot, 1 ≥ 38"	1 + trophy	Option B8	4/15 – 12/15

Proposed Recreational Fishery – Marine Section 1, Option 5

State	Size Limits	Bag Limits	Other	Open Season
New York (private, shore) marine	1 @ 28-37" slot, 1 ≥ 40"	1 + trophy	Option B9	4/15 – 12/15
New York (for-hire) marine	1 @ 28-37" slot, 1 ≥ 40"	1 + trophy	Option B9	4/15 – 12/15

Proposed Commercial Fishery– Marine Section 2 Option 1: (Add IV, B16)

State	Size Limits	2015 Seasonal Quota	Open Season
New York	28"	795,795 lbs.	7/1 – 12/15

Proposed Commercial Fishery – Marine Section 2 Option 2 (Add IV, B16 with CE)

State	Size Limits	2015 Seasonal Quota	Open Season
New York	24"	730,920 lbs.	7/1 – 12/15

Section 1: Marine Recreational Fishery

Marine Recreational Option 1; Option B1: All recreational modes: 1 fish @ 28"TL. This option has been shown to achieve a coast-wide 31% reduction from 2013 harvest, and does not require further analysis.

Marine Recreational Option 2; 1 fish @ 28"TL: private and shore modes (analyses included because regulations are mode specific); 2 fish @ 32"TL: for-hire modes

- NY is proposing our private and shore modes implement 1 fish @ 28"; and our for-hire mode implement 2 fish @ 32" through conservation equivalency.
- Our proposal meets the standards as established by the TC in the TC memo (M14-110).
- Our analyses includes average 2011-2013 MRIP landings data, including raw data from the MRIP Trip and Catch files for the bag limit analyses and proportion at length and landings data for the size limit analyses.
- Our pooled 2011-2013 MRIP data sets used for the private and shore modes for the bag limit analyses included a total of 2,516 trips.
- Our analyses were completed by using the methods of Dr. G. Nelson, used for Addendum IV for the bag limit and size limit analyses.
- The results of the bag limit and size limit analyses are presented in Tables 1-3a.
- The data presented in Tables 1-3a indicate that a **29.2%** reduction will result from the private and shore modes and a **25.9%** reduction will result from the for-hire modes, resulting in a combined **27.4%** reduction from 2013 total removals.

Marine Recreational Option 3: Option B7: All recreational modes: 1 fish @ 28-34" TL slot; 1 fish \geq 36" TL.

- This option has been shown to achieve a 26% coast-wide reduction from 2013 harvest, and does not require further analysis.

Marine Recreational Option 4: Option B8: All recreational modes: 1 fish @ 28-36" TL slot; 1 fish \geq 38" TL.

- This option has been shown to achieve a 26% coast-wide reduction from 2013 harvest, and does not require further analysis.

Marine Recreational Option 5: Option B9: All recreational modes: 1 fish @ 28-37" TL slot; 1 fish \geq 40" TL.

- This option has been shown to achieve a 26% coast-wide reduction from 2013 harvest, and does not require further analysis.

Section 2: (Marine) Commercial Fishery:

Commercial Fishery– Option 1: 25% Reduction from Amendment 6 Quota.

- This option will require a 28" minimum size.
- Amendment 6 quota is 1,061,060 lbs. A 25% reduction produces a new quota of 795,795 lbs., and does not require further analysis.

Commercial Fishery– Option 2: Conservation Equivalency Quota for 24" TL Minimum Size.

- NY proposes to take an 8.15% reduction to the commercial quota, to compensate for implementing a reduced minimum size of 24"TL, resulting in an annual quota of 730,920 lbs. Explanation below.
- Our proposal meets the standards as established by the TC in the TC memo (M14-110).
- Our analysis includes NY 2013 WLI/Commercial Fisheries Monitoring age at length data, as well as data taken from the 2013 striped bass benchmark stock assessment: maturity at age, natural mortality (M) at age, mean catch weight at age, and proportion of fishing mortality (F) and M before spawning (Table 4). Fishery selectivity samples or partial recruitment was calculated as the probability that a fish of a given age would be larger than the minimum length.
- 2013 age at length data included 835 samples, from 2013 fishery dependent commercial monitoring and fishery-independent Western Long Island Study data.
- Our analysis was completed by using the YPR method as in the 2003 NY conservation equivalency proposal (V. Vecchio, personal communication and internal memo). The analysis estimated the level of fishing mortality that would achieve a level of %MSP at least as conservative as 28". We used the Yield Per Recruit version 3.3 from the NOAA fisheries Toolbox for the analysis.
- The results of the YPR/SPR analyses are presented in Table 5.
- Data presented in Table 5 shows that a new quota of 730,920 lbs. achieves conservation equivalency for NY to implement a reduced minimum size of 24".

Sections 3 and 4 are not applicable to New York

Section 5: Timeline for Implementation

NYS DEC held a Marine Resources Advisory Council (MRAC) meeting on November 18 to discuss commercial and recreational striped bass regulatory options. East end commercial fishermen are meeting in December to discuss commercial striped bass regulatory options. Another MRAC meeting is scheduled for mid-January. There will also be opportunities for public comment prior to implementing new regulations in 2015. Regulations are expected to be implemented prior to the start of the Hudson River Recreational fishing season on March 16, 2015. Marine recreational striped bass season starts April 15, and commercial season starts on July 1.

Table 1. Results from marine recreational bag limit analysis using private and shore modes.

2011 - 2013				
KEPT	PRIVATE/RENTAL	SHORE	Total Imperfect Compliance	Total 1 Fish Perfect Compliance
0	863	506	1369	1369
1	109	22	131	203
2	50	6	56	
3	8		8	
4	8		8	
5			0	
7			0	
			1572	1572

	2 fish	1 fish
Harvest	299	203
Released		96
Total Dead		211.64
%Reduction		-29.2174

Table 2. Number and proportion at length for marine recreational size limit analysis using for-hire modes with data averaged over 2011-2013.

TL Inches	Number	Prop	Cum Prop
14	0	0.000	0.000
15	0	0.000	0.000
16	0	0.000	0.000
17	0	0.000	0.000
18	0	0.000	0.000
19	0	0.000	0.000
21	0	0.000	0.000
22	0	0.000	0.000
23	0	0.000	0.000
24	272	0.001	0.001
25	0	0.000	0.001
26	0	0.000	0.001
27	218	0.001	0.002
28	9517	0.035	0.037
29	26920	0.099	0.136
30	17919	0.066	0.202
31	31977	0.118	0.319
32	43452	0.160	0.479
33	21155	0.078	0.557
34	12807	0.047	0.604
35	15962	0.059	0.663

36	10550	0.039	0.701
37	6825	0.025	0.726
38	3780	0.014	0.740
39	4840	0.018	0.758
40	6961	0.026	0.784
41	8103	0.030	0.814
42	24228	0.089	0.903
43	9408	0.035	0.937
44	13759	0.051	0.988
45	1496	0.005	0.993
46	1550	0.006	0.999
47	82	0.000	0.999
48	109	0.000	1.000
49	0	0.000	1.000
50	82	0.000	1.000

Table 3. Results from 32" marine recreational size limit analysis using for-hire modes with data averaged over 2011-2013.

Description	NY Results
Old Harvest	271,971
Old Releases	367,917
Old Dead Releases	33,113
Old Total Removals	305,084
New Size Limit	32
Prop Har Red	0.319
New Harvest	185,148
New Dead Rel	7,814
Old Dead Rel	33,113
Total Removal	226,075
% Total Reduct	-25.897

Table 3a. Total NY Reductions for 1 fish @ 28" private/shore; 2 fish @ 32" For-hire modes.

2013 removals			
Mode	proportion	% reduction	total reduction
private/shore	0.45	-29.22	-13.05
for hire	0.55	-25.90	-14.33
total			-27.38

Table 4. Data inputs for YPR/SPR analysis ($F_s = 0.1$ and $M_s = 0.33$).

	Mean	Selectivity	Selectivity	Natural	
Age	wt	(28")	(24")	Mortality	Maturity
1	0.2	0	0	1.13	0

2	0.656	0	0	0.68	0
3	1.173	0	0.04	0.45	0
4	1.777	0.01	0.36	0.33	0.04
5	2.438	0.28	0.81	0.25	0.13
6	3.388	0.72	0.99	0.19	0.45
7	4.504	0.9	1	0.15	0.89
8	5.516	0.98	1	0.15	0.94
9	6.46	0.99	1	0.15	1

Current quota	795,795 lbs.
reduction = YPR24/YPR28	0.918478
Resulting quota at 24" minimum	730,920 lbs.

10	7.592	1	1	0.15	1
11	8.858	1	1	0.15	1
12	9.99	1	1	0.15	1
13+	12.799	1	1	0.15	1

2013 NY WLI/Commercial ALK (N= 835)

Table 5. Results from analysis.

Results from YPR analysis					
MSL	YPR	SBPR	%MSP	F	Reduction
28"	0.184	0.167	33.99	0.18	
24"	0.169	0.167	36.13	0.13	0.918478

YPR/SPR

Proposed Inland Fishery Regulations: Recreational options only are presented; commercial fisheries for striped bass are closed in inland waters.

Section 3: Delaware River (Inland) Fishery:

Current Management Regulations:

Current Delaware River Recreational Fishery:

State	Size Limits	Bag Limit	Other	Open Season	License
NY Delaware River	28 inches TL	2		All year	Marine Angler Registry

Summary of Proposed Measures:

Proposed Delaware River Recreational Fishery:

State	Size Limits	Bag Limit	Other	Open Season	License
NY Delaware River	28 inches TL	1	Option B1	All year	Marine Angler Registry

- NY proposes to implement a 1 fish @ 28 inch TL size limit for the Delaware River recreational fishery (Option B1).
- This option has been shown to achieve a coast-wide 31% reduction from 2013 harvest, and does not require further analysis.

Section 4: Hudson River (Inland) Fishery:

Current Hudson River Recreational Fishery:

State	Size Limits	Bag Limit	Other	Open Season	License
NY Hudson	18 inches TL	1		Mar 16 – Nov 30	Marine Angler Registry

Summary of Proposed Measures:

Proposed Hudson River Recreational Fishery Options: ALL options are for 1 fish per day bag limit.

State/area	Option	Size limit	Season	Other	C&R mortality	% reduction	
NY Hudson River and Tributaries, North of the George Washington Bridge (river mile 12)	HR1a. slot	18-28 inches	Mar 16-Nov 30		16%	-27.0	
	HR1b. slot	18-28 inches	Mar 16-Nov 30	circle hooks only	5%	-42.1	
	HR2a. slot OR trophy	18-28 inches OR GE	Mar 16-Nov 30			16%	-25.9
		40inches TL					
	HR2b. slot OR trophy	18-28 inches OR GE 40	Mar 16-Nov 30			5%	-40.4
		inches TL			circle hooks only		
	HR3a. slot OR trophy	18-28 inches OR GE 44	Mar 16-Nov 30			16%	-26.7
		inches TL					
	HR3b. slot or trophy	18-28 inches OR 1@	Mar 16-Nov 30			5%	-41.7
		GE 44 inches TL			circle hooks only		
	HR4a&b. split season slot then GE28	18-28 inches TL	wks 11-19 (Mar 16 - ~ May 8)			16%	-25.6
		28 inches TL	wks 20-24 (May 9 - Jun 15)		circle hooks only	5%	-40.0
		28 inches TL	Jun 16-Nov 30				
HR5a&b. split season slot then GE28	18-28 inches TL	wks 11-20 (Mar 16 - ~ May 15)			16%	-27.3	
	28 inches TL	wks 21-24 (May 16 - Jun 15)		circle hooks only	5%	-42.5	
	28 inches TL	Jun 16-Nov 30					

Dates are approximate for the split season.

Overview of data used for all options:

- Our proposal meets the standards as established by the TC in the TC memo (M14-110).
- MRIP data are not available for the Hudson River above New York Harbor. Our proposed reductions are based on data obtained from a Hudson River Cooperative Angler diary (CAP) program run by the DEC, pooling data from 2011-2013. Data from two previous river-wide creel surveys run by Normandeau in 2001 and 2005 are provided as a comparison to the current CAP data. The two Normandeau creel surveys were extensive river-wide surveys. Recorded sizes of fish caught and harvested under the current CAP program continue to be very similar to what was recorded by Normandeau. (see NY Striped Bass Options.xlsx file)
- CAP data were subset to include the spring season (March 16 to June 15) (Table 6). The analyses were based on averages of the 2011-2013 CAP data, using a total of 2,189 trips (Table 6) and a catch of 5,193 fish for the three years (Table 7). CAP data indicate 97.5% of the striped bass in-river harvest occurs in the spring, in good agreement with the two Normandeau river-wide creel surveys that indicated 95% of the striped bass harvest occurred in the spring. Almost all of the striped bass harvest occurs during the month of May, concentrated on fish greater than or equal to fish 28 inches total length. Most fish over 28 inches TL are spawning females (Figure 1).
- We used the methods as provided by Dr. G. Nelson that were used for Addendum IV coastal size and bag limit reduction analyses.
- We believe that the coastal 9% catch and release mortality rate (Diodati, 1991) is too low for the Hudson, given the stress fish experience by being fished on during the spawning season. Millard et al (2005) showed a 16% catch and release mortality rate for J-hooks during the early part of spawning. Millard et al. (2005) also suggest that the mortality rates likely rise as warmer water temperatures stimulate spawning. The study

was terminated in early May because of increasing mortality of fish being held. The study also examined the use of circle hooks. Catch and release mortality was reduced to 5% when using circle hooks with natural bait.

Hudson River Recreational Option 1: One fish @ 18-28" TL slot limit, with consideration for mandatory use of circle hooks when using natural bait.

- HR option 1a proposes to implement a 1 fish @ 18-28 inch TL slot limit for the Hudson River recreational fishery. Option 1b includes the mandatory use of circle hooks when using natural bait.
- Table 8 provides expected reductions for Options 1 a&b for Hudson River removals, under various assumptions of catch and release mortality rates. For HR Option 1a: 1 fish at 18-28 inch slot limit with a 16% C&R rate would produce a **26.98%** reduction from average 2011-2013 Hudson River total removals. For HR option 1b, assuming a 5% catch and release mortality rate for circle hooks, a 1 fish at 18-28 inch slot, using circle hooks only, would produce a **42.11%** reduction.

Hudson River Recreational Options 2 and 3: Option 2a: 1 fish @ 18-28" TL slot limit OR 1 fish \geq 40 inches TL; alternative Options 3a&b: 1 fish @ 18-28" TL slot limit OR 1 fish \geq 44 inches TL.

- Table 9 provides expected reductions for the Slot or Trophy option for Hudson River removals.
- Both 16% and 5% catch and release mortality rates were used.
- For HR Option 2a: 1 fish at 18-28 inch TL slot limit OR 1 fish \geq 40 inch TL trophy, would produce a **25.9%** reduction (16% C&R) from average 2011-2013 Hudson River total removals; and Option 2b: a 5% catch and release mortality rate for mandatory circle hooks would produce a **40.4%** reduction.
- For HR Option 3a: 1 fish at 18-28 inch slot or 1 fish \geq 44 inches TL trophy would produce a **26.7%** reduction (16% C&R); and Option 3b: a 5% catch and release mortality rate for mandatory circle hooks would produce a **41.7%** reduction.

Hudson River Recreational Options 4 &5: Two Split Spawning Season options are proposed: one fish at 18-28 inch TL slot limit followed by 1 fish at 28 inch TL for the remainder of the year. The option for mandatory use of circle hooks when using natural bait are also included.

- Both a 16% and a 5% Catch and release rates were used in the analyses.
- Analyses were performed by segmenting the spring season by week of the year; actual dates are approximate as days and weeks of the month shift by one day each year. Weeks with their approximate dates are described below.
- Striped bass harvest during the remaining part of the open season from June 16 until November 30 is very low, and a 1 fish \geq 28 inch TL is proposed.
- Results are shown in Table 10.
- **Option 4:** Weeks 11-19 (Mar 16 to ~May 8) 1 fish at 18 to 28 inches TL slot limit; 1 fish at 28 inches TL weeks 20-24 (May 9 – June 15) indicate that **Option 4a** would achieve a **25.6%** reduction from average 2011-2013 Hudson River total removals, using a 16% catch and release mortality rate; **Option 4b** would achieve a **40.0%** reduction, using a 5% catch and release mortality rate for mandatory circle hooks.
- **Option 5:** This proposal extends the slot season one week later into May. Weeks 11-20 (Mar 16 to ~May 15) 1 fish at 18 to 28 inches TL slot limit; 1 fish at 28 inches TL weeks 21-24 (May 16 – June 15) indicate that a **27.3% reduction**, **Option 5a**, would be achieved using a 16% C&R rate. The 5% rate for mandatory circle hooks would achieve a **42.5% reduction**, **Option 5b**.

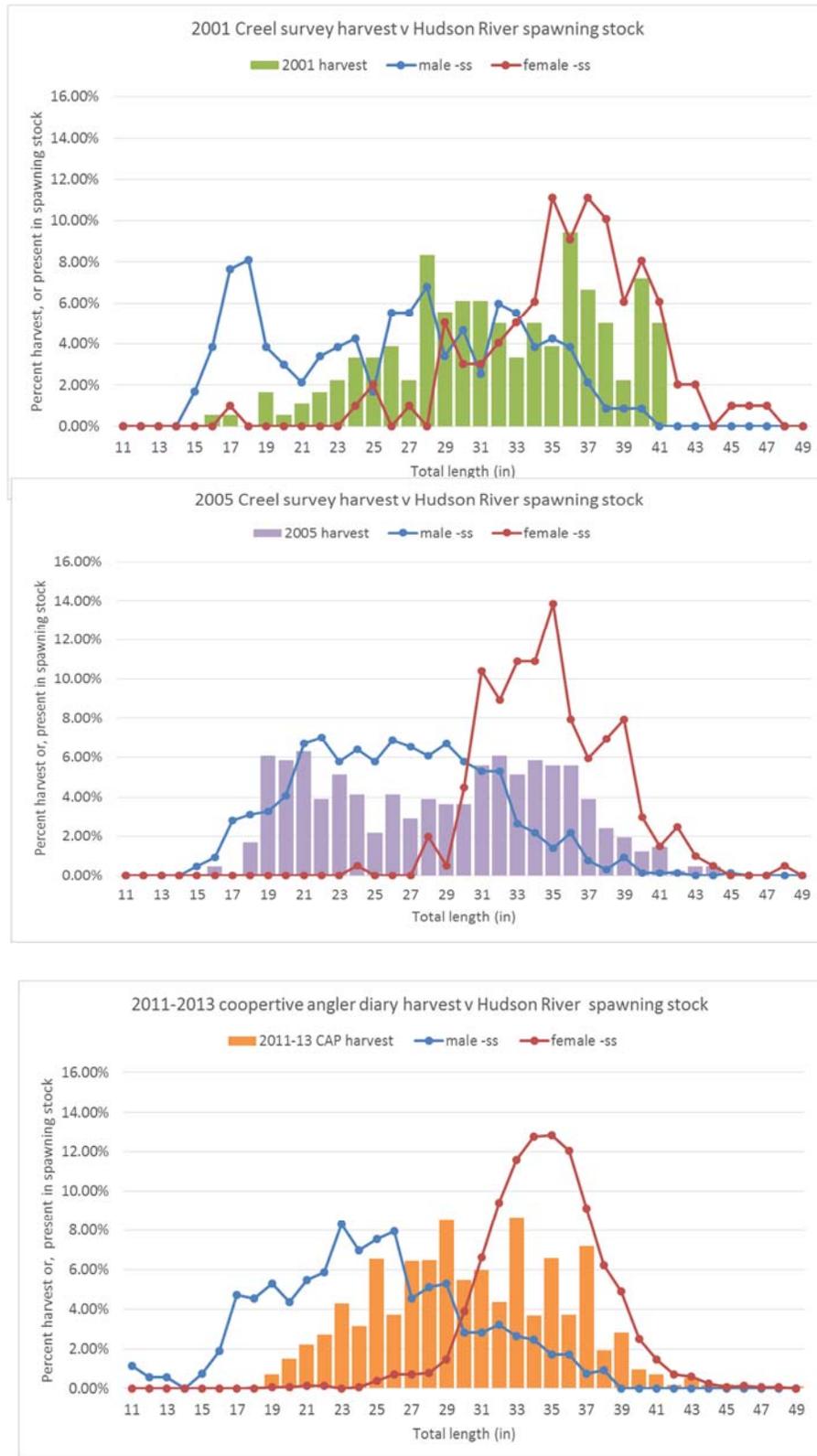


Figure 1. Comparison of harvest data from the 2001 and 2005 creel surveys and the 2011-2013 CAP program with sizes of fish collected during the Hudson River spawning stock survey; all data in the respective years.

Table 6 NYSDEC cooperative angler diary program statistics. Analyses used averages of the 2011 to 2013 data.

March16-June15 only					
Year	N Participants	N Trips	N s. bass caught*	N Anglers	Angler Hours
2006	20	263	624	590	3425
2007	26	330	1118	740	3607
2008	38	459	2577	1014	5518
2009	39	498	1678	1195	6654
2010	52	529	1962	1198	6807
2011	83	840	1970	1797	8829
2012	66	745	2576	1617	8834
2013	56	604	1786	1305	6961
2011-2013 sum	205	2189	6332	4719	24624
2011-2013 ave	68.3	729.7	2110.7	1573.0	8208.1
"All year" data					
2011	83	885	2052	1854	8872
2012	66	749	2587	1624	8834
2013	56	611	1790	1324	7096
2011-2013 sum	205	2245	6429	4802	24802
% trips in spring		97.5%			
*Not all fish caught are measured					

Table 7. Numbers and proportion at length for Hudson River recreational size limit analysis using cooperative angler diary data; percent averaged from 2011- 2013. See NY Excel Workbook.

TL	Total Catch			Number harvested			% harvest	% cum har
	2011	2012	2013	2011	2012	2013		
7	6		3				0.00	0.00
8	3	2	1				0.00	0.00
9	3	4	2				0.00	0.00
10	4	12	7				0.00	0.00
11	2	7	3				0.00	0.00
12	15	35	22				0.00	0.00
13	7	35	12				0.00	0.00
14	36	38	44				0.00	0.00
15	10	40	59				0.00	0.00
16	35	86	119				0.00	0.00
17	39	58	129			1	0.00	0.00
18	96	122	132	3	1	3	0.01	0.01
19	67	55	68	5	6	4	0.01	0.02
20	80	102	100	8	7	7	0.02	0.05
21	89	89	37	7	15	6	0.03	0.07
22	81	118	73	18	14	11	0.04	0.12
23	68	74	47	4	14	13	0.03	0.15
24	148	122	96	25	16	23	0.07	0.21
25	60	83	34	11	18	9	0.04	0.25
26	117	121	65	15	30	20	0.06	0.31
27	75	106	36	24	27	15	0.06	0.38
28	102	122	53	25	40	22	0.09	0.46
29	45	88	30	17	31	9	0.05	0.52
30	53	108	47	16	21	22	0.06	0.58
31	43	73	39	12	19	13	0.04	0.62
32	59	95	64	31	28	27	0.09	0.71
33	38	43	34	12	10	14	0.04	0.75
34	40	67	72	17	23	25	0.07	0.81
35	38	32	26	19	9	9	0.04	0.85
36	48	51	37	27	20	24	0.07	0.92
37	26	25	13	11	7	2	0.02	0.94
38	33	29	14	16	9	4	0.03	0.97
39	9	8	3	4	4	2	0.01	0.98
40	11	6	4	5		2	0.01	0.99
41	2	3	1		2		0.00	0.99
42	5		2	3		2	0.01	0.99
43	3	1		1	1		0.00	0.99
44		2	1		1	1	0.00	1.00
45	1	1	1	1			0.00	1.00
46		1			1		0.00	1.00
47		1			1		0.00	1.00
48		1			1		0.00	1.00
Total	1597	2066	1530	337	376	290	2011-13 ave	334

Table 8. Reduction achieved when implementing HR Options 1a or b: 18 to 28 inch TL slot limit for the Hudson River in-river recreational fishery. Reduction based on an average on 2011 to 2013 cooperative angler data.

C& R rate	18-28 in TL Slot limit
Option HR1a C& R mortality = 16% (J-hooks)	
Proportion of Harvest Reduced	0.54
New Harvest	155
New Dead Releases	29
Old Dead Releases	223
Total Removal	407
% Total Reduction	-26.98
Option HR1b C& R mortality = 5% (circle hooks)	
Proportion of Harvest Reduced	0.54
New Harvest	155
New Dead Releases	9
Old Dead Releases	70
Total Removal	234
% Total Reduction	-42.11

Table 9. Reductions achieved from Hudson River recreational fishery Option 2a&b 1 fish at either an 18-28" slot, OR a trophy fish at 40 inches TL; Option 3a&b 1 fish at either an 18-28" slot, OR a trophy fish at 44 inches TL.

SLOT or TROPHY	1 fish @	
	2a 18-28 OR 40+	3a 18-28 OR 44+
Prop harvest reduced	0.51	0.53
New Harvest	162	157
New Dead Release 16% C&R	27	28
Old Dead releases 16% C&R	223	223
Total removal	413	409
% Total reduction	-25.9	-26.7
	2b	3b
Prop harvest reduced	0.51	0.53
New Harvest	162	157
New Dead Release 5% C&R	9	9
Old Dead releases 5% C&R	70	70
Total removal	241	236
% Total reduction	-40.4	-41.7

Table 10. Reductions achieved from split seasons (see text) in the Hudson River recreational fishery, options 4a&b and 5a&b.

Option 4a Catch and release mortality at 16%				
wks 11-19		wks 20-24		
Size limit>>>	18-28	Size limit>>>	28	
Prop Har Red (%)	0.550	Prop Har Red (cum%	0.421	
New Harvest	103	New Harvest	61	sum of
New Dead Rel	20	New Dead Rel	7	total
Old Dead Rel	142	Old Dead Rel	81	removals
Total Removal	265	Total Removal	150	415
% Total Reduct	-28.486	% Total Reduct	-20.028	-25.646
Option 4b Catch and release mortality at 5%				
wks 11-19		wks 20-24		
Size limit>>>	18-28	Size limit>>>	28	
Prop Har Red (%)	0.550	Prop Har Red (cum%	0.421	
New Harvest	103	New Harvest	61	sum of
New Dead Rel	6	New Dead Rel	2	total
Old Dead Rel	44	Old Dead Rel	25	removals
Total Removal	153	Total Removal	89	242
% Total Reduct	-43.765	% Total Reduct	-32.289	-40.034
Option 5a Catch and release mortality at 16%				
wks 11-20		wk 21-24		
Size limit>>>	18-28	Size limit>>>	28	
Prop Har Red (%)	0.548	Prop Har Red (cum%	0.496	
New Harvest	133	New Harvest	20	sum of
New Dead Rel	26	New Dead Rel	3	total
Old Dead Rel	195	Old Dead Rel	29	removals
Total Removal	354	Total Removal	52	406
% Total Reduct	-27.704	% Total Reduct	-24.035	-27.252
Option 5b Catch and release mortality at 5%				
wks 11-20		wk 21-24		
Size limit>>>	18-28	Size limit>>>	28	
Prop Har Red (%)	0.548	Prop Har Red (cum%	0.496	
New Harvest	133	New Harvest	20	sum of
New Dead Rel	8	New Dead Rel	1	total
Old Dead Rel	61	Old Dead Rel	9	removals
Total Removal	202	Total Removal	30	232
% Total Reduct	-43.119	% Total Reduct	-38.325	-42.541

References:

1. Diodati, Paul. 1991. Estimating Mortality of Hooked and Released Striped Bass. Final Report to NOAA/NMFS Emergency Striped Bass Study. AFC - 22. Mimeo. 35 pgs.
2. Diodati, PJ, and RA Richards. 1996. Mortality of striped bass hooked and released in salt water. Transactions of the American Fisheries Society 125: 300-307.
3. Millard MJ, JW Mohler, A Kahnle, A Cosman. 2005. Mortality associated with catch-and-release angling of striped bass in the Hudson River. North American Journal of Fisheries Management 25: 1533-1541.
4. Normandeau, 2003. Assessment of Hudson River Recreational Fisheries. Normandeau Associates under contract to NYSDEC (Contract C004005).
5. Normandeau, 2007. Assessment of Spring 2005 Hudson River Recreational Fisheries. Normandeau Associates under contract to NYSDEC (Contract C005100).

New Jersey Addendum IV Implementation Plan for Striped Bass

Summary of Proposed Measures

Recreational Fishery

State	Size Limits	Bag Limits	Open Season
New Jersey	1 @ 28" to < 43" and 1 @ ≥ 43" (<i>preferred option</i>)	2	1/1 – 12/31*
	1 @ 29" to < 36" and 1 @ ≥ 36"	2	

Commercial Fishery - Striped Bass Bonus Program (SBBP)

State	Size Limits	Seasonal Quota	Open Season
New Jersey	1 fish ≥ 28" (<i>preferred option</i>)	241,313	1/1 – 12/31*
	1 fish 24" to < 28 or 29"***	215,912	

* Closed January 1 to February 28 in all waters except Atlantic Ocean and April 1 to May 31 in the lower Delaware River and tributaries (spawning ground closure)

** The 28" or 29" upper size limit would depend on the minimum recreational fishery size limit enacted

Section 1: Coastal Recreational Fishery

- New Jersey is proposing to implement one of the following options through conservation equivalency:
 - One fish 28" to < 43" and one fish ≥ 43" (preferred option) or
 - One fish 29" to < 36" and one fish ≥ 36"
- New Jersey's proposal meets the standards as established by the TC in the Technical Committee Criteria for Conservation Equivalency with Addendum IV Memo (TC Memo).
- Data sources include: NJ MRIP, NJ SBBP angler logs, and NJ party/charter boat (PCBT) logs. Sample sizes by data source are provided in Table 1.
- New Jersey's analysis used the methods of Angela Giuliano with the modification noted in the TC Memo (i.e. randomly allocated fish to anglers when angler-specific fish were not identifiable).
- Using pooled 2011-2013 data and 500 random allocation runs, the median harvest reduction is 25.1% for NJ's preferred option and 26.1% reduction for the 29" to < 36" and ≥ 36" option.

Section 2: Coastal Commercial Fishery - Striped Bass Bonus Program (SBBP)

- New Jersey is once again proposing to reallocate its commercial quota to the recreational fishery by implementing one of the following options through conservation equivalency:
 - One fish at ≥ 28" (current SBBP measure and preferred option) with a quota of 241,313 pounds as per Addendum IV or
 - One fish at 24" to < 28" or 29" pending approvals in Section 1 above with a quota of 215,912 pounds. This equates to an additional 10.5% reduction in quota to compensate for implementing the reduced minimum size.
- New Jersey's proposal meets the standards as established by the TC in the TC memo.

- Data sources include NJ's 2013 age length key (n=660) to estimate partial recruitment (Lee 2007¹, NJDEP 2010²), NJ's 2013 mean weights at age from NJ's annual compliance report (due to absence of age 1 fish in NJ catch and landings in 2013, average WAA from 2011 was used since it was the most recent year with age 1 fish in catch and landings), and coast wide (ASMFC 2013³) maturity, age-specific natural mortality, and fractions of fishing and natural mortality occurring prior to spawning. Data are provided in Table 2.
- New Jersey followed the methods of Lee (2007) and used NOAA's Yield Per Recruit Version 3.3.
- Results of the YPR and MSP are provided in Table 3 and show that a reduction in quota of 10.5% is necessary to lower the size limit to 24''.

Sections 3 and 4 are not applicable to New Jersey

Section 5: Timeline for Implementation

Because of the difficulties of implementing striped bass regulations in New Jersey (i.e. implementation is done through the State legislature and not by regulation changes through the NJ Division of Fish and Wildlife and NJ Marine Fisheries Council) combined with the fact that the ASMFC will not approve New Jersey's plan until February 2015 at the earliest, New Jersey hopes to have the proposed regulations implemented by March 1, 2015.

¹ Lee, L. M. 2007. Proposal for conservation equivalency in Rhode Island's commercial trap net fishery for striped bass. Report to the ASMFC Striped Bass Technical Committee. 9 pp.

² NJDEP. Striped bass fishery proposal for 2010. Submitted to the Atlantic States Marine Fisheries Commission's Striped Bass Technical Committee and Management Board. 8pp

³ ASMFC (prepared by Nelson, G.). 2014. Update of the Striped Bass stock assessment using final 2012 data. 74 pp.

Table 1. Sample sizes by data source (2011-2013).

Data source	Trips	Fish
MRIP (NJ)	205	319
NJ SSBP logs	992	1,465
NJ PCBT logs	1,018	8,655
Totals	2,215	10,439

Table 2. Data inputs for yield per recruit model. (PR = partial recruitment)

Age	Mean WAA (kg)	PR 28"	PR 24"	M	Maturity
1	0.004	0.0000	0.0000	1.13	0.00
2	0.721	0.0000	0.0000	0.68	0.00
3	1.066	0.0000	0.0000	0.45	0.00
4	1.642	0.0000	0.3269	0.33	0.04
5	3.036	0.0143	0.7714	0.25	0.13
6	3.682	0.2761	0.9030	0.19	0.45
7	4.842	0.5781	0.9531	0.15	0.89
8	5.599	0.8511	1.0000	0.15	0.94
9	7.342	0.9730	1.0000	0.15	1.00
10	7.130	0.9859	1.0000	0.15	1.00
11	9.938	1.0000	1.0000	0.15	1.00
12	10.388	1.0000	1.0000	0.15	1.00
13+	13.058	1.0000	1.0000	0.15	1.00

Table 3. Results of YPR analysis showing required reduction in quota in order to lower the striped bass bonus program's minimum size to 24 inches.

Min size limit (TL inches)	F	%MSP	YPR	Reduction in quota
28	0.180	41.05	0.19	
24	0.115	41.26	0.17	10.5%

Pennsylvania’s Atlantic Striped Bass Addendum IV Implementation Plan

Summary of Proposed Measures

Recreational Fishery

State	Size Limits	Bag Limits	Other	Open Season
Pennsylvania Delaware Estuary <i>PA/DE state line upstream to Calhoun St. Bridge at Morrisville, PA and Trenton, NJ (56 tidal river miles)</i>	21-25” slot	2		4/1-5/31
	28” min*	1		1/1-3/31, 6/1-12/31
Pennsylvania Delaware River <i>Calhoun St. Bridge upstream (196 non-tidal river miles)</i>	28” min**	1		1/1-12/31

*Measure proposed in cooperation with the Delaware River Basin Fish and Wildlife Management Cooperative and is as similar as possible to the proposed measure in New Jersey’s portion of the Delaware Estuary.

**Measure proposed in cooperation with the Delaware River Basin Fish and Wildlife Management Cooperative and is equivalent to the proposed measure in New York’s portion of the Delaware River and is as similar as possible to the proposed measure in New Jersey’s portion of the Delaware River.

Commercial Fishery

State	Size Limits	Seasonal Quota	Open Season
Not applicable to Pennsylvania (no commercial fishery)			

Section 1: Coastal Recreational Fishery

1b.) Pennsylvania proposes to reduce its slot limit from the current 20-26” to 21-25” for its conservation equivalency measure.

- This proposal meets the data standards established by the Technical Committee (TC) and detailed in the TC memo (M14-110) to the extent practical given that Pennsylvania is not covered by the Marine Recreational Information Program (MRIP).
- The size limit analysis used the proportion at length of slot size Striped Bass on the Delaware River spawning grounds as determined by the Pennsylvania Fish and Boat Commission’s (PFBC) fishery independent spawning stock electrofishing survey conducted annually in May.
- Data were pooled from 2011 to 2013 and adjusted using a post release mortality rate of 9%.
- Decreasing the slot limit from the current 20-26” to 21-25” results in an estimated reduction in harvest of 29.1% (see Table 1).
- Approximately 10% of fish within the current 20-26” slot are mature females and 27% of those females would be protected from harvest by decreasing the slot limit to 21-25”.

Sections 2, 3, and 4 are not applicable to Pennsylvania

Section 5: Timeline for Implementation

Pennsylvania will begin the regulatory process to change Striped Bass regulations in January, 2015. In order to make the new regulations effective by the time of the March start of the recreational season in 2015, it will be necessary for PFBC’s Executive Director to use his authority under 58 PA Code §65.25 to implement temporary modifications to the current regulations. To make the proposed changes permanent, they will be published in the Pennsylvania Bulletin as a notice of proposed rulemaking. This will occur at either the January or May 2015 Commission meeting. Public comments will be accepted for 30 days after the official publication

of the notice. After reviewing the public comments, the Commission is expected to consider final adoption of the changes at either its July or October quarterly meeting.

Table 1. Length frequency distribution and estimated harvest reduction of slot size Striped Bass on the Delaware River spawning grounds as determined by the Pennsylvania Fish and Boat Commission’s spawning stock electrofishing survey conducted annually in May. Data were pooled from 2011 to 2013 and adjusted using a post release mortality rate of 9%.

Total Length Bin (in)	N	% of fish	% Reduction (Adjusted for post release mortality rate of 9%)
20-21	59	18.7%	17.0%
21-22	61	19.4%	
22-23	64	20.3%	
23-24	52	16.5%	
24-25	37	11.7%	
25-26	42	13.3%	12.1%
Total	315	100.0%	29.1%

Notes:

Data pooled from 2011 to 2013.

Delaware Atlantic Striped Bass Addendum IV Implementation Plan

The Delaware Division of Fish and Wildlife (DDFW) submits the following implementation plan to incorporate necessary management actions as a result of the recent adoption of Addendum IV to Amendment 6 of the Interstate Fishery Management Plan for Atlantic striped bass using data standards established by the Technical Committee (TC) and detailed in the TC memo (M14-110).

Summary of Proposed Measures

Recreational Fishery

State	Size Limits	Bag Limits	Other	Open Season
DE – 1A Add. IV Options				
Option B5-Add. IV	33” min.	2		Year round
Option B6- Add. IV	28-34” slot	2		Year round
Option B7- Add. IV	1 at 28-34” slot & 1 at 36” min.	2 (1 slot, 1 trophy)		Year round
Option B8- Add. IV	1 at 28-36” slot & 1 at 38” min.	2 (1 slot, 1 trophy)		Year round
Option B9- Add. IV	1 at 28-37” slot & 1 at 40” min.	2 (1 slot, 1 trophy)		Year round
DE – 1B CE Option				
Option CE 1	28” min., No harvest 38-43” Except in Delaware Bay and River and their tidal tributaries, may only harvest 20-25” slot fish from July 1 – Aug. 31	2 (year round and summer slot)		Catch & release on spawning grounds Apr. 1 – May 31

Commercial Fishery

State	Size Limits	Seasonal Quota	Open Season
DE-Gill Net	20” in Del. Bay and River during the spring season, 28” in all other waters and Del. Bay and River in the fall.	137,831	Feb. 15 – May 31 (March 1 - March 30 - Nanticoke River), Nov. 15 – Dec. 31
DE- Hook & Line	28” min.	14,509	Apr. 1-Dec.31

Section 1: Coastal Recreational Fishery

1A) DDFW will implement a two fish bag limit and a minimum size limit specific to one of the previously agreed upon Options B5-B9 from Addendum IV.

OR

1B) DDFW will implement an option that achieve a 25.18 % reduction in total removals using pooled 2011-2013 Marine Recreational Information Program (MRIP) data for the state based on standards established by the Technical Committee (TC) and detailed in the TC memo (M14-110). Landings at length (A + B1) were queried from MRIP by wave. Only INLAND data were collected during Wave 4 from 2011-2013. Fork length data were converted to Total Length (inches) using the formula from Vecchio & Crecco 1997:

$$\ln(TL) = \ln(FL) * 0.985 + 0.162$$

Old dead releases were calculated as total releases (2011-2013, MRIP B2) x 9 % discard mortality. New dead releases were calculated as old dead releases + (number not harvested * 9% discard mortality). Percent total reduction was calculated as Change in Total Removals/Old Total Removals.

Recreational Total	2011-2013
Old Harvest (no.)	63514
Old Releases (no.)	303816
Old Dead Releases (no.)	27346
Old Total Removals (no.)	90857

Total Landings (2011-2013 MRIP, A + B1) -Waves 1-3,5-6	
TL (in)	Sum of Landings (No.-at-Length)
25	119.75
26	0.00
27	0.00
28	5.40
29	2945.39
30	5403.54
31	2648.45
32	2210.75
33	0.00
34	3146.59
35	2171.09
36	5077.84
37	2852.40
38	5800.72
39	6164.68
40	2737.17
41	2795.23
42	1643.01
43	2453.36
44	0.00
45	5.66
46	576.11
47	508.41
48	99.80
49	59.79
Total	49425.14

Total Landings (2011-2013 MRIP, A + B1) -Wave 4	
TL (in)	Landings (No.-at-Length)
20	747.32
21	1057.37
22	2081.03
23	0.00
24	4767.24

25	1854.85
26	3549.99
27	0.00
28	0.00
29	0.00
30	0.00
31	0.00
32	0.00
33	0.00
34	0.00
35	0.00
36	0.00
37	0.00
38	31.28
Total	14089.08

No take 38-43" Waves 1-3, 5-6; 20-25" slot in DB, river, tribs. during Wave 4	
Percent Harvest Red.	39.59
New Harvest (no.)	38370.06
New Dead Releases (no.)	29606.41
New Total Removals (no.)	67976.47
Percent Total Reduction	25.18

Option CE1, uses the existing minimum size of 28” TL, while prohibiting harvest from 38-43” TL (legal harvest from 28 through 37” and ≥ 44”) with a two fish bag limit year round for all state waters, with the exception of Delaware Bay and River, and their tidal tributaries, which will have a 20-25” (inclusive of 25”) slot size limit and a two fish possession limit during July 1-Aug. 31. This option will reduce total removals by 25.18 %. Also, our proposed Conservation Equivalency option will create a spawning area closure from April 1-May 31 to protect spawning adults. The spawning area is further defined in Section 2 and prohibits recreational and commercial harvest in the spawning areas during that time.

Section 2: Coastal Commercial Fishery

In accordance with Addendum IV, DDFW will implement a 25% reduction in the commercial quota from Amendment 6 resulting in a total state wide commercial quota of 145,085 lbs. with a 20” minimum size for gill nets in Delaware Bay and a 28” minimum size for all other gear and locations.

- Seasons

The spring commercial gill net fishery will be open from February 15 through May 31. The gill net quota will be 137,831 lbs., 95% of the state commercial quota of 145,085 lbs. If less than 98% of the total gill net quota is landed in the spring season, a fall gill net season will be held from November 15 through December 31 for the remaining quota. The commercial hook and line season will run from April 1 through December 31, with an allocation of 14,509 lbs., 10% of the total quota. Delaware over allocates quota to the gill net fishery because the hook and line fishery rarely lands five percent of the quota. Delaware Bay gill net restrictions will consist of drift nets only from February 15 – 28 (mesh size greater than 4” stretch) and May 10 – 31.

- Spawning Area Closure

No commercial or recreational harvest will be allowed in April and May on the spawning grounds, which are defined as the Chesapeake and Delaware Canal, the Delaware River north of the Canal, and the Delaware portion of the Nanticoke River.

- Individual Transferable Quota (ITQ) and Tagging Requirements

All licensed gill netters will be allocated an equal share of the quota in pounds. For example in 2013, the gill net quota (183,816 lbs.) was divided by the number of licensed gill netters who applied for quota (111) to establish the ITQ for the spring fishery (1,656 lbs.). The individual quotas are transferable, provided the transfer is made prior to the issuance of the tags. The number of tags required to fill an individual quota was estimated by dividing the total quota by the expected average weight of striped bass to be landed for that gear type and season.

All striped bass in the possession of a commercial fisher are required by regulation to have a DDFW-issued numbered tag locked through the jaw and gill. If a commercial fisher needs additional tags to fill his/her quota, DDFW will verify the balance of the quota remaining from reports submitted to DDFW by the weigh stations. All unused tags will be returned to DDFW with a written report of landings within 30 days of the closure of the spring and fall fishing seasons.

- Weigh-Station Reporting

Commercial fishers are required to bring all landed striped bass to one of the weigh-stations located throughout the state. The weigh-stations record the aggregate weight and apply a second locking tag to each striped bass landed. The weigh-stations maintain written logs of the date landed, number of fish, total daily weight, and also report each fisherman's daily catch through an Interactive Voice Reporting (IVR) system.

Section 3: Chesapeake Bay Recreational Fishery (MD, VA, PRFC)

Section 3 is not applicable to the state of Delaware.

Section 4: Chesapeake Bay Commercial Fishery (MD, VA, PRFC)

Section 4 is not applicable to the state of Delaware.

Section 5: Timeline for Implementation

Delaware will begin the regulatory process to change striped bass regulations in December 2014. In accordance with Delaware's Administrative Procedures Act (APA), a public hearing will be held in January 2015 to discuss the striped bass regulation changes. Delaware will require a decision from ASMFC on its proposed recreational options before the public hearing. Public input on the recreational fishing options will be taken at the hearing and during the APA-mandated 30 day public comment period. Delaware will use the public comment as part of its decision process in choosing the recreational option to include in the final regulation. The regulation should be in effect before the spring recreational striped bass fishing season begins in April 2015. Delaware may need the Department of Natural Resources and Environmental Control Secretary to issue an Emergency Order to put the new commercial striped bass quota in effect for the February 2015 start of the commercial striped bass gill net season. The Emergency Order would expire when the final regulations go into effect in April 2015.

References

Vecchio V. and G. Crecco. 1997. A study of striped bass in the marine district of New York State-Ocean haul seine. Completion Report, NOAA/NMFS.

Maryland's Atlantic Striped Bass Addendum IV Implementation Plan

Summary of Proposed Measures

Recreational Fishery

State	Size Limits	Bag Limits	Other	Open Season
Maryland Atlantic & Coastal Bays Fishery	28" min	1		Jan 1 – Dec 31
Maryland Chesapeake Bay Trophy Fishery	36" min (Option 3a)	1		3 rd Saturday of April – May 15
	36" min, charter boats allowed 1 fish 28-36" (Option 3b)			
Maryland Chesapeake Bay Summer/Fall Fishery	2 20-28" or 1 20-28" and 1 over 28"	2		May 16 – Dec 20 (Option 3c)
				May 16 – Dec 15 (Option 3d)

Commercial Fishery

State	Size Limits	Seasonal Quota	Open Season
Maryland Atlantic Commercial Fishery	24" min	90,727 lbs	Trawl and Drift Gill Net Jan 1 – April 30, Nov 1 – Dec 31
Maryland Chesapeake Bay Commercial Fishery	18" – 36" (Option 4a)	1,471,888 lbs (Option 4a)	Drift Gill Net Jan 1 – Feb 28, Dec 1 – Dec 31
	20" – 36" (Option 4b)	1,496,631 lbs (Option 4b)	Hook & Line, Haul Seine, and Pound Net June 1 – Nov 30

Section 1: Coastal Recreational Fishery

1a.) 1 fish/person/day at 28" minimum size, consistent with option B1 of Addendum IV chosen by the Management Board. The season will be open January 1 – December 31.

Section 2: Coastal Commercial Fishery

2b.) 24" minimum size for the coastal commercial fishery through conservation equivalency.

- Our proposal meets the standards as established by the TC in the TC memo (M14-110).
- Our analysis includes length-at-age data from the Maryland striped bass spawning stock survey and Atlantic commercial fishery monitoring. Natural mortality-at-age, weight-at-age, and maturity-at-age were taken from the 2013 striped bass benchmark stock assessment (Table 1). Age-specific selectivity was calculated based on the size-at-age distribution (Figure 1). For each age group, the proportion of fish larger than a selected minimum size was calculated and used as a selectivity parameter.
- Length-at-age data from the spawning stock survey included 34,598 samples from 1985-2013. Length-at-age data from the Atlantic commercial fishery monitoring included 785 lengths from 2008-2013. Both were used to calculate selectivity-at-age (Figure 2).
- Our analysis was completed using the methods from the 2004 Maryland conservation equivalency proposal. The analysis estimated the level of fishing mortality that would achieve a level of %MSP as conservative as 28". The Yield Per Recruit version 3.3 from the NOAA Fisheries Toolbox was used for the analysis.
- The results of the YPR/SPR analyses are presented in Table 2.
- The Addendum IV Maryland commercial quota is 98,670 lbs. The conservation equivalency quota will be $98,670 \times 0.919 = 90,727$ lbs.

Section 3: Chesapeake Bay Recreational Fishery (Maryland)

3a.) 1 fish/person/day at 36" minimum size for the spring trophy season. The season will be open the 3rd Saturday in April through May 15.

- The spring trophy fishery targets migratory coastal fish. For this reason, Maryland intends to reduce harvest by at least 25%, consistent with the coastal fishery.
- Our proposal meets the standards as established by the TC in the TC memo (M14-110).
- The 2011-2013 wave 2 and 3 harvest and discard estimates were used in this analysis. The trophy season, however, only spans the first 15 days of wave 3. The same methods used in the Chesapeake Bay migrant harvest report were used to estimate the trophy harvest from wave 3 (Table 3). The proportion of harvest from May 1-15 is calculated from mandatory charter logbooks and applied to wave 3 harvest and discards. The harvest proportion is assumed to be the same for the private boat/shore fleet.
- An estimate of 2011-2013 Virginia trophy harvest (32" minimum, May 1-June 15) was included in our trophy wave 3 harvest estimate. Virginia requires anglers to submit a catch report for trophy fish and adjusts the number to account for non-reporting. Using the ratio of Maryland trophy dead discards to trophy harvest (0.356), an estimate of Virginia's dead discards was calculated and also added to Maryland's trophy wave 3 estimate.
- Length frequency data was from the 2011-2013 Maryland volunteer charter survey through May 15. Charter captains submit lengths to the nearest ¼" for the first 20 fish they catch on each trip from the 3rd Saturday in April through June 15. MRIP data contains very few lengths from wave 2 and the majority of wave 3 sampling occurs after the trophy season ends and the regulations change (Figure 3). The charter logbook data contains many more lengths and allows us to develop length frequencies specific to the trophy fishery time frame (Table 4). The 2011-2013 volunteer charter survey contained 11,332 fish lengths from 249 captains.
- Our analysis was completed using the size limit analysis methods used by Striped Bass TC for the Addendum IV calculations. The only modification was calculating wave 2 and the trophy portion of wave 3 separately to account for changing length frequencies over the course of the trophy season as migratory fish leave the Bay.
- The results of the analysis are shown in Table 5. Using 2011-2013 data, we estimate that increasing the minimum size to 36" will result in a 35% reduction, well above the 25% required in Addendum IV.

3b.) 1 fish/person/day at 36" minimum size for the spring trophy season. In addition, charter boats would be allowed 1 fish/boat within a 28-36" slot limit.

- Analysis methods and data sources are the same as above except calculated separately by mode.
- The 2011-2013 volunteer charter survey length frequency was used for both the private and for-hire modes.
- The size limit analysis methods used by the Striped Bass TC for Addendum IV calculations were used to estimate the reduction achieved for each mode. These were combined to estimate the total overall reduction.
- The additional harvest of fish due to allowance of one fish between 28 - 36" per charter boat trip was calculated to be equal to the number of trips taken, assuming each charter boat harvested one fish within the slot limit on every trip.
- Charter logbook data were used to calculate the number of trips taken by charter boats during the trophy season from 2011-2013. Total number of reported trips were adjusted upwards to account for the fact that some trips reported through SAFIS actually contain information on multiple trips. Captains are supposed to enter daily trip data but based on start and end trip dates as well as counts of anglers and fish harvested, some are entering data from multiple trips. As many charter boats in Chesapeake Bay hold six anglers, if the trip start and end dates were not the same, we divided the number of anglers by 6 to estimate a number of "standard" trips.

- The results of the analysis are shown in Table 6. Using 2011-2013 data, we estimate that letting charter boats harvest one fish within a 28-36" slot limit with the rest of the boat harvesting fish over 36" to result in a harvest reduction on 30.1%, still above the 25% required in Addendum IV.

3c.) 2 fish/person/day 20-28" or 1 fish 20-28" and 1 fish greater than 28", consistent with option C4 from Addendum IV with a 5 day season extension. The season would run from May 16-December 20.

- If approved, Maryland would like to increase the fishing season 5 days at the end of December from December 15 to December 20. This extension is proposed to ease the negative impact of the proposed regulations on the charter boat industry and is similar to one approved by the Technical Committee for the 2008 fishing season when Maryland extended the season two weeks until the end of the year.
- 2011-2013 MRIP estimates of inland harvest and discards were used in these calculations. Similar to above, we used charter logbook data to estimate the proportion of wave 3 harvest that occurred after the trophy season ended and added this to the MRIP estimate of inland harvest and discards from waves 4-6 (Table 7).
- The estimate of 2011-2013 total removals in wave 6, summed across years, was 128,748 fish with a minimum size of 18 inches. Option C4 estimates a 22% reduction in total removals with an increase to 20 inches minimum size. The adjusted wave 6 removal estimate following the size increase would be $128,748 * 0.78 = 100,423$ fish. Currently our season runs for 45 days of wave 6 and the season extension would increase it to 50 days. Using a simple ratio, the total removal estimate was adjusted proportionally, assuming that fishing rates would remain constant throughout the wave. The estimated increase in wave 6 removals due to the season extension, following an increase to a 20 inch minimum size, would be $100,423 * (50/45) = 111,581$ fish. The sum of the total removals from part of wave 3 and waves 4-5 were also adjusted to account for the increase in minimum size ($1,374,176 * 0.78 = 1,071,857$ fish) and added to the new wave 6 estimate (111,581 fish). The total removals for the summer/fall after the size increase and season extension, summed across 3 years, would be 1,183,438 fish. The estimate of the reduction in total removals, even with the season extension would be $(1,183,438 - 1,502,924) / 1,502,924 * 100 = -21.3\%$, still above the -20.5% reduction goal.
- Considering the likely decrease in harvest/effort at the end of December, which violates our assumption of constant harvest and discards, and the unpredictable weather in late December, we believe these predictions are at the high end of what to expect.

3d.) 2 fish/person/day 20-28" or 1 fish 20-28" and 1 fish greater than 28", consistent with option C4 from Addendum IV. The season would be status quo, open from May 16-December 15.

- This option would be chosen if option 3c above is not approved by the Technical Committee.

Section 4: Chesapeake Bay Commercial Fishery (Maryland)

4a.) Maryland's 2012 commercial harvest was 1,851,431 lbs. Following the 20.5% reduction as required in Addendum IV, the 2015 commercial quota will be 1,471,888 lbs with an 18-36" slot limit. As in the past, the drift gill net season will operate from January 1-February 28 and reopen December 1-31. The hook and line, haul seine, and pound net fisheries will operate from June 1 through November 30.

4b.) Maryland's 2012 commercial harvest was 1,851,431 lbs. Following the 20.5% reduction as required in Addendum IV and under conservation equivalency, the 2015 commercial quota will be 1,496,631 lbs with a 20-36" slot limit. As in the past, the drift gill net season will operate from January 1-February 28 and reopen December 1-31. The hook and line, haul seine, and pound net fisheries will operate from June 1 through November 30.

- Addendum IV does not require that commercial minimum size limits change to match the recreational fishery. If Maryland increases the commercial minimum size to 20", we would like to adjust the quota to account for conservation equivalency.

- Maryland would like to retain the option to go to a 20” minimum size if determined necessary based upon potential user conflicts and stakeholder preferences. A common minimum size across sectors would be helpful for law enforcement and the evaluation of the success of regulatory efforts later through the stock assessment process.
- Our analysis was completed using the methods from the 2004 Maryland conservation equivalency proposal. The analysis estimated the level of fishing mortality that would achieve a level of %MSP as conservative as 18”. The Yield Per Recruit version 3.3 from the NOAA Fisheries Toolbox was used for the analysis.
- The inputs for the model include mean weight-at-age, natural mortality-at-age, maturity-at-age and selectivity-at-age. All inputs, except for the selectivity, were taken from the ASMFC 2013 benchmark stock assessment model and are presented in Table 8.
- Selectivity-at-age was calculated based on size-at-age distribution data collected by the MD DNR spring spawning stock survey, creel survey, and hook and line, pound net, and winter gillnet catch surveys (Figure 4). In total, 43,131 lengths-at-age were used in this analysis (For each age group, a proportion of fish larger than the selected minimum size was used as a selectivity parameter (Figure 5).
- The discard mortality estimate was calculated using the 2011-2013 size frequency of Maryland Chesapeake Bay commercial harvest. To calculate the expanded harvest size frequency, 18,696 lengths from 2011-2013 commercial catch monitoring were used.
- The results of the YPR/SPR analyses are presented in Table 9.
- The Addendum IV Maryland commercial quota is 1,471,888 lbs. The conservation equivalency quota will be $1,471,888 * 1.027 = 1,511,748$ lbs.
- An increase in minimum size to 20 inches will result in additional mortality of discarded fish in the size range of 18-20 inches. The conservation equivalency based quota was adjusted for additional discard mortality as follows. Using 2011-2013 data on the size frequency of MD Chesapeake Bay commercial harvest we estimated that on average, the total weight of harvested fish smaller than 20 inches was 0.113 or 11.3% of the total weight of harvested fish that were 20 inches or larger (Figure 6). If all harvested fish under 20 inches were released and 9% of them died as a result of discard mortality, the additional losses in weight due to discards will be $0.113 * 0.09 = 0.010$ or 1.0% of the harvest weight of fish 20 inches and larger. Therefore, the conservation equivalency based quota for the 20 inch minimum size scenario should be adjusted downward to account for additional discard mortality: $1,511,748 * 0.99 = 1,496,631$ lbs.

Section 5: Timeline for Implementation

Maryland plans to implement proposed measures prior to the start of the 2015 fishing season for each sector.

Table 1. Input parameters for the Yield per Recruit Analysis used to evaluate the effect of a minimum size change in the Maryland Atlantic striped bass commercial fishery.

Age	mean weight, kg	natural mortality	female maturity	fraction F before spawning	fraction M before spawning	28 inch min size selectivity	24 inch min size selectivity
1	0.2	1.13	0	0.1	0.33	0.00	0.00
2	0.656	0.68	0	0.1	0.33	0.00	0.00
3	1.173	0.45	0	0.1	0.33	0.00	0.00
4	1.777	0.33	0.04	0.1	0.33	0.00	0.03
5	2.438	0.25	0.13	0.1	0.33	0.01	0.29
6	3.388	0.19	0.45	0.1	0.33	0.14	0.67
7	4.504	0.15	0.89	0.1	0.33	0.48	0.89
8	5.516	0.15	0.94	0.1	0.33	0.75	0.96
9	6.46	0.15	1	0.1	0.33	0.94	1.00
10	7.592	0.15	1	0.1	0.33	0.99	1.00
11	8.858	0.15	1	0.1	0.33	1.00	1.00
12	9.99	0.15	1	0.1	0.33	1.00	1.00
13	12.799	0.15	1	0.1	0.33	1.00	1.00

Table 2. Summary of results from the YPR analysis for the Maryland Atlantic commercial fishery.

Min Size	F	YPR	SSB/R	%MSP	YPR ₂₄ /YPR ₂₈
28"	0.18	0.183322	1.323	42.667	
24"	0.13	0.168564	1.325	42.727	0.919

Table 3. MRIP wave 3 estimates adjusted to only include trophy harvest based on the proportion harvested during the trophy season in charter logbook data.

Year	Wave 3 Total Removals Estimate	Proportion Harvested May 1-15	Trophy Wave 3 Total Removals
2011	149,139	0.27	40,267
2012	100,096	0.18	18,017
2013	222,343	0.20	44,469
Total	471,578		102,753

Table 4. Number of lengths collected by MRIP for Chesapeake Bay striped bass in waves 2 and 3 compared to the number of kept lengths submitted by charter captains during the trophy fishery through May 15. The number of captains participating is also shown.

Year	MRIP Lengths	Volunteer Charter Survey Lengths	# of Participating Charter Captains
2011	342	5,030	109
2012	147	2,983	78
2013	140	3,319	62
Total	629	11,332	249

Table 5. Summary of size limit analysis for the trophy season using data from 2011-2013 for a 36” minimum size.

Old Harvest	139,172
Old Discards	550,842
Old Dead Releases	49,576
Old Total Removals	188,748
New Harvest	66,712
New Dead Releases	6,521
Total Removal	122,809
% Total Reduction	-34.9

Table 6. Summary of size limit analysis for the trophy season using data from 2011-2013 for a 36” minimum size and allowing charter boats to harvest one fish/boat 28-36”.

Old Harvest	139,172
Old Discards	550,842
Old Dead Releases	49,576
Old Total Removals	188,748
New Harvest	66,712
New Dead Releases	6,521
Additional Potential Charter Harvest	9,168
Total Removal	131,977
% Total Reduction	-30.1

Table 7. Total removal estimates, by wave and total, for the Maryland summer/fall fishery under an 18 inch minimum size.

Year	Post Trophy Wave 3 Removals	Wave 4 Removals	Wave 5 Removals	Wave 6 Removals	Total Summer/Fall Removals
2011	108,871	131,374	173,191	61,642	475,078
2012	82,079	148,725	147,141	23,112	401,057
2013	177,875	237,232	167,688	43,994	626,789
Total	368,825	517,331	488,020	128,748	1,502,924

Table 8. Input parameters for the Yield per Recruit Analysis used to evaluate the effect of a minimum size change in the Maryland Chesapeake Bay striped bass commercial fishery.

Age	mean weight, kg	natural mortality	female maturity	fraction F Before spawning	fraction M before spawning	18 inch min size selectivity	20 inch min size selectivity
1	0.2	1.13	0	0.1	0.33	0.00	0.00
2	0.656	0.68	0	0.1	0.33	0.00	0.00
3	1.173	0.45	0	0.1	0.33	0.25	0.05
4	1.777	0.33	0.04	0.1	0.33	0.82	0.49
5	2.438	0.25	0.13	0.1	0.33	0.97	0.85
6	3.388	0.19	0.45	0.1	0.33	0.99	0.96
7	4.504	0.15	0.89	0.1	0.33	1.00	0.99
8	5.516	0.15	0.94	0.1	0.33	1.00	1.00
9	6.46	0.15	1	0.1	0.33	1.00	1.00
10	7.592	0.15	1	0.1	0.33	1.00	1.00
11	8.858	0.15	1	0.1	0.33	1.00	1.00
12	9.99	0.15	1	0.1	0.33	1.00	1.00
13	12.799	0.15	1	0.1	0.33	1.00	1.00

Table 9. Summary of results from the YPR analysis for the Maryland Chesapeake Bay commercial fishery.

Min Size	F	YPR	SSB/R	%MSP	YPR ₂₀ /YPR ₁₈
18"	0.18	0.178	0.720	23.215	
20"	0.20	0.183	0.730	23.530	1.027

MD Atlantic Striped Bass

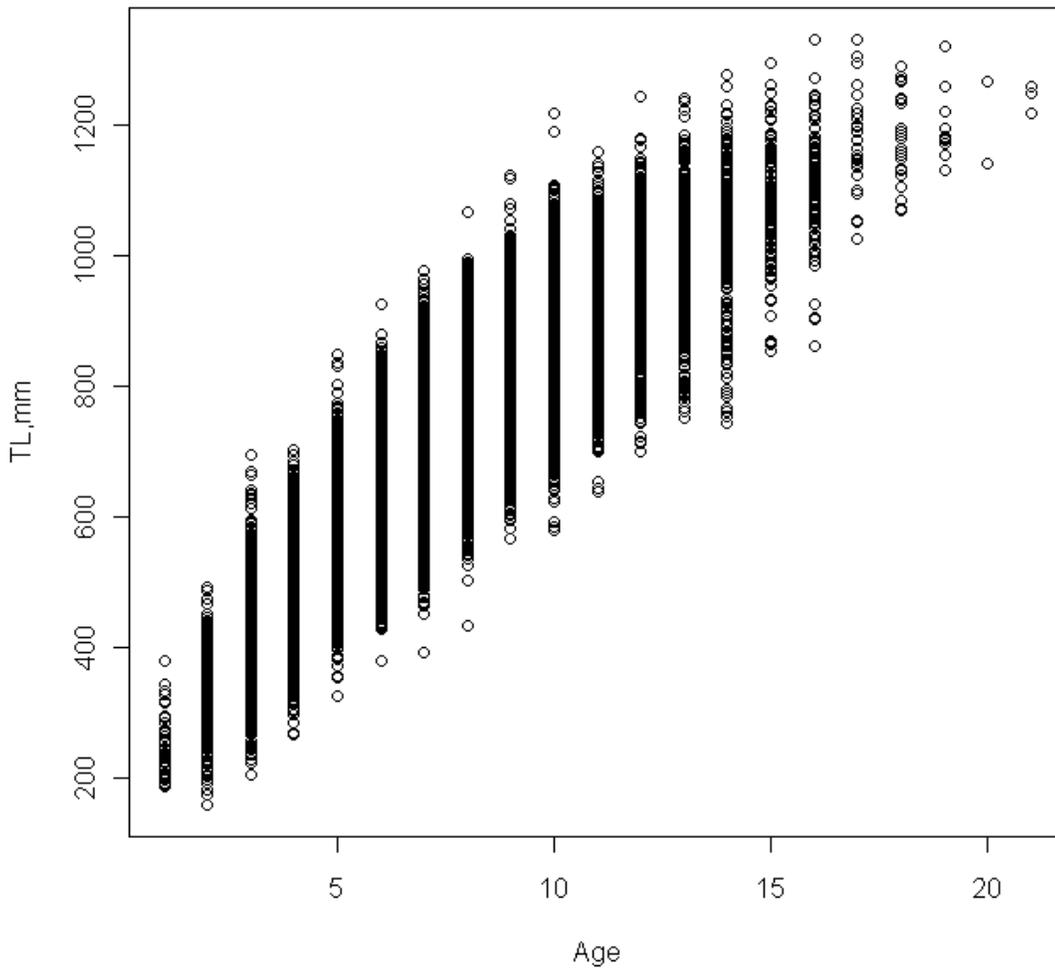


Figure 1. Striped bass size at age distribution based on data collected from the MD Atlantic commercial fishery samples (2008-2013, N= 785) and Chesapeake Bay spring spawning stock survey (1985 – 2013, N= 34,598).

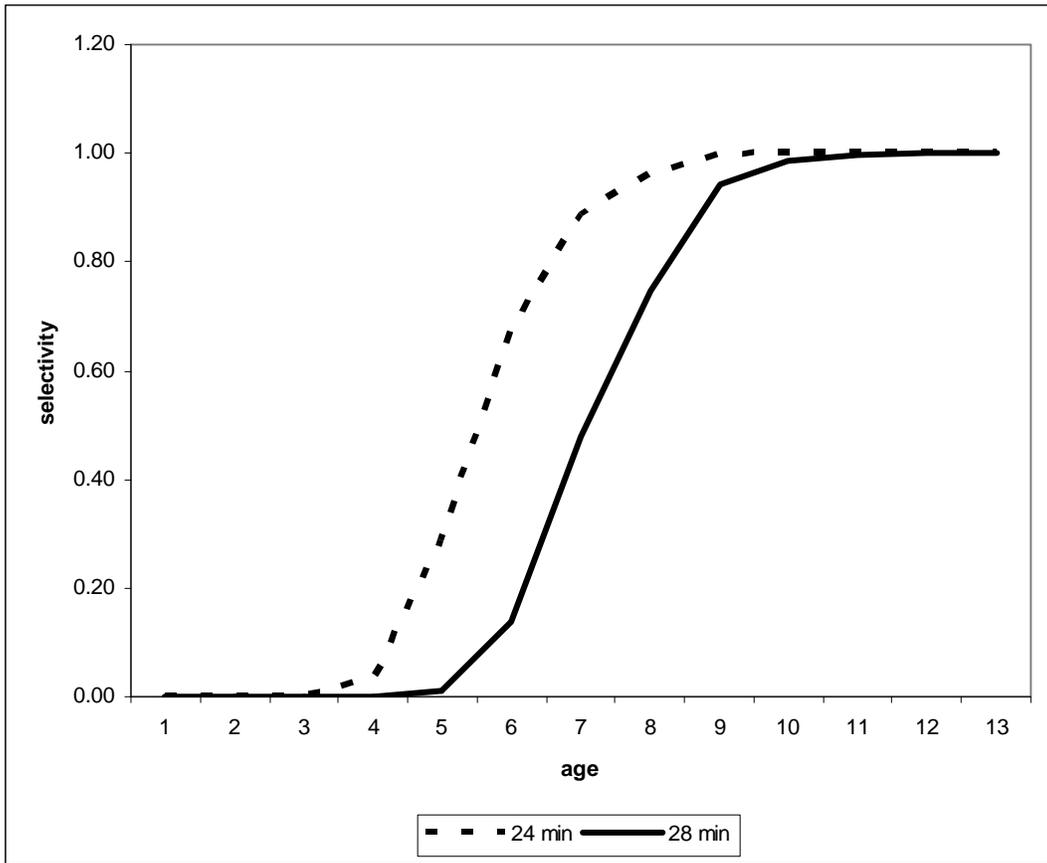


Figure 2. Striped bass selectivity curves for 24 and 28 inch minimum size calculated based on proportion of fish in each age class being at or above minimum size.

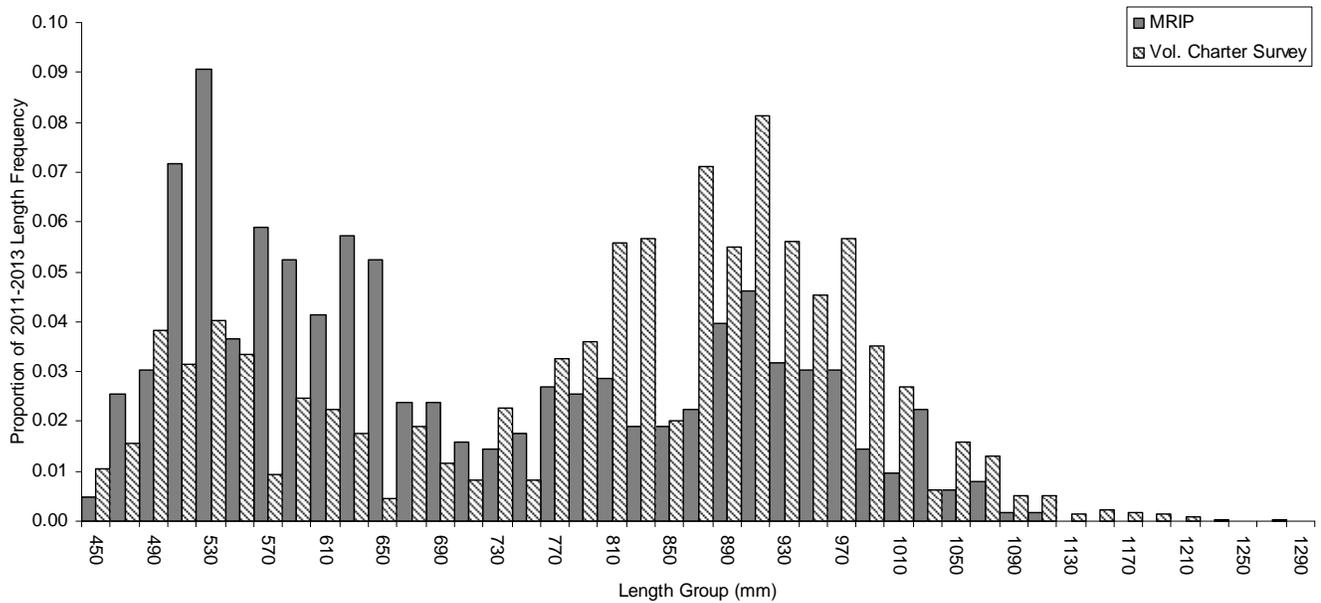


Figure 3. Comparison of the 2013 MRIP length frequency to the volunteer charter survey length frequency for waves 2 and 3.

MD Chesapeake Bay Striped Bass

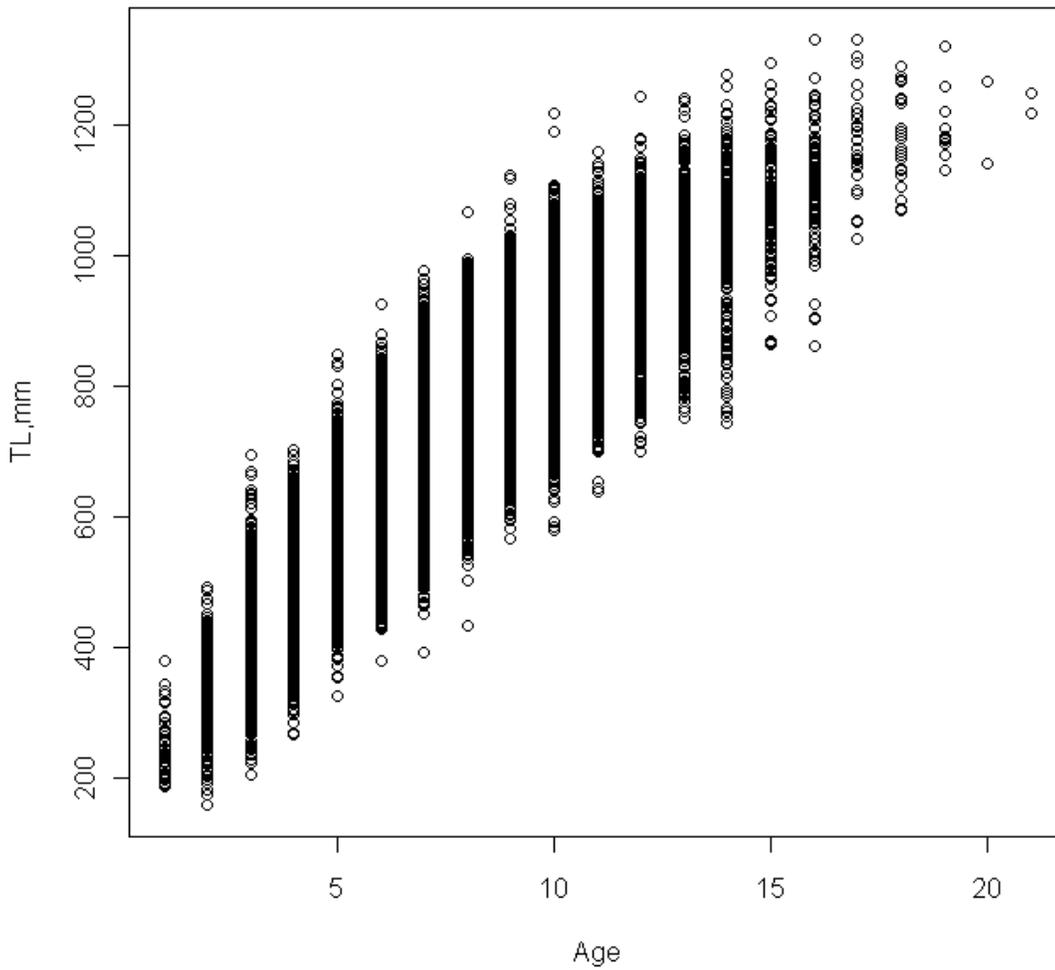


Figure 4. Striped bass size at age distribution based on data collected from the MD spring spawning stock survey (1985-2013, N=34,598), creel survey (2003-2013, N=2,175), and hook and line and pound net checkstation surveys (1999-2013, N=1,525), and winter gillnet checkstation surveys (1994-2014, N=4,833).

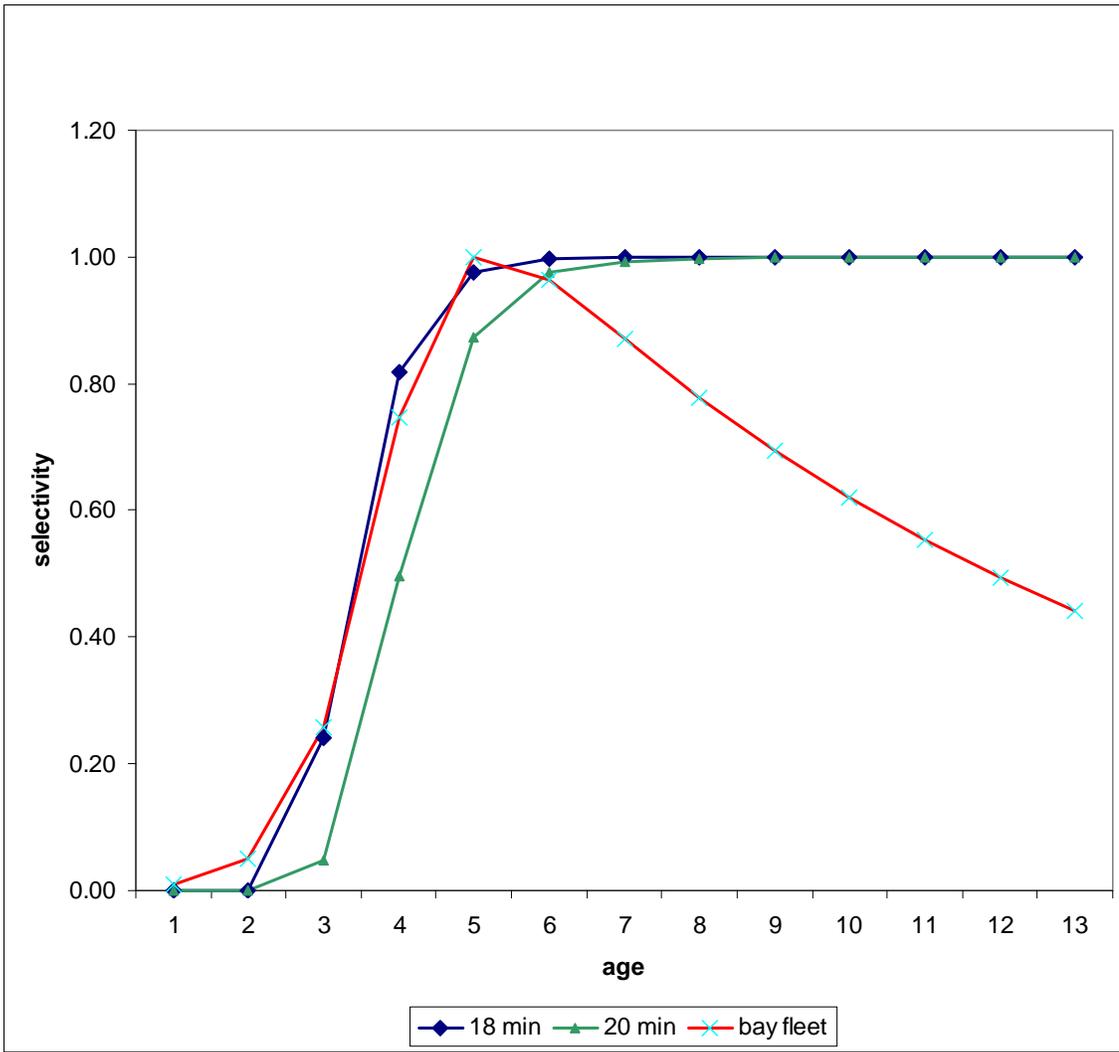


Figure 5. Striped bass selectivity curves for 18 and 20 inch minimum size calculated based on proportion of fish in each age class being at or above minimum size and a “Bay fleet” selectivity estimated by the statistical catch at age model.

District of Columbia Addendum IV Implementation Plan for Atlantic Striped Bass

Summary of Proposed Measures

Recreational Fishery

State	Size Limits	Bag Limits	Other	Open Season
DC	(2) fish at 20"-28" or a combination of: (1) fish at 20"-28" and (1) fish at greater than 28"	2		May 16-Dec 31

Section 1 is not applicable to DC

Section 2 is not applicable to DC

Section 3: Chesapeake Bay Recreational Fishery (MD, VA, PRFC)

3a.) DC will implement a 2 fish/person/day 20" minimum or 1 fish 20-28" and 1 fish greater than 28", consistent with option C4 from Addendum IV. The season would be status quo, open from May 16-December 31.

Section 4 is not applicable to DC

Section 5: Timeline for Implementation

DC will implement proposed measures prior to the start of the 2015 fishing season.

Potomac River Fisheries Commission Addendum IV Implementation Plan for Atlantic Striped Bass

Summary of Proposed Measures

Recreational Fishery

Jurisdiction	Size Limits	Bag Limits	Other	Open Season
Potomac River Trophy Fishery	36" min (Option 3a) or 36" min, charter boats allowed 1 fish 28-36" (Option 3b)	1		3rd Saturday of April – May 15
Potomac River Summer/Fall Fishery	20" min or 1 20-28" and 1 over 28" (Option 3c)	2		May 16 – Dec. 31

Commercial Fishery

Jurisdiction	Size Limits	Seasonal Quota	Open Season
Potomac River	18" min 18" min / 36" max	GN - 355,810 lbs	Jan. 1 – Feb. 14, Nov. 10 – Dec. 31 Feb. 15 – Mar. 25
	18" min / 36" max 18" min	PN – 130,090 lbs	Feb. 15 – Mar. 25 June 1 – Dec. 15
	18" min / 36" max 18" min	HL – 83,462 lbs	Feb. 15 – Mar. 25 June 1 – Dec. 15
	18" min / 36" max 18" min	Misc – 14,000 lbs	Feb. 15 – Mar. 25 June 1 – Dec. 15

Section 1: Coastal Recreational Fishery – N/A

Section 2: Coastal Commercial Fishery – N/A

Section 3: Chesapeake Bay Recreational Fishery (PRFC)

3a.) 1 fish/person/day at 36" minimum size for the spring trophy season. The season will be open the 3rd Saturday in April through May 15.

- The spring trophy fishery targets migratory coastal fish. For this reason, PRFC intends to reduce harvest by at least 25%, consistent with the coastal fishery.
- Our proposal meets the standards as established by the TC in the TC memo (M14-110).
- The 2011-2013 wave 2 and 3 harvest and discard estimates were used in this analysis conducted by MD DNR. The trophy season, however, only spans the first 15 days of wave 3. The same methods used in the Chesapeake Bay migrant harvest report were used to estimate the trophy harvest from wave 3 (Table 1). The proportion of harvest from May 1-15 is calculated from mandatory charter logbooks and applied to wave 3 harvest and discards. The harvest proportion is assumed to be the same for the private boat/shore fleet.
- An estimate of 2011-2013 Virginia trophy harvest (32" minimum, May 1-June 15) was included in the trophy wave 3 harvest estimate. Virginia requires anglers to submit a catch report for trophy fish and adjusts the number to account for non-reporting. Using the ratio of Maryland trophy dead discards to trophy harvest (0.356), an estimate of Virginia's dead discards was calculated and also added to Maryland's trophy wave 3 estimate.
- Length frequency data was from the 2011-2013 Maryland volunteer charter survey through May 15. Charter captains submit lengths to the nearest ¼" for the first 20 fish they catch on each trip from the 3rd Saturday in April through June 15. MRIP data contains very few lengths from wave 2 and the majority of wave 3 sampling occurs after the trophy season ends and the regulations change (Figure 1). The charter logbook data contains many more lengths and allows us to develop length frequencies specific to the trophy fishery time frame (Table 2). The 2011-2013 volunteer charter survey contained 11,332 fish lengths from 249 captains.

- This analysis was completed using the size limit analysis methods used by Striped Bass TC for the Addendum IV calculations. The only modification was calculating wave 2 and the trophy portion of wave 3 separately to account for changing length frequencies over the course of the trophy season as migratory fish leave the Bay.
- The results of this analysis are shown in Table 3. Using 2011-2013 data, we estimate that increasing the minimum size to 36” will result in a 35% reduction, well above the 25% required in Addendum IV.

3b.) 1 fish/person/day at 36” minimum size for the spring trophy season. In addition, charter boats would be allowed 1 fish/boat within a 28-36” slot limit.

- Analysis methods and data sources are the same as above except calculated separately by mode.
- The 2011-2013 volunteer charter survey length frequency was used for both the private and for-hire modes.
- The size limit analysis methods used by the Striped Bass TC for Addendum IV calculations were used to estimate the reduction achieved for each mode. These were combined to estimate the total overall reduction.
- The additional harvest of fish due to allowance of one fish between 28 - 36” per charter boat trip was calculated to be equal to the number of trips taken, assuming each charter boat harvested one fish within the slot limit on every trip.
- Charter logbook data were used to calculate the number of trips taken by charter boats during the trophy season from 2011-2013. Total number of reported trips were adjusted upwards to account for the fact that some trips reported through SAFIS actually contain information on multiple trips. Captains are supposed to enter daily trip data but based on start and end trip dates as well as counts of anglers and fish harvested, some are entering data from multiple trips. As many charter boats in Chesapeake Bay hold six anglers, if the trip start and end dates were not the same, we divided the number of anglers by 6 to estimate a number of “standard” trips.
- The results of the analysis are shown in Table 4. Using 2011-2013 data, we estimate that letting charter boats harvest one fish within a 28-36” slot limit with the rest of the boat harvesting fish over 36” to result in a harvest reduction on 30.1%, still above the 25% required in Addendum IV.

3c.) 2 fish/person/day 20” minimum or 1 fish 20-28” and 1 fish greater than 28”, consistent with option C4 from Addendum IV. The season would be status quo, open from May 16-December 31.

Section 4: Chesapeake Bay Commercial Fishery (PRFC)

4a.) PRFC’s 2012 commercial harvest was 733,789 pounds. Following the 20.5% reduction as required in Addendum IV, the 2015 commercial quota will be 583,362 pounds. As in the past, the gill net fishery will operate from January 1 through February 14 with an 18” minimum size limit; February 15 through March 25 with an 18 – 36” slot limit; and reopen November 10 through December 31 with an 18” minimum size limit. The pound net and miscellaneous (haul seine and fyke net) fisheries will operate from February 15 through March 25 with an 18 – 36” slot limit, and from June 1 through December 15 with an 18” minimum size limit. The hook & line fishery will operate from February 15 through March 25 with an 18 – 36” slot limit, and from June 1 through December 31 with an 18” minimum size limit.

Section 5: Timeline for Implementation

PRFC plans to implement proposed measures prior to the start of the 2015 fishing season for each sector.

Table 1. MRIP wave 3 estimates adjusted to only include trophy harvest based on the proportion harvested during the trophy season in charter logbook data.

Year	Wave 3 Total Removals Estimate	Proportion Harvested May 15-June 30	Trophy Wave 3 Total Removals
2011	149,139	0.27	40,267
2012	100,096	0.18	18,017
2013	222,343	0.20	44,469
Total	471,578		102,753

Table 2. Number of lengths collected by MRIP for Chesapeake Bay striped bass in waves 2 and 3 compared to the number of kept lengths submitted by charter captains during the trophy fishery through May 15. The number of captains participating is also shown.

Year	MRIP Lengths	Volunteer Charter Survey Lengths	# of Participating Charter Captains
2011	342	5,030	109
2012	147	2,983	78
2013	140	3,319	62
Total	629	11,332	249

Table 3. Summary of size limit analysis for the trophy season using data from 2011-2013 for a 36" minimum size.

Old Harvest	139,172
Old Discards	550,842
Old Dead Releases	49,576
Old Total Removals	188,748
New Harvest	66,712
New Dead Releases	6,521
Total Removal	122,809
% Total Reduction	-34.9

Table 4. Summary of size limit analysis for the trophy season using data from 2011-2013 for a 36" minimum size and allowing charter boats to harvest one fish/boat 28-36".

Old Harvest	139,172
Old Discards	550,842
Old Dead Releases	49,576
Old Total Removals	188,748
New Harvest	66,712
New Dead Releases	6,521
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% Total Reduction	-30.1

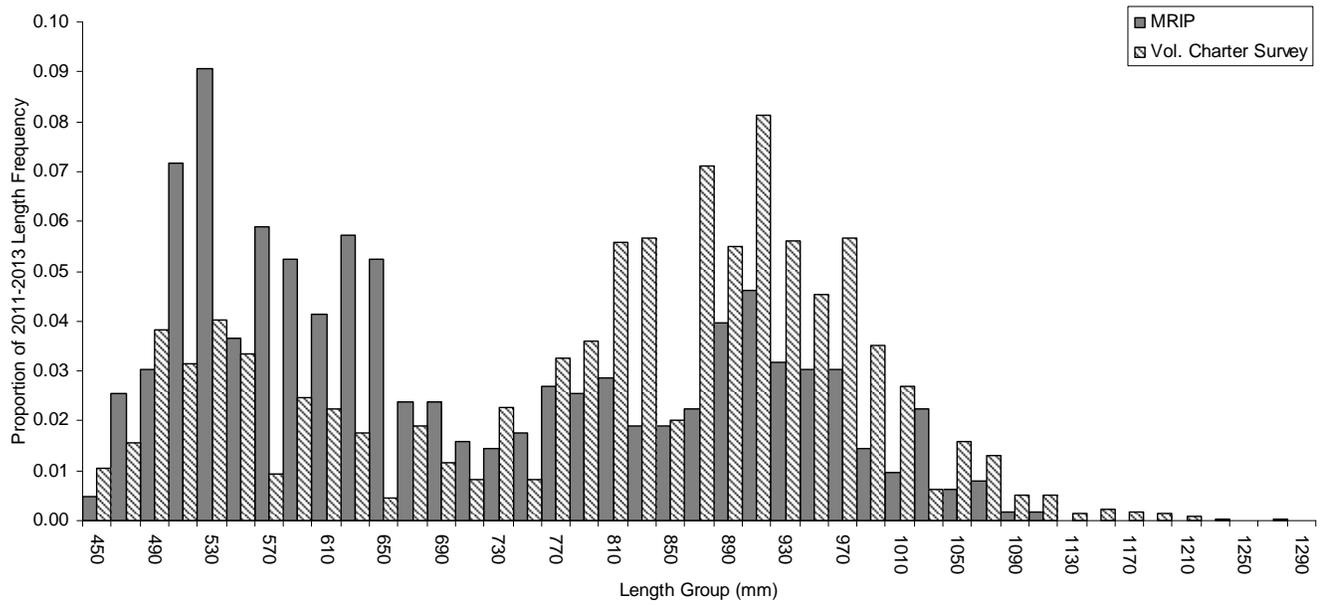


Figure 1. Comparison of the 2013 MRIP length frequency to the volunteer charter survey length frequency for waves 2 and 3.

**Virginia – Atlantic Striped Bass Addendum IV Implementation Plan
(updated January 15, 2015)**

Summary of Proposed 2015 Management Measures

Recreational Coastal Fishery	Size Limits	Bag Limit	Other	Open Season
Virginia Coastal-Option A	28" Minimum	1 per person	Addendum IV Option B1	January 1 – March 31; May 16 – December 31
Virginia Coastal-Option B	33" Minimum	2 per person	Addendum IV Option B5	January 1 – March 31; May 16 – December 31
Virginia Coastal-Option C	1 fish 28" to 34" (slot); 1 fish greater than 36"	2 per person (1 fish in slot, 1 fish greater than 36")	Addendum IV Option B7	January 1 – March 31; May 16 – December 31
Virginia Coastal-Option D	1 fish 28" to 36" (slot); 1 fish greater than 38"	2 per person (1 fish in slot, 1 fish greater than 38")	Addendum IV Option B8	January 1 – March 31; May 16 – December 31

Recreational Chesapeake Bay Fishery	Size Limits	Bag Limit	Open Season
Virginia Chesapeake Bay Fishery	2 fish at 20" to 28" or a combination of 1 fish at 20" to 28" and 1 fish greater than 36"	2 per person	May 16 through June 15
	2 fish at 20" to 28" or a combination of 1 fish at 20" to 28" and 1 fish greater than 28"	2 per person	October 4 through December 31
Virginia Trophy Fishery	36" Minimum	1 per person	May 1 through May 15 (Coastal Fishery); May 1 through June 15 (Chesapeake Bay Fishery)

Commercial Fisheries	Size Limits	2015 Quota	Open Season
Virginia Coastal Fishery	28" Minimum	138,640 pounds (Addendum IV)	January 16 through December 31
Virginia Chesapeake Bay Fishery	18" Minimum	1,064,997 pounds (Addendum IV)	January 16 through March 21 and June 16 through December 31
	18" Minimum and 28" Maximum		March 26 through June 15

Section 1: Coastal Recreational Fishery

The Virginia Marine Resources Commission (VMRC) held a public hearing on Tuesday, December 9, 2014, and the Commission adopted Option B1 of Addendum IV to Amendment 6 to the Interstate Fishery Management Plan for Atlantic Striped Bass. Option B1 reduces the daily possession limit for Virginia's coastal recreational fishery from 2-fish per person to 1-fish per person. This management measure will be effective January 1, 2015. However, the intent of adopting Option B1 was to serve as a temporary management measure for Virginia's January 1 through March 31, 2015 coastal recreational striped bass fishery. The Commission will hold another public hearing on March 24, 2015 to consider additional options, as requested below (and if approved the ASMFC Striped Bass Management Board), for the coastal recreational striped bass fishery as alternatives to Option B1.

The VMRC requests the approval of the ASMFC Striped Bass Management Board to utilize other previous technical committee-approved coastal fishery recreational options, as provided in Addendum IV, in addition to Option B1. The options requested for consideration by VMRC are as follows:

Addendum IV Option	Bag Limit	Size Limit	Trophy Fish	% reduction from 2013 harvest
B5	2	33"	No change	29%
B7	2 (1 slot, 1 trophy)	1 fish 28" to 34" slot	1 fish greater than 36"	28%
B8	2 (1 slot, 1 trophy)	1 fish 28" to 36" slot	1 fish greater than 38"	26%

Section 2: Coastal Commercial Fishery

The VMRC held a public hearing on Tuesday, December 9, 2014, and adopted the following management measures:

- An annual Virginia commercial coastal striped bass quota of 138,640 pounds. The 2015 quota is a 25% reduction from the Virginia Amendment 6 quota of 184,853 pounds.

Section 3: Chesapeake Bay Recreational Fishery

The VMRC requests the approval of the ASMFC Striped Bass Management Board to utilize the previous technical committee-approved Option C4 of Addendum IV. Option C4 increases the minimum size limit for Virginia's Chesapeake Bay recreational fishery from 18-inches to 20-inches, and represents a 22% reduction from 2013 harvest, and a 20.9% reduction from 2012 harvest. If approved, the VMRC would propose to hold a public hearing on Tuesday, March 24, 2015 to consider adopting Option C4 for the 2015 Chesapeake Bay recreational striped bass fishery before the May 16, 2015 season opening.

The VMRC also requests the approval of the ASMFC Striped Bass Management Board to increase the trophy-size striped bass recreational fishery minimum size limit, for the May 1 through June 15 season, from 32 inches to 36 inches. The trophy-size striped bass recreational fishery has always been linked, through management, to the coastal recreational fishery harvest, because this fishery targets the coastal migratory stock within the Chesapeake Bay. Originally, through a conservation equivalency measure approved by the ASMFC Striped Bass Management Board, it was agreed that if the coastal recreational fishery was reduced, the trophy-size spring striped bass recreational fishery harvest would be reduced. Raising the minimum size limit for the trophy-size fishery to 36 inches represents at least a 25% reduction in the harvest of the coastal migratory stock. Additional justification for this request has been provided by the Maryland Department of Natural Resources staff that used both Maryland and Virginia recreational harvest data to calculate this savings (see Maryland Implementation Plan). Based on those calculations, increasing the minimum size of the trophy-size fisheries in the Chesapeake Bay, from 28-inches to 36-inches in Maryland, and from 32-inches to 36-inches in Virginia, will achieve a 35% reduction from the 2011 through 2013 spring removals of coastal migratory stock. If approved, the VMRC would propose to hold a public hearing on Tuesday, March 24, 2015 to consider adopting a 36-inch trophy-size striped bass recreational fishery minimum size limit before the May 1, 2015 trophy-size striped bass recreational season opening.

Section 4: Chesapeake Bay Commercial Fishery

The Virginia Marine Resources Commission (VMRC) held a public hearing on Tuesday, December 9, 2014, and adopted the following management measures:

- An annual Virginia commercial Chesapeake Bay striped bass quota of 1,064,997 pounds. The 2015 quota is a 20.5% reduction from the Virginia 2012 Chesapeake Bay harvest amount of 1,339,619 pounds.

Section 5: Timeline for Implementation

The VMRC has implemented the Coastal and Chesapeake Bay Commercial Fishery allocations for 2015, in accordance with Addendum IV to Amendment 6 to the Interstate Fishery Management Plan for Atlantic Striped Bass (see Sections 2 and 4 of this document).

The VMRC has also implemented Option B1 from Addendum IV for the coastal recreational fishery, for the January 1 through March 31, 2015 fishery season.

Pending approval by the ASMFC Striped Bass Management Board of the Virginia Atlantic Striped Bass Addendum IV Implementation Plan, the VMRC will hold a public hearing on Tuesday, March 24, 2015 to consider and adopt the proposed measures for the Coastal and Chesapeake Bay Recreational Fisheries provided in Sections 1 and 3 of this document.

North Carolina Addendum IV Implementation Plan for Atlantic Striped Bass

Summary of Proposed Measures

Recreational Fishery

State	Size Limits	Bag Limits	Other	Open Season
North Carolina (all modes)	28"	1		1/1 – 12/31

Commercial Fishery

State	Size Limits	Seasonal Quota	Open Season
North Carolina (all gears)	28"	360,360	12/1 – 11/30 (quota season)

Section 1: Coastal Recreational Fishery

1a.) North Carolina will implement a 1 fish daily creel limit maintaining the 28" minimum total length, effective January 1, 2015. The new regulation will apply to all recreational fisheries in North Carolina waters of the Atlantic Ocean (i.e. for-hire, private, and shore modes). This option meets the required reduction based on analysis already conducted and is included in Table B of TC Memo M14-110. No further analysis is necessary.

Section 2: Coastal Commercial Fishery

2a.) North Carolina will take a 25% reduction from our Amendment 6 coastal commercial quota of 480,480 pounds, resulting in a new quota of 360,360 pounds. North Carolina will maintain the 28" minimum size limit. Regulations are effective Dec 1, 2014 (the start of NC's commercial quota year). North Carolina allows three gear types, beach seine, gill net, and trawl. The quota is split evenly between gear types. This option meets the required reduction based on Amendment 6 quotas included on page 2 of TC Memo M14-110. No further analysis is necessary.

Sections 3 and 4 are not applicable to North Carolina

Section 5: Timeline for Implementation

Coastal recreational fishery: regulations will be implemented January 1, 2015. The majority of harvest occurs December through February.

Coastal commercial fishery: regulations will be implemented December 1, 2014. The majority of harvest occurs December through February.



Rhode Island
Department of Environmental Management

DIVISION OF FISH AND WILDLIFE

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401 423-1920
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TO: Mike Waine, Fishery Management Plan Coordinator, ASMFC

FROM: Mark Gibson, RI DEM Deputy Chief *MRG*

DATE: January 14, 2015

SUBJECT: Striped Bass Commercial Tagging Report

The State of Rhode Island is requesting from the Atlantic States Marine Fisheries Commission that the date of submittal for our Striped Bass Commercial Tagging Report be changed for 2015.

As a result of Addendum III to Amendment 6 to the Atlantic Striped Bass Interstate Fishery Management Plan, each state with a commercial striped bass fishery is required to submit a Commercial Tagging Report to ASMFC no later than 60 days prior to the start of the first commercial fishery in that state. A requirement of this report is to include a picture and description of the striped bass tags to be issued. The first striped bass commercial fishery in the state of Rhode Island begins April 1, 2015 for floating fish traps. This would require RI to have their 2015 commercial striped bass tags in possession no later than February 1, 2015 in order to complete the Commercial Tagging Report and be able to submit it 60 days prior to the start of the April 1st opening date for the commercial floating fish trap fishery. RI has scheduled our state striped bass hearing for February 16, 2015 to allow for the striped bass management board to review and potentially approve our state submitted Addendum IV implementation plan and conservation equivalency proposals at their February Board meeting. Due to this and the 4-6 week manufacturing time, it will not be possible for RI to have their tags by February 1, 2015 and be compliant with the tagging report requirement. Therefore we are requesting that we be allowed to submit our Commercial Tagging Report to ASMFC on April 1, 2015. This date will allow sufficient time for the RI DEM to purchase striped bass tags for the 2015 season and complete their Commercial Tagging Report.