Summary of Common Climate Indicator Themes from CBP – Fisheries and Habitat Teams/Workgroups

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Chesapeake Bay Watershed Agreement

II. Goal, Outcomes and Baseline

This management strategy identifies approaches for achieving the following goal and outcomes:

Climate Resiliency Goal

Increase the resiliency of the Chesapeake Bay watershed, including its living resources, habitats, public infrastructure and communities, to withstand adverse impacts from changing environmental and climate conditions.

Monitoring and Assessment Outcome

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 Outcome

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.

Workgroup Feedback Summarized

Physical Indicators (Signals of Change)

Change in Air Temperature (seasonal shifts)

Change in **Water Temperature** (Streams/Bay)

Change in Precipitation (Effects on dissolved oxygen, salinity, nutrient loadings, freshwater flow)

Sea Level Rise (Need finer spatial scale)

Ocean/Coastal Acidification

Impact Indicators (Ecological and Community Threats)

Habitat Quality

- Suitability for key fish (brook trout, forage fish, striped bass) and SAV species
- Fish, SAV, tree species abundance and distribution
- Pathogens/invasives
- Harmful algal blooms

Land-Use Change

- Population migration/increase in development
- Forest, wetland, marsh fragmentation/connectivity and loss/change in migration corridors

Seasonality/Phenology Shifts

- Summer abundance of forage fish
- Longer growing seasons (trees)
- Tree mortality from late-season “flash droughts”

Climate Resilience Indicators (Preparedness)

Conservation/Preservation

- Restore/protect critical habitat areas in climate resilient locations

BMP Implementation

- Temperature lowering BMPs (e.g., forest buffers) in high priority aquatic habitat areas
- Living/hardened shorelines

Species Diversity (Forests and SAV)

Behavior Change

- Shift planting schedules/change species
- Development plans allow for tree/marsh migration

Climate Indicators – Next Steps

- **Assess available data**
  - Inform level of effort (May In Person Meeting)
- **Identify specific resilience indicators of interest**
  - Follow-up with individual workgroups
- **Select climate indicators to update/develop**
  - Ideally, indicators will have cross-workgroup application and inform resilience actions
  - Evaluate GIT-funding to support indicator development – Focus on pilot areas for application
- **Support: Summer Internships (~ April – August 2020)**
  - NOAA Chesapeake Bay Summer Internship Program in partnership with the Chesapeake Research Consortium: Climate Change Indicator Development Support (Habitat and Living Resource Focus)
  - C-StREAM: GIS Analysis of Flooding and Sea Level Rise Impacts on Land Use and Communities