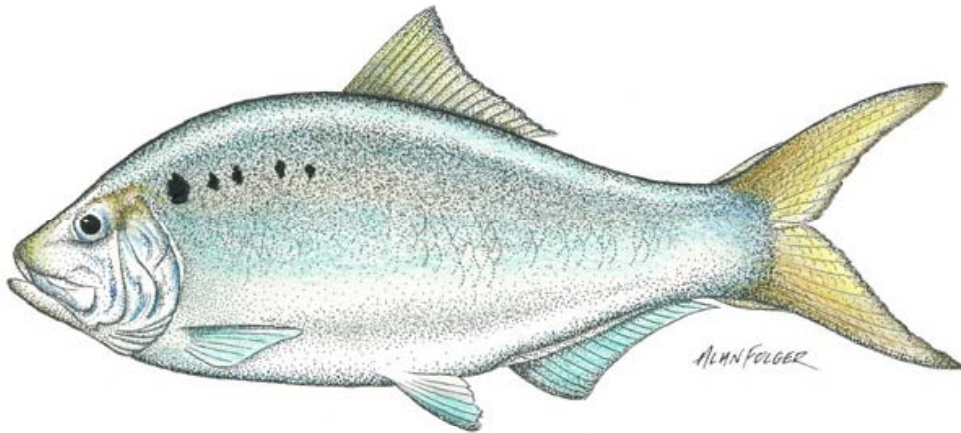


# Menhaden Management Update

## September 2016



How we got here

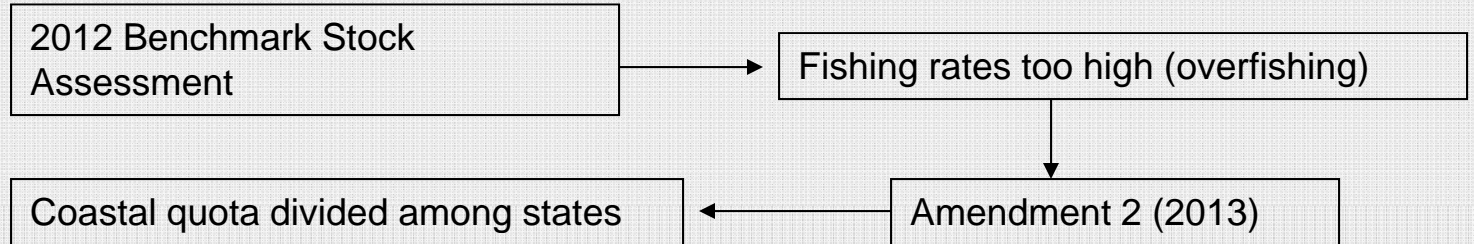
The current situation

What's next....

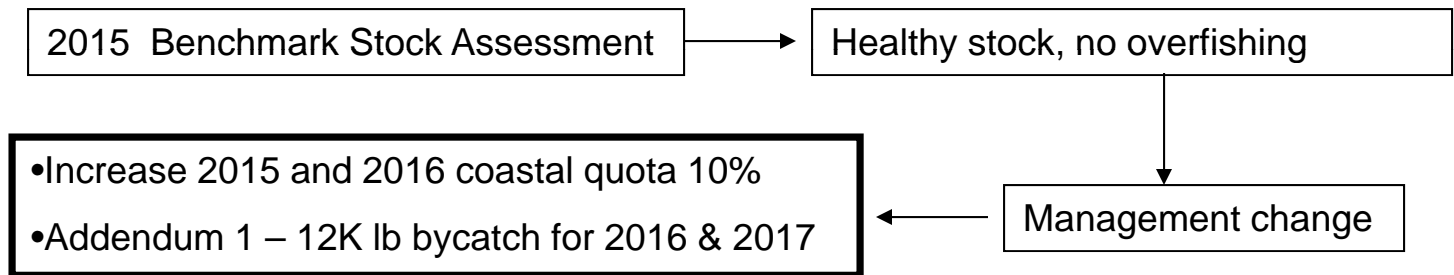
*Please contact Dave Blazer with any questions: 410-260-8281*

# Menhaden Management – The Big, Complicated Picture

1) How we got here:



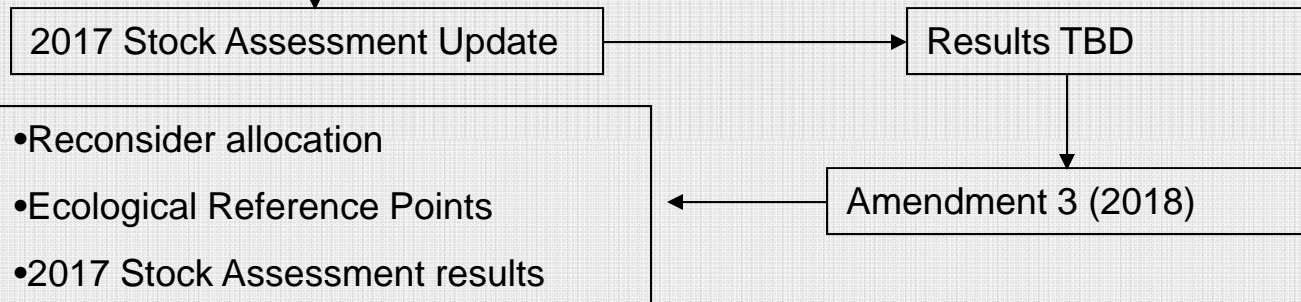
2) Current situation:



Likely Increase in coast wide harvest

**Increase 2017 quota ?? percent**

3) What's next:



## How we Got Here:

In December of 2012, ASMFC approved Amendment 2 (A2) to the Interstate Fisheries Management Plan for menhaden.

A2 was implemented because the 2011 benchmark stock assessment found that fishing rates on menhaden were too high (overfishing was occurring).

### **A2 created the following management tools:**

- 1) Determined that menhaden should be managed according to a coast wide quota that would be divided (allocated) among states.
- 2) Created the New England (episodic event) set aside which reserves 1% of the coast wide quota for New England states. These states received very low or no quotas because fish were not present in their state waters during the reference years (2009-2011) The set aside allows New England access to the fish in years when they appear in Northern waters.
- 3) Created a bycatch allowance that would not be counted toward the quota.

A2 **DID NOT** create ecological reference points which are designed to account for menhaden's role as a forage fish – these are generally more conservative (lower fishing targets) than 'single-species' reference points.

**The bycatch allowance, the New England set aside, and the current allocation among states WILL NOT CHANGE until Amendment (A3) is implemented –planned for 2018.**

The **amount of the quota** (but not how it is allocated) can change while A2 is in play if there is evidence (e.g. a stock assessment) to support the change.

## How we Got Here cont.

### The coast wide quota and allocation

Initially, Amendment 2 (A2) set a coast wide quota of 170,800 metric tons or 377 million pounds to be implemented in 2013.

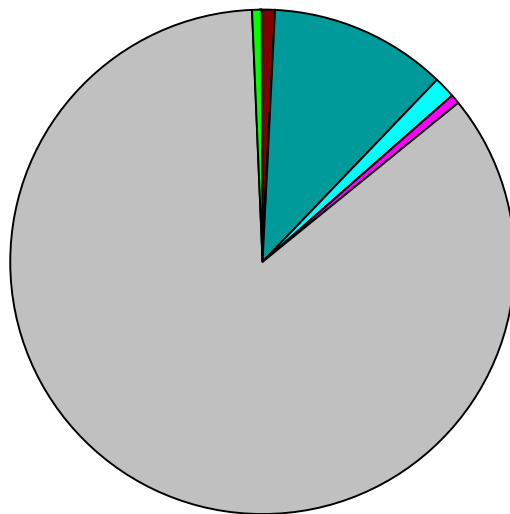
The 2013 quota was a 20% reduction in the coast wide harvest averaged over the 'reference years' 2009, 2010 and 2011; and it was a 25% reduction from 2011 landings because of an increasing trend in bait landings. 2012 harvest data were not yet available when A2 was finalized.

The quota was allocated according to each state's reported harvest averaged over the 3 reference years (2009-2011). Maryland received a quota of 5.16 million pounds which was initially adjusted downward to 5.12 million pounds to account for the New England set aside (Tables 1 and 2).

**Q: Why were the reference years of 2009-2011 chosen?**

**A:** *Because these are believed to be years with the highest quality harvest reports coast wide. Menhaden harvested for bait were not well reported in many states in earlier years and remain poorly reported in some states.*

Amendment 2 allocated the coastal quota by taking each state's average reported harvest between 2009 and 2011 and dividing by the total. Each state gets a piece of the pie depending on how much they harvested in those years. Virginia got a high allocation of 85% because they reported 85% of the coastal landings in the reference years. All fish harvested by the VA purse seine fleets (reduction and bait) are logged as Va landings – no matter where they were harvested.



■ MA ■ NY ■ NJ ■ MD  
 ■ PRFC ■ VA ■ NC

Table 1: How state-specific allocation was determined.

STATE	Harvest in Pounds Amendment 2 Reference Years			Average	Allocation (%)
	2009	2010	2011		
Maine	452,355	46,162		249,259	0.05
New Hampshire	33	390	0	141	0
Mass	6,719,048	4,973,944	116,151	3,936,381	0.84
Rhode Island		77,089	81,300	79,195	0.02
Conn	173,252	44,967	27,459	81,893	0.02
New York	226,980	300,120	232,807	253,302	0.05
New Jersey	32,787,777	50,497,293	74,324,485	52,536,518	11.19
Delaware	69,476	51,933	64,566	61,992	0.01
<b>Maryland*</b>	<b>5,667,415</b>	<b>6,885,330</b>	<b>6,777,209</b>	<b>6,443,318</b>	<b>1.37</b>
PRFC	3,191,905	2,790,728	2,759,597	2,914,077	0.62
Virginia	350,638,957	436,175,179	414,521,299	400,445,145	85.31
North Carolina	2,124,733	1,299,130	3,515,553	2,313,139	0.49
South Carolina	0	0		0	0
Georgia		0		0	0
Florida	52,800	60,307	139,980	84,362	0.02
<b>Total</b>	<b>402,104,731</b>	<b>503,202,572</b>	<b>502,560,406</b>	<b>469,398,721</b>	

\*Maryland's allocation =  $(6,443,318 \div 469,398,721) \times 100$

Table 2: State-specific quotas for 2013 and 2014. All quotas are initially adjusted downward a small amount (1%) to create the New England set-aside.

State	Quota (lbs)	Allocation (2009- 2011)	Returned Set Aside (LBS)	Revised Quota
ME	146,787	0.00039	1,367	148,154
NH	112	0	1	113
MA	3,126,024	0.00839	29,102	3,155,126
RI	66,779	0.00018	622	67,400
CT	65,034	0.00017	605	65,639
NY	206,695	0.00055	1,924	208,619
NJ	41,721,164	0.11192	388,411	42,109,574
DE	49,230	0.00013	458	49,688
<b>MD</b>	<b>5,116,874</b>	<b>0.01373</b>	<b>47,636</b>	<b>5,164,510</b>
PRFC	2,314,174	0.00621	21,544	2,335,719
VA	318,066,790	0.85322	2,961,099	321,027,889
NC	1,836,948	0.00493	17,101	1,854,049
SC	-	0	-	-
GA	-	0	-	-
FL	66,995	0.00018	624	67,619

## The Current (2016) Situation

In 2015 a new benchmark stock assessment was completed with:

more years of data

new data sources

\*a single species model

Findings were positive :

Fishing rates were below the target (no overfishing)

Stock appeared more healthy although **abundance in the last year of the analysis (2013) remained low.**

\*A single species fisheries model seeks to determine how many fish must remain in the water in order to reproduce themselves each year. Any extra can be removed by fishing.

\*Multi-species models include effects of predators and recognize that maintaining just enough forage fish to reproduce themselves may not be enough. Extra fish are needed to meet the needs of predator populations.

## The Current (2016) Situation cont.

In response to the 2015 benchmark stock assessment and the finding of a healthier stock, the ASMFC menhaden management board made 2 moves to allow for more harvest along the coast :

- 1) raised the quota 10% for 2015 and 2016.
- 2) Approved Addendum 1 which allows 12,000 pounds of bycatch per vessel per day when two appropriately permitted individuals are on board. (this will not likely increase harvest in Maryland but it could in other states).

**The effects of these actions on fishing levels will not be known** until the completion of the 2017 stock assessment. The unknown impacts of these past actions are one reason that the ASMFC is hesitant to increase the coast wide quota.

**Q: Why didn't the ASMFC include 2017 in its initial action to raise the quota 10%?**

**A:** *When the ASMFC menhaden management board voted to increase the quota by 10%, Amendment 3 (A3) was planned for completion in 2017. A3 was delayed to allow completion of the socio-economic study which will provide valuable information for the allocation discussions. **With the delay of A3, the 2017 quota needs to be determined.***



**Table 3.** Coastal quotas for menhaden and potential increases from 2016 allocated among the states.

	2013-2014	2015-2016	plus 5%	plus 10%	plus 20%	plus 30%	plus 40%
Metric Tons	170,800	187,880	197,274	206,668	225,456	244,244	263,032
Pounds	376,549,543	414,204,498	434,914,723	455,624,948	497,045,397	538,465,847	579,886,297
After NE Set Aside	372,784,048	410,062,453	430,565,576	451,068,698	492,074,943	533,081,189	574,087,434
<b>potential 2017 state quotas (pounds)</b>							
ME	145,386	161,466	169,540	177,613	193,760	209,906	226,053
NH	111	123	129	135	148	160	172
MA	3,127,658	3,438,630	3,610,562	3,782,493	4,126,356	4,470,219	4,814,082
RI	66,111	73,457	77,129	80,802	88,148	95,494	102,839
CT	64,383	71,537	75,114	78,691	85,845	92,999	100,152
NY	204,628	227,365	238,733	250,102	272,838	295,575	318,311
NJ	41,721,991	45,893,335	48,188,001	50,482,668	55,072,002	59,661,335	64,250,669
DE	48,738	54,153	56,861	59,568	64,983	70,399	75,814
MD	5,118,325	5,628,568	5,909,996	6,191,424	6,754,281	7,317,138	7,879,995
PRFC	2,314,989	2,545,595	2,672,875	2,800,154	3,054,714	3,309,273	3,563,833
VA	318,066,805	349,873,884	367,367,579	384,861,273	419,848,661	454,836,050	489,823,438
NC	1,837,825	2,020,645	2,121,677	2,222,709	2,424,774	2,626,838	2,828,903
SC	0	-	-	-	-	-	-
GA	0	-	-	-	-	-	-
FL	66,325	73,695	77,380	81,064	88,434	95,803	103,173

## How a 2017 quota increase impacts Maryland.

The coast wide quota would need to increase more than 20% to bring Maryland's quota up to 7 million pounds. With the bycatch allowance, we have been able to harvest more than 7 million pounds each year since 2013.

Each 10% quota increase gives Maryland about 563K additional pounds, which is about a week's worth of fishing although this will be highly variable from year to year.

**Table 4: Maryland fishery performance under A2.**

Year	Harvest	Maryland quota	Closure date
2013	<b>7,074,727*</b>	5,164,510	June 29
2014	<b>7,005,271*</b>	5,164,510	Aug 23rd
2015	<b>7,551,430*</b>	5,628,568	Aug 30th
2016	<b>TBD</b>	5,628,568	Aug 27th

*\*in each year, approximately 1.9 million pounds were harvested as bycatch.*

**Table 5: impacts of a 10, 20 and 30% increase on Maryland's quota.**

### UP FOR VOTE IN OCTOBER

% increase*	Maryland's quota
2016 status quo	5,628,568
10% increase	6,191,424
20% increase	<b>6,754,281</b>
30% increase	7,317,138
40% increase	7,879,995

**Table 6:** Maryland's fishing performance since 2003 shows how Amendment 2 (A2) has impacted harvest compared to the decade prior to A2. The average harvest from 2003 through 2012 was 8,043,658 pounds -12% more than the average harvest since 2013.

Year	Reported Md Landings (lbs)
2003	3,163,252
2004	5,369,952
2005	10,635,776
2006	6,841,296
2007	11,370,064
2008	8,153,008
2009	7,756,192
2010	6,903,300
2011	6,506,430
2012	13,737,314
2013	7,074,727
2014	7,005,271
2015	7,551,430

Reference years used to develop 2013 quota.

2012 harvest #'s not available in Dec. 2012 when A2 was finalized.

Harvest since quota was implemented. Numbers include what was harvested under the bycatch allowance.

<b>Fishing Level (F) Reference Point</b>	<b>Definition</b>	<b>Value</b>
<b>Current Threshold (single species)</b>	<b>If this value is exceeded in any year, overfishing is occurring</b>	<b>1.29</b>
<b>Current Target (single species)</b>	<b>This is the fishing level that we try to meet each year.</b>	<b>0.38</b>
<b>Multi-species threshold option in A3</b>	<b>This would become the overfishing line if the Board chooses this option in late 2017</b>	<b>0.29</b>
<b>Fishing level estimated in 2013</b>	<b>This is the most recent estimate of fishing levels we have</b>	<b>0.22</b>

**Table 7.** Fishing levels drive management decisions.

The bottom row in this table shows that the coast wide menhaden fishery is currently operating below both the single species target and the multi-species threshold presented in the Amendment 3 draft document.

There is room for a harvest increase based on the single species target of 0.38.

There is not much room for a harvest increase based on the multi-species threshold of 0.29.

The fishery is operating in a favorable position NOW to avoid cutbacks when the Board selects a multi-species reference point.

Choices with the 2017 quota: the science seems to indicate that an increase to 40% is safe, but with all of the balls in the air, what are the risks of an increase relative to what Maryland gains?

