

					Cross-GIT/Workgroup Evaluation						Climate Indicator Status					
						Sustainable Fisheries GIT		Vital Habitat GIT			Climate Resiliency Workgroup					
Climate Indicator Report Section	Topic (green = indicator available)	Name of Indicator	Indicator Description	Related Outcomes	Healthy Watersheds	Fish Forage Team	Fish Habitat Team	Forestry Workgroup	SAV Workgroup	Wetlands Workgroup	Stage 1: Indicator and metric(s) defined	Stage 2: Data collection program in place	Stage 3: Methods selected to transform data into an indicator	Stage 4: Data processed	Stage 5: Indicator developed for the Chesapeake	Stage 6: Updating Reporting
Group A: Indicators for Physical Stressors																
3	Air Temperature	Average Air Temperature Increases	Presents information about hot temperature extremes and annual mean air temperatures.	Stream Health, SAV, Tree Canopy				X		X	x	x	x	x	x	
		Change in High Temperature Extremes		Stream Health, SAV, Tree Canopy				X	x		x	x	x	x	x	
5	Precipitation	Change in Total Annual Precipitation	Change in Total Annual Precipitation in the Chesapeake Bay Watershed (1901-2017).	Blue Crab, Oyster, SAV, Tree Canopy, Healthy Watershed, Water Quality	X	X	X	X	x	X	x	x	x	x	x	
6	Sea Level Change	Relative Sea Level Rise	Presents the relative sea level change at seven permanent tide gauge stations in the Chesapeake Bay region from 1960 to present.	Wetland, Healthy Watershed, Black Duck, Toxic Contaminants, Forest Buffer , SAV	X		X	X	x	X	x	x	x	x	x	
7	Stream Water Temperature	Stream Temperature Change	Presents site-specific trends (i.e., percentage increase) of the stream water temperatures at select USGS stream gauges.	Stream Health, Brook Trout, Fish Habitat, SAV, Water Quality	X		X				x	x	x	x	x	
9	Acidification (low pH; low carbonate availability)		Track changes in the pH of the Chesapeake Bay and its tidal tributaries.	Brook Trout, Blue Crab, SAV, Wetland, Fish Habitat, Oyster, Forage Fish, Brook Trout, Stream Health, Water Quality			X		x		x	x				
10	Bay Water Temperature		Characterizes how Bay surface water temperatures have changed over the recent past.	Fish Habitat, SAV, Brook Trout, Blue Crab, Oyster, Fish Habitat, Stream Health, Water Quality		X	X		x	X	x	x	partial			
Group B: Indicators for Climate Related Impacts																
8	Upstream Flooding	River Flood Frequency	Characterizes how river/stream flooding is influenced by changing climate conditions	Stream Health, Forest Buffer, Healthy Watershed, Toxic Contaminants, Water Quality	X			X		X	x	x	x	x	x	
		River Flood Magnitude		Stream Health Stream Health, Forest Buffer, Healthy Watershed, Toxic Contaminants, Water Quality	X			X		X	x	x	x	x	x	
4	Coastal Flooding		Identifies the number of days per year in which tidal waters rose above the local threshold for minor or “nuisance” flooding at four locations (Annapolis, Baltimore, Norfolk, and Washington) where water levels have been measured by tide gauges and where locally relevant flood thresholds have been established.	Stream Health, Site Development, Water Quality				X		X	x	x	x	x		
11	Harmful Algal Blooms		Identifies phytoplankton index of biotic integrity (PIBI) scores for the Bay and its tidal tributaries and track changes in index scores over time. The PIBI incorporates both chlorophyll-a (an overall measure of photosynthetic activity) and the abundance of several potentially harmful species of phytoplankton.	Oyster, Blue Crab, Fish Habitat, SAV, Brook Trout, Forage Fish, Water Quality		X	X		x		x	x	x	partial	partial	
12	Property at Risk or Damaged		Identifies the areal extent (acres) of developed land within a FEMA designated floodplain and/or within defined storm surge risk zones (Metric #1), along with historical information on estimated property damage from storm events (Metric #2).	Water Quality, Public Access, Sustainable Schools	X					? Managed retreat	partial	x				
19	Wetland Extent and Physical Buffering Capacity		Identifies the areal extent (square miles) of tidal wetlands along the Chesapeake Bay and its tributaries, by type of wetland, and track changes in extent over time. Future enhancements could include tracking the extent of non-tidal wetlands and monitoring the physical buffering capacity of tidal wetlands in response to storm surge.	Wetland, Tree Canopy, Black Duck, Healthy Watershed	X		X	X		X	x	partial	partial			
15	Bird Species Ranges		Characterizes selected bird species in a manner that represents the spatial extent of each population, and possibly how it is distributed throughout its range.	Black Duck	X					X		x				
20	Fish Population Distribution		Characterizes populations of selected fish species in a manner that represents the spatial extent of each population and how well it is distributed throughout its range.	Fish Habitat, Forage Fish	X	X	X			x restoration priorities						
21	Submerged Aquatic Vegetation Composition		Characterizes the community composition of SAV in the Chesapeake Bay and its tributaries. It will complement the CBP’s current SAV indicator, which tracks SAV extent but does not differentiate by species.	SAV, Fish Habitat, Forage Fish		X	X		x							
Group C: Indicators to Measure Climate Resiliency or Response																
1	Protected Lands	Protected Lands	Identifies the total number of acres of permanently protected lands in the Chesapeake Bay watershed, at multiple jurisdictional levels, and for all land ownership types.	Healthy Watershed, Protected Lands, (add SAV)	X			X	x	x restoration potential	x	x	x	x	x	
2	Restored Habitat	Acres of Restored Oyster Reef	Identifies the acres of restored oyster reefs, along with acreage remaining to meet restoration targets, in four tributaries (Harris Creek, Maryland; Tred Avon River, Maryland; Little Choptank River, Maryland; and Lafayette River, Virginia); and identifies the acres of agricultural wetlands restored per year in the Chesapeake Bay Watershed, compared with a 2010 baseline.	Oyster, Fish Habitat			X				x	x	x	x	x	
		Wetlands Restored on Ag Land		Wetland, Black Duck	X		X			x Ag restoration not only goal	x	x	x	x	x	
13	Urban Tree Canopy		Tracks changes over time in the acreage of tree cover within parts of the Chesapeake Bay watershed that are considered “urban.”	Tree Canopy, Healthy Watershed, Toxic Contaminants	X		X	X			x	x				
16	BMPs and Green Infrastructure		Characterize the state of green infrastructure and BMPs that are designed to reduce and treat stormwater.	Forest Buffer, Healthy Watershed, Tree Canopy, Toxic Contaminants	X		X	X		X tidal and nontidal wetlands are approved BMPs						
17	Land Use/Land Cover		Characterizes certain types of land cover or land use either increase or decrease resilience to climate change.	Land Use Options Evaluation, Tree Canopy, Forest Buffer	X			X	x	X		x				
18	Shoreline Condition		Tracks the relative proportion of shoreline along the mainstem Chesapeake Bay and its tidal tributaries that is considered “hardened.”	Healthy Watershed, Fish Habitat, Oyster, SAV	X	X	X		x	X		x				
19	Wetland Migration Corridors		Focuses on tidal wetlands, using land cover/land use data and spatial analysis tools to map corridors where wetlands will likely be able to migrate. The end product is envisioned as a mapping tool that shows likely migration corridors, which in turn can support jurisdiction-level projections of changes in total tidal wetland acreage under future climate and sea level scenarios. The closer a projection comes to showing no net loss in tidal wetland acreage, the more resilient the system is.	Wetland, Black Duck, Healthy Watershed, Fish Habitat, SAV	x		X		x	X		x				