

Managing Coastal Watersheds to Address Climate Change: Vulnerability and Adaptation in the Middle Patuxent Subwatershed

The Chesapeake Bay watershed is the largest estuary in the United States and home to a diverse array of species and habitats. Its rich abundance of fish and wildlife and its rivers, creeks, and tributaries provide ecological, historical, and cultural values to those that live within the region and beyond. However, the Bay is facing significant challenges. Many resources have been focused on the restoring the Bay and while improvements have been made, climate change effects will likely exacerbate existing stressors. To effectively protect, manage, and restore these important coastal ecosystems in the Bay, we must integrate the reality of current and future climatic changes into our work.



NWF received funding from NOAA and the Kresge Foundation to work with partners in the region to help set the stage for addressing climate change impacts in the Chesapeake Bay by focusing on how to integrate climate change into coastal restoration and conservation activities. Specifically, NWF worked with NOAA and other technical experts to complete a vulnerability assessment and identify potential options for climate-smart restoration and conservation practices to address those impacts at a subwatershed scale (Middle Patuxent subwatershed). ***The information from the project and in the accompanying report will be useful to those working within this watershed and beyond as it provides a process/framework that others can use to identify climate impacts and develop adaptation actions.***



Several key impacts from climate change are expected to affect the Middle Patuxent subwatershed: salt water intrusion and inundation due to sea-level rise that could negatively affect species in areas that have narrow salinity tolerances; warmer waters that could result in heat stress for fish and other species as well as an increase in aquatic disease and harmful algal blooms; more extreme precipitation events and heavier runoff that are likely to contribute to an increase in nutrient, sediment, and pollutant flows; and more intense and longer droughts.

Important climate-adaptation considerations for the Middle Patuxent subwatershed include: (1) *more closely examine and address the interaction between water quality and climate change;* and (2) *consider facilitating upstream and inland migration of habitats where possible to help address projected losses due to climate change.*

Please visit: www.nwf.org/climate-smart to read the complete report that includes specific information on the climate vulnerability and adaptation options for the Middle Patuxent subwatershed and a selection of species, habitats, and conservation/restoration project types.

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