

NPS Guidance and Approaches to Disasters, Climate Change, and Cultural Heritage



Disaster Risk Management and Protection of Our Cultural Heritage
March 10, 2016, Washington, DC

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NPS and Climate Change



NPS Climate Change Response Program

Coastal Adaptation Strategies Handbook
National Resources Planning Act of 1954

Using Scenarios to Explore Climate Change: A Handbook for Practitioners

National Climate Change Interpretation and Education Strategy

Green Advancing Systems

Climate Change Action

Climate Change Scientist
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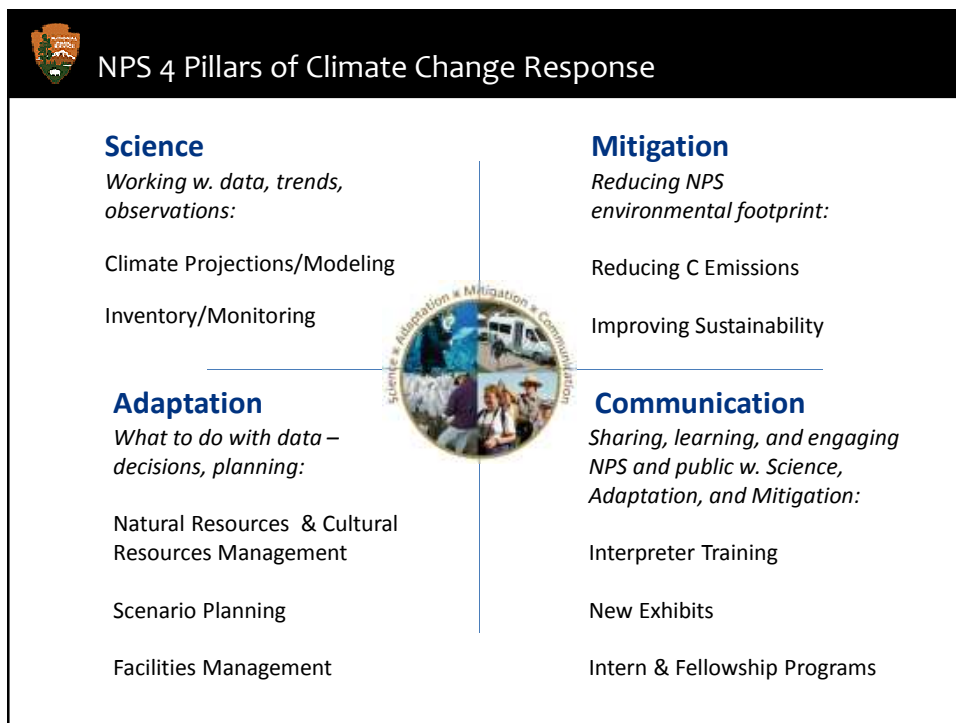
United States Department of the Interior
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1900 L Street, N.W.
Washington, DC 20540

Policy Memorandum 15-01

Climate Change

Subject: Apply Change

Background:





NPS and Climate Change



"One of the most precious values of the national parks is their ability to teach us about ourselves and how we relate to the natural world. This important role may prove invaluable in the near future as we strive to understand and adapt to a changing climate."

—
NPS Director Jon Jarvis, October 28, 2009



NPS Cultural Resources Climate Change Policy Memo: Feb. 10, 2014



United States Department of the Interior

NATIONAL PARK SERVICE
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Policy Memorandum 14-02

"NPS cultural resource management must keep in mind that (1) cultural resources are primary sources of data regarding human interactions with environmental change; and (2) changing climates affect the preservation and maintenance of cultural resources."

National Park Service Management Policies in the Context of Climate Change, which addressed the implications of climate change on the guiding principles of National Park Service (NPS) resource management. Additional guidance, in the form of a Cultural Resource Climate Change Strategy, will be forthcoming.

Background

NPS 2x4 Concept Framework for Climate Change-Cult. Heritage

Dual approach: impacts on resources | long-term human-environment history contained *within* resources

Science

- Climate science@CR scales
- Vulnerability assessments
- Inventory –Monitoring
- GIS
- Preservation science
- Documentation science

Mitigation

- Historic buildings in energy efficiency
- Resource conservation via historic or native landscapes
- Past architectural and landscape techniques suited to local environments
- Cultural heritage conserve/re-establish sense of place and stewardship

Adaptation

- Scenario planning
- Adaptation approaches
- Decision frameworks
- Policy and standards
- Research to support decision and policy
- Past social adaptability to past env. change
- Relating past adaptability to current issues, methods, and decisions

Communication

- Every Place has a Climate Story:
 - Change in the material world
 - Change in experience & lifeways
 - Lessons in change from past societies
 - Origins of modern climate situation
- Cult. resources climate change (CR-CC) literacy
- Dialogue between impacts and information in all pillars
- Links between CR-CC managers-researchers (local-international)
- CR-CC links to public

v. 9.02.15

for Climate Change-Cult. Heritage

man-environment history contained *within* resources

Temperature Change	Climate Change Related Impacts by Cultural Resource			
Archaeological Resources	Cultural Landmarks	Historic Structures	Historic Sites	Historic Districts
<ul style="list-style-type: none"> • Increased risk of erosion and sedimentation • Increased risk of flooding • Increased risk of landslides • Increased risk of soil erosion • Increased risk of soil compaction • Increased risk of soil salinization • Increased risk of soil acidification • Increased risk of soil nutrient depletion • Increased risk of soil waterlogging • Increased risk of soil erosion • Increased risk of soil compaction • Increased risk of soil salinization • Increased risk of soil acidification • Increased risk of soil nutrient depletion • Increased risk of soil waterlogging 	<ul style="list-style-type: none"> • Increased risk of erosion and sedimentation • Increased risk of flooding • Increased risk of landslides • Increased risk of soil erosion • Increased risk of soil compaction • Increased risk of soil salinization • Increased risk of soil acidification • Increased risk of soil nutrient depletion • Increased risk of soil waterlogging • Increased risk of soil erosion • Increased risk of soil compaction • Increased risk of soil salinization • Increased risk of soil acidification • Increased risk of soil nutrient depletion • Increased risk of soil waterlogging 	<ul style="list-style-type: none"> • Increased risk of erosion and sedimentation • Increased risk of flooding • Increased risk of landslides • Increased risk of soil erosion • Increased risk of soil compaction • Increased risk of soil salinization • Increased risk of soil acidification • Increased risk of soil nutrient depletion • Increased risk of soil waterlogging • Increased risk of soil erosion • Increased risk of soil compaction • Increased risk of soil salinization • Increased risk of soil acidification • Increased risk of soil nutrient depletion • Increased risk of soil waterlogging 	<ul style="list-style-type: none"> • Increased risk of erosion and sedimentation • Increased risk of flooding • Increased risk of landslides • Increased risk of soil erosion • Increased risk of soil compaction • Increased risk of soil salinization • Increased risk of soil acidification • Increased risk of soil nutrient depletion • Increased risk of soil waterlogging • Increased risk of soil erosion • Increased risk of soil compaction • Increased risk of soil salinization • Increased risk of soil acidification • Increased risk of soil nutrient depletion • Increased risk of soil waterlogging 	<ul style="list-style-type: none"> • Increased risk of erosion and sedimentation • Increased risk of flooding • Increased risk of landslides • Increased risk of soil erosion • Increased risk of soil compaction • Increased risk of soil salinization • Increased risk of soil acidification • Increased risk of soil nutrient depletion • Increased risk of soil waterlogging • Increased risk of soil erosion • Increased risk of soil compaction • Increased risk of soil salinization • Increased risk of soil acidification • Increased risk of soil nutrient depletion • Increased risk of soil waterlogging

III. Landscape Sensitivity/Vulnerability to Change

- Landscape's characteristics and features are *resilient* to change and there are no current vulnerabilities (including visitor impacts) [**lowest priority – 1 point**]
- Landscape's characteristics and features are *moderately sensitive* and vulnerable to change (including visitor impacts) [**medium priority – 2 points**]
- Landscape's characteristics and features are *highly sensitive* and vulnerable to change (including visitor impacts) [**highest priority – 3 points**]

Landscape Sensitivity/Vulnerability to Change

Landscape Sensitivity/Vulnerability to Change

Adaptation

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Communication

- Every Place has a Climate Story:
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- Links between CR-CC managers-researchers (local-international)
- CR-CC links to public

v. 9.02.15

Using Scenarios to Explore Climate Change: A Handbook for Practitioners

Communication

Find Your Human Story

- Cult. resources climate change (CR-CC) literacy
- Dialogue between impacts and information in all pillars
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<http://www.nps.gov/subjects/climatechange/toolkit.htm>

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DOI High Priority Performance Goals for Climate Change

Bureau	Activity	Level 1 (1 pt.) Design underway or project activity initiated	Level 2 (5 pts.) Draft Available or 30 % of projects completed	Level 3 (10 pts.) Document in final approval or 60 % of projects completed	Level 4 (15 pts.) Document Released or 90% of projects completed
NPS	Incorporate climate change considerations into NPS Foundation Documents.	Q1/FY2014	Q1/FY2016	Q4-FY2016	Q3-FY2017
NPS	Enhance climate literacy through implementing the New Superintendents Academy and associated Superintendents Community of Practice.	Q1/FY2014	Q3/FY2014	Q4/FY2014	Q1/FY2015
NPS	Include sea level rise and storm surge science into new & existing hurricane response plans for coastal parks in the Southeast and Northeast Regions.	Q1/FY2014		Q3/FY2014	Q1/FY2017
NPS	Review and evaluate climate change considerations in all proposed capital improvement projects over \$1M through the Development Advisory Board (DAB) review process.				Q1/FY2014
NPS	Include provisions addressing climate change and related issues into grants from the Historic Preservation Fund to state, local, tribal grantees.	Q1/FY2014	Q2/2015	Q2/2016	Q3/2016


- **Level 1 (design underway or project activity initiated):**
Initiate development of guidance to grantees with release of NPS cultural resources climate change policy memo (original target Q2/2014 - complete).
- **Level 2: (draft available or 30% of project completed):**
Initiate review of existing state historic preservation plans (goal: 50% of total of 50 states) to assess current approaches to climate change (revised target Q2/2015 – complete).
- **Level 3: (document in final approval or 60% of projects completed):**
Continue assessment climate change provisions in existing state historic preservation plans; incorporate prototype climate change criteria with Hurricane Sandy recovery funds (revised target Q1/2016).
- **Level 4 (document released or 90% of projects completed):**
Develop and disseminate climate change guidance for Historic Preservation Fund grants (revised target Q3/2016).



EXTRA SLIDES

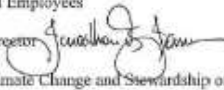
 **NPS Cultural Resources Climate Change Policy Memo:
Feb. 10, 2014**

- The NPS leads the Nation in the care and management of cultural resources




United States Department of the Interior
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Policy Memorandum 14-02

To: All Employees
From: Director 
Subject: Climate Change and Stewardship of Cultural Resources

This policy memorandum provides guidance and direction regarding the stewardship of cultural resources in relation to climate change. It follows my March 6, 2012, memorandum, *Applying National Park Service Management Policies in the Context of Climate Change*, which addressed the implications of climate change on the guiding principles of National Park Service (NPS) resource management. Additional guidance, in the form of a Cultural Resource Climate Change Strategy, will be forthcoming.

Background

 **NPS Cultural Resources Climate Change Policy Memo:
Feb. 10, 2014**

and...

“The Cultural Resource Climate Change Strategy currently being prepared will provide further guidance.”



NPS Climate Change Response Strategy for Cult. Heritage



- **Goal 1. Understand the Scope**
Coordinate science, management, and community engagement to identify the effects of climate change on cultural resources.
- **Goal 2. Connect Impacts and Information**
Engage partners in recognition of the full scope of cultural resources and climate change impacts and information across climate change science, adaptation, mitigation, and communication.
- **Goal 3. Integrate Practice**
Incorporate climate change into ongoing research, planning, and stewardship
- **Goal 4. Learn and Share**
Connect with partners to grow the body of knowledge for cultural resources and climate change

Temperature Change		Climate Change Relat		Precipitation Change		Climate Change Related Impacts by Cultural Resource						
						Impact on Cultural Resources						
						Archaeological Resources	Cultural Landscapes	Ethnographic Resources	Historic Collections	Buildings & Structures		
Increased Cultural Resources	Archaeological Resources	Cultural Landscapes	Impact on Cultural Resources	Historic Collections	Buildings & Structures	Loss of stratigraphic integrity due to erosion, water damage, and other factors	Water stress may reduce growth of some species	Stress on culturally significant species (plants, animals, etc.)	Increased risk of theft and vandalism	Increased risk of structural damage	Increased risk of structural damage	Increased risk of structural damage
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Goal 2. Connect Impacts and Information



"One of the most precious values of the national parks is their ability to teach us about ourselves and how we relate to the natural world. This important role may prove invaluable in the near future as we strive to understand and adapt to a changing climate."

—
NPS Director Jon Jarvis, October 28, 2009

