Climate Resiliency Workgroup: Monitoring and Assessment Progress Review

2021-2022 CRWG Logic & Action Plan

August 2022 CRWG Meeting

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Outcomes

Monitoring and Assessment:

Continually monitor and assess the trends and likely impacts of changing climatic and sea level conditions on the Chesapeake Bay ecosystem, including the effectiveness of restoration and protection policies, programs and projects.

Adaptation:

Continually pursue, design, and construct restoration and protection projects to enhance the resiliency of Bay and aquatic ecosystems from the impacts of coastal erosion, coastal flooding, more intense and more frequent storms and sea level rise.

TODAY'S MEETING
August 15, 2022

NEXT MONTH'S MEETING
September 19, 2022

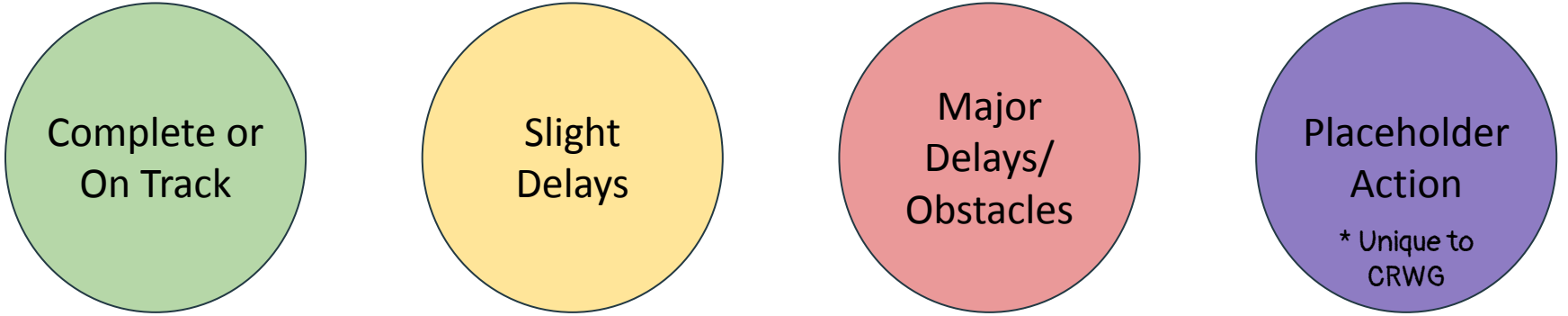
Monitoring and Assessment Factors

Factor 1- Scientific Capabilities: The scientific capabilities to estimate, project, model and monitor ecosystem changes and impacts as a result of climate change are complex and resource intensive. Appropriate science and modeling of climate and non-climate related stressors are necessary for Chesapeake Bay Program partners to properly address climate impacts during policy planning and adaptation efforts.

Factor 2- Geographic Extent/Variability: It is important to not limit the focus of the management strategy to coastal issues alone but to recognize the wide range of monitoring, assessment and adaptation needs throughout the region. The variability of the ecosystem within the Bay proper and the larger watershed presents challenges in data consistency and comparability among regions and sectors.

Factor 3- Complexity of Monitoring Program: A monitoring program to detect ecosystem change and inform program and project response is a complex undertaking. Developing an acceptable monitoring approach for the watershed will be complex, and there are clear budgetary challenges associated with such long-term monitoring.

Action Plan Review- Tracking Key



Priority Tracking Key

1 Indicates primary workgroup actions as determined by the Workgroup and/or Chesapeake Bay Program

2 Indicates secondary workgroup actions as determined by the Workgroup and/or Chesapeake Bay Program

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Action 1.1: Assess utility of climate change indicators in tracking climate resilience for water quality, living resources, habitats, and public infrastructure and determine strategy for updating prioritized indicators

A. Worked with STAR and other workgroups and met with the Management Board in prioritizing which climate change indicators for the CBP Partnership to focus on in connection with other outcomes. Currently, revising the web text on Chesapeake Progress to better reflect the prioritized climate change indicator work that is being done.

B. Developed a descriptive list for the prioritized climate change indicators with preliminary information on timeframes and potential responsible parties. Will need increased resources and capacity to complete a revised implementation plan for prioritized indicators.

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Action 1.2: Coordinate the development of climate change indicators in connection with clear management objectives with corresponding workgroups to inform climate resilience activities related to ecological and community impacts

A. **Bay Water Temperature Change Indicator related to Fish and SAV**:
- Developed synthesis paper identifying data sources and conceptual ideas.
- Assisted the Rising Water Temperature STAC Workshop–hosted special meeting with multiple workgroups to discuss rising water temperature effects on living resources and habitats, facilitated tidal workshop discussions, completed draft of tidal chapter for STAC report (Action C).
- Initiating discussions with Integrated Trends Analysis Team (ITAT) as potential data provider and Fisheries GIT to help link with living resource thresholds.

B. **Stream Temperature Change Indicator related to Brook Trout**:
- ~Fall 2022 USGS data release of multi-agency stream temperature compilation database.
- Healthy Watersheds GIT–developed "proxies" for stream temp by expanding the use of a dataset related to brook trout and rising stream temps.

D. **Sea Level Rise Indicator related to Marshes:**
- Wetland Workgroup–soon completion of GIT-Funded Marsh Data Synthesis project (Sept)–includes comparison of marsh migration models and recommendations of data.

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Action 1.3: Increase capacity to better understand sea level rise (SLR) impacts to coastal marsh habitats and their ecosystem services

A. Deliverables from the Wetland Workgroup's GIT-Funded **Marsh Data Synthesis** project soon available (Sept.): marsh metric data review (e.g., sea level rise, shoreline condition, migration corridors), marsh migration model comparison, and data synthesis methodology:
   - Aid in selecting regional focus areas for outreach and identification of marsh adaptation projects for CRWG's GIT-funded Marsh Adaptation project.
   - Help identify data and method for sea level rise indicator related to marshes.

B. Subject matter experts presented relevant research and efforts during:
   - CRWG's Mar, Sep, and Dec 2021 meetings: i.e., USGS Risk to Coastal Habitats, MD GreenPrint, ConserveVA, Delaware Estuary Bay Project, AdaptVA.
   - Resilient Coastal Wetlands and Communities Multi-Regional Workshop: focused on decision frameworks and tools related to assessing sea level rise and storm surge impacts to marshes and communities. CRWG members participated in workshop and CRWG efforts were highlighted during Mid-Atlantic Panel.

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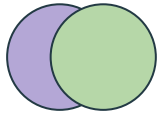
Action 1.5: Coordinate with the Modeling Workgroup and the Water Quality Goal Implementation Team (WQGIT) to support the application of TMDL climate change projections



A. The CRWG April 2021 meeting focused on reviewing the climate model narrative language presented by the Modeling Workgroup and providing suggestions on language for clearer interpretation.

B. Meet with Modeling Workgroup and WQGIT to identify where assistance from CRWG will be needed to prepare the application of the TMDL climate change model projections for 2025.

- WQGIT decided to hold off on applying projections for 2025.

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Action 1.6: Support the WQGIT on BMP climate resilience assessments needed to update Watershed Implementation Plans

A. The CRWG coordinated with WQGIT who provided a list from their jurisdictions on priority BMPs in their Watershed Implementation Plans to share with Virginia Tech to include in their climate change BMP performance review. These were discussed during the CRWG April 2021 meeting.

B. Completion of the climate change BMP performance review report by Virginia Tech (January 2022).

C/D. Follow-up meetings in developing a research agenda related to climate change effects on BMPs on hold until the U.S. EPA Request for Applications (RFA) on this topic is released. Details of the RFA were shared during the WQGIT June 2022 meeting and will include applicants consider findings from the climate change BMP performance review report.

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Action 2.3: Identify blue carbon science and monitoring needs to apply existing blue carbon crediting protocols to support climate resilience activities

A. Utilized the 2021 NOAA Climate Internship Position, in partnership with VIMS, to complete a review of existing blue carbon crediting protocols from VERRA and identify data and science needs to implement protocols.

B. The CRWG shared blue carbon science needs with the Monitoring Workgroup to include in the monitoring program review requested by the Principals' Staff Committee. The CRWG has not had the capacity to connect this information with groups exploring the implementation of blue carbon financing projects.

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Action 2.7: Utilize the Chesapeake Bay Program's SRS process to conduct a biennial review of the Climate Resiliency Workgroup and assess priorities

A. The workgroup began developing a charter that would describe the workgroup's role, membership contributions, participation benefits, and operating principles. This effort was started, but never completed–waiting until there is better understanding of needs from the Climate Change Executive Directive.

B. The workgroup is beginning the process of developing their next workplan, logic & action table, and updating their management strategies to guide the workgroup for the next two years.

C. Workgroup provided science needs for Strategic Science and Research Framework and monitoring science needs for PSC monitoring report

D. There is regional coordination on marsh resilience projects (Wetland Workgroup, EPA, MD DNR, MD Sea Grant, TNC). Still need to identify coordination process where Management Board identifies how their organizations can assist.

E. Began developing a process for prioritizing climate-related requests from CBP workgroups for CRWG assistance, but have not formalized it yet. Will be incorporated into the charter later on.

2

Action 1.4: Increase capacity to better understand increased precipitation and warming temperature on Submerged Aquatic Vegetation (SAV)

A. SAV Workgroup GIT-Funded Project through STAR: “Modeling climate impacts on on SAV Project is evaluating model outcomes and potential SAV recovery trajectories under various climate change scenarios”
   - VIMS team is finalizing climate scenarios and results – final report to be submitted in late December.

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Action 1.7: Support efforts of STAR to promote use of climate science data in existing tools and building collaborative data partnerships (EnviroAtlas/Ecosystem Services)

A. CRWG meeting presentations:
   a. October 2021: The EnviroAtlas Team presented their tool and relevant climate resilience metrics and ecosystem services.
   b. April 2022: John Wolf presented on the Chesapeake Bay Environmental Justice and Equity Dashboard and the CBP targeting tool that is under development highlighting potential user case studies pertaining to climate and environmental justice in story map.

Summary of Monitoring and Assessment Action Themes

- Sea level rise effects on marshes
- Marsh migration
- Climate change indicators connected with natural resource outcomes (e.g., tidal wetlands, fish habitat, submerged aquatic vegetation)
- BMP climate change studies
- Blue carbon
- Resilience targeting information related to ecosystem services and environmental justice
- Capacity to do the work

Jamboard Questions

- Quantifying Progress:
  - Through our involvement with our factors (found at the top of our logic & action plan), what are our lessons learned? How have our actions made progress towards our outcomes?
  - What steps has our workgroup taken to ensure that our actions and work will be equitably distributed and focused in geographic areas and communities that have been underserved in the past?
  - What is our key message to the Management Board regarding our progress?

- Understanding Barriers to Success:
  - List any external developments (scientific, fiscal, policy) that could impact this group's focus/priorities in the next two-year cycle.
  - What do you view as this Team's greatest challenge(s) moving forward?