

# BIENNIAL STRATEGY REVIEW SYSTEM

## Chesapeake Bay Program



### Logic and Action Plan: Post-Quarterly Progress Meeting

**Submerged Aquatic Vegetation – 2020-2021** [NOTE: make sure to edit **pre-** or **post-** in the text above, to tell the reader whether this logic and action plan is in preparation for your quarterly progress meeting or has been updated based on discussion at the quarterly progress meeting.]

**Long-term Target:** Achieve and sustain the ultimate outcome of 185,000 acres of SAV Bay-wide; 130,000 acres by 2025

**Two-year Target:** To reach our 2025 goal of 130,000 acres, baywide SAV should increase by 2,000-3,000 acres per year. By 2019, we hope to achieve 109,000 acres of SAV, but a short-term target is not officially defined

<b>Instructions:</b> Before your quarterly progress meeting, provide the status of individual actions in the table below using this color key.
Action has been completed or is moving forward as planned.
Action has encountered minor obstacles.
Action has not been taken or has encountered a serious barrier.

Additional instructions for completing or updating your logic and action plan can be found on [ChesapeakeDecisions](#).

Factor	Current Efforts	Gap	Actions	Metrics	Expected Response and Application	Learn/Adapt
<i>What is impacting our ability to achieve our outcome?</i>	<i>What current efforts are addressing this factor?</i>	<i>What further efforts or information are needed to fully address this factor?</i>	<i>What actions are essential (to help fill this gap) to achieve our outcome?</i>	<i>What will we measure or observe to determine progress in filling identified gap?</i>	<i>How and when do we expect these actions to address the identified gap? How might that affect our work going forward?</i>	<i>What did we learn from taking this action? How will this lesson impact our work?</i>
	The Chesapeake Bay TMDL was established to limit the amount of N, P, and TSS entering the	Although SAV throughout the Bay is responding to improvements in water clarity, there are areas	1.1, 1.2	Acres of SAV mapped	Increased SAV acreage Bay-wide	
			1.3	Recognition and acceptance that we may not be able to reach all shallow	Increased collaboration between groups to assure that each	

<b>Habitat Condition and Availability</b>	Chesapeake Bay. Reductions in N, P, and TSS improve water clarity, which allows SAV to recover and regulations are in place to protect existing SAV	where water clarity remains insufficient for SAV recovery. Additionally, it remains unclear what shallow-water use-conflicts and impacts from climate change will have on our ability to reach Bay-wide and segments-specific SAV restoration goals	1.4	water goals simultaneously	works in the best interest of all. Climate change research will allow us to determine if SAV goals are feasible and help determine if mitigation efforts are necessary where it appears they are not.
<b>Protection of Existing and Recovering SAV</b>	The SAV Workgroup meets annually to gather information, make reports, synthesize and prioritize research, and work on other efforts including updating the management strategy and implementing the workplan.	Full cooperation and partner input is not always possible without regularly scheduled meetings.	2.1	Bi-annual meetings held, work accomplished	Engaged and participatory membership, workplan accomplished
	Maryland, Virginia and the District of Columbia all have at least some regulations in place that protect existing SAV from harmful practices, including dredging and	Existing regulations may not be effective at protecting SAV as the resource recovers in the Chesapeake Bay. New threats and conflicts are emerging that may deem the current	2.2	Recommendations reviewed and considered, regulatory updates	SAV more effectively protected

	filling, nearshore construction and commercial fishing	regulations ineffective, such as aquaculture, climate change impacts, and harvesting. A review of all of the statutes, regulations, and policies that affect SAV in the Chesapeake Bay was completed in 2019. The review included multiple recommendations that should be considered for more thorough protection of SAV in the Bay.				
	The states and various federal organizations also work to manage invasive species and minimize their impact on SAV in the Bay	A new species of Water Chestnut, <i>Trapa bispinosa</i> , has been discovered in various bodies of water in and near the Potomac River. Management efforts for this species and <i>Trapa natans</i> have been insufficient to fully eradicate or prevent the new introduction of water chestnut.	2.3	Invasive species eradicated	SAV acreage increase with removal of invasive competitor	
<b>SAV Restoration</b>	State agencies, academic institutions, and	There is limited capacity to restore SAV and	3.1	Number of successful SAV restoration	Increased number of successful SAV restoration	

<b>Potential and Activity</b>	other organizations in Maryland, Virginia and Washington, D.C. currently work to actively restore SAV in appropriate areas throughout the Chesapeake Bay using seeds and, in some limited cases, adult plants	accelerate restoration goal attainment without engagement of additional organizations to assist with the effort.		activities, number of organizations involved, increased citizen engagement, increased SAV acreage	activities, increased citizen engagement, increased SAV acreage	
			3.2	SAV acreage	Increased SAV acreage	
<b>SAV Research and Monitoring</b>	Chesapeake Bay Program partner scientists and others in the region are currently conducting research in SAV biology, ecology, genetics, restoration, and climate resilience.	Although SAV Workgroup members work together to the extent possible from their various institutions, new research and information is not always conveyed effectively or efficiently, or in a timely manner, to ensure that those involved in CB SAV research are aware of what others are doing. Furthermore, there is a general lack of funding for SAV research so research topics should be prioritized to ensure efficient use of what funds are available.	4.1	Topics prioritized, research conducted and new data and information shared.	Increased knowledge of SAV biology and ecology as well as conservation, protection, and restoration methods. Increased SAV acreage.	

	<p>SAV Workgroup members actively engage in a variety of SAV monitoring activities each year. These activities include the annual baywide SAV survey and more recently, volunteer monitoring with the Chesapeake Bay SAV Watchers program.</p>	<p>Despite its overwhelming importance, there are chronic funding issues regarding the Bay-wide aerial survey. Furthermore, the Chesapeake Bay needs a Sentinel Site Program for SAV for more detailed data collection and to round out a three-tiered hierarchical monitoring approach.</p>	4.2	<p>Bay-wide monitoring program sustained long-term, CB SAV Watchers implemented and expanded, sentinel sites program developed and implemented, 3-tiered hierarchical monitoring approach established.</p>	<p>SAV protected and restored</p>	
<p><b>Public Perception, Knowledge, and Engagement</b></p>	<p>In an effort to educate the public about the benefits of SAV, reduce conflict and improve the public's perception of SAV, the SAV Workgroup works with the Chesapeake Bay Program communications team on annual press releases of SAV acreage and goal-attainment and produces SAV-related web and social media content throughout the year. The SAV</p>	<p>Regardless of semi-frequent media posts regarding the recovery of SAV in the Bay, public perception of SAV varies, with some constituents regarding it as a nuisance rather than a welcome habitat that provides numerous ecosystem services.</p>	5.1	<p>Communication products and strategies created; products marketed. Fewer nuisance complaints recorded, change in public perception via survey.</p>	<p>Public perception of SAV improves; less SAV is damaged or harvested unnecessarily.</p>	
		<p>Although the CB SAV Watchers Program was developed, there remains a limited number of watershed</p>	5.2	<p>More organizations join CB SAV Watchers Program, more certified trainers and volunteers, more data</p>	<p>Public perception of SAV improves; more data are collected and contributed to SAV research</p>	

	Workgroup also developed the first CBP SAV monitoring program for volunteers and community scientists.	organizations involved and the program is primarily being conducted in Maryland. There are no groups in Virginia using the protocol.		collected, increased local outreach and engagement		
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**ACTIONS – 2020-2021**

<b>Action #</b>	<b>Description</b>	<b>Performance Target(s)</b>	<b>Responsible Party (or Parties)</b>	<b>Geographic Location</b>	<b>Expected Timeline</b>
<b>Management Approach 1: Support efforts to conserve and restore current and future SAV habitat and SAV habitat conditions in the Chesapeake Bay</b>					
<b>1.1</b>	Support WQ GIT in their efforts to achieve water clarity/SAV standards in areas designated for SAV use.	a. WQ Management Action 1: Enhance monitoring	Bay States, Water Quality GIT, SAV Workgroup	Chesapeake Bay	By 2025
<b>1.2</b>	Encourage/Promote the use of best management practices within local planning efforts that benefit SAV persistence and recovery	a. Promote the use of the SAV Fact Sheets developed by the SAV Synthesis Team and published on the <a href="#">CBP Data Dashboard</a> .	SAV Workgroup, Communications Workgroup, LGAC, Local Leadership Workgroup	Chesapeake Bay Watershed	2021, onward
		b. Promote use of " <a href="#">SAV: Principles for Phase III Watershed Implementation Plans</a> " fact sheet.	SAV Workgroup, Communications Workgroup, LGAC, Local Leadership Workgroup	Chesapeake Bay Watershed	2021, onward
<b>1.3</b>	Consider the implications of competing goals related to shallow water uses, i.e. aquaculture and living shorelines	a. Convene meeting with appropriate State and Bay Program representatives to discuss shallow-water use conflicts and feasibility of multiple goal attainment	SAV Workgroup, various State and Bay Program reps	Bay-wide	2020

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1.4	Evaluate the potential for SAV to reach restoration goals and provide relevant ecosystem services in the face of Climate change impacts, i.e.. sea level rise, increased Bay temperatures	a. Mapping exercise to determine if SLR combined with hardened shorelines will prevent inland migration of SAV to the extent that SAV goal attainment will no longer be feasible.	SAV Workgroup members, Climate Resiliency Workgroup;	Chesapeake Bay and Watershed	2021, likely beyond for full project completion
		b. Conduct review of springtime ecosystem services provided by <i>Zostera marina</i> compared to <i>Ruppia maritima</i> . If we lose <i>Zostera</i> , as anticipated with increasing Bay temperatures, consider the implications of the loss of the early season plant ( <i>Zostera</i> peaks in May) in the polyhaline region of the Bay and its impact on fisheries (blue crab and scallops) productivity and other ecosystem services.	SAV Workgroup members, Climate Resiliency Workgroup, Fish GIT	Polyhaline region of Chesapeake Bay	
<b>Management Approach 2: Protect existing and recovering SAV in the Chesapeake Bay</b>					
2.1	The SAV Workgroup will convene in-person bi-annually, to the extent possible, with conference calls conducted as needed, to discuss priorities, review status updates, update the SAV Management Strategy, and implement Workplan actions.	a. The SAV Workgroup will meet and produce meeting reports and summaries.	SAV Workgroup	Chesapeake Bay Watershed	Annually
	Review and consider implementation of recommendations in “Existing Chesapeake Bay Watershed	a. Meet with various state representatives to review the statutes and regulations affecting SAV in the Bay, consider the recommendations	SAV Workgroup, various State reps	Chesapeake Bay	2021

**ACTIONS – 2020-2021**

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2.2	Statutes and Regulations Affecting Submerged Aquatic Vegetation” (HGIT funded project) produced in 2019 by the Chesapeake Legal Alliance at the request of the CBP and SAV Workgroup.	made in the review, determine which, if any, to pursue			
2.3	Encourage local, state, and federal partners and stakeholders to manage invasive species (both plant and animal) that are considered detrimental to existing SAV populations (i.e. Water chestnut, mute swans, new species associated with warming conditions) and work with partner agencies in efforts to manage those species when possible.	a. Control of Mute Swans.	MdDNR, FWS, NPS	Bay-wide	Ongoing as needed
		b. Water chestnut management ( <i>Trapa spp.</i> ).	MdDNR; USGS; VaDGIF; other partner agencies with vested interest	Bay-wide	
		c. Include <i>Trapa spp.</i> awareness in outreach and education efforts	SAV Workgroup	Bay-wide	
<b>Management Approach 3: Restore SAV in the Chesapeake Bay</b>					
3.1	Develop “Small-scale SAV Restoration in Chesapeake Bay: A Protocol and Technical Guidance Manual”. This is a 2020 GIT Funded Project contracted to Green Fin Studios.	a. Create small scale SAV restoration protocol and technical guidance manual and outreach materials that local organizations can use to promote restoration efforts. Facilitate collaboration between partner agencies and organizations that are working on SAV restoration in the Bay.	SAV Workgroup (contracted to Green Fin Studios)	Chesapeake Bay	2021

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		b. Work with Riverkeepers and Watershed Organizations to use the guidance document and expand SAV restoration capacity in the CB	SAV Workgroup	Chesapeake Bay	2021, onward
<b>3.2</b>	Continue SAV restoration efforts through direct plantings of seeds or propagules in hopes of establishing viable SAV beds where they are not recovering naturally with improvements in water quality or where diversity is low. SAV restoration is also an outreach and education tool for citizen stewardship involvement (see MA V).	a. Md DNR, VIMS, and other partner organizations will continue direct planting in appropriate sites in Maryland, Virginia, and DC.	Md DNR, VIMS, DC DOEE, local groups	Chesapeake Bay	Annually, onward
<b>Management Approach 4: Enhance SAV research and monitoring in the Chesapeake Bay</b>					
<b>4.1</b>	Initiate, support and track advancements in SAV research (biology, ecology, genetics, restoration, effects of climate change on SAV and its role in climate resiliency, predictive modeling, etc.). Prioritize research topics based on current gaps in knowledge regarding SAV restoration, recovery, and resilience. Use recent synthesis efforts and information to guide research needs prioritization. Apply	a. Hold bi-annual SAV Workgroup meetings with dedicated time for SAV research updates. This information will be reviewed and summarized in each meeting summary, and used to update items 4.1b and c.	SAV Workgroup with invited science providers.	Chesapeake Bay	2021, annually, onward
		b. Create searchable database of past, current, and future Chesapeake Bay SAV research activity to reduce redundancy, increase efficiency, and identify gaps.	SAV Workgroup	Chesapeake Bay	
		c. Facilitate inter-agency/institution working session to prioritize SAV research needs and agenda.	SAV Workgroup	Chesapeake Bay	

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	findings to inform restoration and conservation of SAV.	d. Initiate workgroup efforts and/or support broader partnership efforts to advance SAV research. Identify funding opportunities, offer letters of support, serve on MTAGs and steering committees, and otherwise provide subject matter expert support as appropriate.	SAV Workgroup with invited science providers.	Chesapeake Bay	
4.2	Monitor SAV throughout the Bay. SAV conservation, restoration, and research all rely on effective and efficient monitoring of the resource.	a. Continue to support and work to ensure funding for the annual Bay-wide aerial SAV monitoring program that provides up to date data regarding the distribution and density of SAV in the Bay and its tributaries. These data are essential to the protection of existing SAV and is an indicator of water clarity standards. Between 2019 and 2020, this effort will include a review of the potential for the integration of satellite data into the CB SAV monitoring program.	VIMS (Orth, Wilcox) (with funding support from the EPA, VA DEQ, VA CZM (NOAA), and MD DNR); DC, MD, VA; DoD (will continue providing VIMS escorted access to restricted air space above installations)	Chesapeake Bay	Annual, 2019-2020
		b. Work with partner agencies and organizations to continue long-term monitoring of SAV sites throughout the Bay.	DNR, Landry and Golden; VIMS, Orth and Richardson; VIMS, Shields; FWS, McGowan; BaCo DEPS, Riter; D.C. Fisheries	Baywide	Annual

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		c. Develop and implement Chesapeake Bay Sentinel Site Program for SAV. The sentinel site program will be a Bay-wide, multi-partner effort. Sentinel sites may include current long-term monitoring sites as well as newly established sites.	SAV Workgroup, CBP	Baywide	2021
		d. Continue implementation of Chesapeake Bay SAV Watchers Program. Recruit additional organizations and volunteers, certify additional “Trainers”, collect ground survey data in additional tributaries. (See MA 5.1a,b)	SAV Workgroup, watershed organizations	Bay-wide	2021, onward
		e. Combine the Bay-wide aerial survey, the Chesapeake Bay SAV Watchers Program (and potentially other ground surveys), and the Sentinel Site Program for SAV to develop a 3-tiered hierarchical monitoring approach for Chesapeake Bay SAV. A 3-tiered hierarchical monitoring approach will allow for more effective and efficient SAV research, conservation, and restoration.	SAV Workgroup, partner organizations	Bay-wide	2021, onward
<b>Management Approach 5: Enhance citizen involvement, education, and outreach in the Chesapeake Bay watershed</b>					
<b>5.1</b>	Develop a communication strategy that enhances the public's knowledge of and	a. Market the importance of SAV through websites, social media, informational signage at ramps, perception survey, etc.	SAV Workgroup in collaboration with CBP	Chesapeake Bay states	2021

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	appreciation for SAV in the Chesapeake Bay, similar to the models used to advance oyster and other wildlife restoration efforts. Include information about threats to SAV, such as alert! sheets for Water Chestnut.	b. Participate in Community Based Social Marketing Campaign Project with Communications Workgroup	Communications Workgroup		
<b>5.2</b>	Implement Chesapeake Bay SAV Watchers Program (see MA #4.3.d)	a. Recruit Riverkeepers, watershed organizations, independent volunteers, and schools to participate in the program b. Hold training events to certify CB SAV Watcher “Trainers” via the CB SAV Watchers Trainer Certification Program	SAV Workgroup	Bay-wide	2021, onward