BIENNIAL STRATEGY REVIEW SYSTEM
Chesapeake Bay Program

Logic and Action Plan: Post-Quarterly Progress Meeting

Submerged Aquatic Vegetation – 2022-2023

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 16,000 acres per year. By 2023, we hope to achieve 98,000 acres of SAV, but a short-term target is not officially defined.

Factor	Current Efforts	Gap	Actions	Metrics	Expected Response and Application	Learn/Adapt
What is impacting our ability to achieve our outcome?	*What current efforts are addressing this factor?*	*What further efforts or information are needed to fully address this factor?*	*What actions are essential (to help fill this gap) to achieve our outcome?*	*What will we measure or observe to determine progress in filling identified gap?*	*How and when do we expect these actions to address the identified gap? How might that affect our work going forward?*	*What did we learn from taking this action? How will this lesson impact our work?*
Factor 1. Habitat Condition and Availability: SAV requires suitable water quality and clarity to recover and thrive as well as suitable shallow-water habitat in which to expand.	**Effort 1.1** The Bay TMDL was established to limit the amount of N, P and TSS entering the Chesapeake Bay. Reductions in N, P and TSS improve water clarity, which allows SAV to recover.	**Gap 1.1** Although SAV throughout the Bay has been shown to respond to improvements in water quality, it is also susceptible to degradation of water quality, particularly when impacted by multiple stressors, which we observed	**Action 1.1a** [Support WQ GIT in their efforts to improve water quality through the Bay TMDL and achieve water clarity/SAV standards in areas designated for SAV use.]	**Metric 1.1a** Acres of SAV mapped (Bay-wide aerial survey)	**Response 1.1a** Further improvements in water clarity will greatly affect the ability of SAV populations in the Bay to gain or maintain resilience against climate stressors; benefits of improved water	

		in 2019-2020 when we lost ~1/3 of our SAV. Continued, accelerated and potentially targeted efforts to improve water quality through the Bay TMDL and best management practices (BMPs) may help to mitigate stressors associated with climate change.			clarity would be seen within the SAV growing season.	
			Action 1.1b [Encourage/Promote the use of BMPs within local planning efforts that benefit SAV persistence and recovery: wastewater treatment plant upgrades, stormwater runoff improvements, riparian buffers, etc.]	**Metric 1.1b** BMPs implemented that benefit SAV persistence and recovery.	**Response 1.1b** Implementation of additional and targeted BMPs will encourage continued SAV recovery measured as increased Bay-wide and segment specific SAV acreage.	
			Action 1.1c [Determine the local effect of flow/stormwater runoff on SAV density and acreage and options for targeting BMPs that would protect priority SAV areas. This action was specifically recommended by the Management Board.]	**Metric 1.1c** Completed project determining the local effect of flow/runoff on SAV density and acreage and proposed options for targeting BMPs that would protect priority SAV areas.	**Response 1.1c** If shown to have impact, there may be an increase in targeted placement of BMPs in areas of high SAV value (large, dense, stable beds that provide important habitat).	

			Action 1.1d [Explore the potential for co-locating land-based BMPs, oyster/mussel restoration efforts and SAV restoration efforts. This action was specifically recommended by the Management Board.]	**Metric 1.1d** Report outlining the potential benefits of, and options for, co-locating land-based BMPs, oyster/mussel restoration efforts and SAV restoration efforts	**Response 1.1d** If shown to have significant potential benefits, the SAV Workgroup would potentially pursue a pilot project to co-locate a land-based BMP, an oyster/mussel restoration project and an SAV restoration project.	
	Effort 1.2 Direct effects of climate change on SAV are currently being modeled and evaluated as part of a GIT-funded project (SAV/Climate Modeling project- Technical Lead: Becky Golden). Direct effects include increased precipitation, increased turbidity, increased water temperatures, sea level rise, etc. Temperature impacts, specifically, are	**Gap 1.2** The SAV/Climate Modeling Project and STAC workshop are still underway so at this time, direct impacts are not fully understood, nor are the implications of rising temperatures on all of the Bay's SAV communities. Furthermore, indirect effects of climate change are difficult to identify, predict or address, so their eventual impact on SAV recovery efforts are largely unclear.	**Action 1.2a** [Evaluate the potential for SAV to reach restoration targets and provide relevant ecosystem services in the face of climate change by completing and publishing the results of the GIT-funded SAV/Climate Modeling Project.]	**Metric 1.2a** A completed project report and associated publications. Increased understanding of climate impacts on SAV recovery potential.	**Response 1.2a** Increased understanding of climate impacts on SAV would allow for better management of the resource through mitigative improvements in water clarity and inform future SAV goal attainment potential.	
			Action 1.2b [Evaluate the potential for SAV to reach restoration targets and provide relevant ecosystem services in the face of rising temperatures by	**Metric 1.2b** A completed project report and associated publications. Increased understanding of rising temperatures on	**Response 1.2b** Increased understanding of rising temperatures on SAV would allow for better management of the resource	

	being evaluated as part of a STAC workshop on rising temperatures in the Chesapeake Bay.		completing and publishing the outcomes and management recommendations from the STAC workshop on rising temperatures in the Chesapeake Bay.]	SAV recovery potential.	through mitigative improvements in water clarity and inform future SAV goal attainment potential.	
			Action 1.2c [Implement the SAV Sentinel Site Program throughout the Bay to more effectively evaluate the impacts of climate stressors on the Bay's SAV populations. See also Management Approach 4, Effort 4.4]	**Metric 1.2c** SAV Sentinel sites established and adopted, data collected, data analyzed, reports written, insights into direct and indirect climate impacts gained.	**Response 1.2c** Chesapeake Bay SAV Sentinel Site data will complement acreage and density data collected via the Bay-wide aerial survey and local observational data collected via the Chesapeake Bay SAV Watchers program and other ground surveys. Together, these interconnected Chesapeake Bay SAV monitoring efforts will form a three-tiered hierarchical monitoring approach that maximizes our efficiency and forecasting capabilities.	

	Effort 1.3 The SAV Workgroup is collaborating with other workgroups and GITs to address shallow water use conflicts to ensure that all resources and habitats, including SAV, are adequately considered and protected when making decisions regarding shallow water areas. See also Effort 2.1 and associated Gaps and Actions.	**Gap 1.3** Although we have been discussing shallow water use conflicts among workgroups, GITs and partners, consensus regarding a defined purpose and end-goal aside from enhancing co-benefits has remained elusive. A decision matrix of sorts is necessary to address habitat assessments and trade-offs to improve decision making for shallow water uses.	**Action 1.3a** [Gain consensus among Bay Program workgroups, GITs and partners on shallow-water use conflict discussion purpose and end-goal]	**Metric 1.3a** Development of a clearly defined end goal/statement of purpose.	**Response 1.3a-b** Identification of the end-goal and development of a structured decision matrix, or the like, would be valuable to decision makers when making permitting decisions involving shallow water use conflicts.	
			Action 1.3b [Create a structured decision matrix/assessment protocol to evaluate shallow-water habitat trade-offs such as those considered in Effort 2.1.]	**Metric 1.3b** Development of a structured decision matrix/assessment protocol to evaluate shallow-water habitat trade-offs.		

Factor 2. Protection of Existing and Recovering SAV: SAV in the Bay, as well as the shallow-water habitat where SAV needs to recover, is subject to degradation from poor water quality but also from physical disturbances associated with dredging, harvesting, commercial fishing activities, boating, shoreline alteration, etc.	**Effort 2.1** Maryland, Virginia and the District of Columbia all have regulations in place that protect existing SAV from harmful practices, including dredging and filling, nearshore construction and commercial fishing, etc. See also Effort 1.3 and associated Gaps and Actions.	**Gap 2.1** 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 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 have not been but should be considered and potentially implemented for more thorough protection of SAV in the Bay.	**Action 2.1a** [Work with state leadership in Maryland, Virginia and D.C. to review and implement appropriate recommendations from "Existing Chesapeake Bay Watershed Statutes and Regulations Affecting Submerged Aquatic Vegetation" a GIT-funded project report produced in 2019 by the Chesapeake Legal Alliance (CLA) at the request of the CBP and SAV Workgroup.]	**Metric 2.1a** Recommendations reviewed and considered, regulatory updates made.	**Response 2.1a** Reviewing and making the recommended regulatory updates will take significant time but when completed, both existing and recovering SAV will be more effectively protected.	

	Effort 2.2 The states and various federal organizations work to manage invasive species and minimize their impact on SAV in the Bay.	**Gap 2.2** A new species of water chestnut, *Trapa bispinosa*, has been discovered in various non-tidal bodies of water near the Potomac River in Virginia. There are no existing management efforts in place for this species. Management efforts for *Trapa natans*, however, have been adequate to keep the populations in check but not fully eradicate them from the Bay.	**Action 2.2a** [Encourage local, state and federal partners in Virginia, DC and Maryland to manage water chestnut by developing and implementing plans to reduce or eradicate it in Chesapeake Bay and other local water bodies.]	**Metric 2.2a** Water chestnut, both *T. bispinosa* and *T. natans*, managed or eradicated.	**Response 2.2a** SAV acreage increase with removal of invasive competitor.	

Factor 3. SAV Restoration Potential and Activity: Direct SAV restoration by seeding or transplanting adult plants is an important component of SAV recovery in Chesapeake Bay, particularly in the absence of a diversity of species or viable seed bank.	**Effort 3.1** State agencies, academic institutions and other organizations in Maryland, Virginia and Washington, D.C. work to actively restore SAV in appropriate areas throughout the Chesapeake Bay using seeds and, in some limited cases, adult plants.	**Gap 3.1a** While several organizations and agencies are involved in SAV restoration efforts, the capacity to restore SAV and accelerate restoration goal attainment is still limited without the engagement of additional organizations to assist with the effort. More hands make less work.	**Action 3.1a.1** [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.]	**Metric 3.1a.1** Number of SAV restoration activities, number of organizations involved, increased community engagement, increased SAV acreage.	**Response 3.1a.1-3.1a.2** Promoting the use of the SAV Restoration Guide will result in an increase of SAV restoration projects and potentially increased SAV acreage. It may also increase the number of mitigation projects that include direct, in-kind SAV restoration rather than out-of-kind restoration.	
			Action 3.1a.2 [Distribute the recently completed SAV Restoration Guide and associated outreach materials among local, state, and federal agencies and organizations that conduct or would like to conduct direct SAV restoration to expand SAV restoration capacity in Chesapeake Bay]	**Metric 3.1a.2** Number of successful SAV restoration activities, number of organizations involved, increased community engagement, increased SAV acreage.		
		Gap 3.1b SAV restoration efforts could be limited by water quality conditions and wild seed supply. SAV restoration efforts should be carefully	**Action 3.1b** [Work with permitting agencies to ensure SAV restoration activities are permitted during appropriate growing conditions and over-harvesting from	**Metric 3.1b** Increased coordination with permitting agencies and improved success rates for restoration efforts.	**Response 3.1b** Strategically implementing SAV restoration activities during period of high water quality and protecting donor beds from	

		planned and implemented only when there is adequate and stable donor bed seed supply and water quality is sufficient for high likelihood of success.	donor beds does not occur.]		overharvest will ensure long-term confidence in SAV restoration activities and potential.	
		Gap 3.1c A commercial seed supply for native Chesapeake Bay SAV is not available and all seeds must come from wild harvest.	**Action 3.1c** [Review potential opportunities to create a Chesapeake Bay SAV nursery or SAV nursery network that would foster necessary research for SAV aquaculture technology and restoration protocols, provide space for a native SAV seed repository and produce a commercial seed supply; pursue options if possible and funding is available.]	**Metric 3.1c** Review of opportunities to create an SAV nursery or nursery network; funding options identified and pursued if determined appropriate.	**Response 3.1c** An SAV nursery and commercial seed supply would encourage broader restoration and mitigation effort participation, protect donor beds from potential over-harvest, provide space for a native SAV seed repository, and other research benefits resulting in greater capacity for direct SAV restoration in Chesapeake Bay.	
Factor 4. SAV Research and Monitoring: SAV research and monitoring are necessary to make	**Effort 4.1** Chesapeake Bay Program partner scientists and others in the region are currently	**Gap 4.1** There are still substantial knowledge gaps and existing science and research needs in	**Action 4.1a** [Identify and prioritize an updated list of SAV science and research needs, initiate workgroup efforts and/or	**Metric 4.1a** SAV science and research needs identified and prioritized, increased funding opportunities	**Response 4.1a** Increased funding for identified research priorities would enhance our	

appropriate and effective management decisions and track progress towards SAV restoration targets.	conducting research in SAV biology, ecology, genetics, restoration and climate resilience.	the fields of SAV biology, ecology, genetics, restoration science and climate resilience. More research in these fields is needed to support more effective management decisions and recovery of SAV in the Bay.	broader partnership efforts to advance SAV research, and provide support for research in the form of funding, steering committee participation, Management Transition Advisory Group (MTAG) participation, letters of support for research funding, subject matter expert support, etc.]	identified, necessary research conducted and new data and information shared, and SAV more effectively protected and restored.	understanding of SAV in Chesapeake Bay and support effective management decisions and recovery. Additionally, Chesapeake Bay SAV research would inform management decisions in other estuaries around the world.	
	Effort 4.2 A Bay-wide aerial survey – the first tier of a three-tiered hierarchical monitoring approach for SAV in Chesapeake Bay - has been conducted each year since 1984 to track progress towards the Bay-wide Chesapeake Bay SAV restoration goal of 185,000-acres and individual segment-specific goals.	**Gap 4.2a** Continuation of the Bay-wide aerial survey is necessary to track progress towards SAV restoration targets and water clarity standards attainment.	**Action 4.2a** [Continue annual Bay-wide SAV Survey to track progress towards SAV restoration targets and water-clarity standards attainment.]	**Metric 4.2a** Bay-wide SAV Survey completed; SAV acres mapped	**Response 4.2a** SAV conservation, restoration and research all rely on effective and efficient monitoring of the resource.	
		Gap 4.2b To ensure the Bay-wide aerial survey's long-term stability, the benefits of using high-resolution satellite imagery and automated SAV	**Action 4.2b** [Work with the Bay Program partners to identify funding opportunities to support the continued exploration of satellite imagery and	**Metric 4.2b** Identification of funding opportunities and development of algorithms and work flows for automated SAV	**Response 4.2b** The automated detection and quantification of SAV in the Chesapeake Bay from high-resolution satellite imagery	

		detection to supplement or eventually replace plane-based image collection are being explored by the SAV Workgroup and Bay Program Partners, but additional funding is required to develop the algorithms and workflow necessary for full-Bay automation and mapping.	the development of algorithms and work flows to automate SAV detection and quantification.]	detection and mapping	may eventually supplement or replace the current methods of hand delineation of SAV beds from aerial imagery. This could potentially reduce costs associated with the SAV monitoring program and ensure its long-term stability.	
	Effort 4.3 A volunteer monitoring effort – the SAV Watchers Program – is the second tier of SAV monitoring in a three-tiered hierarchical monitoring approach. The program was developed with GIT funding to support the data needs of Bay scientists but also provide an educational and engaging experience for volunteers. The Program was	**Gap 4.3** The SAV Watchers Program has been successfully implemented by several watershed groups and Riverkeeper organizations in Maryland, but it has not expanded into Virginia. Additional support (time, funding) will be necessary to expand the program into new rivers throughout the Bay, maintain the Train-the-Trainer Certification Program, and provide funding for	**Action 4.3a** [Continue implementation of the SAV Watchers Program and work to identify funding opportunities to ensure the long-term stability of the SAV Watchers Program.]	**Metric 4.3a** Identification of funding opportunities, continuation and expansion of program, increased watershed group participation and increased volunteer participation.	**Response 4.3a** With continued support and funding, the SAV Watchers Program will provide data necessary to ground truth aerial and satellite imagery, increase our understanding of SAV species and community distribution throughout the Bay, and provide an educational and engaging experience for watershed groups and volunteer	

	initiated in 2019 and is active in watershed groups throughout Maryland. See also Effort 5.4 and associated Gaps and Actions.	watershed groups to continue implementation.			scientists. Data from the SAV Watchers program is used in Riverkeeper and watershed organization reports and outreach materials.	
	Effort 4.4 The SAV Sentinel Site Program was developed in 2020-2021 to provide the top tier of a three-tiered hierarchical monitoring approach for SAV in Chesapeake Bay and to collect detailed data necessary to identify and track impacts to SAV associated with climate change and other stressors.	**Gap 4.4a** Though almost fully developed, the SAV Sentinel Site monitoring protocol needs to be finalized and an implementation plan needs to be established to initiate the program in 2022.	**Action 4.4a** [Finalize SAV Sentinel Site Monitoring protocol and develop an implementation plan for the SAV Sentinel Site Program that includes identification and commitment from site adopters.]	**Metric 4.4a** Finalized protocol and implementation plan; Program implemented	**Response 4.4a** Implementation of an SAV Sentinel Site Program will help Bay scientists and managers identify climate effects on SAV and appropriately manage them.	
		Gap 4.4b Although the SAV Sentinel Site Program is currently soliciting volunteer sentinel site adopters (i.e., no funding provided), funding will be necessary to support coordinating activities and to support sentinel site adopters for long-term commitment to the program.	**Action 4.4b** [Identify funding opportunities to ensure the long-term stability of the SAV Sentinel Site Program.]	**Metric 4.4b** Funding identified; Sentinel Sites adopted	**Response 4.4b** Providing funding for sentinel site adopters will increase and improve the quantity and quality of data collected and long-term retention of SAV Sentinel Site adopters.	

	Effort 4.5 SAV Monitoring Program webpage content is being developed to support the dissemination of information about the various CBP SAV monitoring efforts. See also Effort 5.2 and associated Gaps and Actions.	**Gap 4.5** SAV Monitoring Program web content is under review and has not yet been finalized or published on Chesapeakebay.net.	**Action 4.5a** [Complete the development and publication of the SAV Monitoring Program Webpages on Chesapeakebay.net describing and supporting the CBP SAV Monitoring effort.]	**Metric 4.5a** Published web content; information more effectively and efficiently disseminated.	**Response 4.5a** Providing a web space to maintain SAV Monitoring web pages will provide a valuable resource to SAV Workgroup members and the public, while simplifying the recruitment of SAV Sentinel Site adopters.	
Factor 5. Public Perception, Knowledge, and Engagement: Public perception of SAV affects its health and recovery: some members of the public perceive it as a nuisance and consequently take measures to deter its growth or directly	**Effort 5.1** 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, goal-attainment and habitat benefits, as well as produce SAV-related web and social media	**Gap 5.1** Regardless of semi-frequent media posts regarding the recovery of SAV in the Bay and the numerous ecosystem services it provides, public perception of SAV varies, with some constituents continuing to regard it as a nuisance rather than a welcome habitat that benefits us all.	**Action 5.1a** [Develop a communication strategy that enhances the public's knowledge of and appreciation for SAV in the Chesapeake Bay.]	**Metric 5.1a** Communication products and strategies created; products marketed. Fewer nuisance complaints recorded; change in public perception.	**Response 5.1a** Public perception of SAV improves; less SAV is damaged or harvested unnecessarily.	

remove it. Human activities can be managed through education, outreach and regulation.	content throughout the year. Likewise, D.C., Maryland and Virginia, along with academic institutions and watershed groups, promote SAV education and engagement through annual press releases, reports, social media posts and outreach activities.					
	Effort 5.2 The SAV Workgroup is working with the CBP communications and web development teams to build SAV Monitoring Program Web pages from content developed during a project contracted to Tetra Tech in 2020-2021. The web pages will fully describe the various SAV Monitoring programs in the	**Gap 5.2** SAV Monitoring Program web content is under review and has not yet been finalized or published on Chesapeakebay.net.	**Action 5.2a** [Publish SAV Monitoring program content on Chesapeakebay.net.]	**Metric 5.2a** Publication of content and public engagement	**Response 5.2a** SAV Monitoring web pages will improve public understanding of SAV and SAV monitoring efforts	

	Bay and educate and engage the public about the importance of SAV and SAV monitoring. See also Effort 4.5 and associated Gaps and Actions.					
	Effort 5.3 Community-Based Social Marketing products were developed during a GIT-funded project (SAV Workgroup and Comms Team collaboration) to encourage the public to be good SAV stewards. The SAV Workgroup and Comms Team are working together to develop a plan to implement the marketing strategies developed during the project.	**Gap 5.3** The goals of this project were to develop a marketing strategy and materials—not to implement the strategy or print the materials. Additional funding and support is necessary to print the materials and implement the strategy.	**Action 5.3a** [Work with the CBP Comms team to identify funding and support to implement the strategy and print the materials. Work with other CBP groups that have also developed CBSM strategies and materials.]	**Metric 5.3a** Funding obtained to print materials and implement strategy, materials printed and strategy implemented, people engaged, behavior modified and SAV protected.	**Response 5.3a** Community-based social marketing is a proven method for positive behavior change. Once implemented, the public's perception of SAV should improve.	

	Effort 5.4 The SAV Workgroup recently developed the first CBP SAV monitoring program for volunteers and community scientists–the SAV Watchers Program—and is working with watershed groups, Riverkeeper organizations and schools to implement the program as an educational and public engagement tool, as well as a means of collecting much-needed SAV data. See also Effort 4.3 and associated Gaps and Actions.	**Gap 5.4** The SAV Watchers Program has been successfully implemented by several watershed groups and Riverkeeper organizations in Maryland, but it has not expanded into Virginia. Additional support (time, funding) will be necessary to expand the program into new rivers throughout the Bay, maintain the Train-the-Trainer Certification Program, coordinate with watershed groups and Riverkeepers on the program, collect and share data, and provide funding for watershed groups to continue implementation.	**Action 5.4a** [Continue implementation of the SAV Watchers Program and work to identify funding opportunities to ensure the long-term stability of the SAV Watchers Program.]	**Metric 5.4a** Number of trainers certified, volunteers certified, organizations involved and data collected.	**Response 5.4a** The SAV Watchers Program has been an effective means of engaging the public in SAV monitoring and protection. Increased participation will increase SAV stewardship over time.	

	Effort 5.5 The SAV Workgroup meets annually to gather information from and share information with members and partners, write reports, synthesize and prioritize research, and work on other efforts as needed and appropriate.	**Gap 5.5** Although the annual all-hands SAV Workgroup meeting provides an excellent forum for member participation, members have expressed an interest in meeting more frequently to share information and ideas for collaborative efforts.	**Action 5.5a** [The SAV Workgroup will convene in-person or virtually (depending on current COVID policies) quarterly with supplemental meetings with appropriate sub-groups taking place as needed to discuss priorities, share ideas for collaborations, review status updates, update the SAV Management Strategy and implement the SAV Workplan, etc. SAV Workgroup leadership and staffers will meet monthly.]	**Metric 5.5a** Meetings held per year, participation in SAV workgroup activities maintained and enhanced, coordination among SAV chair and staffer improved.	**Response 5.5a** Increased meeting frequency will result in an engaged and participatory membership, increased collaboration and SAV Workplan accomplished.	

SAV Workplan/ACTIONS – 2022-2023					
Action #	**Description**	**Performance Target(s)**	**Responsible Party (or Parties)**	**Geographic Location**	**Expected Timeline**
Management Approach 1: Support efforts to conserve and restore current and future SAV habitat and SAV habitat conditions					
1.1a	Support WQ GIT in their efforts to improve water quality through the Bay TMDL and 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
1.1b	Encourage/promote the use of BMPs within local planning efforts that benefit SAV persistence and recovery: wastewater treatment plant upgrades, stormwater runoff improvements, riparian buffers, etc.	a. Promote the use of the SAV Fact Sheets developed by the SAV Synthesis Team and published on the CBP Data Dashboard.	SAV Workgroup, Communications Workgroup, LGAC, Local Leadership Workgroup	Chesapeake Bay watershed	2022, onward
		b. Promote use of "SAV: Principles for Phase III Watershed Implementation Plans" fact sheet.	SAV Workgroup, Communications Workgroup, LGAC, Local Leadership Workgroup	Chesapeake Bay watershed	2022, onward
1.1c	Determine the local effect of flow/stormwater runoff on SAV density and acreage and options for targeting BMPs that would protect priority SAV areas. This action was specifically recommended by the Management Board.	a. Targeted GIS exercise to explore areas of high flow and SAV acreage/density impacts.	SAV Workgroup, CBP Modeling Team, BMP experts	Chesapeake Bay and watershed	2022-2023
		b. Review land-use in areas where flow directly impacts SAV; explore BMP options for those areas.			

SAV Workplan/ACTIONS – 2022-2023					
Action #	**Description**	**Performance Target(s)**	**Responsible Party (or Parties)**	**Geographic Location**	**Expected Timeline**
1.1d	Explore the potential for co-locating land-based BMPs, oyster/mussel restoration efforts and SAV restoration efforts. This action was specifically recommended by the Management Board.	a. Work with appropriate CBP teams to explore options and propose potential pilot study.	SAV Workgroup, CBP Modeling Team, BMP experts, Fish GIT	Chesapeake Bay and watershed	2022-2023
1.2a	Evaluate the potential for SAV to reach restoration targets and provide relevant ecosystem services in the face of climate change by completing and publishing the results of the GIT—funded SAV/Climate Modeling Project.	a. Complete GIT-funded SAV/Climate Modeling Project, review and disseminate results and other project products	SAV Workgroup members, STAR, Climate Resiliency Workgroup, VIMS, SERC	Chesapeake Bay	2022-2023
1.2b	Evaluate the potential for SAV to reach restoration targets and provide relevant ecosystem services in the face of rising temperatures by holding the STAC workshop on rising temperatures in the Chesapeake Bay and by completing and publishing the workshop report and management recommendations.	a. Complete STAC rising temp workshop, assist with report, review and disseminate results, reports and recommendations.	SAV Workgroup members, STAR, Climate Resiliency Workgroup.	Chesapeake Bay	2022-2023

SAV Workplan/ACTIONS – 2022-2023					
Action #	**Description**	**Performance Target(s)**	**Responsible Party (or Parties)**	**Geographic Location**	**Expected Timeline**
1.2c	Implement the SAV Sentinel Site Program throughout the Bay to more effectively evaluate the impacts of climate stressors on the Bay's SAV populations. See also Management Approach 4, Action 4.4	a. Complete SAV Sentinel Site Monitoring Protocol	SAV Workgroup	Chesapeake Bay	2022
		b. Publish "SAV Monitoring" Web Pages on Chesapeakebay.net	SAV Workgroup, CBP Web Team, CBP Comms	Chesapeake Bay	2022
		c. Recruit SAV Sentinel Site Adopters	SAV Workgroup	Chesapeake Bay	2022
		d. Implement and maintain Program	SAV Workgroup, Site adopters and program partners	Chesapeake Bay	2022. onward
		e. Identify long-term funding options for Program	SAV Workgroup, Site adopters and program partners	Chesapeake Bay	2022, onward
1.3a	Gain consensus among Bay Program workgroups, GITs and partners on shallow-water use conflict discussion purpose and end-goal.	a. Meet with CBP workgroups, GITs and partners that have expressed interest in topic to gain consensus on discussion purpose and end-goals	SAV Workgroup, Fish GIT, HGIT	Chesapeake Bay	2022
1.3b	Create a structured decision matrix/assessment protocol to evaluate shallow-water habitat trade-offs.	b. Work with involved partners to create a structured decision matrix for shallow water use assessment and decision making	SAV Workgroup, Fish GIT, HGIT	Chesapeake Bay	2023

SAV Workplan/ACTIONS – 2022-2023					
Action #	**Description**	**Performance Target(s)**	**Responsible Party (or Parties)**	**Geographic Location**	**Expected Timeline**
Management Approach 2: Protect existing and recovering SAV					
2.1a	Work with jurisdictional leadership in Maryland, Virginia and D.C. to review and implement appropriate recommendations from "Existing Chesapeake Bay Watershed Statutes and Regulations Affecting Submerged Aquatic Vegetation" a GIT-funded project report produced in 2019 by the CLA at the request of the CBP and SAV Workgroup.	a. Coordinate with jurisdictional leadership to initiate discussions with appropriate state representatives	SAV Workgroup, jurisdictional leadership	Chesapeake Bay watershed	2022
		b. Coordinate with appropriate jurisdictional representatives to review and discuss recommendations from CLA SAV Regulatory Report	SAV Workgroup, jurisdictional leadership	Chesapeake Bay watershed	2022
		c. Determine which recommendations for regulatory updates will be pursued and devise plan to do so.	SAV Workgroup, state leadership	Chesapeake Bay watershed	2023
2.2a	Encourage local, state and federal partners in Virginia, DC and Maryland to manage water chestnut (*Trapa natans* and *T. bispinosa*) by developing and implementing plans to reduce or eradicate it in Chesapeake Bay and other local water bodies.	a. Annual efforts to manage or eradicate water chestnut; bushels removed from waterways	SAV Workgroup, MD, VA, and DC jurisdictional agencies, local watershed groups	Chesapeake Bay find	2022, onward

SAV Workplan/ACTIONS – 2022-2023					
Action #	**Description**	**Performance Target(s)**	**Responsible Party (or Parties)**	**Geographic Location**	**Expected Timeline**
Management Approach 3: Restore SAV					
3.1a.1	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.	a. MD DNR, VIMS and other partner organizations will continue direct planting in appropriate sites in Maryland, Virginia and DC.	SAV Workgroup, MD DNR, VIMS, Watershed groups	Chesapeake Bay	2022, onward
3.1a.2	Distribute the recently completed SAV Restoration Guide and associated outreach materials among local, state and federal agencies and organizations that conduct or would like to conduct direct SAV restoration to expand SAV restoration capacity in Chesapeake Bay.	a. SAV Restoration Guide and associated outreach materials distributed to interested parties either in print or as shared link.	SAV Workgroup	Chesapeake Bay	2022
3.1b	Work with permitting agencies to ensure SAV restoration activities are permitted during appropriate growing conditions and over-harvesting from donor beds does not occur.	a. Contact appropriate permitting agencies to make them aware of the distribution of the SAV Restoration Guide and ensure appropriate review of permit applications.	SAV Workgroup	Chesapeake Bay	2022, onward
3.1c	Review potential opportunities to create a Chesapeake Bay SAV nursery or SAV nursery network that would foster necessary research for SAV aquaculture technology and	a. Continued conversation about Chesapeake Bay SAV nursery potential with interested SAV Workgroup members and review of potential opportunities; pursue	SAV Workgroup	Chesapeake Bay	2022-2023

SAV Workplan/ACTIONS – 2022-2023					
Action #	**Description**	**Performance Target(s)**	**Responsible Party (or Parties)**	**Geographic Location**	**Expected Timeline**
	restoration protocols, provide space for a native SAV seed repository and produce a commercial seed supply; pursue options if possible and funding is available.	funding if available and deemed appropriate			
Management Approach 4: Enhance SAV research and monitoring					
4.1a	Identify and prioritize an updated list of SAV science and research needs, initiate workgroup efforts and/or broader partnership efforts to advance SAV research and provide support for research in the form of funding, steering committee participation, MTAG participation, letters of support for research funding, provide subject matter expert support, etc.	a. Initiate workgroup efforts to identify and prioritize an updated list of science and research needs and 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	Chesapeake Bay	2022, onward
4.2a	Continue annual Bay-wide SAV Survey to track progress towards SAV restoration targets and water-clarity standards attainment.	a. Continued support of 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.	SAV Workgroup, CBP Leadership	Chesapeake Bay	2022, onward
4.2b	Work with the Bay Program partners to identify funding opportunities to support the continued exploration of satellite imagery and the development of algorithms and	a. Identification of funding to support algorithm and work flow development; algorithm and work flow development.	SAV Workgroup; STAR	Chesapeake Bay	2022-2023

SAV Workplan/ACTIONS – 2022-2023					
Action #	**Description**	**Performance Target(s)**	**Responsible Party (or Parties)**	**Geographic Location**	**Expected Timeline**
	work flows to automate SAV detection and quantification.				
4.3a	Continue implementation of the SAV Watchers Program and work to identify funding opportunities to ensure the long-term stability of the SAV Watchers Program.	a. Continued implementation of Chesapeake Bay SAV Watchers Program. Recruitment of additional organizations and volunteers, certification of additional "trainers" and collection of ground survey data in additional tributaries.	SAV Workgroup; SAV Watchers Partner Organizations	Chesapeake Bay	2022, onward
		b. Identification of funding opportunities to ensure long-term stability of SAV Watchers Program	SAV Workgroup; STAR	Chesapeake Bay	2022
4.4a	Finalize SAV Sentinel Site monitoring protocol and develop an implementation plan for the SAV Sentinel Site Program that includes identification and commitment from site adopters.	a. Finalized protocol with basic and advanced monitoring options	SAV Workgroup SAV Sentinel Site Team	Chesapeake Bay	2022
		b. Implementation plan developed, site adopters identified and program implemented	SAV Workgroup SAV Sentinel Site Team	Chesapeake Bay	2022
4.4b	Identify funding opportunities to ensure the long-term stability of the SAV Sentinel Site Program.	a. Identification of funding for SAV Sentinel Site Program	SAV Workgroup	Chesapeake Bay	2022

SAV Workplan/ACTIONS – 2022-2023					
Action #	**Description**	**Performance Target(s)**	**Responsible Party (or Parties)**	**Geographic Location**	**Expected Timeline**
4.5a	Complete the development and publication of the SAV Monitoring Program webpages on Chesapeakebay.net describing and supporting the CBP SAV Monitoring effort.	a. SAV Monitoring Program webpages approved and published	SAV Workgroup; CBP Comms; CBP Web team	Chesapeake Bay	2022
Management Approach 5: Enhance community involvement, education, and outreach					
5.1a	Develop a communication strategy that enhances the public's knowledge of and appreciation for SAV in Chesapeake Bay.	a. Marketing of the importance of SAV through websites, social media, informational signage at ramps, perception survey, etc. b. Population of the SAV Workgroup webpage on Chesapeakebay.net with SAV Workgroup Program information, products and relevant literature and reports.	SAV Workgroup; CBP Comms	Chesapeake Bay	2022
5.2a	Publish SAV Monitoring Program content on Chesapeakebay.net	a. Publication of content, public engagement	SAV Workgroup	Chesapeake Bay	2022
5.3a	Work with the CBP Comms team to identify funding and support to implement the strategy and print the materials. Work with other CBP groups that have also developed CBSM strategies and materials.	a. Identification of funding to support printing pf materials and implementation of CBSM strategy.	SAV Workgroup; CBP Comms	Chesapeake Bay	2022
5.4a	Continue implementation of the SAV Watchers Program and work to identify funding opportunities to ensure the long-term stability of the SAV Watchers Program.	a. Continued implementation of Chesapeake Bay SAV Watchers Program. Recruitment of additional organizations and volunteers, certification of additional “trainers,”	SAV Workgroup	Chesapeake Bay	2022, onward

SAV Workplan/ACTIONS – 2022-2023					
Action #	**Description**	**Performance Target(s)**	**Responsible Party (or Parties)**	**Geographic Location**	**Expected Timeline**
		and collection of ground survey data in additional tributaries.			
5.5	The SAV Workgroup will convene in-person or virtually (depending on current COVID policies) quarterly with supplemental meetings with appropriate sub-groups taking place as needed to discuss priorities, share ideas for collaborations, review status updates, update the SAV Management Strategy and implement the SAV Workplan, etc. SAV Workgroup leadership and staffers will meet monthly.	a. Convene quarterly half day SAV Workgroup meetings; the winter meeting will remain a full-day all-hands meeting.	SAV Workgroup	Chesapeake Bay	2022, onward
		b. Convene monthly SAV Workgroup leadership meetings.	SAV Workgroup	Chesapeake Bay	