SAV Fall Meeting - December 2025

December 10, 2025

Visit the meeting webpage for meeting materials and additional information.

Purpose:

Hear updates from SAV Workgroup Chair on multiple SAV programs as well as Chesapeake Bay Program's Revised Watershed Agreement. Additionally, review the "SAV Workgroup Mitigation and Monitoring Requirements Recommendations to Regulatory Partners" recommendation language. Lastly, hear SAV workgroup member research as well as environmental product presentations from entrepreneurial innovators.

Attendance:

- **Nick Staten** - Chesapeake Research Consortium
- **Becky Swerida** - MD DNR/CBNERR
- **Stephanie Hall** - MD DNR
- **Bob Murphy** - Tetra Tech
- **Cathy Waznial** - MD DNR/MCBP
- **Julie Luecke** - CBF
- **Kaitlin Scowen** - MD DNR
- **Magdalene Ngeve** - UMCES
- **Gabriella Vailati** - DNREC
- **Brady Bayne** - Gunpowder Riverkeeper
- **Joe Ottomano** - Gunpowder Riverkeeper
- **Zack Kelleher** - Sassafras Riverkeeper, ShoreRivers
- **Katia Engelhardt** - UMCES
- **Chris Guy** - USFWS, Habitat GIT Coordinator
- **Victoria Hill** - Old Dominion University, Norfolk
- **Dave Wilcox** - VIMS
- **Chris Patrick** - VIMS
- **Brooke Landry** - MD DNR
- **Kyle Capistrant-Fossa** - VIMS
- **Alex Bijak** - VIMS
- **Becky Golden** - ShoreRivers
- **Erika Koontz** - MD DNR
- **Erin Shields** - CBNERR-VA/VIMS
- **Kayla Clauson** - DNREC
- **Mollie Boyd** - Severn River Association
- **Riley Kuehn** - Arundel Rivers
- **Mickie Edwards** - VIMS (Patrick Lab)
- **Tammy Domanski** - AACC EC
- 17039151276 - Unknown
- **Kayla Clauson** - DE DNREC, SAV Program
- **Dave O'Brien** - NOAA Fisheries
- **Megan Spindler** - USACE
- **Mike Johnson** - MRC
- **Mark Lewandowski** - MD DNR

- **Emily French** - EPA
- Matt - Unknown
- Lindsey White - Unknown
- **Tish Robertson** - VA DEQ
- **Jonathan Watson** - NOAA NMFS
- **Camille Wilson** - VIMS
- Jim Gearing - Unknown
- **Katherine L Tanner** - UMES
- Jennifer Gilmore - Unknown
- Alexander T. Solis - Unknown
- **Alyson C. Hall** - VIMS
- **Nancy B Rybicki** - USGS Retired
- **Matthew Robinson** - EPA
- Nora M. Keely - Unknown
- **Mollie Boyd** - SRA
- Litzia Galvan - Unknown
- **Nick Thatos** - Coastal Protection Technologies
- **Nate L'Esperance** - Ulysses Ecosystem Engineering

New Action Items From The Meeting

- **Action**: The Review of "SAV Workgroup Mitigation and Monitoring Requirements Recommendations to Regulatory Partners" document will be considered final after the holidays, get any objections/comments to Brooke Landry by December 19th.

- **Action for workgroup members**: Re: Chesapeake Bay Shallow Water Habitat Sentinel Site Program Development. Respond to this **GOOGLE FORM** if you have recommendations for Shallow Water Habitat Sentinel Site locations based on the given parameters, thoughts on potential partners who aren't currently engaged, or funding sources.

- **Action for workgroup members**: Re: Chesapeake Bay SAV Sentinel Site Program. If you are interested in adopting existing sites or would like to propose new sites for inclusion in the SAV Sentinel Site Program (not to be confused with the Shallow Water Sentinel Site Program) contact Brooke Landry (brooke.landry@maryland.gov).

- Determining When In-Kind Mitigation Is Appropriate" section's action item:
  - **Action**: Continue discussion around SAV mitigation banking/in-leu fee feasibility and logistics with USACE and other permitting entities.

- "Proximity of Mitigation Sites to Impact Site" section's action item:
  - **Action**: Consider adding language for the need for site-specific flexibility and consider adding flow chart style examples where specific site considerations would demand flexibility.

- "Donor Bed Criteria" section's action items:
  - **Action**: Consider the implications of prioritizing retention of local genetic material due to the assumption that the plants are best adapted for that area. There could be situations where you wouldn't want to do that. For example an area with changing baseline conditions, a plant may be best adapted for an area 50 years ago but may not be the best candidate for future conditions.

- " Should Financial Assurances be Required?" section's action item:
  - **Action**: Consider leaving this out because it is already included in Maryland's Phase 2 mitigation plans and is baked into ACE regulations.

Meeting Minutes Table of Contents

Meeting Minutes

I. SAV Workgroup Updates

Lead: Brooke Landry (MD DNR)

Description: Quarterly SAV Workgroup updates that include 2024 and 2025 SAV Monitoring Program results, news on the SAV Mitigation Guidance document, a summary of progress for the Chesapeake Bay Shallow Water Habitat Sentinel Site Program development project, and the updated Chesapeake Bay Agreement.
Slides: Click here

Decisions:

1. N/A

Actions:

1. Action for workgroup members: Respond to this **GOOGLE FORM** if you have recommendations for Chesapeake Bay Shallow Water Habitat Sentinel Site locations based on the given parameters, thoughts on potential partners who aren't currently engaged, or funding sources.
2. Action for workgroup members: If you are interested in adopting existing Chesapeake Bay SAV Sentinel Sites or would like to propose new sites for inclusion in the SAV Sentinel Site Program (not to be confused with the Shallow Water Sentinel Site Program), contact Brooke Landry (brooke.landry@maryland.gov).

Notes:

1. Funded Project Updates

Completed and Ongoing Projects

A recently completed project examining the effects of Best Management Practices (BMPs) on SAV distribution throughout the Chesapeake Bay was acknowledged. Dissemination of results had been delayed due to broader Chesapeake Bay Program transitions related to the post-2025 agreement. A presentation on this project was scheduled for an upcoming STAR meeting.

Shallow Water Habitat Sentinel Site Program Development

The primary active funded project discussed was the Shallow Water Habitat Sentinel Site Program Development, which extends beyond SAV to encompass all shallow water habitats. This effort was initiated in response to recommendations from a shallow water habitat small group and findings from the Comprehensive Evaluation of System Response (CESR), which emphasized the need for increased focus on shallow water habitats.

Key points included:

- This is a Chesapeake Bay Program funded project with funding through the Goal Team Funding Initiative/CBT.
- The project is focused on program development only; implementation is not currently funded.
- The work is being conducted by Green Fin Studio, which is responsible for science communication, program design, and guidance development.
- Progress to date includes approval of a Quality Assurance Project Plan (QAPP), a comprehensive literature and program review, and a two-day scoping workshop held in September 2025.

The September workshop included broad participation from SAV, water quality, oyster, wetland, fisheries, regulatory, academic and other partners. The workshop focused on identifying management questions, program design elements, parameters to monitor, site selection considerations, and coordination needs. No final decisions were made during this workshop; it was intended as an idea-gathering and scoping exercise.

A second workshop was scheduled for February 26, 2026 (one day). This workshop is intended to review a near-complete draft of the program and gather focused feedback.

Program Goals and Management Questions

The overarching goal is to develop a Sentinel Site Program that provides a comprehensive understanding of shallow water habitat functionality and responses to changing environmental conditions, and to evaluate the effectiveness of management actions implemented under the Chesapeake Bay Program beyond 2025.

Key management questions identified include:

- How do climate-related variables affect shallow water habitats?
- How do habitats respond to management actions and BMP implementation?
- What are the primary drivers of shallow water habitat change?
- How do changes in shallow water environments affect ecosystem functions and services?

Parameters and Site Considerations

Potential parameters discussed included water quality (e.g., temperature, salinity, dissolved oxygen), physical characteristics (e.g., depth, substrate), living resources (e.g., SAV, fish, invertebrates), and habitat structure.

Site considerations included:

- Inclusion of both stressed and non-stressed systems
- Structured and unstructured shorelines
- Multiple habitat types (SAV beds, oyster beds, non-vegetated bottoms)
- Transitional habitats and migration corridors
- Urban estuaries and environmental justice considerations

The program will focus on tidal waters only, with 12–15 Sentinel sites proposed, distributed across salinity zones (approximately 3–5 sites per zone). The design

emphasizes leveraging existing monitoring locations to maximize feasibility and continuity.

A tiered monitoring approach was proposed:

- Tier 1: Lower-cost, easier-to-collect parameters
- Tier 2: More intensive and costly monitoring, to be implemented if funding becomes available

Next Steps and Input Requests

Next steps include finalizing site selection, refining monitoring parameters and protocols, and presenting a draft program at the February workshop. Participants were invited to provide suggestions for site locations, potential partners, and funding sources via chat or a Google form.

Action for workgroup members: Respond to this google form if you have recommendations for site locations based on the given parameters, thoughts on potential partners who aren't currently engaged, or funding sources.

Discussion emphasized that long-term success will require strong partner buy-in, coordination across states and institutions, and identification of sustainable funding sources, particularly given anticipated constraints on federal funding.

Discussion:

- Recommendations for site locations based on the given parameters:
    - **Mark Lewandowski (Chat)**: Round Bay sago pondweed bed
    - **Joe Ottomano (Chat)**: Theaux's in and out, but he suggests a gunpowder oligohaline sentinel site in the gap between susquehanna flats and downbay
    - **Mark lewandowski (Chat)**: Claiborne Landing
    - **Jonathan Watson (Chat)**: In Maryland, it would be interesting to try to have sentinel sites with some proximity to the juvenile striped bass survey locations. It may be difficult to make inferences between the two survey results, but could be interesting if there are large SAV change signals
    - **Stephanie Hall**: A good resource for choosing sites could be Eyes on the Bay which would give you access to historical datasets and a starting point through their network of monitoring.
        - **Brooke Landry**: Green Fin will be incorporating current monitoring efforts in their review of water quality monitoring throughout the bay.

2. SAV Monitoring Updates

Tier 1 – Baywide SAV Aerial Survey

Preliminary results from the 2024 SAV aerial survey:

- 2024 SAV acreage: 82,778 acres

- 2023 SAV acreage: 83,419 acres (including estimated unmapped areas)
- This represents approximately 64% of the 130,000-acre restoration target and 45% of the long-term 185,000+ acre goal.
- The 2024 total reflects a 1% decrease from 2023, which was probably not statistically significant given natural variability.

Discussion emphasized that baywide totals can mask important regional trends. While some mid-Bay mesohaline areas experienced losses (notably widgeon grass), freshwater and low-salinity zones showed strong performance.

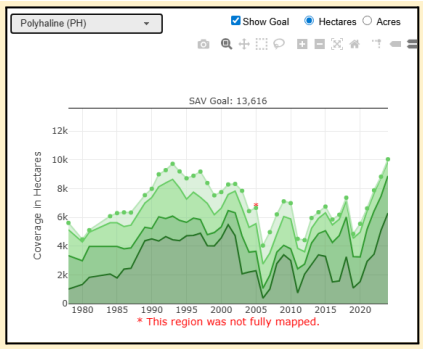
Potential contributing factors discussed included:

- Reduced seed production observed in widgeon grass during 2023
- High rainfall and storm-driven turbidity in early 2024
- Possible interactions among freshwater inflow, light limitation, and temperature stress

Participants discussed the importance of improving how SAV trends are communicated, particularly through platforms such as Chesapeake Progress, which may undergo restructuring and temporary data freezes during redevelopment.

Discussion:

- **David Wilcox**:



https://www.vims.edu/research/units/programs/sav/access/charts/zones/

- **Erika Koontz**: Sign up for the Chesapeake Bay SAV Watchers listserv here: Email Subscription to the Chesapeake Bay SAV Watchers Newsletter
- **Kayla Clauson**: Hi everyone! On the topic of monitoring- I'm sharing a form link I created to gather SAV "field findings" from this past season. If you monitor any SAV (NOT limited to, but including Zostera) your input would be incredibly helpful! The goal is to build a broader coastwide picture of SAV and/or habitat variations from year-to-year. I am gathering data on species, growth, dieback and reproductive phenology (if available), bed conditions, and stressors. So far I have 10 responses from 9 states covering 4 species and would appreciate any further input! Let me know if you have any questions- information will be shared through the East Coast SAV Collaborative. https://forms.gle/EQU7VfpNoeqmonTu8 I do have to jump for now but will be back later.

Tier 2 – SAV Watchers Program

The SAV Watchers volunteer monitoring program continues to expand:

- Seven training events were held in 2025
- Over 70 new trainers were certified
- Approximately 110 new data points were collected

While volunteer participation is growing, data collection varies by organization, with some large programs (e.g., ShoreRivers) and many smaller efforts. Expansion into Virginia is underway through partnerships with local nature centers.

Tier 3 – SAV Sentinel Site Monitoring

The SAV Sentinel Site Monitoring Program continues on a voluntary basis, focusing on low-cost, standardized data collection. In 2025, monitoring occurred at multiple sites including the Severn River, Susquehanna Flats, Smith Island (Marshy Creek and Dundee Creek), and sites in Virginia managed by academic and research partners (St. Mary's & VIMS). Chesapeake Bay National Estuarine Research Reserve (CB-NERR) sites also continue SAV monitoring.

Action for workgroup members: If you are interested in adopting existing CB SAV Sentinel Sites sites or would like to propose new sites for inclusion in the SAV Sentinel Site Program (not to be confused with the Shallow Water Sentinel Site Program) contact Brooke Landry (brooke.landry@maryland.gov).

3. Workforce Development

The new Chesapeake Bay Program workforce workgroup was introduced. The goal is to develop training, certification, and career pathways for restoration and conservation work, including SAV restoration, without requiring traditional four-year or advanced degrees.

Key concepts included:

- Partnerships with high schools, community colleges, and training programs
- Development of practical, hands-on skill certifications
- Creation of a pipeline connecting trained participants with employment opportunities

The initiative is intended to address workforce shortages and bottlenecks in restoration implementation. Discussion referenced past workforce efforts and emphasized the importance of long-term employment pathways rather than short-term internships alone.

4. Chesapeake Bay Agreement Beyond 2025

The Executive Council approved the updated Chesapeake Bay Watershed Agreement in December 2025.

Revised Watershed Agreement Link:
https://www.chesapeakebay.net/what/what-guides-us/watershed-agreement

Key structural updates include:

- Transition to four goal teams: Healthy Landscapes, Clean Water, Engaged Communities, and Habitats, Fisheries and Wildlife
- The SAV Workgroup now falls under the Habitats, Fisheries and Wildlife goal team
- The Management Board will be phased out by mid-2026, with an interim governance structure in place

SAV Outcome and Targets

The updated SAV outcome states:

Outcome: Sustain and increase the habitat and ecosystem benefits of SAV in the Chesapeake Bay. Achieve and sustain the outcome of 196,600 acres of SAV Bay-wide necessary for a restored Bay.

- Measure progress against the following targets for each salinity zone: Tidal Fresh: 21,700 acres; Low Salinity: 13,100 acres; Medium Salinity: 126,000 acres; High Salinity: 35,800 acres.
- Measure progress toward this Outcome against interim targets of 90,000 acres by 2030, 95,000 acres by 2035 and 100,000 acres by 2040.

These interim targets were based on long-term trend analysis and reflect realistic projections rather than aspirational goals. Discussion acknowledged concerns that these targets are lower than previous benchmarks but emphasized alignment with observed trends and credibility.

The use of simplified salinity terminology (rather than technical terms) was discussed as a science communication decision intended to improve public understanding while retaining technical rigor in scientific work.

II. Review of "SAV Workgroup Mitigation and Monitoring Requirements Recommendations to Regulatory Partners"

Lead: Brooke Landry
Description: Review of the recommendations outlined in the "SAV Workgroup Mitigation and Monitoring Requirements Recommendations to Regulatory Partners" document after the most recent round of comments had been incorporated.
Slides: Click Here

Decisions:

1. N/A

Actions:

1. This document will be considered final after the holidays, get any objections/comments to Brooke Landry by December 19th.
2. Determining When In-Kind Mitigation Is Appropriate" section's action item:
    a. Action: Continue discussion around SAV mitigation banking/in-leu fee feasibility and logistics with USACE and other permitting entities.
3. "Proximity of Mitigation Sites to Impact Site" section's action item:
    a. Action: Add language for the need for site specific flexibility and consider adding flow chart style examples where specific site considerations would demand flexibility.
4. "Donor Bed Criteria" section's action items:
    a. Action: Add language about whether donor seed material can be taken from lakes then added to a tributary.
    b. Action: Consider the implications of prioritizing retention of local genetic material due to the assumption that the plants are best adapted for that area. There could be situations where you wouldn't want to do that. For example an area with changing baseline conditions, a plant may be best adapted for an area 50 years ago but may not be the best candidate for future conditions.
5. " Should Financial Assurances be Required?" section's action item:
    a. Action: Consider leaving this out because it is already included in Maryland's Phase 2 mitigation plans and is baked into ACE regulations.

Notes:

1. Background and Rationale for the Guidance

The effort was initiated primarily in response to increased SAV impacts and mitigation requirements in Maryland, though the intent is for the guidance to be baywide.

Key drivers included:

Increased use of in-kind SAV compensatory mitigation in Maryland

Reliance on tidal wetlands mitigation guidance, which does not translate cleanly to SAV

Inconsistent standards, success criteria, and monitoring requirements applied on a case-by-case basis

- Requests from regulatory agencies for greater consistency, while retaining flexibility for adaptive management and regional variation

Initial attempts to develop recommendations internally within the SAV Workgroup stalled due to uncertainty around feasibility, regulatory needs, and practicality. This led to the decision to convene a facilitated workshop with regulatory partners, allowing direct input from agencies responsible for permitting and enforcement.

Regulatory perspectives were provided during the workshop by representatives from NOAA, Maryland Department of the Environment (MDE), and the Maryland Board of Public Works, focusing on how SAV impacts are currently reviewed and permitted.

The workshop structure included:

- Pre-defined mitigation questions
- Interactive poster-board and sticky-note exercises
- Open discussion and consensus-building activities

The end product is a non-binding guidance document intended to inform regulatory agencies, outlining what the SAV scientific and practitioner community considers necessary, feasible, and beneficial for mitigation and monitoring.

Draft guidance and a workshop summary were circulated to a limited group of regulatory reviewers prior to this meeting. The version discussed incorporates both workshop consensus and reviewer feedback, meaning it may differ slightly from the original workshop outcomes.

2. Trigger Threshold for SAV Mitigation

Overarching Principle

Participants emphasized adherence to the federal mitigation hierarchy:

1. Avoid impacts to SAV
2. Minimize unavoidable impacts
3. Mitigate for unavoidable impacts

Any unavoidable loss of SAV habitat should be accounted for and discouraged through compensation.

Size Threshold Discussion

The group discussed whether a minimum impact size should trigger compensatory mitigation.

Key points:

- Any impact above zero should require some form of compensation
- Concern: establishing a minimum exemption that is non-zero could encourage project designs that intentionally remain below that threshold

Restoration practitioners noted that the smallest feasible restoration effort that reliably establishes SAV is approximately 300 square feet, which—using a 3:1 mitigation ratio—would require a 900 square foot mitigation project.

Alternative thresholds (e.g., 500 square feet) were discussed to simplify calculations, but consensus remained that:

- A specific acreage threshold for in-kind compensatory mitigation is useful
- Compensation should still apply to all impacts, we do not want project planners to be thinking “I can disturb this much without penalty”

How SAV Impacts Are Quantified

SAV impacts are quantified during the permitting process by applicants, not by the SAV Workgroup. This typically involves:

- Overlaying project designs with the most recent 3 years of SAV aerial survey data
- Identifying direct, permanent impacts (e.g., burial from shoreline structures or dredging)

Indirect or temporary impacts (e.g., turbidity, sediment plumes) are handled separately through measures such as:

- Time-of-year construction restrictions (mid-April through mid-October)
- Turbidity curtains or similar best practices

Screening reports available through MDE primarily indicate presence/absence of SAV, not quantitative acreage impacted. While detailed impact data likely exist within agency databases, they are not consistently publicly accessible.

Discussion highlighted:

- Most living shoreline impacts are well under one acre, often in the range of a few thousand square feet
- Larger impacts are typically associated with maintenance dredging
- Geographic clustering of impacts, particularly in Anne Arundel County, may reflect both shoreline stabilization trends and local adoption patterns

Prop Scarring Discussion

A brief discussion addressed propeller scarring:

- Generally considered accidental
- No formal mitigation requirements in Maryland or Virginia
- Scarring is monitored via aerial surveys and reported to regulatory agencies
- Enforcement historically focused on egregious or repeated damage (e.g., hydraulic dredging)

Participants emphasized that prop scarring is outside the scope of the current mitigation guidance, which focuses on permitted projects.

2. Determining When In-Kind Mitigation Is Appropriate

Before requiring in-kind SAV mitigation, habitat conditions must be evaluated.

Key recommendations from document:

- If recent (last 3 years) SAV data show declining conditions in the impacted tributary, in-kind mitigation may not be appropriate

- In such cases, mitigation should occur:
    - Elsewhere in the same salinity zone, or
    - Through an in-lieu fee mechanism if restoration success is unlikely regionally

Participants discussed limitations of existing in-lieu fee programs:

- SAV mitigation banking does not currently exist and is not compliant with the 2008 federal mitigation rule.
- Establishing the option in Maryland for an in-leu fee earlier in the process would require more than policy change, it would require regulatory or legislative action since the in-kind, out-kind, then in-leu sequence is in the regulations already.
- SAV mitigation banks would likely need to be operated by states due to public ownership of submerged lands

Consensus emerged that:

- In-lieu fees are preferable to no compensation, especially for small impacts
- Any recommendation must clearly acknowledge regulatory and legal constraints
- Continued exploration of SAV mitigation banking is warranted as a future action

Action: Continue discussion around SAV mitigation banking/in-leu fee feasibility and logistics with USACE and other permitting entities.

Discussion/Chat:

- Brooke Landry: Megan – do you have a sense of what an average size impact would be?
    - Megan Spindler (USACE): For living shorelines it is usually smaller than an acre. Projects larger than an acre are usually something like maintenance dredging. The larger living shoreline projects are likely around 20,000 square feet (sf) whereas most smaller ones are 1,000-3,000 sf.
- Emily French (Chat): some of my recent living shoreline projects (individual permits) have impacted about 0.5 acre of SAV. about once every 2 or 3 weeks i get an SPGP (category b) that impacts greater than 300 sf of SAV
    - Erika Koontz: Thanks Emily. That's good to know
    - Emily:no prob!! thanks for keeping track of the MDE data! and awesome megan spindler is there and can provide square footage and acreage estimates too. EPA R3, NMFS and USACE are all tracking SAV impact values but it can be a bit confusing sometimes, for instance we as EPA don't necessarily know when a permit actually gets completed (and impacts SAV) and we don't know when MDE has required a payment into the tidal comp fund for an SAV impact
    - would it be easier for MD DNR to establish an in lieu fee than a mitigation bank for SAV or tidal wetlands? i think both NH and MA state agencies have tidal wetland ILFs.

    - would say to that that there was just a permittee responsible mitigation project approved for oyster restoration that is on state bottom!! so can be done! by a private company/ entity!
    - chris judy consulted on and approved two areas near kent island for an oyster restoration project in excahnge for an SAV impact
- Johnathan Watson (Chat): there should always been avoidance/minimization up front, before mitigation. Could you simply cite the mitigation hierarchy described in the 2008 mitigation rule? It addresses the different forms of compensation.
- Emily French (Chat): Not an expert but from a few years in the 404 program it seems helpful to have different options available-- whether it's permittee responsible, ILF or bank.

3. Mitigation Site Selection Criteria

Suitable mitigation sites should:

- Meet or exceed SAV habitat requirements outlined in Technical Synthesis 2
    - Have adequate light availability, low chlorophyll, and appropriate depth
    - Experience low wave energy and boat traffic
    - Be adjacent to compatible land uses
    - Have historical SAV presence

To maximize limited seed resources:

- Mitigation sites should not currently support SAV
- Restoration guidance from the Chesapeake Bay SAV restoration manual should be followed

Use of habitat suitability indices (e.g., GrassLight) was recommended as an optional tool to assess restoration feasibility.

4. Proximity of Mitigation Sites to Impact Site

Mitigation should occur:

- As close as possible to the impact site
- Preferably within the same tributary
- At minimum, within the same salinity zone

If mitigation occurs outside the sub-watershed, a justification should be provided.

Species Selection and Flexibility

Species selection should align with established restoration guidance:

- Freshwater: wild celery
- Mesohaline: recommended species suite
- Polyhaline: appropriate salt-tolerant species

While proximity of donor material is generally preferred, participants emphasized:

- Genetic and ecological uncertainty
- Need for flexibility based on seed availability, water quality trends, and project-specific science
- Guidance should not be overly prescriptive and must allow regulators discretion

Action: Consider add language for the need for site specific flexibility and consider adding flow chart style examples where specific site considerations would demand flexibility.

5. Donor Bed Criteria

Donor beds should:

- Be large relative to SAV extent in the tributary
- Have been present in aerial surveys for at least 5 years
- Exhibit high density and reproductive capacity (approx. 75% reproductive plants based on visual assessment)
- Be harvested under appropriate state permits

Seed collection should minimize impacts to donor beds and prioritize sustainability.

Action: Consider adding language about whether donor seed material can be taken from lakes then added to a tributary.

Action: Consider the implications of prioritizing retention of local genetic material due to the assumption that the plants are best adapted for that area. There could be situations where you wouldn't want to do that. For example an area with changing baseline conditions, a plant may be best adapted for an area 50 years ago but may not be the best candidate for future conditions.

6. Monitoring Requirements

Monitoring recommendations include:

- Annual surveys during peak biomass
- Metrics such as percent cover, shoot density, and bed extent
- Monitoring duration of at least 5 years

7. Reference Sites

Reference sites are required to:

- Distinguish mitigation failure from regional water quality decline
- Match mitigation sites in species composition, substrate, depth, and water quality

8. Reference Site Proximity to Mitigation Site

Reference sites should be located as close as possible to the mitigation site.

If outside the tributary/subwatershed, justification must be provided.

9. Responsibility for Monitoring

Key points:

- Monitoring costs should be included in project funding
- Monitoring should be conducted by a qualified third party when possible
    - If not, photographic documentation should be required
- Permittees are responsible for adaptive management actions during the monitoring period

Discussion/Chat:

- Q: Should there be field verification, not just photos?
    - Jonathan Watson (Chat): I'd consider it an achievement if we even got reports, much less field verification
    - Agencies do not have the capacity to do verification.
- Jonathan Watson (Chat): agree with Megan S. - if the compensation is through a bank, then liability falls on the banker. That is all well defined in the regs

10. Maintenance

If mitigation is successful at year 5, obligations end. If unsuccessful, regulatory agencies determine next steps, including potential contingency actions.

Contractual responsibility between permittees and restoration contractors should be defined in project agreements.

Discussion/Chat:

- Megan Spindler: If there is an in-leu fee or mitigation bank responsibilities are outlined in that approval process.
    - Jonathan Watson (Chat): agree with Megan S. - if the compensation is through a bank, then liability falls on the banker. That is all well defined in the regs
- Q: Who is responsible in the event that a community organization wants to put in a living shoreline and they need to mitigate for SAV impacts, so they hire a consulting agency. If the mitigation process is not successful because of water quality issues, is the permittee responsible or the contractor financially responsible?
    - Megan Spindler: The applicant or permittee is the one who will be responsible for mitigation. Unless the responsibility is transferred via an official mechanism such as an in-leu fee or mitigation bank. Is it worth specifying in these recommendations who is responsible? Through a regulatory standpoint it is going to be the applicant.
        - Jonathan Watson (Chat): agree with Megan S. - if the compensation is through a bank, then liability falls on

the banker. That is all well defined in the regs

11. How should project success be determined?

Success should be defined by the Threshold Value and Quality Ratio as defined by the Seagrass Restoration Handbook - Gamble et al. (2021).

12. Should Financial Assurances be Required?

Some financial assurance should be provided that the applicant/permittee can perform at least one additional round of seeding (year 3) if the project is not initially successful.

If assurance is impossible, a letter of commitment/agreement should be required to ensure follow up or enactment of a contingency plan.

Action: Consider leaving this out because it is already included in Maryland's Phase 2 mitigation plans and is baked into ACE regulations.

Closing and Next Steps

Participants emphasized that this guidance:

- Is advisory, not regulatory
- Represents best available science
- Must allow site-specific flexibility

Next steps include:

- Refining language based on discussion
- Clarifying in-lieu fee recommendations and caveats
- Continuing discussions on mitigation banking as a future action item

Action: This document will be considered final after the holidays, get any objections/comments to Brooke Landry by December 19th.

III. Member Research

Lead: Multiple
Receive presentations from multiple presenters. See descriptions of presentations below.

Notes:

- ### Carbon Storage in Chesapeake Bay SAV – Katie Tanner (UMD Eastern Shore)

  ***Description*: Presentation by UMES PhD student Katie Tanner on her research looking into eelgrass carbon sequestration across the mid-Atlantic and how temperature and subsequent population decline may reduce eelgrass meadows' future sequestration capacity.**
  Slides: Click Here

- **Eelgrass Dynamics in the Lower Bay – Chris Patrick (VIMS)**

  Description:
  Slides:

- **Product Demonstration – Nichollas Thatos (Coastal Protection Technologies)**

  Description: Coastal Technologies Corp has developed systems providing revolutionary abilities to control water, wind, sediment, vegetation, and produce scalable shellfish reefs. These temporary and adjustable-in-the-field systems were designed to address the failure points of standard methods while promoting natural restoration and resilience.
  Slides: Click Here

- **SAV Restoration with AUVs -- Nate L'Esperance (Ulysses Ecosystem Engineering)**

  Description: Ulysses Ecosystem Engineering is building and piloting Autonomous Systems for SAV Restoration and presented field results from Virginia's Eastern Shore.
  Slides: Click Here