

# RESILIENT BMPs: Planning Tools & Resources

## General Resources

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- [National Climate Assessment U.S. Global Change Research Program](#)  
An interactive, online report on the impact of climate change on the United States, with detailed regional information.
- [Climate Resilience Toolkit](#) – NOAA  
A compilation of tools, resources, data and projections, as well as case studies to help increase understanding of how to address climate risks across many sectors.  
[Climate Data for the Mid Atlantic](#) – MARISA Climate Data Portal  
Access to the *ChesWx* gridded climate datasets contain daily interpolations of precipitation and temperature observations for the Chesapeake Bay watershed.
- [Chesapeake Bay Program, Climate Smart Framework and Decision Support Tool](#) Tetra Tech  
A decision-support tool for tailoring “Climate Smart” decision-making processes to the implementation of Chesapeake Bay Program goals and outcomes.
- [Estimation of Best Management Practice Impact on Chesapeake Bay Program Management Strategies](#) Tetra Tech  
The report scores BMPs based on their ability to positively impact (i.e., climate adaptation, flood control and energy efficiency) Chesapeake Bay Program’s management strategies.
- [Managing Water Quality in the Face of Uncertainty](#) RAND Corporation  
A report describing how to use Robust Decision Making (RDM) when managing future uncertainties such as climate change and evolving land use patterns. A case study on the Patuxent River in Maryland is included.
- [Better Assessment Science Integrating Point & Non-point Sources with Climate Assessment Tool \(BASINS CAT\)](#) EPA  
BASINS CAT combines GIS, national watershed data, and watershed modeling tools to model potential climate change scenarios.
- [Tools for Water Related Climate Change Adaptation](#) EPA  
A database of climate change adaptation tools for communities on water utilities, water quality, and ecosystem protection.
- [Best Management Practices: Preserving Clean Water in a Changing Climate](#) Maryland DNR  
A fact sheet with information on climate risks and solutions for implementation of water quality related BMPs.

## Coastal and Riverine

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- [Climate Change Installation Adaptation and Resiliency: Planning Handbook](#) NAVFAC  
An analytical framework and methodology to help planners understand how to consider climate change in plans and projects.
- [Coastal Flood Exposure Mapper](#) NOAA  
A collection of visualization tools and maps to assess vulnerability to sea level rise and other coastal flood hazards.
- [Building Resilience through Habitat Restoration](#) Maryland DNR  
Recommendations on how to incorporate climate change considerations into restoration decision-making processes.

## Agriculture and Forestry

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- [USDA Climate Hubs](#) - A collection of resources for farm and forest managers to make climate informed decisions.
- [Implementation of BMP Strategies for Adaptation to Climate Change and Land Use in a Pasture-Dominated Watershed](#) Chiang *et al.*  
Paper predicts the impact of climate change on 171 pastoral BMP combinations and recommends those that are the most resilient.
- [Using Cover Crops to Mitigate and Adapt to Climate Change](#) Kaye, Jason P. and Miguel Quemada  
Paper on the use of cover crops to mitigate climate change with information on a case study in Pennsylvania.
- [Assessment of Agricultural BMPs Using Models: Current Issues and Future Perspectives](#) Xie *et al.*  
The paper suggests model strategies, such as simplified tools and climate integration to better represent agricultural BMPs.
- [Agricultural Policy/Environmental eXtender Model \(APEX\)](#) Texas A&M  
A watershed simulation model with climate change capabilities, including assessing increased CO<sub>2</sub> impacts on crop yields.
- [Sustaining Forests in a Changing Environment](#) US Forest Service – Resources on managing forests in the face of climate change.

## Urban/Infrastructure

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- [Assessment of Climate Change Impacts on Stormwater BMPs and Recommended Design Considerations in Coastal Communities](#) *Horsely Witten Group*  
Report outlines recommendations for improving the selection, siting, design, construction, and operation and maintenance of coastal BMPs to ensure their adaptability and continued performance in the face of climate change.
- [National Stormwater Calculator](#) *EPA*  
The calculator uses a selection of low impact development controls to estimate local area annual rainwater and runoff frequency.
- [Flood Resilience Guide: A Basic Guide To Water and Wastewater Utilities](#) *EPA*  
The guide includes videos and flood maps to help protect small to medium water and wastewater utilities from flooding.
- [Stormwater Management in Response to Climate Change Impacts: Lessons from the Chesapeake Bay and Great Lakes Regions](#) *EPA* A report on strategies and tools to incorporate climate resiliency into community planning.
- [Creating Resilient Water Utilities \(CRWU\)](#) - *EPA*  
Tools to help make drinking water, wastewater, and stormwater utilities more resilient.
- [Storm Water Management Model with Climate Assessment Tool \(SWMM-CAT\)](#) *EPA*  
A management tool to model stormwater runoff and incorporate green infrastructure BMPs, like rain gardens.
- [Climate Resilience Evaluation and Awareness Tool \(CREAT\)](#) *EPA*  
Current and long-term weather conditions within the risk assessment tool help utilities plan for extreme weather events.

## State-Specific Resources

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- [Maryland Coastal Atlas](#) *Maryland DNR*  
An interactive GIS tool with access to spatial data to help communities identify areas vulnerable to sea level rise, flooding, and erosion.
- [Climate Change Preparedness in NJ: Best Practices for Watershed Management](#) *NJ Climate Adaptation Alliance*  
A list of techniques and Best Management Practices to help local governments adapt to future changes in climate.
- [DC Climate Projections and Stormwater Applications](#) *DC Department of Energy and Environment*  
A presentation showing how DC heat index, heat wave, and precipitation projections will influence design storm events.
- [AdaptVA](#) *VIMS*  
Data, information and tools for individuals, local programs, and agencies engaged in climate adaptation.
- [Delaware Climate Projection Portal](#) *DE Division of Energy and Climate*  
Provides data on Delaware's climate indicators like temperature, precipitation, and length of growing season.
- [Community Risk and Resiliency Act \(CRRRA\)](#) *NY Dept. of Environment and Conservation*  
Provisions, resources and implementation guidance for the ACT's requirements for mainstreaming consideration of climate change in state programs.
- [Pennsylvania Climate Impacts Assessment](#) *PA DEP*  
Report provides scientific predictions regarding changes in temperature and precipitation in Pennsylvania and a summary of the potential impact of climate change on human health, the economy and other sectors.
- [Robust Stormwater Management in the Pittsburgh Region: A Pilot Study](#) *Fischbach et al.*  
The report offers an improved decision making framework for better stormwater management in Pittsburgh.
- [West Virginia State Climate Summary](#) *NOAA*  
A summary of observed annual average and extreme temperature and precipitation records for the State of Virginia.
- [Fact Sheet: Legal Tools for Climate Resilient Siting](#) *Environmental Law Institute*  
Suggests legal strategies for implementing climate resilient green infrastructure in Virginia and Maryland.