10/18/2023 – SAV Workgroup Fall Meeting

MEETING: SAV Workgroup Fall Meeting
DATE/TIME: 10/18/2023, 10:00 - 4:00 ET

WELCOME AND INTRODUCTIONS

Presenter: Brooke Landry (Workgroup Chair)

- Roll Call

SAV WORKGROUP UPDATES

Presenter: Brooke Landry (Workgroup Chair)

- SAV numbers were up in 2022 by 12%.
- PSC Report and Recommendations
    - **RFP #1:** Support effort to develop automated methods that mimic historic SAV bed delineation methods for aerial imagery. Will also support effort to map *Zannichellia palustris* with satellite imagery throughout mesohaline as proof-of-concept for satellite data use. **This RFP was posted and closed in September. Award being announced October 23rd.**
    - **RFP #2 will:** Support long-term funding for the Chesapeake Bay SAV Watcher Program. This RFP is being developed and will be posted later this fall.
- Upcoming NOAA Funding
    - 2023 Inflation Reduction Act Climate Ready Workforce for Coastal and Great Lakes States, Tribes, and Territories Initiative
        - closes November 30, 2023
    - Coastal Habitat Restoration and Resilience Grants for Underserved Communities
        - Closes December 19, 2023
- East Coast SAV Collaborative
    - Website: www.eastcoastsavcollaborative.com
    - Goal: 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.
- Chesapeake Conservation and Climate Corps: https://cbtrust.org/chesapeake-climate-corps/

MEMBER RESEARCH UPDATES

Erin Shields (VIMS): Evaluating and Enhancing Eelgrass Resiliency and Restoration Potential in a Changing Climate

- Developing a foundational understanding of which eelgrass populations and genotypes are more resilient and/or resistant to thermal stress, and why.
- Project Objectives
    - Compare resiliency traits of eelgrass populations in NC and VA.
    - Identify specific meadows in NC that could serve as seed donor beds.
    - Conduct reciprocal test restoration of NC and VA seeds.
- Questions/Comments:
    - **Brooke Landry**: How long will the project be going on for?

        - **Erin Shields**: One more year.
    - **Nancy Rybicki:** Genetic diversity is really interesting. What was your method?
        - **Erin Shields**: Collected 15 shoots from each meadow and brought them back to the lab, cleaned, and froze them. Then shipped them to a lab for further analysis.
    - **Enie Hensel:** Where are the seed collections happening? Is it just in the northern area?
        - **Erin Shields:** We did Brown Bay, Mobjack, and just around Big Island.
    - **Katia Engelhardt**: How do you seed those plots? Do the seeds move around quite a bit?
        - **Erin Shields**: The seeds that were selected to be used were ones in good shape, so hopefully they would've sunk immediately but we were patting them down to be sure.
    - **Cathy Wazniak**: Are you going to expand your genetic testing to other areas, such as coastal systems?
        - **Erin Shields**: The Park Service funded sampling in the Coastal Bays, Eastern Shore, Four Points Marsh, and Chincoteague Bay because they are interested in getting this information along their seashores.

Chris Patrick (VIMS): VIMS SAV Program Updates: The Mystery of the Horned Pondweed

- Burtons Bay Restoration Project – 4-year project
    - Funded by NOAA.
    - Collected 10.5 million *Zostera* seeds.
    - Planted 80 acres of eelgrass in a stratified design in the Fall.
    - Plan to restore scallops, eelgrass, and monitor biotic and abiotic factors in the bay.
- SAV Mapping Program
    - Combination of flight and satellite imagery used to cover the entire Chesapeake Bay.
    - For previous reports and the interactive map go here: https://vims.edu/research/units/programs/sav/access/index.php
    - Preliminary updates from the 2023 Survey:
        - Grasses in lower bay are up.
        - Grasses in Gunpowder River, Rappahannock, and Potomac are down.
- Horned Pondweed (*Zannichellia palustris*)
    - Reports of an explosion of horned pondweed in May and June.
    - Horned pond weed is not typically included in the aerial survey because it has died back by the time surveys are conducted.
        - What are we missing by not mapping it?
    - Conducted an earlier survey to capture horned pondweed and found that it occurs deeper and further offshore than later season meadows.
        - When the earlier survey is combined with the normal survey data there is a 34% increase of SAV mapped.
    - Including horned pondweed could mean getting closer to the SAV goal.
- Questions/Comments:
    - **Jonathan Watson (*in chat)***: I'm interested in the early-nursery function for *Z. palustris* for larval/juvenile anadromous fishes! The timing and location are right but haven't seen it reported in the literature.

        - **Chris Patrick**: It could be important for anything coming into the Bay in April or May. Since *Zannichellia* is further up in the tributaries not sure if marine larval organisms are getting that far up.
    - **Doug Myers (*in chat*):** *Z. palustris* may be even more important in sediment stabilization BECAUSE it's there early when spring rains are delivering sediment load.
    - **Jessie Iliff:** Do you think it is possible that horned pondweed will make it easier for other SAV species to grow?
        - **Chris Patrick:** You can get facilitation between grasses. *Zannichellia* comes in early and forms big mats, which can shade out other species. I can see it going either way.
    - **Erin Shields:** In an oyster aquaculture project we saw *Ruppia* excluded possibly due to poor light conditions and farm maintenance, but *Zannichellia* continued to grow. While just outside the farm *Ruppia* was abundant, so there is interesting competition.
    - **Jonathan Watson:** Mapping *Zanichellia* would be helpful in the regulatory setting because it can lead to more informed conversations around avoidance minimization.

Cassidy Gersten (VIMS): Simplifying Widgeongrass Seed Selection for Restoration: Effects of Seed Size and Storage Time on Successful Germination.

- How do we expand our restoration efforts to include Widgeongrass now that it makes up a predominant part of *seagrass* biomass in the Chesapeake Bay?
    - Can cold storage change germination outcomes on a fine scale?
    - Do Widgeongrass seeds exhibit a pattern of viability in which larger seeds with faster fall velocities are better than smaller and slower seeds?
    - Widgeongrass has two distinct seed shapes, will this effect germination probability as well?
- Preliminary Findings:
    - Seeds can be separated by fall velocity.
    - Cold storage time increases germination 20% - 40% after two months in the fridge.

Enie Hensel (VIMS): Stingrays Alter Seagrass Meadows as Predators and Habitat Engineers

- 3 research questions:
    - What predicts variation in the intensity of ray foraging on seagrass meadows?
        - Requires more investigation.
    - What are the effects of ray foraging holes on seagrass community structure?
        - Fast regrowth around stingray pit, so did not see a decrease in adjacent seagrass biomass.
    - What are the effects of ray foraging on basic ecosystem functions?
- Looked at the South Bay eelgrass meadows and used paired plot exclosure experiments and surveys.
- Rays are changing seagrass structure in the fauna and habitat complexity.
- <u>Questions/Comments:</u>
    - **Brooke Landry**: How many pups do rays have a year?
        - **Enie Hensel:** Depends on the species but can be 1 – 2 pups every other year.
    - **Nancy Rybicki:** Did you put the scallops in the exclosures?

        - **Enie Hensel**: No, they are natural scallop populations.
    - **Becky Swerida:** Are rays native to this area?
        - **Enie Hensel:** Yes, they are extremely native to this area. This is one of their historic migration spots for foraging, pupping, and mating.

PROTECTING CHESAPEAKE BAY SAV GIVEN CHNAGING HYDROLOGIC CONDITIONS: PRIORITY SAV AREA IDENTIFICATION AND SOLUTIONS: 2023 GIT PROJECT

Presenter: Bob Murphy (Tetra Tech)

- Goals of GIT Funded Project
    - To utilize an expanded set of criteria to evaluate and select high-priority SAV habitats.
    - Data analyses to associate water quality, land use, possibly other environmental conditions, and existing best practice (BMP) effects to temporal and spatial responses of SAVs as a basis for recommending the most appropriate BMPs.
    - Assessment of the functioning and efficiency of various BMPs through both literature review and data analysis/modeling to link these to the conditions and needs of priority SAV areas.
- Prioritization Criteria
    - Bed size and density
    - Bed maturity
    - Species richness and diversity
    - Sensitive/rare species
    - Habitat value
    - Distribution
    - Representativeness
- Plan to take the BMP data and apply it to the priority SAV beds to then make inferences.
- Questions/Comments:
    - **Doug Myers**: Are we able to take a look at the edge of streams instead of the delivery factors geared towards the deep channel attainment of water quality standards.
        - **Bob Murphy**: Yeah, I don't know how available the data will be at this stage for what you're asking.
        - **Doug Myers**: If we're focusing on shallow basins, we might need to look at sub watersheds that are proximal to the grass beds to look at the edge loading factors. So, we don't either underestimate or overestimate the BMP effectiveness to a specific location.
    - **Dave Wilcox**: Do you plan on using the priority designation to pick out the set of beds you want to look at and how they are responding? Or are you going to use the actual index as a response itself?
        - **Bob Murphy**: The idea was to use those beds first, but I think once we've done that we can go back and make some correlations. We can also look at places that don't have beds as a comparison.
    - **Ken Moore (*in chat*)**: I see no category of scoring relative to resistance to climate change factors: such as broad salinity or temperature tolerances, capacity to withstand storm events, recovery or regrowth capacities, etc.
        - **Bob Murphy**: That could be incorporated a bit in the geography criteria because that's where the impact is demonstrated more.

10/18/2023 – SAV Workgroup Fall Meeting

STRATEGY REVIEW SYSTEM PROCESS UPDATES AND ACTION TABLE REVIEW

Presenter: Brooke Landry (Workgroup Chair) & Sarah Brzezinski (EPA)

- Sarah went over the changes to the Strategy Review System
  - All outcomes will go through the full SRS Process once every two years but have the option to go before the Management Board (MB) every year.
  - Only one document required for submission to the MB: Outcome Review Summary.
- Brooke went through the current Logic & Action Table and labelled them red, yellow, or green.
- Jamboard Link: https://jamboard.google.com/d/1fzoDPAo9URFaL-s3475EiFMY0mEwA4p5TC2_zQiQli8/edit?usp=sharing
  - Are you good with current the lists of Factors Influencing Success and Management Approaches?
  - Do you want to recommend any updates to the Factors Influencing Success or Management Approaches?
  - Do you want to participate in the updating process?
- Questions/Comments:
  - **Doug Myers**: What I'm seeing still looks very stove piped. Is there a way this process allows for less stove piping, so we can look across programs.
    - **Sarah Brzezniski**: Previously we had 7 cohorts and now we have 4, so we have eliminated some of the stove pipes. The idea is that if we can get these cohorts to come before the MB every year we can begin to break down some of those silos and have cross outcome conversations.

2025 AND BEYOND: SAV GOAL ATTAINMENT DISCUSSION CONTINUED

Presenter: Brooke Landry (Workgroup Chair)

- Based on workgroup member's input on the Jamboard from the Summer SAV Workgroup Meeting on June 27th, the workgroup chair and vice chair propose revising the current SAV outcome in these ways:
  1. Adopt the 192,000-acre Bay-wide SAV goal to align with the state goals.
  2. We include a percent attainment goal of 75%, so that the goal reads, *"Sustain and increase the habitat benefits of SAV in the Chesapeake Bay. Achieve and sustain the ultimate outcome of 192,000 acres of SAV Bay-wide or 75% segment attainment necessary for a restored Bay. Progress toward this ultimate outcome will be measured against a target of 90,000 acres by 20XX, 130,000 acres by 20XX, and the ultimate outcome of 192,000 acres by 20XX."*
  3. When the next Aerial survey contract rolls over, we begin including *Zannichellia* in the acreage results.
- Questions/Comments:
  - **Chris Patrick:** The 75% in the second suggestion sounds arbitrary. What if we used a maximum composite? Something like "within the last 4 years the composite hit 90,00 acres".
    - **Becky Swerida:** The window of composite makes sense, but the rolling aspect might be confusing for people.

- **Doug Myers:** Like the idea of a threshold or a target line displayed along with the long-term averages. We could display whatever's happening over a 5-year period and call that the short-term trend and compare that to the 192,00 acre goal. I agree that some science needs to be applied to identify the threshold response for that lower line that would call for more drastic management actions.

SAV REGULATORY REVIEW AND POLICY HOUR UPDATE

Presenter: Becky Golden (Workgroup Vice Chair)

- GIT funded project to conduct a regulatory review on the Federal and DC, DE, MD, & VA SAV statutes
  - The Chesapeake Legal Alliance wrote the report, Existing Chesapeake Bay Watershed Statutes and Regulations Affecting Submerged Aquatic Vegetation
- Initial meeting on March 7, 2023, to look at the recommendations in the report to prioritize them and see if anything is missing.
  - It was decided to prioritize dredging & filling, marine & estuarine resources, and water quality standards.
  - The report was missing DC wetland regulations, living shorelines, and TMDL crediting.
- Following the initial meeting 7 office hours were held to further discuss the recommendations previously identified.
- Takeaways from the policy office hours
  - Jurisdictions should review shallow water/SAV designated use criteria in relation to recent SAV acreage data.
  - Engage MD Watermen's Association and regulatory partners.
  - Continue studies on the impacts of aquaculture on SAV habitat; promote practices and gear types that minimize impacts.
  - Evaluation of recovery trajectories of SAV following maintenance dredging.
  - Better tracking & public availability of SAV impacts/losses due to permitted activities.
  - Better tracking & public availability of SAV restoration and in-kind mitigation activities.
  - Valuation of SAV habitat benefits (ecosystem services).
  - Additional mapping of early season SAV species (*Zannichellia palustris*) to inform avoidance/minimization measures.
- Questions/Comments:
  - **Megan Fitzgerald:** Getting a handle on what those resource tradeoffs are would go a long way. Do we all agree that these are self-mitigating if wetlands and SAV are not the same? Do we not agree?
  - **Doug Myers:** Interested in the recommendations specific to living shorelines that came up from the office hours.
  - **Jonathan Watson:** Think tracking can definitely be improved, so that's a good recommendation Becky. In some projects there needs to be greater consideration for the existing resource's function. There are improvements there for how we engage with landowners and how we make projects happen in a way that's sensitive to the existing resource.
  - **Woody Francis:** There needs to be a better understanding and incorporation of critical area and living shoreline projects where they can be constructed in harmony.

10/18/2023 – SAV Workgroup Fall Meeting

CHESAPEAKE WATERSHED INVESTMENTS FOR LANDSCAPE DEFENSE (WILD) PROGRAM

Presenter: Faren Wolter (USFWS)

- Goals of Chesapeake WILD
  - Improve functionality and connectivity of habitat for imperiled and listed wildlife.
  - Improve water health.
  - Enhance climate resilience and readiness using nature-based solutions.
  - Equitably connect people with nature.
  - Build capacity to access funding and implement restoration and conservation activities.
- FY22 awarded $3.5 million to 12 projects.
- FY23 awarded $7.7 million to 25 projects.
- Chesapeake WILD 2024 SAV Opportunity
  - SAV species and habitat conservation.
  - Nature-based solutions/living shorelines.
  - Permanently protect marsh migration corridors
  - Recover/restore natural seed banks.
  - Direct plantings.
  - Public engagement
  - Protecting existing and recovering SAV
- Chesapeake WILD FY24 RFP
  - Release = late January/early February
  - Proposal due date = about mid-April/ March
  - Awards announced = about September
- Questions/Comments:
  - **Brooke Landry**: Do the proposals have to come from the SAV workgroup? Or can our member institutions and organizations apply?
    - **Faren Wolter**: The only entity that aren't eligible to apply are for profit businesses.
  - **Becky Swerida:** What about multi-state projects?
    - **Faren Wolter:** Great idea.

MEETING ADJOURN

PARTICIPANTS (55):

In-person (19):

Brooke Landry (MDNR)	**Becky Golden** (MDNR)	**Chis Guy** (USFWS)
Dede Lawal (CRC)	**Kaitlin Scowen** (MDNR)	**Chris Patrick** (VIMS)
David Wilcox (VIMS)	**Grace Breitenbeck** (VIMS)	**Bob Murphy** (TetraTech)
Aly Hall (VIMS)	**Megan Fitzgerald** (EPA)	**Becky Swerida** (MDNR)
Jesse Iliff (SRA)	**Stephanie Hall** (MDNR)	**Cassidy Gersten** (VIMS)
Caitlin Sughnre (VIMS)	**Corey Brennan** (Spa Creek)	**Woody Francis** (USACE)
Nancy Rybicki (USGS)		

Online (36):

Chesapeake Bay Program
Science. Restoration. Partnership.

10/18/2023 – SAV Workgroup Fall Meeting

Angie Sowers (USACE)	**Anna Kenne**	**Bill Jenkins** (EPA)	**Bob Siegfred II** (RES)
Breck Sullivan (USGS)	**Brian Pickard** (TetraTech)	**Cathy Wazniak** (MDNR)	**Christina Thomas** (EPA)
Cole Blasko (TetraTech)	**Dave O'Brien** (NOAA)	**Douglas Austin** (EPA)	**Enie Hensel** (VIMS)
Erin Shields (VIMS)	**Erin Stehr** (VIMS)	**Faren Wolter** (USFWS)	**Gina Hunt** (MDNR)
Greg Brennan (Spa Creek Conservancy)	**Hayden Acors** (VIMS)	**Jennifer Gilmore** (VIMS)	**Jennifer Whiting** (VIMS)
John Sandkuhler (NWA)	**Jonathan Watson** (NOAA)	**Kate Allcock** (EPA)	**Katia Engelhardt** (UMCES)
Kayla Clauson (DNREC)	**Kelly Sommers** (EPA)	**Ken Moore** (VIMS)	**Lesley Baggett** (AKRF)
Mark Lewandowski (MDNR)	**Matthew Smith** (VIMS)	**Mickie Edwards** (VIMS)	**Mike Naylor** (MDNR)
Doug Myers (CBF)	**Richard Zimmerman** (ODU)	**Sally Hornor** (MRA)	**Sarah Brzezinski** (EPA)