



# Chesapeake Bay Program

Science. Restoration. Partnership.

## **SAV Workgroup Fall Meeting 2022 – Meeting Minutes**

November 01, 2022; 10:00 am - 3:00 pm ET

### **ATTENDEES (51)**

<b>Amanda Shaver,</b> VA DEQ	<b>Amanda Small,</b> MD DNR	<b>Andrew Howard,</b> DNREC	<b>April Sparkman,</b> USACE	<b>Becky Golden,</b> MD DNR
<b>Becky Monahan,</b> MDE	<b>Bill Dennison,</b> UMCES	<b>Bo Williams,</b> EPA	<b>Bob Murphy,</b> Tetra Tech	<b>Breck Sullivan,</b> USGS
<b>Brooke Landry,</b> MD DNR	<b>Carl Friedrichs,</b> VIMS	<b>Cathy Wazniak,</b> MD DNR	<b>Cheyenne Owens,</b> USFWS	<b>Chris Guy,</b> USFWS
<b>Chris Patrick,</b> VIMS	<b>Cindy Johnson,</b> VA DEQ	<b>David O'Brien,</b> NOAA	<b>David Wilcox,</b> VIMS	<b>Dick Zimmerman,</b> Old Dominion University
<b>Doug Myers,</b> Chesapeake Bay Foundation	<b>Elle Bassett,</b> Arundel Rivers	<b>Enie Hensel,</b> VIMS	<b>Erin Reilly,</b> James River Association	<b>Erin Shields,</b> VIMS
<b>Gina Hunt,</b> MD DNR	<b>Greg Brennan,</b> South Riverkeeper	<b>Jon Lefcheck,</b> Smithsonian Institution	<b>Jonathan Watson,</b> NOAA	<b>Julie Bortz,</b> MD DNR
<b>Katia Engelhardt,</b> UMCES	<b>Katlyn Fuentes,</b> Chesapeake Research Consortium	<b>Kayla Clauson,</b> DNREC	<b>Lauren Alvaro,</b> VIMS	<b>Lesley Baggett,</b> AKRF
<b>Maile Neel,</b> U. of Maryland	<b>Marc Hensel,</b> VIMS	<b>Matt Robinson,</b> DOEE	<b>Megan Fitzgerald,</b> EPA	<b>Mickie Edwards,</b> VIMS
<b>Mike Johnson,</b> VA MRC	<b>Mike Naylor,</b> MD DNR	<b>Paige Hobaugh,</b> Tetra Tech	<b>Peter Tango,</b> USGS	<b>Rebecca Thur,</b> MD DNR
<b>Sally Hornor,</b> Magothy River Association		<b>Thomas Arnold,</b> Dickinson College	<b>Tish Robertson,</b> VA DEQ	
<b>Tom Guay,</b> Severn River Association		<b>Victoria Hill,</b> Old Dominion University	<b>Woody Francis,</b> USACE	

**PRESENTATION SLIDES CAN BE FOUND AT THE FOLLOWING WEBSITE:**

<https://www.chesapeakebay.net/what/event/sav-workgroup-meeting-october-2022>

The following meeting notes complement the slides and highlight the discussion points – they do not summarize information provided in the slides. If you have any additional questions pertaining to the slides, please contact the presenter directly.

## **SAV WORKGROUP FALL 2022 MEETING – MEETING MINUTES**

**Welcome and Introductions:** Dr. Kandis Boyd is the new Director of the Chesapeake Bay Program. Katlyn Fuentes is the interim SAV Workgroup Staffer and sole Habitat Goal implementation Team (HGIT) staffer until a second HGIT Staffer is hired.

### **SAV WORKGROUP UPDATES**

**Presenter:** Brooke Landry (Workgroup Chair, MD DNR)

**Presentation:** <https://d18lev1ok5leia.cloudfront.net/chesapeakebay/documents/2022.11.01-SAV-WG-Fall-Meeting-Workgroup-Updates.pdf>

- **2021 SAV NUMBERS:** 67,470 acres of SAV in 2021
  - 52% of the 2025 target of 130,000 acres
  - 36% of the ultimate 185,000-acre goal
  - **Link to Chesapeake Progress:** <https://www.chesapeakeprogress.com/abundant-life/sav>
- **UPDATES on FY2021-2022 GIT FUNDED PROJECTS**
- **SAV WG STAC WORKSHOP PARTICIPATION NOTES**
- **SAV MONITORING UPDATES: SAV WATCHER AND SENTINEL SITE PROGRAMS**
  - **Link to SAV Monitoring Program:**  
<https://www.chesapeakebay.net/what/programs/monitoring/sav-monitoring-program>
  - **Link to SAV Watcher Program:** <https://www.chesapeakebaymonitoringcoop.org/chesapeake-bay-sav-watchers/>
- **PSC REPORT AND RECOMMENDATIONS**
- **ISBW14 RECAP**

### **SAV ACREAGE TARGET ADJUSTMENTS – 5 VIRGINIA SEGMENTS**

**Presenter:** Tish Robertson (VA DEQ)

**Presentation:** <https://d18lev1ok5leia.cloudfront.net/chesapeakebay/documents/2022.11.01-SAV-WG-Fall-Meeting-PRESENTATION-Robertson.pdf>

- **David Wilcox:** To confirm – we’re moving to the Chesapeake Bay restoration target goals for the five segments?
  - **Tish Robertson:** Yes.
- **Tom Guay:** How does Virginia go about doing their shallow water clarity assessments?
  - **Tish Robertson:** VA DEQ works with the Shallow Water Monitoring Lab at VIMS. Carl Friederichs manages that lab. The lab maps water clarity and compiles the information with the SAV aerial data to give a final shallow water assessment.
  - **Tom Guay:** Is VIMS doing that based on aerial surveys or do they measure in situ in the tributaries?
    - **Tish Robertson:** Water clarity is measured based on data flow and SAV is mapped through aerial photography. Additionally, water clarity is measured in specific, targeted tributaries, and the selected tributaries changes every three years.
    - **Carl Friederichs:** If the habitat area has SAV, then there is less inclination to assess actual water clarity because the habitat is suitable for SAV. However, if the SAV is missing, then water clarity is assessed. If the water clarity is fine, then it is not responsible for the lack of SAV. The areas that are problematic are those that are shallow-enough for SAV, but that have no SAV AND have poor water clarity.

## **SAV WORKGROUP FALL 2022 MEETING – MEETING MINUTES**

### **SAV RESTORATION SUCCESS DEFINITION; SAV WORKGROUP CONSENSUS FOR MITIGATION REQUIREMENTS**

**Presenters:** Brooke Landry and Becky Golden (Workgroup Vice-Chair, MD DNR)

**Presentation:** <https://d18lev1ok5leia.cloudfront.net/chesapeakebay/documents/2022.11.01-SAV-WG-Fall-Meeting-PRESENTATION-Landry-Golden-MitigationCriteria.pdf>

- **PUBLICATION:** *Evaluation of the Effectiveness of SAV Restoration Approaches in the Chesapeake Bay: A Program Review Requested by the Chesapeake Bay Program's SAV Workgroup and Conducted by the Chesapeake Bay Program* ([Link to Article](#)) This link doesn't go anywhere
- **JAMBOARD:** the link to the Jamboard was provided during the meeting, with the request for those in attendance to fill it out by close of business Wednesday, 11/2. Below are the questions included in the Jamboard, as well as a link to the results.
  - **QUESTIONS:**
    - *What metrics or parameters do you suggest to be monitored?*
    - *How should restoration sites be compared to reference sites?*
    - *Are there new or existing performance standards/success criteria you'd recommend?*
  - **RESULTS CAN BE VIEWED HERE:**  
<https://d18lev1ok5leia.cloudfront.net/chesapeakebay/documents/2022.11.02-JAMBOARD-Slides.pdf>
- **QUESTIONS/COMMENTS:**
  - **Matt Robinson:** How does Becky's proposal work with USACE mitigation requirements?
    - **Becky Golden:** Unknown. MDE has reached out for guidance, so this is just how the state is working on this.
    - **April Sparkman:** Aside from USACE Regulatory, who is requiring SAV mitigation? I'm curious what the catalyst is for these mitigation projects.
      - **Becky Golden:** Maryland Dept. of the Environment required SAV mitigation.
  - **Matt Robinson:** DE Center for Inland Bays has monitored SAV with drones.
  - **Brooke Landry:** Regarding funding for volunteers, would the requested funding be used to pay volunteers or to fund organizations' coordination efforts?
    - **Bill Dennison:** For the organizations.
    - **Elle Bassett:** There are baseline costs that are required before even bringing on volunteers: getting information, printing, purchasing supplies, etc.
  - **Matt Robinson:** I would like to stay involved in mitigation discussions moving forward.

### **EVALUATING AND ENHANCING EELGRASS RESILIENCY AND RESTORATION POTENTIAL IN A CHANGING CLIMATE**

**Presenter:** Erin Shields (CBNERR-VA/VIMS)

**Presentation:** <https://d18lev1ok5leia.cloudfront.net/chesapeakebay/documents/2022.11.01-SAV-WG-Fall-Meeting-PRESENTATION-Shields-PART-1.pdf>

- **Bill Dennison:** Regarding the genomics work, what are you going to be looking for? Historically, heat shock proteins were examined for heat tolerance.
  - **Erin Shields:** Heat shock proteins are one of the things being examined. For more information on other avenues being explored, you'd have to speak to one of the geneticists on the project.
- **Cathy Wazniak:** Have there been studies of differences in epiphytes between the two areas?
  - **Erin Shields:** No. There aren't any comparative studies between these two areas.

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### **IS A PRECAUTIONARY APPROACH TO PERMITTING TOO CONSERVATIVE? QUANTIFYING THE IMPACTS OF OYSTER AQUACULTURE ON SAV**

**Presenter:** *Erin Shields (CBNERR-VA/VIMS)*

**Presentation:** <https://d18lev1ok5leia.cloudfront.net/chesapeakebay/documents/2022.11.01-SAV-WG-Fall-Meeting-PRESENTATION-Shields-PART-2.pdf>

- **Woody Francis:** What did they do to correct the dragging cages?
  - **Erin Shields:** They reduced the oyster density and added more floats to the bags.
- **David O'Brien:** I'm not sure how only 25% cover under the floating cages compared to lanes on Eastern Shore grower is not an impact to SAV?
  - **Erin Shields:** It certainly is an impact to SAV directly under the cages. However, within the overall farm footprint, the amount of bottom that the cages are over is about 7% or so of the entire farm. It is such a small impact and creates these small areas of 25% cover that are surrounded by 100% cover. But it is certainly something we are looking at moving forward, because those direct cage impacts just started showing up this past summer.
- **Rebecca Thur:** Can you please confirm the gear types in your study? The beginning of your presentation indicated that they were floating, but the scouring in the Western Shore site made it seem like they were resting on the bottom during certain portions of the tidal cycle.
  - **Erin Shields:** The gear was supposed to be floating gear that moved with the tidal cycle. However, the Western Shore farm was not maintained to the degree that the Eastern Shore farm was, as they overfilled their bags, which caused the gear to drag despite being connected to the floating line.

### **UPDATES ON MARYLAND'S ECOLOGICAL EFFECTS OF SEA LEVEL RISE (EESR) PROJECT'S SAV COMPONENT**

**Presenter:** *Becky Golden*

**Presentation:** <https://d18lev1ok5leia.cloudfront.net/chesapeakebay/documents/2022.11.01-SAV-WG-Fall-Meeting-PRESENTATION-Golden.pdf>

- **Chris Patrick:** Do these predictions include accretion rates? We found that accretion rates of healthy SAV beds pretty much negate sea level rise in the Bay at least through 2060 in the modeling work we've been doing at VIMS.
  - **David O'Brien:** That's a much more positive message that should be shared widely! NOAA is all for the restoration/protection of SAV!
  - **Becky Golden:** For the marsh portion, they did factor in accretion and erosion based on satellite data that they had.
- **David Wilcox:** Regarding the story maps, I think it would help to show the shoreline and bathymetry changes along with the SAV change.
- **Brooke Landry:** Is there an estimate for how long it takes marsh to convert to SAV? There's data that suggests that marshes aren't suitable and would take a long time for it to be habitable for SAV.
  - **Bill Dennison:** It would take several years. One of the problems is that the seeds from the SAV can't get into the clay/peat substrate.

### **INCORPORATING HEAT TOLERANT SEAGRASSES CAN ENHANCE RESTORATION SUCCESS – A FIELD RESTORATION EXPERIMENT USING *Zostera marina* & *Ruppia maritima* IN LYNNHAVEN RIVER, VA**

**Presenter:** *Enie Hensel (VIMS)*

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**Presentation:** <https://d18lev1ok5leia.cloudfront.net/chesapeakebay/documents/2022.11.01-SAV-WG-Fall-Meeting-PRESENTATION-E.Hensel-PART-1.pdf>

- **Dick Zimmerman:** Regarding the differences in the animal populations between *Ruppia* and *Zostera*, you have more individuals but no difference in biomass. How similar is the species composition in the two treatments?
  - **Enie Hensel:** What species are present is very similar, but size and abundance differed. There were larger but fewer individuals found within *Zostera*, whereas *Ruppia* were smaller but in greater numbers.
  - **Dick Zimmerman:** Is that because *Ruppia* isn't good habitat for the larger animals, once they grow to a certain size? Do they move somewhere else? Or are they actually being removed by predators?
  - **Enie Hensel:** We did not test for this specifically. I would hypothesize that yes; they would better be able to take refuge in a bigger SAV canopy/bed.

### **EXPLORING HOW LARGE-BODIED STINGRAYS ALTER SEAGRASS HETEROGENEITY AND ITS CASCADING EFFECTS ON PREDATOR-PREY INTERACTIONS – A PILOT EXPERIMENT IN *Zostera marina* IN MEADOWS IN VA COASTAL BAYS**

**Presenter:** *Enie Hensel (VIMS)*

**Presentation:** <https://d18lev1ok5leia.cloudfront.net/chesapeakebay/documents/2022.11.01-SAV-WG-Fall-Meeting-PRESENTATION-E.Hensel-PART-2.pdf>

- **Brooke Landry:** Regarding your stingray study, do you think stingrays have the ability of making a negative impact on the heterogeneity of the seagrass beds?
  - **Enie Hensel:** Yes, they can have negative effects if you're looking at the longevity of the bed and the habitat being there. Beyond this pilot study, it would be interesting to look at bed size and ray intensity (amount they forage and/or number of rays there), to see if they truly have positive, neutral, or negative effects on habitat functionality.

### **CHANGING FOUNDATION SPECIES IN CHESAPEAKE BAY: IMPLICATIONS FOR FAUNAL COMMUNITIES OF TWO DOMINANT SEA GRASS SPECIES**

**Presenter:** *Lauren Alvaro (VIMS)*

**This presentation was not posted to the website as the results on this study are preliminary and have not been approved for distribution.**

### **ENVISIONING THE FUTURE FOR CHESAPEAKE BAY SEAGRASSES UNDER CLIMATE CHANGE**

**Presenter:** *Marc Hensel (VIMS)*

**Presentation:** <https://d18lev1ok5leia.cloudfront.net/chesapeakebay/documents/2022.11.01-SAV-WG-Fall-Meeting-PRESENTATION-M.-Hensel.pdf>

- **Doug Myers:** This model is truly highlighting the consequences of missing our 2025 nutrient reduction deadline.
- **Brooke Landry:** Assuming we continue our reductions, what role does salinity play in the stability of *Ruppia*? Do we anticipate a more or less *Ruppia* dominated bay?
  - **Marc Hensel:** Unknown. I hypothesize that the change in salinity is going to be ok, because these grasses are generally widely salinity-tolerant. Generally, low salinity indicates a high-

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flow year, and high salinity indicates a low-flow year. Also, salinity is the most important indicator for models of widgeon-grass.

### **DEVELOPMENT OF A ROBUST AUTOMATED ALGORITHM TO QUANTIFY SUBMERGED AQUATIC VEGETATION FROM HIGH RESOLUTION SATELLITE IMAGERY**

**Presenters:** *Dick Zimmerman and Victoria Hill (Old Dominion University, VA)*

**Presentation:** <https://d18lev1ok5leia.cloudfront.net/chesapeakebay/documents/2022.11.01-SAV-WG-Fall-Meeting-PRESENTATION-Zimmerman-Hill.pdf>

- **Brooke Landry:** Can you differentiate the macroalgae that's sitting on top of the plants based on the reflectance of satellite imagery of the Susquehanna Flats?
  - **Victoria Hill:** Unfortunately, no because the reflectance imagery shows everything as green – there's no way to distinguish the two. Due to the quality of satellite images and the frequency in which they're being taken, there's a chance that the observed changes in density/area over time could be indicative of the presence of macroalgae.
- **Thomas Guay:** We have tons of biomass on our remaining SAV in the Severn River. Our grasses have been brown since August.
- **Chris Patrick:** Have we looked at how long the Eelgrass vegetative shoots are positively buoyant? I've looked at reproductive shoot buoyancy – one of our studies was conducted in a flume and we calculated length of buoyancy before the shoots sunk.
  - **Dick Zimmerman:** The length of buoyance is largely dependent on species.

### **DISCUSSIONS, FEEDBACK, QUESTIONS, OTHER ANNOUNCEMENTS:**

- A brewery in Virginia has been using SAV from the Eastern Shore to brew beer! For more information, check out this article: <https://whro.org/news/local-news/32734-virginia-brewery-uses-eastern-shore-eelgrass-in-new-conservation-themed-brew>
- **FUTURE MEETINGS:**
  - **Chris Patrick** suggested that meeting location should be rotated. For example, one meeting at Colonial Beach (VA) and one at VIMS in between each Annapolis meeting.
  - **WINTER 2023 MEETING:** Our next workgroup meeting will probably be a full day meeting that will take place early next year, 2023 (most likely in February).
    - Those in attendance were all in agreement that this next meeting will also be a hybrid format, as it allows for those at far distances to join virtually
- **WORKGROUP STAFFER:** It is anticipated that a new Habitat Goal Implementation Staffer will be hired early next year. This Staffer will help support the SAV, Black Duck, and Wetland workgroups. In the meantime, **Katlyn Fuentes** ([fuentesk@chesapeake.org](mailto:fuentesk@chesapeake.org)) will continue to be the sole staffer for all six Habitat GIT workgroups.