How the 185K Acre SAV Restoration Goal Was Established

SAV WG Meeting
January 28, 2014

Ancient History

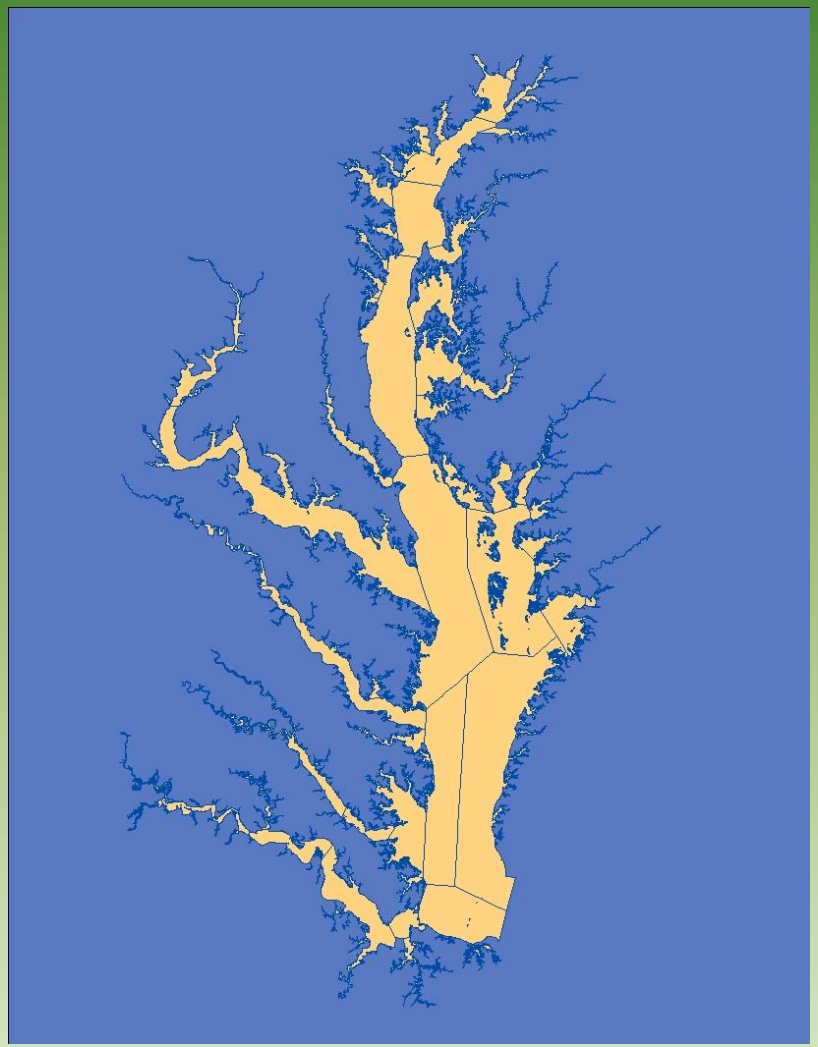
- Efforts began in 2002 (at least that's my earliest email) to develop a restoration goal for SAV in the Bay.
- This was strictly a goal for SAV acreage – not yet tied to water clarity attainment.
- Not just the usual SAV suspects were involved – also MDE (Rich Eskin, Joe Beaman) and VA DEQ (Elleanore Daub, Rick Hoffman) as well as DC and DE.

Data Used

- VIMS aerial surveys 1978-2000
- Historical data derived from Soil Conservation Service (?) aerial photos taken 1930s-early 1970s
  - Best year used
  - Digitized and merged into one historical layer
- For the addendum (after goal set), VIMS data for 2001 and 2002 used in setting state regulations

Segmentation Used

- Initially there were the 78 CBP monitoring segments.

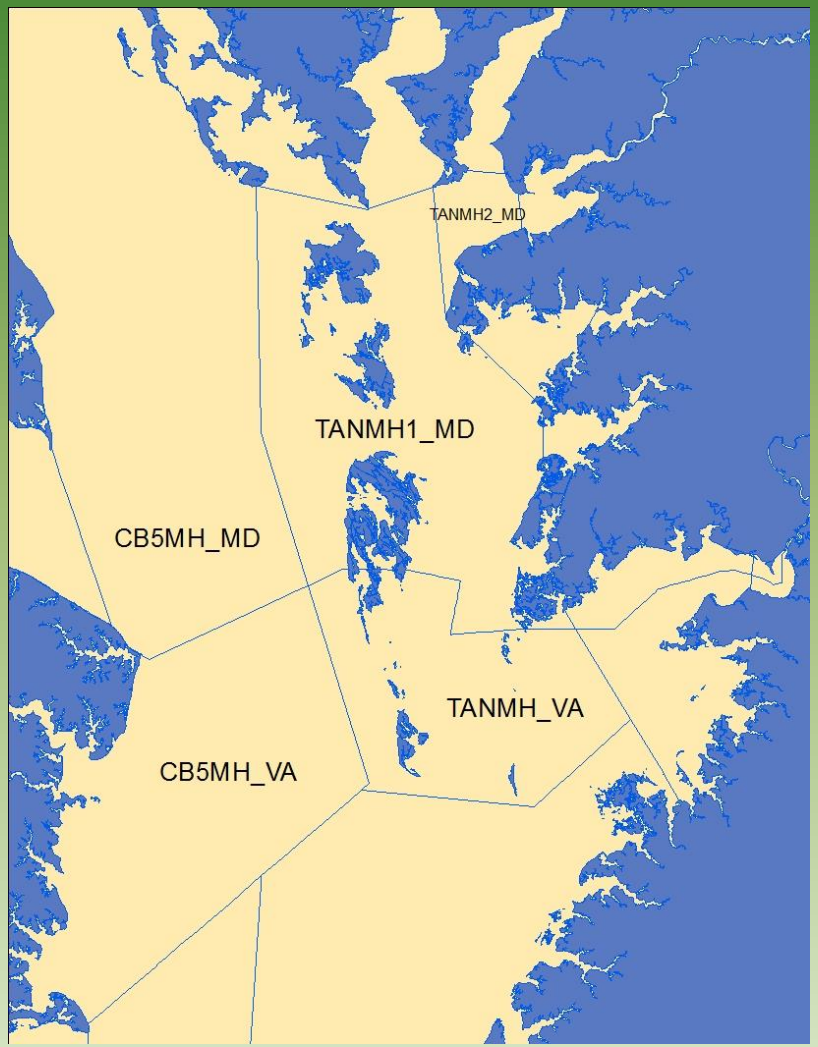


Segmentation Used

- Some segments were later split (at the request of MD and VA) where water quality or physical factors were thought to greatly affect or preclude SAV occurrence in part of the segment creating separate goals.

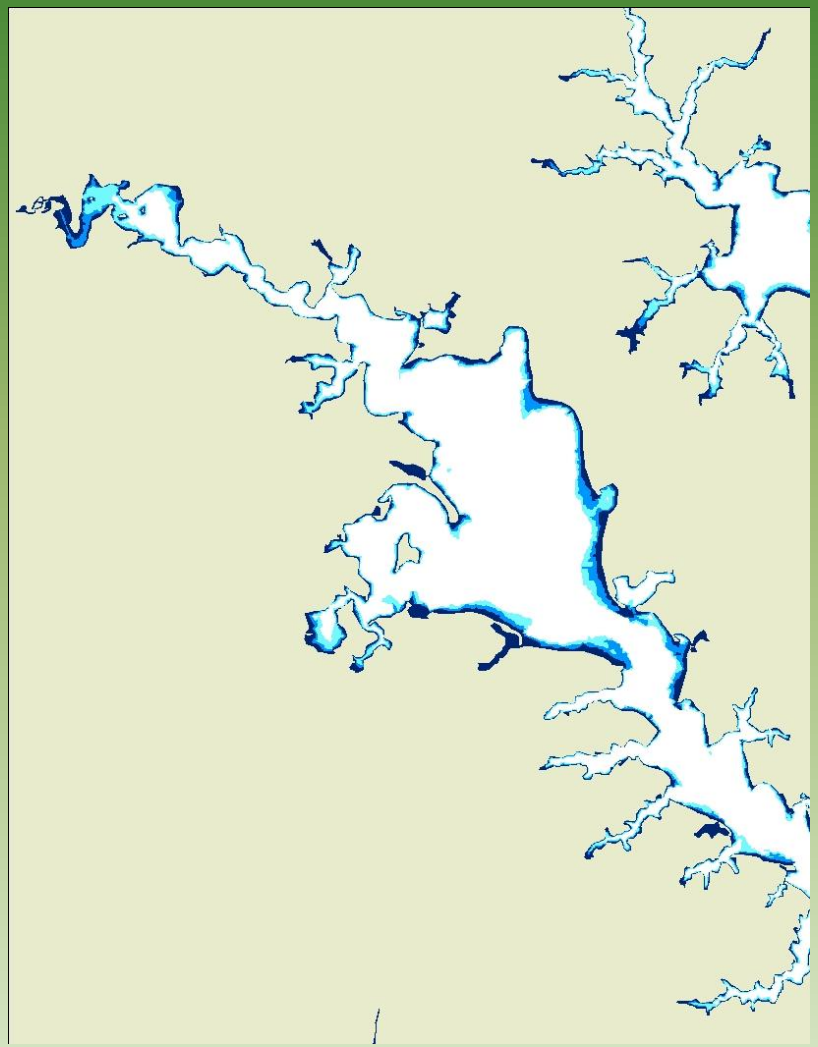
Segmentation Used

- Segments were further split by state where multiple jurisdictions occurred within a single segment, creating a final total of 104 segments.



Single Best Year (SBY)

- Each segment was divided into 3 depth zones (application depths): 0-0.5m, 0.5-1m and 1-2m.



Single Best Year (SBY)

- SAV was clipped to the shoreline.
- No bathymetry on “land”, so SAV on “land” was not counted.

Single Best Year (SBY)

- No-grow zones were removed from the depth zones.
- For each segment's SBY, ascertain the deepest zone
  - containing >= 20% SAV coverage, or
  - containing >= 10% SAV coverage in at least 3 of the 4 five-year periods from 1978-2000 was determined.
- SAV was clipped to this application depth.
- The resulting SAV for each segment was merged into one layer.
- The final output was the Restoration Goal: 184,889 acres.

In Print

- The Goal and supporting documentation appeared in “Technical Support Document for Identification of Chesapeake Bay Designated Uses and Attainability”, October 2003 and in the 2004 Addendum.

Why the Restoration Goal Acres and Regulation Acres Don't Always Match

- 2001 and 2002 surveys were added after Goal was set – Shallow Water Existing Use (1978-2002).
- SAV previously clipped by the shoreline or depth was added.
- (Both above are in the 2004 Addendum.)
- States selected what they wanted to use in the regs from what CBP provided or in a few cases selected their own acreage goal.

Chesapeake Bay Program Segment Name	Chesapeake Bay Program Segment		Shallow-water Existing Use Acreage (1978-2002 Single Best Year)	Year	Chesapeake Bay Program Adopted SAV Restoration Acreage	Year	Clipped SAV Acreage	Total SAV Acreage Out to Application Depth	SAV Acreage Beyond Application Depth	Application Depth	SAV Restoration Goal Acreage w/o Clipping and Depth Limitations	Expanded SAV Restoration Acreage
Maryland												
Northern Chesapeake Bay	CB1TF	Split - Table VI-2	9,223	2002	12,908	Historical	103	13,011	217	2	13,228	13,228
Upper Chesapeake Bay	CB2OH		705	2000	302	Historical	25	327	683	0.5	1,010	1,010
Upper Central Chesapeake Bay	CB3MH		1,370	1978	943	1978	75	1,018	353	0.5	1,370	1,370
Middle Central Chesapeake Bay	CB4MH		269	2002	2,511	Historical	22	2,533	292	2	2,824	2,824
Lower Central Chesapeake Bay	CB5MH	#	2,136	2002	8,257	Historical	13	8,270	306	2	8,575	8,575
Bush River	BSHOH		350	2002	158	Historical	9	167	69	0.5	236	350
Gunpowder River	GUNOH	Split - Table VI-2	2,432	2000	2,254	2000	128	2,382	27	2	2,409	2,432
Middle River	MIDOH		740	2000	838	Historical	41	879	32	2	910	910
Back River	BACOH	340	*		*					0.5	*	*
Patapsco River	PATMH		121	1978	298	Historical	91	389	196	1	585	585
Magothy River	MAGMH		473	1979	545	Historical	34	579	137	1	716	716
Severn River	SEVMH		455	1999	329	1999	22	351	104	1	455	455
South River	SOUMH		54	1998	459	Historical	20	479	73	1	552	552
Rhode River	RHDMH		15	1978	48	Historical	12	60	38	0.5	98	98
West River	WSTMH		115	1978	214	Historical	24	238	99	0.5	338	338
Upper Patuxent River	PAXTF		205	2001	5	1996	147	152	6	0.5	158	205
Western Branch (Patuxent River)	WBRTF		*		*					0.5	*	*
Middle Patuxent River	PAXOH		115	2000	68	2000	36	104	12	0.5	115	115
Lower Patuxent River	PAXMH	Split - Table VI-2	141	2002	1,325	Historical	55	1,380	305	1	1,685	1,685
Upper Potomac River	POTTF	#	2,142	1991	1,992	1991	71	2,063	79	2	2,143	2,143
Piscataway Creek	PISTF		789	1987	783	1987	5	788	0	2	788	789
Mattawoman Creek	MATTF		792	2002	276	2000	20	296	34	1	331	792
Middle Potomac River	POTOH	# Split - Table VI-2	2,801	1998	2,576	1998	199	2,775	27	2	2,802	2,802
Lower Potomac River	POTMH	#	2,438	2002	6,919	Historical	169	7,088	1,917	1	9,005	9,005
Northeast River	NORTF		76	2002	88	Historical	1	89	74	0.5	164	164
C&D Canal	C&DOH		7	2001	0	1978	0	0	2	0.5	2	7
Bohemia River	BOHOH		354	2001	97	2000	15	112	75	0.5	187	354
Elk River	ELKOH	Split - Table VI-2	2,034	2001	1,648	2000	40	1,688	22	2	1,710	2,034
Sassafras River	SASOH	Split - Table VI-2	1,169	2001	764	2000	52	816	144	1	960	1,169
Upper Chester River	CHSTF	230	*		*					0.5	*	*
Middle Chester River	CHSOH		*		63	Historical	14	77	40	0.5	117	117
Lower Chester River	CHSMH		2,601	1978	2,724	Historical	204	2,928	834	1	3,762	3,762
Eastern Bay	EASMH		4,953	1999	6,108	Historical	101	6,209	187	2	6,397	6,397
Upper Choptank River	CHOTF		*		*						*	*
Middle Choptank River	CHOOH		*		63	Historical	9	72	16	0.5	89	89
Lower Choptank River	CHOMH2		233	1978	1,499	Historical	122	1,621	400	1	2,020	2,020
Mouth of the Choptank River	CHOMH1		6,898	1997	8,044	Historical	140	8,184	538	2	8,721	8,721
Little Choptank River	LCHMH		2,904	2002	3,950	Historical	126	4,076	58	2	4,134	4,134
Honga River	HNGMH		6,317	2002	7,686	Historical	75	7,761	183	2	7,943	7,943
Fishing Bay	FSBMH		109	2002	193	Historical	4	197	533	0.5	730	730
Upper Nanticoke River	NANTF	#	*		*						*	*
Middle Nanticoke River	NANOH		*		3	Historical	9	12	1	0.5	13	13
Lower Nanticoke River	NANMH		*		3	Historical	0	3	3	0.5	6	6
Wicomico River	WICMH		*		3	Historical	0	3	4	0.5	7	7
Manokin River	MANMH	Split - Table VI-2	727	2002	4,359	Historical	39	4,398	37	2	4,434	4,434
Big Annemessex River	BIGMH	Split - Table VI-2	782	2002	2,014	Historical	32	2,046	166	2	2,212	2,212
Upper Pocomoke River	POCTF		*		*						*	*
Middle Pocomoke River	POCOH		*		*					0.5	*	*
Lower Pocomoke River	POCMH	#	68	1993	859	Historical	18	877	35	1	912	912
Tangier Sound	TANMH	# Split - Table VI-2	9,134	1992	24,614	Historical	225	24,839	1,569	2	26,408	26,408
Totals			66,247		108,790		2,547	111,337	9,921		121,258	122,611

Virginia

Lower Central Chesapeake Bay	CB5MH	#	2,767	*2002*	6,704	*Historical*	75	6,779	854	*2*	7,633	7,633
Western Lower Chesapeake Bay	CB6PH		1,264	*1993*	980	*Historical*	35	1,015	252	*1*	1,266	1,266
Eastern Lower Chesapeake Bay	CB7PH		11,040	*1993*	14,620	*Historical*	355	14,975	133	*2*	15,108	15,108
Mouth of the Chesapeake Bay	CB8PH		11	*1996*	6	*1996*	0	6	5	*0.5*	11	11
Upper Potomac River	POTTF	#	2,093	*1991*	2,008	*1991*	74	2,082	11	*2*	2,093	2,093
Middle Potomac River	POTOH	#	1,503	*1998*	1,145	*1998*	340	1,485	17	*2*	1,503	1,503
Lower Potomac River	POTMH	#	179	*2002*	3,254	*Historical*	321	3,575	675	*1*	4,250	4,250
Upper Rappahannock River	RPPTF		66	*2001*	20	*2000*	20	40	0	*0.5*	40	66
Middle Rappahannock River	RPPOH	4	*		*					*0.5*	*	*
Lower Rappahannock River	RPPMH	1700	1,006	*2002*	5,380	*Historical*	120	5,500	2,314	*1*	7,814	7,814
Corrotoman River	CRRMH		768	*2002*	516	*Historical*	2	518	129	*1*	647	768
Piankatank River	PIAMH		1,075	*1993*	3,256	*Historical*	54	3,310	170	*2*	3,480	3,480
Upper Mattaponi River	MPNTF		85	*1998*	75	*1998*	1	76	9	*0.5*	85	85
Lower Mattaponi River	MPNOH		*		*					*0.5*	*	*
Upper Pamunkey River	PMKTF		187	*1998*	155	*1998*	3	158	29	*0.5*	187	187
Lower Pamunkey River	PMKOH		*		*					*0.5*	*	*
Middle York River	YRKMH		*		176	*Historical*	11	187	52	*0.5*	239	239
Lower York River	YRKPH	2793	921	*2002*	2,272	*Historical*	25	2,297	469	*1*	2,766	2,766
Mobjack Bay	MOBPH		10,973	*1997*	15,096	*Historical*	299	15,395	506	*2*	15,901	15,901
Upper James River	JMSTF	Split - Table VI-2	95	*2001*	1,600	*Historical*	182	1,782	124	*0.5*	1,905	1,905
Appomattox River	APPTF		*		319	*Historical*	26	345	34	*0.5*	379	379
Middle James River	JMSOH		15	*2001*	7	*1998*	8	15	1	*0.5*	15	15
Chickahominy River	CHKOH		535	*2000*	348	*2000*	113	461	74	*0.5*	535	535
Lower James River	JMSMH	200	3	*1999*	531	*Historical*	74	605	107	*0.5*	712	712
Mouth of the James River	JMSPH	300	280	*2002*	604	*Historical*	11	615	78	*1*	693	693
Western Branch Elizabeth River	WBEMH		*		*						*	*
Southern Branch Elizabeth River	SBEMH		*		*						*	*
Eastern Branch Elizabeth River	EBEMH		*		*						*	*
Lafayette River	LAFMH		*		*						*	*
Mouth of the Elizabeth River	ELIPH		*		*						*	*
Lynnhaven River	LYNPH		107	*1986*	69	*1986*	2	71	36	*0.5*	107	107
Middle Pocomoke River	POCOH		*		*						*	*
Lower Pocomoke River	POCMH	#	1,847	*1993*	3,233	*Historical*	109	3,342	724	*1*	4,066	4,066
Tangier Sound	TANMH	#	8,972	*1992*	13,351	*Historical*	169	13,520	60	*2*	13,579	13,579
Totals			45,792		75,725		2,426	78,151	6,862		85,013	85,161
Totals for all jurisdictions			112,437		184,889		4,982	189,871	16,795		206,666	208,169

* No SAV data available or no SAV present.

\# Contains only the jurisdiction's portion of the segment.

Acreage in regs

Rest. Goal + clipped SAV

Split Seg. - see other table

Acreage of unknown origin

Chesapeake Bay Program Segment	Split Segment	Shallow-water Existing Use Acreage (1978-2002 Single Best Year)	Year	Chesapeake Bay Program Adopted SAV Restoration Goal Acreage	Year	Clipped SAV Acreage	Total SAV Acreage Out to Unsplit Segment's Application Depth	Total SAV Acreage Out to Split Segment's Application Depth	SAV Restoration Goal Acreage w/o Clipping and Depth Limitations	Year	Expanded SAV Restoration Acreage	Shallow-water Acreage to 2 Meter Depth (Excluding SAV No-grow Zones)	
CB1TF	CB1TF1	639	2002	833	Historical	29	862	754	874	Historical	874	3,088	
	CB1TF2	8,584	2002	12,075	Historical	74	12,149	12,149	12,354	Historical	12,354	17,820	
GUNOH	GUNOH1	1,860	2000	1,772	2000	61	1,833	1,834	1,860	2000	1,860	3,540	
	GUNOH2	572	2000	482	2000	67	549	429	572	2000	572	3,819	
PAXMH	PAXMH1	138	2002	1,148	Historical	35	1,183	1,459	1,474	Historical	1,474	5,497	
	PAXMH2	0	2002	172	Historical	20	192	187	201	Historical	201	2,206	
	PAXMH3	0	2002	0	Historical	0	0	0	0	Historical	0	282	
	PAXMH4	0	2002	2	Historical	0	2	1	3	Historical	3	348	
	PAXMH5	2.6	2002	3	Historical	0	3	2	7	Historical	7	378	
	PAXMH6	0	2002	0	Historical	0	0	0	0	Historical	0	82	
POTOH	POTOH1	1,387	1998	1,306	1998	57	1,363	1,362	1,387	1998	1,387	6,577	
	POTOH2	262	1998	226	1998	36	262	257	262	1998	262	1,079	
	POTOH3	1,153	1998	1,044	1998	106	1,150	1,026	1,153	1998	1,153	2,687	
ELKOH	ELKOH1	1,844	2001	1,593	2000	38	1,631	1,631	1,652	2000	1,844	3,648	
	ELKOH2	190	2001	55	2000	2	57	49	57	2000	190	1,377	
SASOH	SASOH1	1,073	2001	763	2000	51	814	949	958	2000	1,073	1,772	
	SASOH2	95	2001	1	2000	1	2	2	2	2000	95	1,938	
TANMH	TANMH1	9,134	1992	24,451	Historical	224	24,675	24,683	26,250	Historical	26,250	43,558	
	TANMH2	0	1992	164	Historical	1	165	74	166	Historical	166	4,251	
MANMH	MANMH1	723	2002	4,264	Historical	30	4,294	4,294	4,331	Historical	4,331	8,615	
	MANMH2	4	2002	95	Historical	8	103	59	103	Historical	103	2,085	
BIGMH	BIGMH1	780	2002	1,991	Historical	30	2,021	2,021	2,187	Historical	2,187	4,302	
	BIGMH2	2	2002	23	Historical	2	25	22	25	Historical	25	763	
JMSTF	JMSTF1	95	2001	1,333	Historical	76	1,409	1,345	1,530	Historical	1,530	9,947	1000
	JMSTF2	0	2001	266	Historical	106	372	276	375	Historical	375	2,888	200

Acreage in reg
Rest. Goal + clipped SAV
Acreage of unknown origin