

## Outline for Section 5.3 – Climate Change Factors

- I. Brief Introduction to Climate Change
  - a. Topic: briefly introduce climate change and how it affects the Chesapeake Bay (i.e., “Warmer, Wetter, Weirder)
  - b. Scope: Bay-wide
  - c. Sources: IPCC report, Climate change in the Bay literature (Hinson et al)
  - d. Purpose: Set the context for the section and explain why it is important
- II. Increased Precipitation
  - a. PRISM data
    - i. Topic: Define and explain the precipitation data being used
    - ii. Scope: Tributary specific? Depends on what Gopal and Alex Soroka have time for
    - iii. Sources: PRISM, USGS, Gopal
    - iv. Purpose: Demonstrate the increase in precipitation. Describe spatially and temporally
  - b. WQSAM Indicator – Qian’s annotated graph
    - i. Topic: attainment of water quality standards in relation to noteworthy precipitation events and trends
    - ii. Scope: Bay-wide
    - iii. Sources: Qian’s figure in the same folder
      - 1. “Attainment\_indicator\_2019-2021\_preliminary.jpg” in the “Climate Change” folder
    - iv. Purpose: Demonstrate how wet years lead to decreases in water quality attainment
- III. Warming Water Temperatures
  - a. Topic: explain how rising water temperatures affect water quality trends
  - b. Scope: Bay-wide
  - c. Sources: VIMS Marine Heatwaves Work (Mazzini et al), water temperature tidal trends data
  - d. Purpose: Show the warming component of climate change and why it matters for Bay water quality
- IV. Changing Habitats
  - a. Topic: Linking changes in estuary conditions to effects on living resources
  - b. Scope: Bay – wide, may provide research on tributary specific changes
  - c. Sources: NOAA Season Summary – provide synopsis and link
    - i. Link: [Seasonal Summaries | Chesapeake Bay Interpretive Buoy System \(noaa.gov\)](https://www.noaa.gov/seasonal-summaries/chesapeake-bay-interpretive-buoy-system)
    - ii. Synopsis – will write a draft and send to Bruce for review
  - d. Purpose: Show how climate change impacts on the estuary also have an impact on the living resources – water quality criteria was adopted to protect living resources