Worksheet 1B.Examine Category 2 Climate-Smart Design Considerations: *Impacts of Climate Change on Management Actions*

*SAVs*

| **B1** | **B2** | **B3** | **B4** | **B5** | **B6** | **B7** | **B8** |
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| **Action number** | **Existing management action** | **Changes in effectiveness of management action due to: climate impacts on target stressor** | **Changes in effectiveness of management action due to: climate impacts on management action** | **Time frame or constraint for using the action and implementation (e.g., urgency, longer or shorter term)** | **What changes are needed to adapt the action (place, time, and engineering design)** | **Climate-Smart Management Action** | **Notes** |
| 1 | **Homeowner initiated SAV restoration project**: SAV restoration along the shoreline of the property on Kirwans Landing Lane on Kent Island, MD.  | * WQ of Ches Bay has been improving to the point of supporting some natural SAV recovery; however, increased introduction of sediments & nutrients especially in winter, and during larger episodic storms may degrade WQ, increase turbidity, encourage algal blooms and epiphyte growth, and thus decrease the viability of restored SAV beds
* Water depths of the SAV beds will (continue to) increase over time, reducing optimal habitat conditions, including for light penetration. This may be less of a problem if existing riprap is replaced with natural shoreline, but even mixed shoreline may inhibit shoreward migration of SAV.
* *Phragmites* may become more successful, making replacement with native marsh more difficult. Having bordering marsh is correlated with successful SAV beds, so removal of *Phragmites*, or a higher probability of native marsh loss, may threaten SAV success.
 | * More frequent/intense storms and hurricanes can be expected to do greater/more frequent physical damage to restored SAV beds, potentially destroying the SAV beds or at least decreasing the resilience of the SAVs.
 | * A current partnering opportunity
 | * Work with the WQ and other GITs/workgroups responsible for upland restoration of agricultural lands to minimize increases in sediment & nutrient runoff associated with climate changes in precipitation patterns and larger episodic storm event.
* Along shorelines selected for SAV replanting, restore natural shoreline/marsh where hard structures (riprap) currently exist, to the extent possible.
 | Implement SAV restoration, focusing on *Ruppia maritima*, along natural or restored (riprap removed) shorelines, including fringing marshes, of the property on Kirwans Landing Lane on Kent Island, MD. The primary method will be seeding of *Ruppia*. Encourage concomitant restoration of agricultural land in the adjacent watershed to minimize increases in sediment & nutrient runoff that is otherwise projected to occur due to climate change. | * Implementation of ‘living shoreline’ restorations, including ‘mixed shorelines’, reduces available habitat for (occupies the same space as) SAV, and the human demand for living shorelines are likely to increase with climate change increases in SLR and storm frequency & intensity.
* May need to develop more information/ research on the potential application of floating wave-attenuation or similar devices in SAV beds as a means of boosting the resistance of restored (or existing) beds to physical damage from storms.
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| 2 | **Eelgrass restoration in Virginia Coastal Bays**: Restoration of SAV beds. |  |  |  |  |  |  |
| 3 | **Protection of the Susquehanna Flats SAV bed**: Designate Susquehanna Flats SAV beds as an Estuarine Protected Area. |  |  |  |  |  |  |
| 4 | **SAV and conflicting uses of potential shallow water habitat**: Implement protective fishing regulations in designate SAV beds in the mesohaline portion of the Maryland Bay in the vicinity of the mouth of the Choptank and the Tred Avon Rivers. |  |  |  |  |  |  |