03/15/2023 – SAV WORKGROUP WINTER MEETING 2023

MEETING: SAV Workgroup Winter Meeting
DATE/TIME: 03/15/2023, 9:00am - 4:00pm

MEETING NOTES:

Click here for the meeting agenda and presentation materials

9:00am - WELCOME AND INTRODUCTIONS:

- Brooke begins the meeting by apologizing for the slight delay due to technical difficulties. Then Katlyn introduces herself and goes over housekeeping for hybrid meeting etiquette.

- There is a round of introductions starting with the participants online and then to those in person.

9:20am - SAV WORKGROUP UPDATES:

***Presenter**: Brooke Landry (SAV Chair)*

- SAV workgroup meetings are held quarterly. The last meeting was held November 1, 2022 and the next one will be a half day sometime in the summer (possibly June).

- The SAV outcome is to sustain and increase SAV in the Chesapeake Bay (CB) to 185,000 acres. The measurable goal of reaching 130,000 acres of SAV in the Bay by 2025 is off target because of increased precipitation and high flow events that took place between 2018 and 2019 where about ⅓ of the grasses were lost. As of 2021 there are 67,470 acres of SAV in the Bay, so only 52% of the 130,000 acres target has been met and 36% of the ultimate goal of 185,000 acres has been met. For more information on the outcome progress check out this link: https://www.chesapeakeprogress.com/abundant-life/sav

- To make sure the SAV outcome is on track for meeting its targets, every 2 years the Strategy Review System (SRS) is conducted to update the Management Strategy and Logic and Action Plan (LAP). The process will begin again in October 2023 and Brooke will be asking for input from members.

- Chris Guy makes the point that the SRS is overengineered and informs the group that Dede Lawal will be presenting on the SRS at the Habitat GIT Spring Meeting in April. The presentation will discuss the workgroup's role in the SRS process.

- The Management Strategy identifies the factors that influence success, identifies the current efforts and gaps related to those factors, and defines management approaches.

- From those management approaches we go into the Logic and Action Table process where the factors, current efforts, gaps, actions, metrics, expected responses, etc. are identified.

- Each factor from the logic and action table is then identified as an action in the 2-Year Workplan. It's given an action number, description, performance targets, responsible party, geographic location, and expected timeline.
    - Example Action: SAV Regulatory Review Meeting (action # 2.1a)
        - Gather state agency representatives in the policy and regulatory realm to discuss which recommendations to pursue from the report, *Existing Chesapeake Bay Watershed Statutes and Regulations Affecting Submerged Aquatic Vegetation*.
        - After the meeting on March 7, 2023 there is a plan to come to a consensus on an SAV definition, review the maintenance dredging policy, and come up with beneficial use guidelines.
- One way the workgroup gets things done is through the GIT Funded Projects where GITs/workgroups can compete internally for funding to tackle the actions identified in their workplans. Examples below:
    - In 2021 there was funding for a modeling project focusing on the impact of climate change on SAV. Those results will be presented in this meeting by Marc Hensel.
    - Most recently received funding to run a project looking at how BMPs can help conserve SAV beds on a local scale from flow and storm events. This project will also identify high-priority SAV areas for BMP implementation. The project was awarded $85,000 and has an 18 month timeline, which will start in May.
    - Another project focuses on advancing social marketing through 2 pilot programs and we will be working with the communications workgroup with Rachel Felver as the lead. The "Behavior Change Training and SAV Pilot Implementation" project will build off a previous GIT funded project where the marketing material and strategy plan was created, but it hasn't been implemented yet.
    - CB SAV monitoring web pages can be found on chesapeakebay.net. There are 3 tiers of the SAV Monitoring Program.
        - Tier 1 - aerial survey
        - Tier 2 - CB SAV Watchers Program, which is primarily located in Maryland. Kaitlin Scowen, who works with Brooke Landry at Md DNR is going to help with coordinating this program moving forward and will be able to dedicate more time to it.
        - Tier 3 - CB SAV Sentinel Site Program, which hopes to find 15 - 20 sites evenly distributed throughout the Bay's salinity zones. Several potential sites are already identified, approximately 10 will begin being surveyed this summer, and we're open to recommendations for other site locations if workgroup members are willing to take them on. Looking for funding for this project.

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- Principals' Staff Committee (PSC) Report recommended ways on how to increase monitoring efforts on SAV using infrastructure funding. Was able to get funding to support: automated methods that mimic hand delineation methods, long-term stability and growth for the SAV Watcher Program, and *Z.palustris* mapping efforts.

- SAV Workgroup had 3 STAC funded Workshops 2021 - 2022, but did not submit any proposals for 2023. If any member wants to lead a workshop it's an annual opportunity with funding involved (~$30,000 a year, $10,000 allocated for each workshop). Great opportunity, but a lot of work.

- SAV Restoration Guide and associated outreach materials put together by Green Fin Studio (Lead: Dave Jasinski) with consultation from Dr. Cassie Gurbisz. Can be found here.

- A list of science and research needs is maintained, so if there is a pressing science/research need you identify let Brooke (brooke.landry@maryland.gov) or Dede (lawalh@chesapeake.org) know and they will update the list. The list keeps track of what needs to be done and could potentially lead to resources. It's also a good list to look at if you are interested in conducting research and are looking for ideas for actionable science.

- SAV segment description fact sheets for each of the tributaries in the Bay are available at Data Dashboard, VIMS maps, and CAST. They include SAV trends, abundancy/density trends, conceptual diagrams, what makes a system more resilient/vulnerable etc.

- East Coast SAV Collaborative is a new initiative with the goal to bring together SAV experts from east coast states to share ideas that bring actionable science to the forefront of SAV management strategies.

    - The first activity from this collaborative will be a remote sensing workshop held July 25th - July 26th in Annapolis, MD offered by Dick Zimmerman and Victoria Hill. More details to come.

- Questions/Comments:
    - **Chris Patrick**: "Definition: SAV (Submersed Aquatic Vegetation) are vascular plants with roots that are primarily submersed, including plants that grow up to the surface but excluding emergent plants (like Typha, Spartina, etc) that are occasionally submersed. This definition would be inclusive of all species including non-natives that move into the area. Pro's and Con's there, but better to over than under protect....."

    - **Chris Patrick:** How are budgets set for GIT funding? Wouldn't want to ask for more money than available.
        - **Chris Guy**: There's about $1million available, there's no ceiling for how much funding you can ask for. $100,000 give or take $25,000 is a competitive range.

        - **Peter Tango**: Common proposals fall in the $50K-75K range. The goal is to support as many projects as possible.
    - **Bob Murphy:** Is there an analysis that estimates the amount of money that is necessary to get a project funded? Don't want to be short changed when asking for funding.
        - **Chris Guy**: Mentions Chesapeake WILD grant opportunity for additional support.

10:00am - BREAK

10:20am - SAV/ CLIMATE PROJECT FINAL REPORT OUT AND SHINY APP DEMO to CBP:
Presenter*: Marc Hensel (VIMS) - Envisioning the Future for CB SAV under Climate Change*

- Marc's contact info: mhensel@vims.edu
- GIT funded project worked on by: Marc Hensel, Chris Patrick, Dave Wilcox, & Jon Lefchek
- Research Question: How will climate change and human activities affect major communities of seagrass and aquatic vegetation in the Chesapeake Bay? The future will be different from the past, which makes modeling difficult because future prediction is based on the past. So how do we predict the future? In three steps.
- Step 1: Understanding the past: How have environmental conditions affected seagrass and aquatic plant communities?
    - Data sources: VIMS aerial SAV survey data, VIMS observation data, CBP WQ stations
    - Used cluster analyses to identify four dominant communities of seagrass and aquatic vegetation in the Bay: Oligohaline/tidal fresh community (most abundant), *Ruppia* monoculture, *Zostera* monoculture, and Mixed mesohaline (smallest zone). For the past 20 years *Ruppia* has been the most abundant grass in the bay, but there was a crash in 2020 so the oligohaline/tidal fresh is the most abundant in the Bay.
    - Built structural equation models to explain how past environmental changes have affected each dominant community. Saw that a rise in nutrients had a negative effect on water quality which led to less *Ruppia*, and an increase in salinity had a positive effect on *Ruppia* abundance.
    - **Matt Robinson**: Why is *Ruppia* such a boom or bust species?
        - **Marc Hensel**: *Ruppia* is highly temperature tolerant. Springtime influx of nutrients from the watershed clouds the water when *Ruppia* shoots are relatively short and causes hindrance in growth due to low light levels.
    - Important take home is that different communities are controlled by different seasonal variables. *Zostera* is influenced by temperature, human activity, and

water clarity in the summer. *Ruppia* is influenced by rain, nutrients, and chlorophyll a in the spring. Mixed Mesohaline is influenced by rain, temperature, and phosphorus in the summer. Oligohaline is influenced by phosphorus, temperature, and eutrophication in the summer. Climate (temperature, precipitation) and human activities (nutrients) have reshaped species dominance in CB.

- Step 2: Understanding the future: How will environmental conditions shift with climate change and human activities?
    - Data source: CBP climate modeling scenarios (2020 - 2060) models scenarios from future data at the same scale as the past.
    - There are two main scenarios used: No Further Action since 2020 (climate accelerated and no reduction) and Nutrient Reductions (climate accelerated with nutrient reduction). Temperature rise and precipitation variation are inevitable, so nutrient reductions may dictate future Bay conditions.
    - **Doug Myers**: Long term trends information projected based on the past. Seems to be variability in the noise of suspended sediment separate from eutrophic driven phytoplankton growth. Is there a way to tease out water clarity issues more related to suspended sediments than they are chlorophyll?
        - **Marc Hensel**: Substantial gaps in TSS past dataset, so it was excluded from these analyses.
- Step 3: Putting it all together: How will shifting conditions and shifting species affect SAV meadow coverage into the future?
    - Data source: predictive mixed effects models under 2 future scenarios (2021-2060) - 1,000 simulations for each community for each scenario.
    - The Nutrient Reductions scenario with 100 simulations has big variation, but the direction is clear. As we move into the 2060s with nutrient reduction, SAV area in acres goes up.
    - 95% envelopes show +50,000 acres of SAV in the Bay by 2040 if nutrient reductions continue.
    - None of the scenarios reach the SAV goal of 185,000 acres in CB.
- Summary: Temperature increase will widen the shift in dominant species and SAV management must adjust. Nutrient reductions in Oligohaline/tidal fresh and *Ruppia* zones are essential because they respond best to nutrient management. Local/regional action offsets and prevents the effects of global climate change. Targeted nutrient management that benefits climate tolerant species encourages continued recovery.
- Lessons Learned: Need community restoration goals in addition to segment/baywide goals and we must start quantifying species shifts, food web shifts, and change in fisheries.

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- Web App Demonstration

- Questions/Comments:
    - **Peter Tango**: Was sea level rise and shoreline development considered too? Do we assume grasses will have suitable habitat to move into as water levels rise and move into previously terrestrial habitats?
        - **Matt Robinson**: To add to Peter's question, how does SLR associated salinity changes affect communities? For example, will meso/mixed communities change to Ruppia dominated communities with rising salinity?
        - **Marc Hensel**: By 2060 did not see significant enough changes in available habitat from SLR to work it into final presentation.

12:00pm - BREAK

1:00pm - MEMBER UPDATES: SAV RESTORATION in CB and BEYOND

***Presenter**: Sara Sweeten (VA Tech) - Wild Celery (Vallisneria americana) Restoration Project*

- The past 4 years have been developing a unique technique for transplanting *Vallisneria*. Started growing plants in an aquaculture center at VA Tech to reduce the risk of spreading invasive species. The technique only takes a handful of seed pods. Transplants large *Vallisneria* that reach the surface, which helps with lack of turbidity and they can handle harsher conditions. Leads to question: How to move big plants without interrupting their roots?

- Many have flowers and seed pods at planting to encourage reproduction in the first season. Most of the plants have large, developed tubers to help with resiliency. Cages are used to protect the mature plants (biggest challenge is predation) and help regenerate the system naturally through seed dispersal, so they act as a population source.

- Over 4 years planted *Vallisneria* in 31 different water bodies from VA to MN. About 1,000 sq ft planted and has grown to about 5,000 sq ft (including the failures).

- Advantage of the technique: Can plant in high energy areas because the plants are bigger and can better withstand harsh conditions. Idea to marry gray and green infrastructure by planting in places where there is not a lot of habitat.

- Started using the term “Aquatic Dust Bowl” because the loss of aquatic plants is similar to the loss of prairie plants. Both lead to the suspension of fine sediments during high energy events.

- Sara’s questions for SAV experts:
    - Genetics: Local vs Non-local vs Mix of seeds to plant?
    - Predators: Who? How to identify (cameras, baited trap nets)?
    - Better caging options?
    - Available funding sources?

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- Questions/Comments:
    - **Brooke Landry**: When doing interstate travel - do you get permits to plant in other states? Do you worry about putting VA seed stock in other states?
        - **Sara Sweeten**: Depends on location. MN requires seed sources from MN, but no other states really have regulations or requirements, but I try to work with biologists in each state to make good decisions
    - **Brooke Landry**: Were there places you planted that resulted in plant failures?
        - **Sara Sweeten**: Biggest problem has been due to caging failures, which has led to predation. Have not lost plants due to low water quality.
    - Ever planted in areas with other species? With the intent of increasing native diversity?
        - **Sara Sweeten**: All planting sites are chosen by who has funding - not biology. However, found out that *Vallisneria* is not a good competitor with other species, but thrives in harsher conditions.
    - **Erin Shields**: "Camera traps blue crab in act of eating val"
        - https://link.springer.com/article/10.1007/s00442-019-04439-4

***Presenter**: Bob Murphy (Tetra Tech): Wild Celery Planting in the Middle River*

- Wild celery planting in a 6.5 acre area in the Middle River that was historically impacted by PCB contamination, so deemed necessary to remove the sediment. Prior to the sediment removal the beds were extensive. Mainly composed of *Vallisneria* and Coontail. *Vall* is great to use since it is native, abundant elsewhere in the area, and has a high abundance of seeds.

- Conducted a baseline rake survey in 2015, identified viable donor beds and chose 5 places to harvest from in 2017, seeded in 2018 and then again in 2022. After dredging, the depth did not go back to a place that was suitable for grasses, instead it stayed 9 ft or deeper, which impacted the results.

- After 5 years of monitoring, they found a decent emergence the first year (~6 plants m^2), but it crashed in 2019 and 2020 (due to storm event). There was a small uptick in 2021 and 2022. Will continue monitoring and visual assessments for 2 more years, maybe 3.

- Questions/Comments:
    - **Matt Robinson**: Any impact due to canvasback ducks?
        - **Bob Murphy**: Haven't seen any signs of duck feeding on the plants.

***Presenter**: Enie Hensel (VIMS)*: *Widgeongrass seeding methods from a manipulative field experiment: Incorporating generalist seagrasses enhances habitat restoration in a changing environment*

- Widgeongrass is a seed producing grass that is distributed worldwide. It can tolerate a wide range of salinity/temperature, is fast growing and has shallow roots, which makes it great for restoration purposes.

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- Seed Collection: Collect seeds by hand in a 3 day window in late May, early June. Sort the seeds into large outdoor aerated tanks. As the plant material decays it is sieved out while seeds drop. The key is to quickly remove seeds from plant material.

- Seed Processing: For *Zostera* they know that heavier seeds do best, so use a flume to process the seeds. For *Ruppia* the same test is not reliable because seeds come in different shapes, so they are testing various methods on how to properly process and test the viability of *Ruppia* seeds.

- Seed Storage: Seeds are stored in an aerated chilled (20 - 22°C) tank until planting time. Can store *Ruppia* seeds in a dark fridge at 4°C for 3-10 yrs in super high salinity.

- Seed Planting: Best time for planting is in October and they use a broadcasting method where the seeds are tossed out from a boat. Seeds per $1m^2$ varies, but between 25 - 100 seeds per $1m^2$.

- Outcomes: Found that *Ruppia maritima* broadcasted in the fall with no pretreatment established bigger and denser plots. Spring treatments had lower root establishments, so lower survivorship compared to the fall. Ruppia is a proactive restoration choice - can establish in the wild from planted seeds and can provide short term and longer term restoration success.

- Questions/Comments:
    - **Ken Moore**: Did you do any reciprocal plantings? Like *Ruppia* in the deep zone and *Zostera* in the shallow zone? Would you need to do both species?
        - **Enie Hensel**: Each treatment had 5 plots and the plots were striated where an entire row was in the same zone, so did manipulate depth for both plants and both survived. Added another stress level for *Zostera* in the shallow zone due to temperature and for *Ruppia* in the deeper zone due to bioturbators.
    - **Greg Brennan**: Is patchiness the natural habit of *Ruppia*?
        - **Enie Hensel**: Can make quite a monoculture, but when first growing dependent on seed location so can see patchiness, but overtime can grow to be less patchy.

***Presenter**: Mark Lewandowski (MDNR) and Michael Norman (AACC): Overview of SAV Restoration Efforts of DNR and AACC in Maryland (2015 - 2022)*

- Bay Grasses in Classes: Taught teachers and students how to grow grasses (wild celery, redhead, sago pondweed, etc.) in classrooms and then they planted them in the CB. From 1998 - 2011 36,000 students participated and 2 acres of adult plants were planted.

- From 2005 - 2006 experimented using tubers for restoration at Ft. Meade Lab. Found that plants grown from tubers grew twice as fast/tall and were overall healthier, but had to grow a parent tray for a whole season so not the most economical.

- New techniques for eelgrass seed collection and distribution. Used an aquatic plant harvester to harvest only the reproductive shoots from eelgrasses. Would store the plant material in laundry bags overnight and then take them to an aquaculture facility in Piney Point. One batch would be put back in the bay in spring. The bags were attached to cinder blocks and as the plants decay the seeds would drop. The other batch would be processed throughout summer and the seeds were redistributed off the back of the boat in fall. Successful until 2007 when the Bay got really hot and wiped out most of eelgrass that was planted.

- 2015 - AACC Whole Plant Restoration: got really good at growing plants. Grew them in aquariums, troughs, greenhouses, etc. but the effort got really expensive. Grew enough to do field plantings with limited success, but was able to make partnerships.

- Current research goal is to restore four dominant SAV species in the Oligohaline (wild celery) and Mesohaline (redhead grass, widgeon grass, sago pondweed) regions of the CB with seed. Strategies for success include increasing capacity for large-scale seed restoration, improving site selection/monitoring, and using seeding protocol studies to determine ways to improve bed recruitment.

- Uses the “turbulator” to force air through pipes (very effective) and the seeds stay on the material as a result. The plant material goes through box sieves onto screen mesh and about 24 baskets of material turn into 3-4 baskets of seed rich gum. As a note, wild celery does not go through the turbulator. The seed is mixed in a sand or aggregate mix to increase the dispersal when distributed into the water.

- Data driven site selection for SAV restoration in the Chesapeake Bay - Phase 1: Historical distribution and shoreline type. Three areas where seeding efforts have led to an increase in SAV: Magothy River, Gibson Island, and Upper Chester River.

- Future efforts will involve: the analysis of sediment composition and other site characteristics; experiments with seed mixtures, timing, and depth of plantings; and the establishment of test sites for a multi-year effort at western and eastern shore locations to develop protocols for success.

3:00pm SAV Restoration Success Criteria; WG Consensus for Mitigation Requirements:
Presenter*: Becky Golden (SAV Vice-Chair) - Developing Success Criteria & Performance Standards For in-kind SAV Mitigation Projects*

- There has been an increase in MD projects where SAV mitigation/restoration is required, but we don’t have any scientific or consistent methods to gauge mitigation success. Usually base them off of wetlands metrics, but not the best route to go with for SAV because of its variability. So considered working in measurements of reference beds to gauge the variability and regional trends. Looked at existing guidelines from other states for guidance. The report, A Review of Compensatory Mitigation in Estuarine and Marine Habitats, summarizes the existing documents Becky mentioned.

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- *This discussion's objectives are to review the proposed approach, gain workgroup consensus, and recommend a reasonable and consistent approach for future projects.*

- The proposed approach will be modeled after Short et al. 2000 and Gamble et al. 2021. We really need to choose what the parameter will be. Example: % cover, shoot density etc. Once chosen, you will measure that metric in your restoration site and reference sites every year to then calculate the threshold value and quality ratio. It provides a quantitative metric to decide if the restoration area is meeting some sort of threshold.

- Indicators: Would rather an in-situ non-destructive method that takes place during peak biomass of the dominant species. Based on the EPA report the most common metric is % cover or shoot density. Also would like to keep track of the area/extent of the bed over time to make sure it is expanding and not contracting over time.

    - Does everyone support the use of non-destructive measures when monitoring?
        - YES

    - Does everyone support the recommended approach that we should use shoot density or % cover?
        - % cover: YES - suggestion to use AI
        - Shoot density: NO

- Restoration Sites: Suggests using "Small-scale SAV Restoration Guide" as a means to help choose appropriate restoration sites. Also, we should not be planting or seeding if there are no suitable sites found or if the water quality conditions are not suitable. Encourages reaching out to DNR/other partners if need help figuring out if a habitat is suitable or not. It was suggested that reference sites should be in the same system as the restoration site.

    - Is everyone okay with using the restoration guide as a source and reaching out to the resource agencies/other partners with experience and not moving forward with restoration when conditions are not suitable?
        - YES – with the understanding that additional consultation with restoration practitioners will also be beneficial.

- Reference Sites: The permittee must establish a reference site. It must be far away enough from the impacts, but close enough to the restoration site to have similar species composition and habitat conditions. Encourages permittee to coordinate with DNR Resource Assessment Service or VIMS.

    - Discussion over having 1 vs 2 reference sites. Pros and Cons to having either 1 or 2 reference sites. No consensus was reached.

- Monitoring Timeline: Permittee must monitor both the restoration site and reference site for 5 years. After 5 years of monitoring if the quality ratio is higher than the threshold value then there is no further monitoring required. If the quality ratio is lower than the threshold value then the project requires a contingency plan.

    - Should we recommend an independent third party for monitoring to avoid conflict of interest?
        - Some in favor of having an independent third part - but can increase costs for smaller groups

- Next Steps:
    - Engage with the regulatory agencies on recommendations for determining in-kind mitigation success criteria.
    - Use the data collected from these projects to set appropriate mitigation ratios.
    - Increase SAV restoration and monitoring capacity by developing training and certification programs.
    - Investigate permittee responsible mitigation vs third party mitigation (mitigation bank, in lieu fee programs)

3:50pm Defining High-Priority SAV Areas in CB; WG Consensus for GIT-funded BMP Project

***Presenter**: Brooke Landry (SAV Chair) - Identifying High-Priority Areas for SAV Conservation in Chesapeake Bay*

- As part of the GIT funded BMP project, we promised to provide criteria to the contractor on how to select high-priority SAV areas. The Management Board said to prioritize areas of SAV that you really want to protect and let's figure out which BMPs would be most beneficial there. Want consensus from the workgroup on identifying the criteria that will help determine the high-priority conservation areas. There are 7 different criteria initially suggested.

- 1. Bed Size and Density - Is there a minimum acreage and density that you would consider for inclusion? Should the size of the bed matter?
    - **Doug Myers**: Don't want an arbitrary number but use science to see if there is a size needed for function
    - **JJ Orth**: Recommends Ken Moore's paper, "Influence of seagrasses on water quality in shallow regions of the lower Chesapeake Bay" to use as a reference.

- 2. Species Richness and Diversity - For freshwater regions should diversity be prioritized over monocultures or beds with just a few species?
    - YES - diversity is important

- 3. Bed Maturity/Stability - How long does a bed have to be around to be considered mature? Should mature beds be prioritized over less mature beds?
    - Suggestion: Maturity based on presence of native species

- 4. Sensitive/Rare Species - Should threatened species be prioritized over more common/abundant species (ie. Zostera)
    - YES

- 5. Habitat Value - Should areas that support economically or ecologically important fisheries be prioritized?
    - Suggestion: Use point system for these questions
    - Provides a place where we can think about diversity of animals using the habitat

- 6. Representativeness - Should areas that are representative of the realistic ecological condition be included? This may mean selecting areas/beds that accurately reflect current habitat conditions rather than other areas that are more ecologically pristine.
    - Suggestion: This question should be weighted less if we do weighted criteria

- 7. Priority Area Distribution - Should there be an equal number of priority areas identified in each salinity regime/community type?
    - Suggestion: Prioritize based on projections - in areas more likely to see success.
    - Need more discussion on this question
    - What else can we do besides BMPs to conserve the beds?

GENERAL ANNOUNCEMENTS PROVIDED BY EMAIL:

- **Aaron Kornbluth:** Also perhaps of interest is a report that Pew supported for eelgrass restoration success evaluation on the West Coast: https://honu.psmfc.org/media/PMEP/Eelgrass_Restoration_Synthesis/Documents/PMEP_Beheshti_Ward_2021_EelgrassSynthesisReport.pdf

- **Bruce Vogt**: "I am not able to join today but do have interest in the SAV restoration success and priority areas discussion. NOAA got funding for UMES to conduct a study in Tangier and Pocomoke sounds evaluating use of SAV habitats by fish (Summer flounder is the target species) using video. If video assessment could aid in evaluating restoration success in terms of fish habitat enhancement or if you all could help us with sampling design in the Pocomoke/Tangier area that would be great."

PARTICIPANTS (75): **Dede Lawal** (CRC/HGIT Staffer), **Katlyn Fuentes** (CRC/HGIT Staffer), **Chris Guy** (USFWS/HGIT Coordinator), **Gina Hunt** (MDNR/HGIT Chair), **Brooke Landry** (MDNR/Chair SAV WG), **Becky Golden** (MDNR/Vice-Chair SAV WG), **JJ Orth** (VIMS), **Elizabeth Lacey** (Stockton University), **Amanda Shaver** (DEQ), **Andrew Howard** (DE DNREC), **Angela Sowers** (USACE), **April Sparkman** (USACE), **Audrey Smylie** (BPW), **Bill Dennison** (UMCES), **Bill Morgante** (MD DPW), **Bob Murphy** (TetraTech), **Breck Sullivan** (USGS/CBP), **Brian Pickard** (TetraTech), **Carl Friedrichs** (VIMS/CBNERR-VA), **Cassie Gurbisz** (St. Mary's), **Cathy Wazniak** (MDNR), **Chris Patrick** (VIMS), **Cindy Johnson** (VA DEQ), **David O'Brien** (NOAA), **David Wilcox** (VIMS), **Elizabeth Lacey** (Stockton University), **Emily Anderson** (Smithsonian), **Emily French** (EPA), **Enie Hensel** (VIMS), **Erin Reilly** (JRA), **Erin Shields** (VIMS), **Helen Golimowski** (Devereux Consulting), **Jamileh Soueidan** (NOAA/CBP), **Jim George** (MDE), **JJ Orth** (VIMS), **Joel Carr** (USGS), **John Sandkuhler** (Nanticoke River), **Jonathan Watson** (NOAA), **Julie Reichert-Nguyen** (NOAA), **Kaitlin Sowen** (MDNR), **Katia Englehardt** (UMCES), **Kelly Somers** (EPA), **Ken Moore** (VIMS), **Lamuelle Coleman** (USACE), **Lesley Baggett** (AKRF), **Lew Linker** (EPA), **Lisa Ham** (Maritime

Museum), **Marc Hensel** (VIMS), **Maria Teresi** (USACE), **Mark Lewandowski** (MDNR), **Marty Gary** (PRFC), **Matt Robinson** (EPA), **Mike Dombroski** (USACE), **Mike Johnson** (VMRC), **Mike Naylor** (MDNR), **Nicole Nasteff** (USACE), **Peter Tango** (CBP), **Ray Li** (USFWS), **Rebecca Murphy** (CBP), **Sally Hornor** (Magothy River Association), **Sara Sweeten** (VA Tech), **Tish Robertson** (VA DEQ), **Tom Parham** (MDNR), **Woody Francis** (USACE), **Zak Kelleher** (Sassafras River Keeper), **Greg Brennan** (Spa Creek Conservancy), **Megan Fitzgerald** (EPA), **Jonathan Watson** (NMFS), **Stephanie Hall** (MDNR), **Doug Myers** (CBF), **Becky Swerida** (CBNERR/MDNR), **Paige Hobaugh** (Tetra Tech), **Elle Basset** (Arundel River Deferation), **Tess Danielson** (DOEE), **Aaron Konbluth** (Pew Charitable Trusts/Akron Consulting)