



**Pre-PastForward Online 2021 Workshop Handouts**  
**Understanding Climate Change**  
**September 21, 2021**  
[SavingPlaces.org/conference](https://SavingPlaces.org/conference)

Are you eager to tackle climate issues but not sure where to start? This workshop provides clarity of definitions and terminology, describes climate concepts and outlines various strategies to address the impacts of climate on heritage. National organizations and subject matter experts will provide attendees a basic understanding of the role of cultural resources in climate change mitigation and adaptation and specific resources and guidelines to begin climate work. Developed in partnership with the National Park Service.

Below are a set of additional resources provided by panelists.

**Preservation Priorities Task Force**

[Issue Brief: Sustainability and Climate Action](#), Preservation Priorities Task Force (2021). Developed through a partnership between the National Preservation Partners Network and the National Trust for Historic Preservation, this 12-page summary provides an overview of the connections between climate change and preservation and suggests ways preservationists can take action at the local, state, and national levels.

[More about the Preservation Priorities Task Force on Preservation Leadership Forum.](#)

**Climate Change Science/Data**

[National Climate Assessment](#) Assesses the science of climate change and variability and its impacts across the United States, now and throughout this century. Updated every four years, the currently available version is the Fourth Climate Assessment published in 2018.

[State Climate Summaries](#) Provides key messages and a descriptive narrative of projected changes in major climate characteristics for each state. The narrative, and supporting figures and tables, were specifically developed to help inform citizens and do not assume specialized scientific training. Developed through NOAA's National Centers for Environmental Information.

[U.S. Climate Resilience Toolkit](#) This resource is a major clearinghouse for climate viewers, adaptation tools & case studies, training courses, and other resources, all quickly searchable by region, state, topic, type of resource (visualization, data set, report, tool, case study, etc.). As with any clearinghouse, you have to take time to learn how to structure searches, but it is a highly recommended 'first stop' for more detailed exploration (for example, search "sea level rise" and "visualization").



[Climate Explorer](#) The Climate Explorer gives users a way to check how climate conditions in the United States are projected to change over the coming decades. This information has been summarized for counties and 'county-equivalents' for all 50 states and U.S. territories in the United States.

[Flood Factor](#) Provides estimates of flood risk at the level of individual properties (for certain locations).

[NASA Sea Level Projection Tool](#) This tool uses data from the most recent UN Intergovernmental Panel on Climate Change (IPCC) projections (AR6) and is worth exploring, although the information isn't as "granular" as some of the other tools. [NOAA's Sea Level Rise Map Viewer](#) is similarly a good visualization tool.

[Coastal Change Hazards Portal](#) A resources developed by the US Geological Survey (USGS). In March 2022, USGS is expected to release sea level rise and coastal hazard maps from Virginia Beach to Miami, including flooding, erosion, and groundwater hazards.

[US Global Change Research Program \(USGCRP\)](#) USGCRP Sea Level Rise Task Force is expected to issue updated regional level sea level rise projections based on the most recent UN Intergovernmental Panel on Climate Change (IPCC) assessment (AR6) in late 2021.

## **Climate Change Response Strategy**

[NPS Climate Change Response Strategy](#) Organized around four fundamental components to addressing climate change—Science, Adaptation, Mitigation, and Communication—this document remains the primary document guiding NPS climate change response efforts across park system.

[NPS Cultural Resources Climate Change Strategy](#) NPS primary climate change response document organized around four main goals to connect climate change impacts and information; understand the scope of the impacts; integrate into practice; and learn and share with cultural resource partners.

[NPS Cultural Resources Impacts Table](#) Good resource document that identifies the major impacts of climate change, the related changes to weather and the environment, and their impacts on five different types of cultural resources: archaeological resources, cultural landscapes, ethnographic resources, museum collections, and buildings and structures.

[NPS Coastal Adaptation Strategies Handbook](#) Guidance on implementing climate change adaptation in coastal settings, including Great Lakes areas. See, in particular, the chapter on *Cultural Resources*. There is a companion report on [Case Studies](#) that is also highly recommended.

[NPS Sea level rise viewer](#) Illustrates the general scale of projected sea level rise and storm surge in coastal areas, intended to focus primarily on NPS park units.



[Weather It Together](#), City of Annapolis (2015). This model Cultural Resource Hazard Mitigation Plan was developed by the City of Annapolis in collaboration with FEMA, consultants, and community members. It highlights the city's efforts to address the local impacts of climate change on cultural resources through proactive hazard mitigation planning. Interactive maps, participatory GIS, surveys, photo crowdsourcing, and other elements were incorporated to provide a platform for resident and stakeholder involvement.

### **Adaptation to Climate Change and Natural Hazards**

[The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring & Reconstructing Historic Buildings](#) Includes sections on climate change and resilience to natural hazards.

[NPS Guidelines on Flood Adaptation for Rehabilitating Historic Buildings](#) Recently released updated and illustrated guidelines for the adaptation of historic buildings to flooding, including four case study examples.

[NPS Preservation Brief #41: The Seismic Rehabilitation of Historic Buildings](#)

[Testing the Flood Resilience of Traditional Building Assemblies](#), APT Bulletin LII, No. 1 Article by NPS and USACE discussing joint-research and testing being conducted on the resilience to flooding of traditional building materials and wall/floor assemblies.

[NPS National Center for Preservation Training & Technology](#) Guidance and information on [Climate Change](#) and [Disaster Preparedness and Recovery](#).

[FEMA Climate Change Website](#) Includes links to guidance on such topics as national risk and capability assessments, climate change, hazard mitigation planning, building science, dam safety, earthquake risk, hurricane planning and response, wild fire preparedness, and windstorm impact reduction, including resources for the adaptation of historic and existing buildings to such hazards as flooding, high winds, tornadoes, hurricanes, wild fire, etc.

[Incorporating Climate Change Adaptation in Infrastructure Planning and Design: Overarching Guide](#) Issued by USAID in 2015, a good starting point for community adaptation of infrastructure.



## Case Study: City of Charleston, SC - Adaptation to Flooding

[City of Charleston Guidance and Procedures for Elevating Buildings](#) Guidance and information, including the City's [Design Guidelines for Elevating Historic Buildings](#).

[Charleston Low Battery Adaptation Project](#) page

[Army Corps Charleston Peninsula Coastal Flood Risk Management Study](#)

[Draft Feasibility Report & Environmental Impact Statement](#), optimized version, released September 2021

[Perimeter Protection Analysis Discovery Report](#), led by Waggoner & Ball for public-private partnership between City of Charleston and stakeholder groups, released April 2021

## Sustainability

[The Secretary of the Interior's Standards for Rehabilitation and the Illustrated Guidelines on Sustainability for Rehabilitating Historic Buildings](#) Illustrated guidelines on how historic buildings are themselves often inherently sustainable and how this can be used to advantage in any proposal to upgrade them, as well as specific guidance on how to make historic buildings more sustainable (windows, weatherization, insulation, HVAC, solar and other technologies, etc.) in a manner that will preserve their historic character.

[NPS Preservation Brief #3: Improving Energy Efficiency in Historic Buildings](#)

[NPS Technical Preservation Services: Sustainability](#) Includes guidance, technical information, and case studies, including guidelines on [Solar Panels on Historic Buildings](#) and [Green Roofs on Historic Buildings](#)

[The Greenest Building: Quantifying the Environmental Value of Building Reuse](#), National Trust Preservation Green Lab (2011). Through analysis of eight building types in four climate zones this research study found that it can take between 10 and 80 years to overcome the carbon debt that is incurred when an existing structure is replaced, even if the new building is highly energy efficient.

## Additional Resources

[Future of Our Pasts: Engaging Cultural Heritage in Climate Action](#), International Council on Monuments and Sites (2019). This report explains how cultural heritage relates to the goals of the Paris Agreement, "including heightening ambition to address climate change, mitigating greenhouse gases, enhancing adaptive capacity, and planning for loss and damage."

[Buildings That Last: Design for Adaptability, Deconstruction, and Reuse](#), American Institute of Architects (2021). Practical guidance and case studies for low carbon design and construction techniques, focusing on reducing carbon emissions through reuse of buildings and materials.