Climate Science Needs Review

Prep for December 17th
STAR Meeting

For Discussion

- CRWG prioritization of climate science needs - identify highest priority needs
- Should any climate science needs be removed?
- Are there any CRWG or partner resources/projects that can help address climate science needs?
- Are there any climate science needs that should be added to the list related to meeting the outcomes in the Chesapeake Bay Watershed Agreement?

Existing BMP-Related Science Needs

Need	Engaged Resources	Priority (Draft)	Coordinator Recommendation
Detailed statement of data/research needs for climate resilient BMPs and siting design	**BMP Climate Resilience Assessments** Chesapeake Stormwater Network - Urban Stormwater BMPs STAC-Funded/Virginia Tech - Urban, Ag, and natural BMPs NOAA/Virginia Tech - Tidal water BMPs	Highest Previous CRWG Vote = 100%	Combine and rephrase as, "Data and research needs for impacts of SLR, storm surge, increased temperatures, extreme precipitation events and saltwater inundation on BMP climate resilience (i.e., maintenance, shelf life, siting and design, etc.)"
Impacts of SLR, coastal storms, increased temperatures and extreme events on BMPS (maintenance, shelf life, etc.)			

Existing BMP-Related Science Needs Cont.

Need	Engaged Resources	Priority (Draft)	Coordinator Recommendation
Green infrastructure performance including increased sediment due to climate change		Previous CRWG Vote = 33%	Many green infrastructure strategies are also approved BMPs. This science need could be addressed by row 2. May want to be more specific on what is meant by green infrastructure. Is this need specific to sediment increase? If so, then rephrase as, "Impact of sediment increases due to climate change on green infrastructure performance."

Existing BMP-Related Science Needs Cont.

Need	Engaged Resources	Priority (Draft)	Coordinator Recommendation
Better understanding of precipitation changes with regards to intensity, annual amounts, seasonal impacts, storm events and stormwater management	Various ongoing Intensity, Duration, and Frequency Curve stormwater research (see spreadsheet)	Previous CRWG Vote = 56%	Suggest lising Urban Stormwater WG as the lead. List CRWG as a supporting workgroup from an advisory capacity.

Existing Habitat/Living Resources Science Needs

Need	Engaged Resources	Priority (Draft)	Coordinator Recommendation
Better understanding of sea level rise and subsidence impacts in changing climatic conditions	FY20 GIT-Funded project, "Synthesis of Shoreline, Sea Level Rise, and Marsh Migration Data for Wetland Restoration Targeting" (Lead: Wetland Workgroup, Consulting: CRWG)	Highest Previous CRWG Vote = 44%	Combine - have it be specific to wetland loss, marsh migration, and adjacent land use considerations related to SLR and subsidence impacts. Many of our current indicator efforts are to connect with living resources and habitat impacts. Change to High priority - needed for addressing our adaptation outcome.
Changing climate conditions and their impacts on wetlands		Highest Previous CRWG Vote = 19%	

Existing Habitat/Living Resources Science Needs Cont.

Need	Engaged Resources	Priority (Draft)	Coordinator Recommendation
Changing climate conditions and their impacts on SAV	STAR FY20 GIT-funded project, "Modeling climate impacts on submerged aquatic grasses (SAV) in Chesapeake Bay" (Lead: SAV workgroup, Consulting: CRWG) SAV Sentinel Site protocols (SAV Workgroup)	Previous CRWG Vote = 6%	Important need - STAR is sponsoring work and SAV is one of the end targets for the TMDL to meet aquatic life WQS
Climate impacts to key aquatic fish species abundance, life cycle and habitat	FY20 GIT-Funded project, "Forage Indicator Development: Using Environmental Drivers to Assess Forage Status" (Lead: Forage Team) - includes analysis of seasonal shifts on forage species (warming) "Vulnerability of oyster aquaculture and restoration to ocean acidification and other co-stressors in the Chesapeake Bay" (Marjorie Friedrichs - VIMS project through NOAA OAP grant)	Previous CRWG Vote = 13%	Important need - many of our current indicator efforts are connecting with impactes to living resources and habitat. Understanding thresholds and climate impacts will help make informed climate adaptation/resilience decisions.

Existing - Social Science

Need	Engaged Resources	Priority (Draft)	Coordinator Recommendation
Social Science - human behavior - implications of the human response (positive and negative) to climate change, flooding, sea level rise as well as motivation and needs of communities to adapt	FY20 GIT-Funded project, "Chesapeake Bay Program Social Science Assessment and Integration Road Map Development"	Previous CRWG Vote = 50%	Suggest that the Stewardship GIT is the lead. CRWG can support from an advisory capacity.

Existing - Other (Remove?)

Need	Engaged Resources	Priority (Draft)	Coordinator Recommendation
Changing climate conditions and their impacts on invasive species		Previous CRWG Vote = 0%	Remove?
Detailed list of specific science/data needs for Citizen Science programs		Previous CRWG Vote = ?	Remove?

New Additions

Need	Engaged Resources	Priority (Draft)	Coordinator Recommendation
Method/metrics to track climate resilience progress related to Chesapeake Bay Watershed Agreement goals	FY19 GIT-Funded project, "Building a Bay-Wide Scorecard to Track Climate Resilience for Watershed Communities" (CRWG, RAND Corp.)	Highest	This is directly related to being able to meet Climate Resiliency Monitoring and Assessment outcome
Evaluation of science needs to implement blue carbon financing strategies	FY19 GIT-Funded Finance Coaching hours		Important for the adaptation outcome - need the means to fund adaptation projects to build climate resilience