

# ATLANTIC STRIPED BASS ASSESSMENT SUMMARY FOR 2013

## *State of the Stock:*

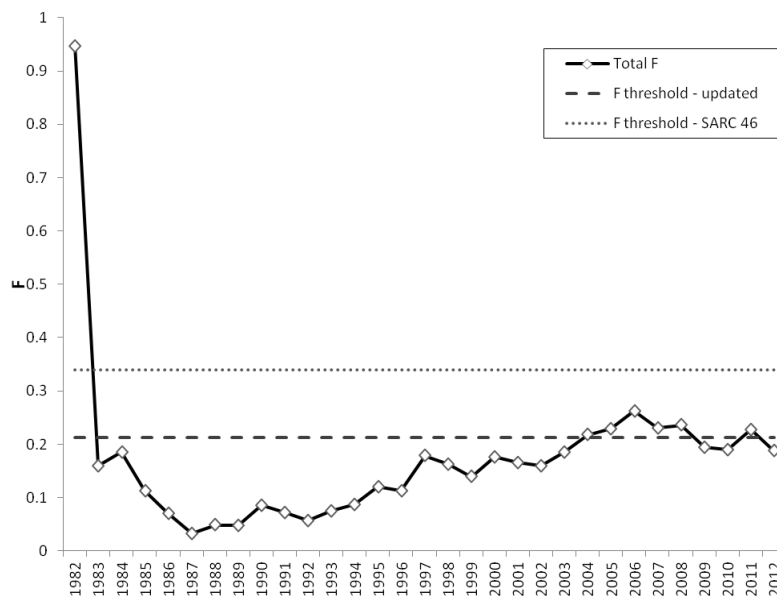
- Whether you use the current Biological Reference Points, or the new BRPs from the 2013 Benchmark Assessment – Atlantic Striped Bass in 2012 are **not overfished and overfishing is not occurring**.
- Female spawning stock biomass (SSB) was estimated at 61.5 thousand mt (136 million lbs), above the SSB threshold of 57,904 mt, but below the SSB target of 72,380 mt.
- Total fishing mortality was estimated at 0.188, below the F threshold of 0.213 but above the F target of 0.175.

## *Biological Reference Points:*

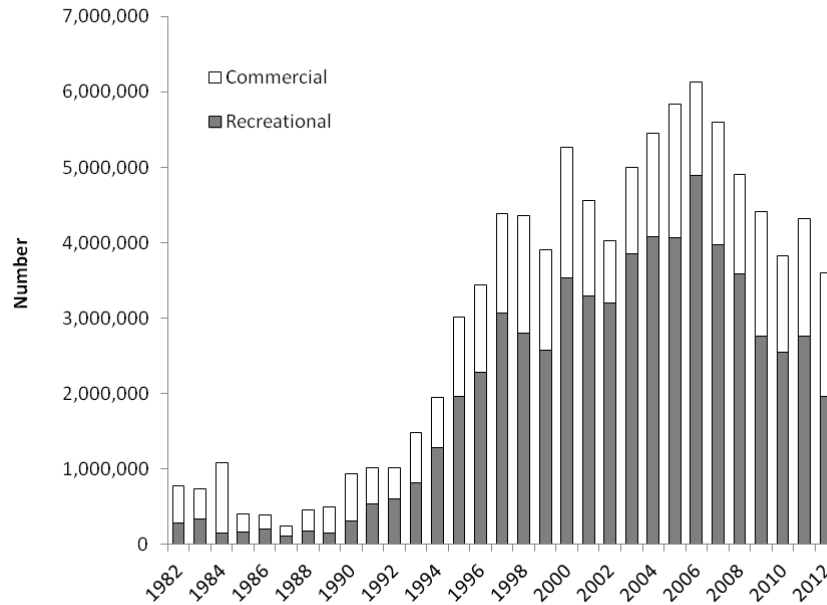
Reference Point	Current		Updated	
	Definition	Value	Definition	Value
$F_{\text{Threshold}}$	$F_{\text{MSY}}$	0.34	F projected to obtain $SSB_{\text{Threshold}}$	0.213
$F_{\text{Target}}$	24% Exploitation rate	0.30	F projected to obtain $SSB_{\text{Target}}$	0.175
$SSB_{\text{Threshold}}$	Estimate of 1995 SSB	36,000 mt	Estimate of 1995 SSB	57,904 mt
$SSB_{\text{Target}}$	125% of $SSB_{\text{Threshold}}$	46,101 mt	125% of $SSB_{\text{Threshold}}$	72,380 mt

## *Fishing Mortality:*

- Fully-recruited fishing mortality in 2012 was 0.188. Total fishing mortality has been declining since a peak in 2006.



## Catches:



- Commercial landings in the Atlantic striped bass fishery increased from roughly 313 mt (800,000 lbs) in 1990 to 3,332 mt (7.3 million lbs) in 2004. Since 2005, landings have fluctuated about an average of 3,162 mt (6.97 million lbs); however, landings have declined slightly in recent years to about 2,952 mt (6.5 million lbs) in 2012.
- The estimates of dead commercial discards were 625,631 and 795,675 fish for 2011 and 2012.
- Recreational harvest increased from 1,010 mt (2.2 million pounds) in 1990 to 14,082 mt (31 million pounds) in 2006. Since 2006, harvested declined through 2012 to 8,740 mt (19 million pounds). The number of striped bass that die due to catch and release increased from 132 thousand fish in 1990 to 1.2 million fish in 1997. Dead releases have remained around 1.2 million fish through 2003, but increased to the series maximum of 2.1 million fish in 2006. Since 2006, dead releases have declined substantially to 459,954 fish. Total recreational striped bass removals (harvest and dead discards) in 2011 and 2012 were 2.76 million fish and 1.96 million fish, respectively.

### Total Catch of Atlantic Striped Bass (millions of fish) by Fishery

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Max <sup>1</sup>	Min <sup>1</sup>	Mean <sup>1</sup>
<b>Commercial Harvest</b>	0.87	0.91	0.97	1.05	1.02	1.01	1.04	1.03	0.93	0.84	1.23	0.01	0.65
<b>Commercial Discards</b>	0.26	0.46	0.79	0.19	0.60	0.30	0.61	0.25	0.63	0.80	0.80	0.04	0.34
<b>Recreational Harvest</b>	2.55	2.55	2.44	2.79	2.52	2.47	2.04	1.99	2.23	1.50	2.79	0.04	1.25
<b>Recreational Dead Releases<sup>2</sup></b>	1.32	1.53	1.63	2.10	1.45	1.13	0.72	0.56	0.53	0.46	2.10	0.03	0.76

<sup>1</sup>: Minimum, maximum, and mean catch based on 1982-2012 data.

<sup>2</sup>: Assuming a 9% mortality rate on fish released alive.

## Stock Biomass:

- Female Spawning stock biomass (SSB) grew steadily from 1982 through 2003 when it peaked at about 81 thousand mt (178 million lbs). Female SSB has declined since then and was estimated at 61.5 thousand metric tons (135 million lbs) in 2012. Total biomass increased from 18,609 mt (41 million lbs) in 1982 to its peak at 221,774 mt (489 million lbs) in 1999.
- Total biomass declined through 2011, but increased in 2012 due to the strong 2011 year-class (Figure 3)

### Current Status of Atlantic Striped Bass

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Min <sup>3</sup>	Max <sup>3</sup>	Mean <sup>3</sup>
Female SSB (thousands of mt)	81.43	79.32	79.66	74.2	71.9	69.9	67.9	65.8	65.5	61.5	4.1	81.4	47.7
Total Abundance (millions of fish)	174.77	243.49	190.2	170.	138.	147.	123.	135.	169.87	215.21	32.1	251.1	151.5
Age-1 Abundance (millions of fish)	76.71	160.13	87.40	82.8	59.0	80.4	55.9	76.5	108.5	143.5	18.3	183.4	87.1
Maximum F-at-Age	0.185	0.218	0.229	0.26	0.23	0.23	0.19	0.19	0.22	0.18	0.0	0.947	0.173

<sup>3</sup>: Minimum, maximum, and mean based on 1982-2012 model estimates.

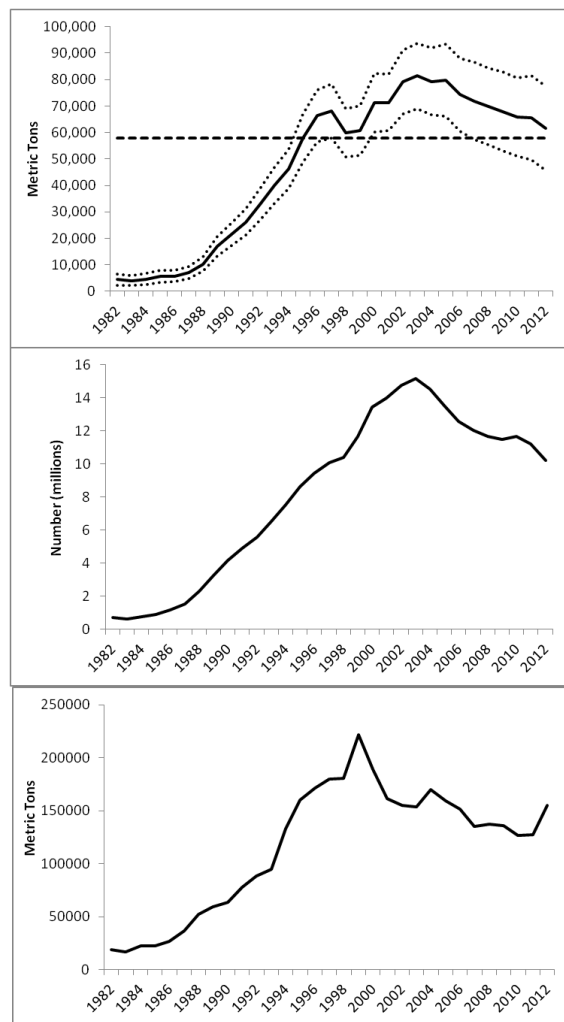


Figure 3. Estimates of A) female spawning stock biomass by year (solid line), B) female spawning stock numbers, and C) total January-1 biomass. Dotted lines equal 95% confidence intervals. Dashed line is the female spawning stock biomass threshold (1995 value).

## ***Recruitment:***

- Striped bass experienced a period of strong recruitment from 1993-2003, followed by a period of lower recruitment from 2004-2009 (although not as low as the early 1980s, when the stock was overfished). The 2010 and 2011 year-classes were above the 2004-2009 average, but index values indicate the 2012 year class was very weak (Figure 4).

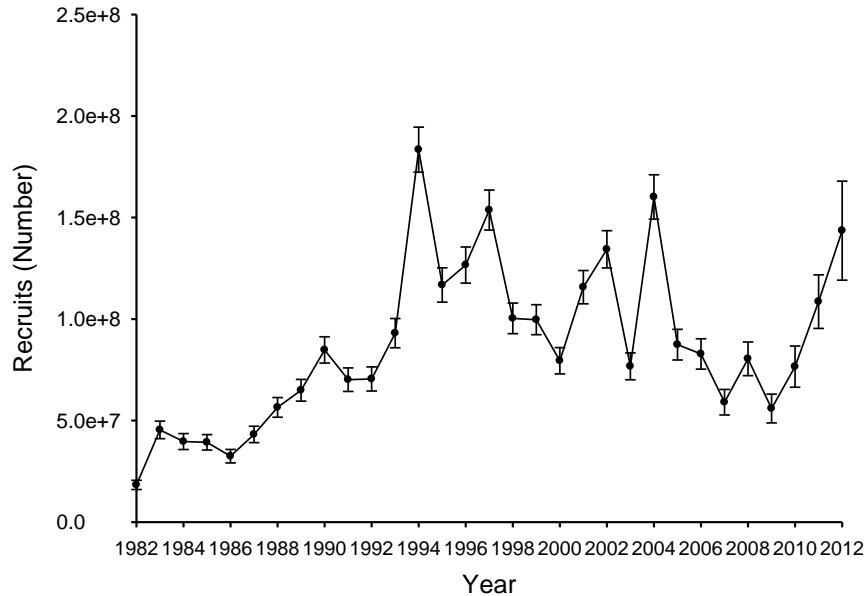


Figure 4. Model-estimated recruitment of age-1 striped bass.

## ***Projections:***

- Five-year projections of female spawning SSB and fishing mortality were made. If the current removals, meaning landings and dead discards of 3.59 million fish, are maintained during 2013-2017, the probability of stock overfishing increases rapidly starting in 2013 and reaches near 100 percent by 2014. If constant removals equal to 50% of the 2012 removals are taken during 2013-2017, the probability of fully-recruited F being above the F threshold is near zero.