Spring QUARTERLY MEETING – June 5th, 2024

Chesapeake Bay Program

Submerged Aquatic Vegetation Workgroup Updates

Brooke Landry
Maryland DNR and
Chair, SAV Workgroup

Through the Chesapeake Bay Watershed Agreement*, the Chesapeake Bay Program has committed to…*

Goal: ***Vital Habitats***

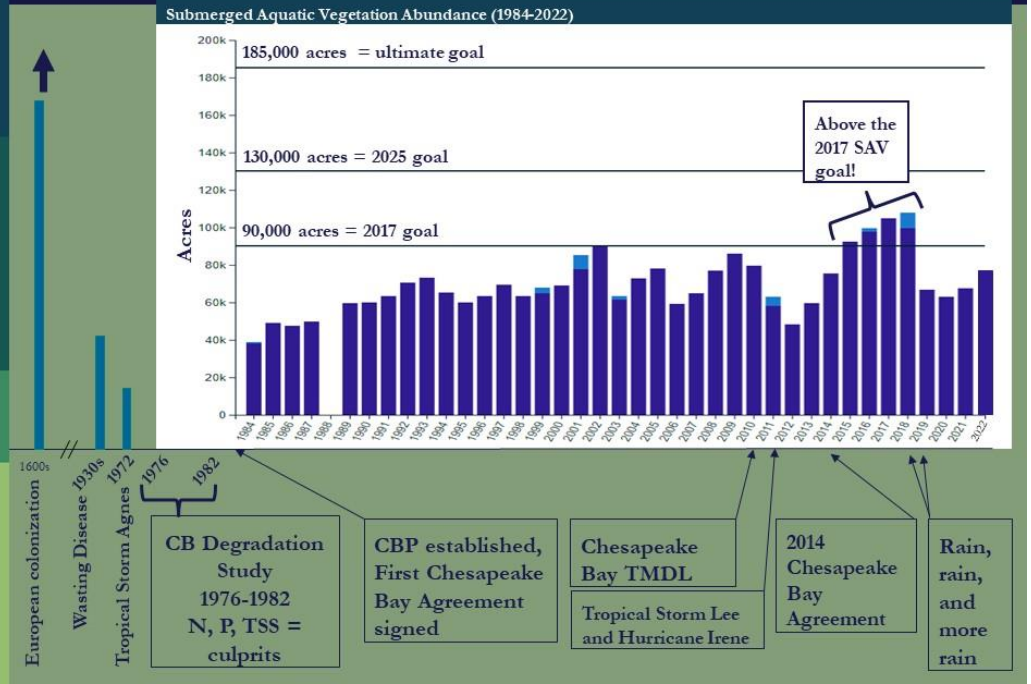
Outcome:

Sustain and increase the habitat benefits of SAV in the Chesapeake Bay. Achieve and sustain the ultimate outcome of 185,000 acres of SAV Bay-wide necessary for a restored Bay. Progress toward this ultimate outcome will be measured against a target of 90,000 acres by 2017 and 130,000 acres by 2025.

NO SAV #s for 2023 yet…

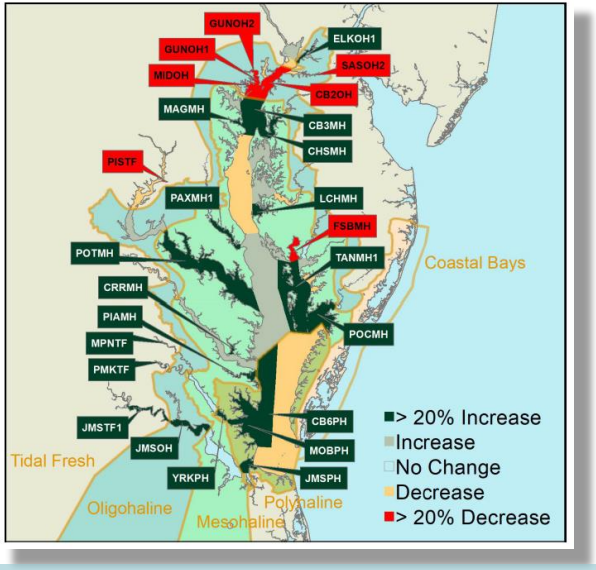
What is our Progress?

Progress towards the Bay-wide SAV goal



Final SAV #s were up in 2022:

- 77,425 acres were mapped in 2022 (+13.8%)
- This is 60% of the 2025 target and 42% of the ultimate 185,000-acre outcome.



https://www.vims.edu/research/units/programs/sav/access/maps/index.php

https://www.chesapeakeprogress.com/abundant-life/sav

Shallow Water Habitat Sentinel Site Program

Request to Management Board: "We ask that the MB endorse the necessity of **establishing a Shallow Water Habitat Sentinel Site Program** and guide the CBP to take the necessary steps to do so."

This tier-3 monitoring effort would not only monitor the impacts of climate change on the functional value of shallow water habitats throughout the Bay but also track the effectiveness of measures taken beyond 2025.

Management Board: Go forth and Explore the Possibilities

Development Progress:

1. SAV Workgroup applied for GIT funding. It was not funded in the initial round but STAC requested that we re-submit in June.

2. When not funded, we then put in for GIT funding instead….still waiting to hear on that.

3. Will apply for STAC funding again if we don't get GIT funding.

Chesapeake Bay Shallow Water Habitat Sentinel Site Program Development
Proposal for a Programmatic STAC Workshop
Submitted by the CBP's Submerged Aquatic Vegetation (SAV) Workgroup
February 14th, 2024

We propose a Programmatic STAC Workshop to explore the development of a Chesapeake Bay Shallow Water Habitat Sentinel Site Program. The program would monitor climate impacts on the functional value of shallow water habitats in Chesapeake Bay as well as the effectiveness of management measures taken by the Chesapeake Bay Program (CBP) partnership beyond 2025 as a focus on shallow water habitat restoration is emphasized. The Chesapeake Bay Program Management Board is in support of this effort and has directed the Submerged Aquatic Vegetation (SAV) Workgroup and Habitat Goal Implementation Team (HGIT) to take the initial steps necessary to determine what a Shallow Water Habitat Sentinel Site Program would entail and if its implementation would be feasible.

Background
As the CBP partnership approaches 2025, a number of small teams, workshops, reviews, and reports have been undertaken or are underway to evaluate Chesapeake Bay restoration progress to date, address successes and failures, and design a path toward Bay recovery *Beyond 2025*. Three reports in particular are relevant to this workshop proposal: Rising Watershed and Bay Water Temperatures— Ecological Implications and Management Responses (Batiuk et al., 2023), *A Comprehensive Evaluation of System Response* (CESR, STAC 2023), and Enhancing the Chesapeake Bay Program Monitoring Networks: A Report to the Principals' Staff Committee (CBP, 2022). Together, these reports highlight and emphasize the importance of maintaining and expanding restoration and monitoring efforts in Chesapeake Bay to accelerate recovery and track impacts associated with climate change, particularly in shallow water habitats. One specific recommendation in the monitoring report to the Principals' Staff Committee was to fund the SAV Sentinel Site Program to improve understanding of SAV habitat response to shifting conditions and management actions.

The SAV Sentinel Site Program is the third and most detailed tier of a hierarchical monitoring approach employed by the CBP's SAV Workgroup to monitor SAV in Chesapeake Bay. Partially implemented in 2023, the SAV Sentinel Site Program was designed to monitor twenty sentinel sites distributed throughout the four salinity regimes of the Bay. Development of the SAV Sentinel Site Program happened concurrently with the other CBP partnership efforts identified above and consequently, **the benefits and necessity of expanding the SAV Sentinel Site Program into a comprehensive Shallow Water Habitat Sentinel Site Program emerged.** Rather than concentrating solely on SAV, this comprehensive effort would monitor multiple living resources and water quality measures as well as climate impacts on the functional value of shallow water habitats in Chesapeake Bay. The program would also serve to monitor the effectiveness of measures taken by the Partnership beyond 2025 as focus on shallow water habitat restoration is emphasized.

Incorporating a Shallow Water Habitat Sentinel Site Program into the Chesapeake Bay monitoring effort is essential to outcomes within the partnership. The purpose of sentinel site monitoring is to systematically observe and gather data from specific locations (sentinel sites) to track changes, assess environmental conditions, and provide early warning signals for potential issues. Sentinel site monitoring serves as a proactive and systematic approach to understanding, managing, and preserving ecosystems. By focusing on specific locations with known significance or vulnerability, these monitoring programs contribute to environmental conservation, research, and informed decision-making. Sentinel site monitoring can serve various purposes depending on the context, but common objectives include:

1. Early Detection of Changes: Sentinel sites are strategically chosen to represent key ecosystems or areas vulnerable to specific threats or changes; early detection of changes in environmental parameters, such as land use changes, water quality, habitat health, or biodiversity, allows for timely intervention and management.
2. Monitoring Trends and Patterns: By consistently collecting data from sentinel sites over time, trends and patterns in environmental conditions can be identified; understanding long-term changes helps researchers and policymakers make informed decisions about conservation, restoration, or mitigation strategies.
3. Indicator of Ecosystem Health: Sentinel sites often serve as indicators of overall ecosystem health; changes observed at these sites can reflect broader shifts in ecological conditions, providing valuable insights into the well-being of the larger ecosystem.
4. Research and Scientific Study: Sentinel site monitoring provides valuable data for scientific research and studies; researchers can use the collected information to analyze ecological processes, study the impact of human activities, and advance scientific understanding of ecosystems.
5. Risk Assessment and Management: Identifying changes or abnormalities at sentinel sites helps assess potential risks to ecosystems and biodiversity; this information is crucial for developing management strategies and implementing measures to mitigate or prevent negative impacts.

2022 GIT-Funded Project Lead: SAV Workgroup

Protecting Chesapeake Bay SAV Given Changing Hydrologic Conditions: Priority SAV Area Identification and Solutions Development **– progress moving along. Tetra Tech will present updates again at summer meeting.**

Project Objective

This project will identify high-priority SAV areas within the Chesapeake Bay Watershed and determine which BMPs could be most effective in protecting those areas from loss during high-flow events/years using GIS spatial analysis/modeling and existing SAV, flow, land-use, and water quality data. With this information, steps can be taken to target high-priority SAV areas for implementation of BMPs and land management policies that will protect or restore those priority SAV habitats.

Contracted to: Tetra Tech

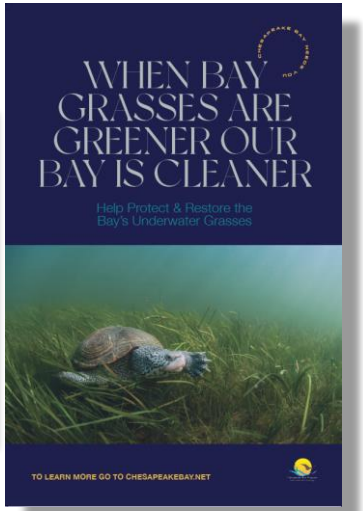
- **Steering committee has been identified and had their first meeting**
- **Bob Murphy, Tetra Tech, will present on project and progress later this morning**

2022 GIT-Funded Project
Lead: Comms Workgroup

Advancing Social Marketing Through Two Pilot Programs – Steve told us about their progress on this earlier….

Proposed Project Outcomes

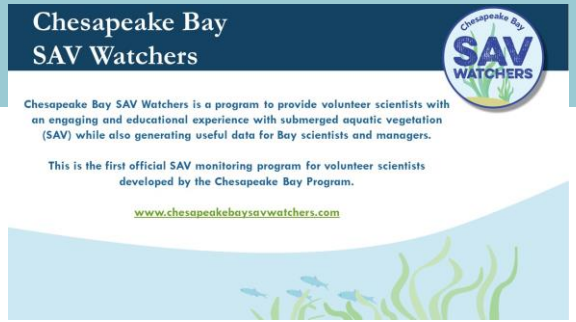
This project will develop pilot programs for existing community-based social marketing (CBSM) campaigns that have been developed over the past few years, SAV being one.



Contracted to: OpinionWorks

Three SAV Watcher Trainer Certification Events planned for 2024:
Marshy Point Nature Center - Havre de Grace maritime Museum
Accokeek Foundation at Port Tobacco

Chesapeake Bay SAV Watchers Program
(program dev for this was also GIT-funded)



Chesapeake Bay SAV Watchers – Tier 2 Participation

SHORERIVERS

Havre de Grace MARITIME MUSEUM and Environmental Center

James River ASSOCIATION

SRA Severn River Association
America's Oldest River Group

Magothy River Association
Saving our river for future generations

Baltimore County Public Schools
Raising the bar, Closing gaps, Preparing for our future

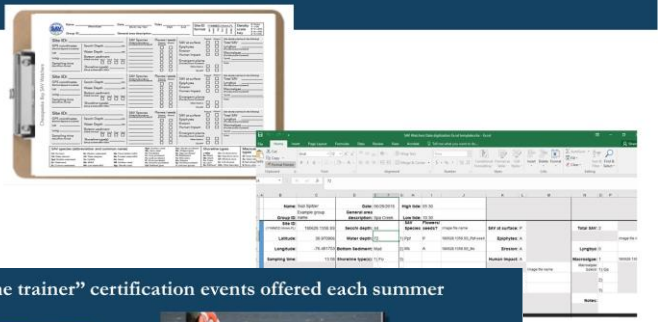
The Gunston School 1911 Centreville, MD

Marshy Point Nature Center

Arundel Rivers FEDERATION

Chesapeake Bay National Estuarine Research Reserve Maryland
Using Sound Science...Finding Solutions...Promoting Wise Decisions

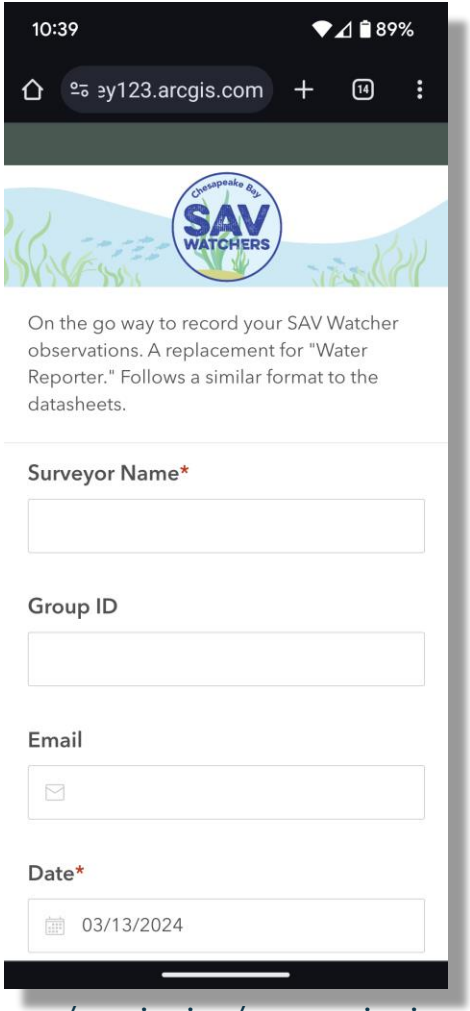
Standardized datasheet and digitization template



Train the trainer" certification events offered each summer

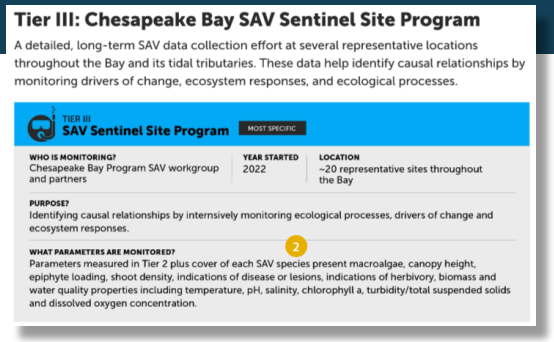
www.chesapeakebaysavwatchers.com OR https://www.chesapeakebay.net/what/programs/monitoring/sav-monitoring-program

New app: ArcGIS Survey123



www.chesapeakebaysavwatchers.com OR https://www.chesapeakebay.net/what/programs/monitoring/sav-monitoring-program

SAV Sentinel Site Program – continuing in 2024!



Tier III: Chesapeake Bay SAV Sentinel Site Program

A detailed, long-term SAV data collection effort at several representative locations throughout the Bay and its tidal tributaries. These data help identify causal relationships by monitoring drivers of change, ecosystem responses, and ecological processes.

TIER III
SAV Sentinel Site Program MOST SPECIFIC

WHO IS MONITORING?
Chesapeake Bay Program SAV workgroup and partners

YEAR STARTED
2022

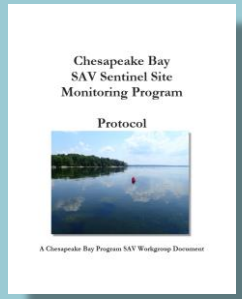
LOCATION
~20 representative sites throughout the Bay

PURPOSE?
Identifying causal relationships by internsively monitoring ecological processes, drivers of change and ecosystem responses.

WHAT PARAMETERS ARE MONITORED?
Parameters measured in Tier 2 plus cover of each SAV species present macroalgae, canopy height, epiphyte loading, shoot density, indications of disease or lesions, indications of herbivory, biomass and water quality properties including temperature, pH, salinity, chlorophyll a, turbidity/total suspended solids and dissolved oxygen concentration.

Sites that will be installed and monitored in 2024:

- Severn River
- Susquehanna Flats
- Smith Island
- Marshy Creek
- Dundee Creek
- St. Mary's
- VIMS sites
- CB- NERR sites



Chesapeake Bay
SAV Sentinel Site
Monitoring Program

Protocol

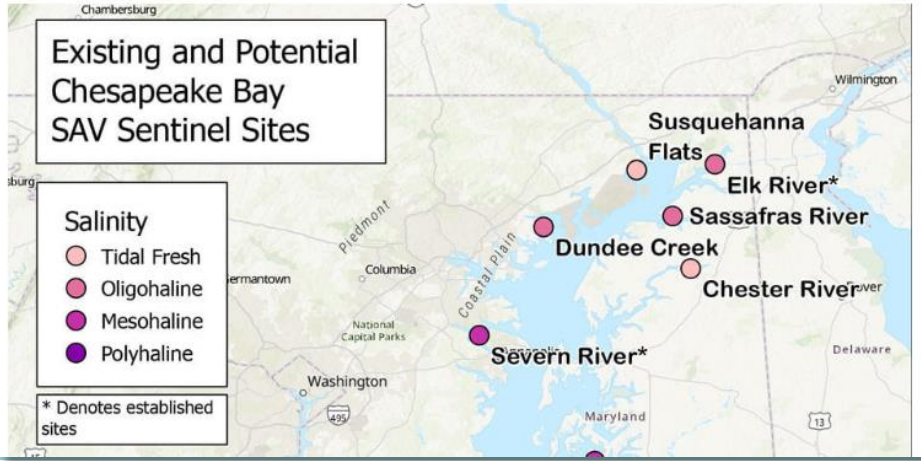
A Chesapeake Bay Program SAV Workgroup Document

Tier III: SAV Sentinel Site Program

The SAV Sentinel Site Program is a monitoring effort conducted by Bay scientists

What is the Chesapeake Bay SAV Sentinel Site Program?

The Chesapeake Bay SAV Sentinel Site Program forms the third tier of the Chesapeake Bay SAV Monitoring effort. SAV sentinel sites are located in each of the Bay's four salinity zones (tidal fresh, oligohaline, mesohaline and polyhaline) and are monitored using a standardized, in-depth data collection protocol. These sentinel sites are a combination of existing, long-term sites and new sites where Bay scientists monitor changes in SAV habitat characteristics and resilience indicators. This program is coordinated by the Bay Program's SAV Workgroup. If you are interested in adopting and managing an SAV Sentinel Site, contact the program coordinator at brooke.landry@maryland.gov.



https://www.chesapeakebay.net/what/programs/monitoring/sav-monitoring-program

NOAA Funding Opportunity

(still waiting)

Proposal 1:

RESTORE AMERICA'S ESTUARIES

Infrastructure and Capacity Building for Transformational Submerged Aquatic Vegetation Restoration in the Mid-Atlantic United States

Funding Stream: NOAA Transformational Habitat Restoration and Coastal Resilience Grants

Budget Requested: $13,874,547 over 5 years

Submerged aquatic vegetation (SAV) habitat is in crisis globally due to pressure from human development along our coasts and degraded water quality. Due to the ecosystem services that SAV provides, however, its recovery is a priority and steps must be taken to accelerate SAV recovery both locally and nationally.

Restore America's Estuaries (RAE) and its partners propose to enhance SAV restoration capacity throughout the Mid-Atlantic by leveraging substantial existing infrastructure to develop SAV nurseries and seed processing facilities, forge strategic partnerships with the aquaculture industry, conduct direct SAV restoration, develop and implement an SAV restoration training and certification program, and develop accessible SAV lesson plans and community outreach products. Together these project components will significantly enhance the capacity for SAV restoration throughout the mid-Atlantic and serve as an example for SAV restoration efforts nationally.

Key Benefits	Program Partners	
	Primary	**Supporting**
• Build SAV Nurseries and Seed Processing Centers throughout the Mid-Atlantic • Expand SAV Restoration Capacity through Aquaculture Industry Partnership • Conduct Direct, Transformative SAV Restoration to Enhance Coastal Climate Resiliency • Establish an SAV Restoration Training and Certification Program • Develop K-12 Lesson Plans and Community Outreach Product	• Tetra Tech • Maryland Department of Natural Resources	• Delaware Center for Inland Bays • Delaware State University • Ferry Cove Oyster Hatchery • Green Fin Studios • Maryland Coastal Bays Program • Mattaponi Indian Tribe and Reservation • Old Dominion University • Smithsonian Environmental Research Center • St. Mary's College of Maryland • Stockton University • University of Delaware and Delaware Sea Grant • University of North Carolina Wilmington • Virginia Institute of Marine Science • Virginia Institute of Marine Science CB NERR • Waterkeepers Chesapeake

Restore America's Estuaries (RAE) is a national leader in the protection and restoration of our nation's estuaries and bays. RAE has over 25 years of experience managing complex programs on behalf of federal agencies, public/private partnerships, corporations and foundations.

Proposal 2: HEAT Helping Eelgrass Adapt to Temperature – this project will conduct common garden experiments with eelgrass from NC to ME, facilitating the migration of more heat tolerant plants northward.

https://estuaries.org/2024-rae-summit/

East Coast SAV Collaborative

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Co-chairs:
Brooke Landry, Md DNR
Jessie Jarvis, UNCW
Elizabeth Lacey, Stockton U.

The goal for this collaborative is to bring together experts in SAV research and management from each of the U.S. East Coast states from NC to ME to share ideas and information, provide training and resources, and collaborate on efforts that bring actionable science to the forefront of our SAV management strategies.

Upcoming East Coast SAV Collaborative Meetings:

- **SAV and Living Shorelines:** Will be in October most likely……
- www.eastcoastsavcollaborative.com

Winter 2024 Science and Research Needs Update –

still need to send suggested additions out for ranking.

Legislative SAV Updates

Number/ Chapter (Cross File) Total: 5	Title	Primary Sponsor	Status	Original House Committee(s) and Hearing Dates	Opposite House Committee(s) and Hearing Dates
HB0109 / CH0083 (SB0281 / CH0084)	Natural Resources - Submerged Aquatic Vegetation - Alteration or Removal Requirements	Chair, Environment and Transportation Committee	Approved by the Governor - Chapter 83	Environment and Transportation 1/31/2024 - 2:30 p.m.	Education, Energy, and the Environment
HB0807 / CH0512 (SB1140)	Natural Resources – Submerged Aquatic Vegetation Surveys	Delegate Stein	Approved by the Governor - Chapter 512	Environment and Transportation 2/21/2024 - 1:00 p.m.	Education, Energy, and the Environment 3/26/2024 - 1:00 p.m.

HB0109 in a nutshell: amends COMAR 4-213. Reduces allowable width of removal for navigation at piers and docks from 60’ to 20’ and requires notification to DNR. Effective Oct. 1, 2024.

HB0807 in a nutshell: SAV surveys besides the VIMS aerial survey can now be used to inform SAV protection zone placement AT THE DISCRETION OF DNR.
Effective June 1, 2024.

Summer 2024 SAV Workgroup Meeting -

Might be a retreat.
Might not be.
TBD….

Questions?