Fall QUARTERLY MEETING – November 13th, 2024

Chesapeake Bay Program

SAV Mitigation and Monitoring Guidance

SAV Workgroup 2024

Developing Success Criteria & Performance Standards for in-kind SAV mitigation projects

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SAV Workgroup Meeting

3.15.23

Background & Current Approach

- Increase in MD projects where SAV mitigation/restoration is required (~3 this year)
  - Have been other "self-mitigating" projects and out-of-kind mitigation projects
- Performance standards/success criteria are based off tidal wetland metrics
  - Annual monitoring
    - Minimum % cover required after 3 years → Replant/Reseed if not met
    - Minimum % cover required after 5 years → Contingency if not met
- Consider reference sites and regional trends

Out of date. Determined on a case-by-case basis at this point.

Performance Standards considered

Performance standards or success criteria for SAV are based on the net-acreage and visual percent cover of SAV and generally show that the site has achieved the acreage and level of ecological function of the reference site, which should be chosen based on similarity with the impacted site.

Gamble, C., Glover, A., Debney, A., Bertelli, C., Green, B., Hendy, I., Lilley, R., Nuuttila, H., Potouroglou, M., Ragazzola, F., Unsworth, R., & Preston, J. (Eds.) (2021). *Seagrass Restoration Handbook: UK and Ireland*. Zoological Society of London.

Threshold Value and Quality Ratio

Post-restoration monitoring should be completed for five years following implementation of SAV mitigation. To determine restoration success each year, use the **Threshold Value & Quality Ratio** defined by Gamble et al. 2021. These ratios account for environmental factors that may impact SAV restoration success by comparing the restored bed to a reference site rather than to the original condition of the impacted site.

- To determine the Threshold Value and Quality Ratio from the monitoring data collected each year, apply the following formulas:

$$\textbf{Threshold Value} = \frac{\text{(average of parameter } a\text{* - 1 SD in reference beds)}}{\text{(average of parameter } a \text{ in reference beds)}}$$

$$\textbf{Quality Ratio} = \frac{\text{(average of parameter } a \text{ in the restored bed)}}{\text{(average of parameter } a \text{ in the reference bed)}}$$

- If the **Quality Ratio** is greater than the **Threshold Value**, the restoration project is a success for that year.

For example, shoot density per m2 in the restored bed can be compared with the reference bed using a minimum of 30 randomly placed quadrats in each bed.

Shoot density in the restored bed was averaged at 515 shoots per m2.

The shoot density of the reference bed was measured at an average density of 560 shoots per m2 with a standard deviation of 102 shoots per m2.

The Threshold Value is (560-102)/560 = 0.818

The Quality Ratio is 515/560 = 0.92

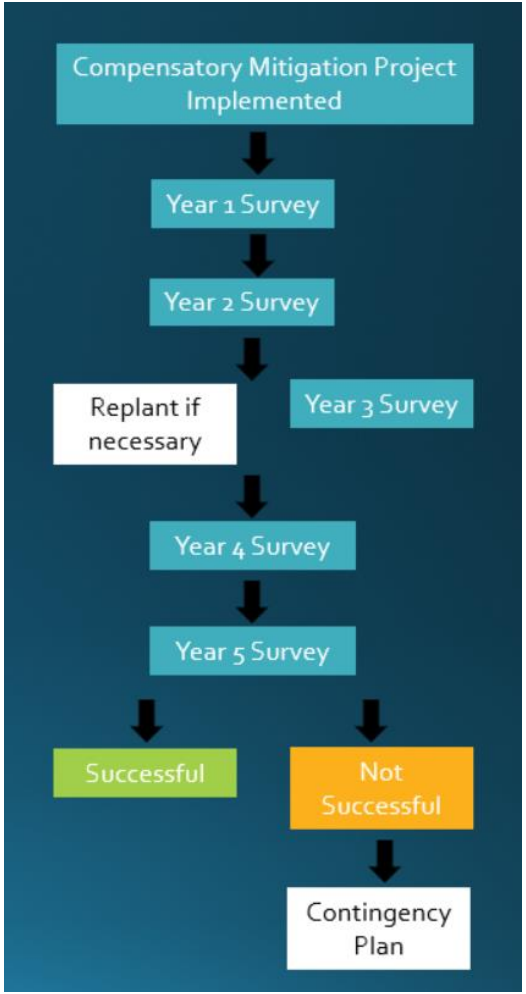
The Quality Ratio > Threshold Value (0.92 > 0.82). This means that the restoration was successful *in that year.*

*Note: parameter *a* can either be a shoot count or visual percent cover and SD is the standard deviation of the average value.

Monitoring and Assessment Timeline considered

Monitoring Timeline:

- Permittee must monitor both the restoration site and reference site(s) for 5 years
- Recommend an independent third party for monitoring to avoid conflict of interest
- Success each year will be determined using the Threshold Value & Quality Ratio defined in Gamble et al. 2021
- If at Year 2 of monitoring the Quality ratio is < Threshold value, the permittee can replant/reseed during spring of year 3
- After 5 years of monitoring:
- If the quality ratio > the threshold value, project is successful, no further monitoring required
- If the quality ratio < the threshold value, project not successful; require contingency



SAV Mitigation and Monitoring Recommendation Development – Workshop

Identified Need: SAV Mitigation and Monitoring Requirement Guidance from the SAV Workgroup to the Chesapeake Bay state regulatory agencies that oversee licensing for projects that impact SAV in Chesapeake Bay.

DRAFT Workshop Goals:

- explore the full breadth of considerations when recommending SAV mitigation
- determine SAV mitigation requirements recommendations
- determine SAV mitigation project monitoring requirements
- determine SAV mitigation project success criteria
- determine circumstances for in-lieu fee
- others as identified during planning

Who should participate?

- SAV experts
- Regulatory agency representatives tasked with licensing decisions
- Funding agency representatives for projects with SAV impacts
- Environmental review representatives

NOTE: The SAV Workgroup will make policy *recommendations* only to the state and federal agencies responsible for permitting decisions. It will be up to the state and federal agencies themselves to determine their policies based on recommendations from the SAV Workgroup.

Questions?