Expanded SAV Acreage Goals for Five Virginia Segments

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Background

- In 2003, the Chesapeake Bay Partnership adopted a restoration target of 185,000 acres.
- The sum of the jurisdictions' WQS SAV goals is 192,000 acres.
- CBP staff, the Criteria Assessment Protocols Workgroup, and the SAV Workgroup reviewed the basis of the two sets of SAV acreages to understand the discrepancies between them.

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Background

- The results of this review were published in 2017. (EPA 903-R-17-002)
- It was found that five Virginia segments have WQS SAV restoration goals that are considerably less than their respective CBP restoration goals.
- It was also found that the adopted acreages for these segments are inconsistent with the methodology used in the other Bay segments.

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SAV Workgroup reviewed the jurisdictions' SAV goals with respect to the 1993 CBP SAV restoration targets

Chesapeake Bay Segment	Source of the 1993 CBP SAV Restoration Goal Acreages	1993 CBP SAV Restoration Goals Acreages		State Water Quality Standards SAV Restoration Acreages	Difference Between State WQ Standards Acreages and 1993 Restoration Goal	2003 Restoration Goal Actual Mapped SAV (up to 2000) Clipped to Application Depth	Actual Mapped SAV (up to 2000) Not Clipped	Actual Mapped SAV (including that mapped more recently than 2000) Not Clipped	Rationale for the Difference in the Acreage Between the 1993 Chesapeake Bay Program Restoration Goal and the State Water Quality Standards SAV Restoration Acreages
HNGMH	Historical	7,686	<	7,761	75	7,761	7,943	7,943	Historical Restoration Acreage + Clipped Acreage
LCHMH	Historical	3,950	<	4,076	126	4,076	4,134	4,134	Historical Restoration Acreage + Clipped Acreage
MAGMH	Historical	545	<	579	34	579	716	716	Historical Restoration Acreage + Clipped Acreage
MANMH1	Historical	4,264	<	4,294	30	4,294	4,331	4,331	Historical Restoration Acreage + Clipped Acreage
MANMH2	Historical	95	>	59	-36	103	103	103	Total SAV Acreage Out to Split Segment's Application Depth. Note the total acres for the sum of the split segments goals for MANMH1 and MANMH2 is approximately the total for the MANMH before the split.
MATTF	2000	279	<<	792	513	296	331	792	Used Single Best Year (2002)
MIDOH	Historical	838	<<	879	41	879	910	910	Historical Restoration Acreage + Clipped Acreage
NANMH	Historical	3	=	3	0	3	6	6	No change

Good explanation!

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These segments were found to have a WQS goal significantly less than its CBP restoration target (and without a good explanation)

2003 Restoration Goal

Chesapeake Bay Segment	Source of the 1993 CBP SAV Restoration Goal Acreages	1993 CBP SAV Restoration Goals Acreages		State Water Quality Standards SAV Restoration Acreages	Difference Between State WQ Standards Acreages and 1993 Restoration Goal	Actual Mapped SAV (up to 2000) Clipped to Application Depth	Actual Mapped SAV (up to 2000) Not Clipped	Actual Mapped SAV (including that mapped more recently than 2000) Not Clipped	Rationale for the Difference in the Acreage Between the 1993 Chesapeake Bay Program Restoration Goal and the State Water Quality Standards SAV Restoration Acreages
JMSMH	Historical	531	>	200	-331	605	712	712	200 acres were derived as "attainable acres" developed from the May 2004 Chesapeake Bay Program Water Quality/Sediment Transport model confirmation run (Source: Lew Linker (USEPA) via Cindy Johnson (VADEQ)).
JMSPH	Historical	604	>	300	-304	615	693	693	300 acres were derived as "attainable acres" developed from the May 2004 Chesapeake Bay Program Water Quality/Sediment Transport model confirmation run (Source: Lew Linker (USEPA) via Cindy Johnson (VADEQ)).
JMSTF1	Historical	1,333	>	1,000	-333	1,409	1,530	1,530	WQS Acreage of unknown origin
JMSTF2	Historical	266	>	200	-66	372	375	375	WQS Acreage of unknown origin
RPPMH	Historical	5,380	>	1,700	-3680	5,500	7,814	7,814	1700 acres were derived as "attainable acres" developed from the May 2004 Chesapeake Bay Program Water Quality/Sediment Transport model confirmation run (Source: Lewis Linker (USEPA) via Cindy Johnson VADEQ)

Virginia's rationale for expanding the SAV acreage goals for these segments

Chesapeake Bay Program Segment	WQS Restoration Goal (acres)	CBP Restoration Target (acres)	Highest Historical Mapped SAV Acreage (1930s – 1950s)	Highest Recently Mapped SAV Acreage (1971 - 2019)	Rationale for Adopting a Higher WQS Goal
JMSMH	200	531	712	3	The highest mapped water clarity acreage (2007 growing season, 10,524 acres[1]) is more than 2.5 times the CBP Restoration Target. **CBP Restoration Target is theoretically attainable.**
JMSPH	300	604	694	477	The highest mapped water clarity acreage (2006 growing season, 2,388 acres[1]) is more than 2.5 times the CBP Restoration Target. **CBP Restoration Target is theoretically attainable.**
JMSTF1	1,000	1,333	1,530	627	The origin for the current WQS goal is unknown. **The origin of the CBP Restoration Target is known.**
JMSTF2	200	266	375	11	The origin for the current WQS goal is unknown. **The origin of the CBP Restoration Target is known.**
RPPMH	1,700	5,380	7,814	2,786	The highest mapped water clarity acreage is 10,062 acres[1] (2007 growing season). **Thus, recent information suggests this segment can theoretically support up to 4,012 acres of SAV.**

[1] VIMS Shallow Water Monitoring Assessment Results (November 2019)

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WQS amendments

- Approved by State Water Control Board on August 25.
- Currently being reviewed by the Gov's office.
- Not effective until EPA approval.

Designated Use	Chesapeake Bay Program Segment	SAV Acres[1]	Percent Light-Through-Water[2]	Water Clarity Acres[1]	Temporal Application
Shallow water submerged aquatic vegetation use	RPPMH	~~1700~~ 5,380	22%	~~5000~~ 13,450	April 1 - October 31
	JMSTF2	~~200~~ 266	13%	~~500~~ 665	April 1 - October 31
	JMSTF1	~~1000~~ 1,333	13%	~~2500~~ 3,332	April 1 - October 31
	JMSOH	15	13%	38	April 1 - October 31
	JMSMH	~~200~~ 531	22%	~~500~~ 1,328	April 1 - October 31
	JMSPH	~~300~~ 604	22%	~~750~~ 1,510	March 1 - November 30

[1]The assessment period for SAV and water clarity acres shall be the single best year in the most recent three consecutive years. When three consecutive years of data are not available, a minimum of three years within the data assessment window shall be used.

[2]Percent light-through-water = $100e^{(-KdZ)}$ where K_d is water column light attenuation coefficient and can be measured directly or converted from a measured secchi depth where K_d = 1.45/secchi depth. Z = depth at location of measurement of K_d.

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Questions?