Climate Change and Cultural Resources at the National Park Service



Presentation to the International Conference of National Trusts October 13, 2011, Victoria, Canada Marcy Rockman, Ph.D., RPA Climate Change Adaptation Coordinator for Cultural Resources National Park Service Washington, DC

CEQ Starting Point

Oct. 2010 Progress Report of the Interagency Climate Change Adaptation Task Force: Recommended Actions in Support of a National Climate Change Adaptation Strategy

Recommended Action: Create a "roadmap" of existing Federal science efforts that inform and support adaptation

In addition, the "roadmap" should include all relevant science fields required for adaptation efforts, including disciplines beyond the traditional physical "climate science" such as social and behavioral sciences and ecology, as well as interdisciplinary efforts.

Recommended Action: Prioritize activities that address science gaps important to adaptation decisions and policies

Expand research on **relevant social and behavioral sciences** to improve understanding of human responses to change.

Identify the **social and ecological tipping points and thresholds** (beyond which change is sudden and potentially irreversible) to help guide decisions regarding intervention and planning.

Dept. of Interior

Bureau of Indian Affairs

Bureau of Land Management

Bureau of Ocean Energy Management, Regulation and Enforcement

- **Bureau of Reclamation**
- National Park Service
- Office of Surface Mining, Reclamation and Enforcement
 - U.S. Fish and Wildlife Service
- U.S. Geological Survey

Secretarial Order 3289:

 Protect cultural and archaeological resources and iconic structures that may be affected by climate change.

Address the impacts of climate change on American Indians and Alaska Natives, for whom the Department holds trust responsibilities on behalf of the Federal government.

Continue to provide state-of-the art science to better understand the impacts of climate change and to develop science-based adaptive management strategies for natural and cultural resource managers.

DOI Climate Change Mechanisms

Climate Science Centers



Landscape Conservation Cooperatives





National Park Service Climate Structure

Climate Change Response Program

- 4 Adaptation Coordinators:
 - Natural Resources
 - Cultural Resources
 - Interpretation and Education
 - Park Planning, Facilities, and Lands
 - Will coordinate between CSCs, LCCs, Park Regions and National Staff

Cultural Resource Ex-DOI Outreach (to date)

- US Global Change Research Program
- National Climate Assessment
- NOAA Maritime Heritage Program
- White House National Science and Technology Council Subcommittee on Disaster Reduction

National Park Service Climate Change Response Strategy

Goal 7 (of 14, not necessarily in order of importance):

.

- Objective 7.1: Use the best available science to develop and apply a process to prioritize cultural resource adaptation projects that combine established management tools with newer methods, such as vulnerability assessments. = vulnerability assessments and prioritization
- Management decision-making tools that consider long-term treatment options for archeological sites, historic structures, and other cultural resources to increase resilience and capacity should be utilized for this end. = management of archaeological sites, historic structures
- Objective 7.2: Increase the capacity and utility of the NPS Museum Program to preserve and protect resources. = museum collections
 - Museum collections provide unique data for understanding the genetic diversity of populations, past community and ecosystem structure, and past climate variability. Such information provides critical, cost-effective scientific evidence to guide management decisions.
 - Objective 7.3: Strengthen partnerships with traditionally associated peoples through con-sultation and civic engagement to ensure the preservation of ethnographically significant resources and continued access to these resources.
 - Federal law, executive orders, and NPS policy recognize certain resources have special sig-nificance for traditionally associated peoples, and the NPS response to climate change must include consultation and civic engagement re-garding such cultural resources = partnerships with traditionally associated peoples, ethnographic/traditional knowledge and related resources
 - Objective 7.4: Expand NPS capacity to con-duct inventory and monitoring of archeo-logical sites in anticipation of climate change impacts and support curation of artifacts and associated documentation. =inventory and monitoring of archaeological sites
 - Archeological data provide insight into climatic changes over the long term as well as the human responses to such alterations. The NPS will work with partners to form strate-gies to document significant sites before their destruction and make the results available to a broad constituency.

Summary to this Point

 Call in the CEQ document for means to address broad social science questions – tipping points, thresholds, what is the meaning of adaptation for social systems

Concern within DOI and NPS is for means to identify vulnerabilities, and manage and protect cultural resources in our charge

Goal for CCACCR (my) position: link these calls for action: Cultural resources not only affected by climate change but integral and fundamental to developing durable social means of

addressing it.









- Locational knowledge
- Limitational knowledge
- Social knowledge











2 Connections **Cultural Resources to Climate Change**

Impacts on:

Inundation - rising sea level Physical damages - storm patterns Damage – erosion Alteration - soil changes Deterioration – precipitation and temperature variations Material and landscape changes invasive species Memory/practice loss due to relocation (ethnographic resources)

source: World Heritage Center, 2006

Use of information from :

- As part of the paleoenvironmental record
- As parts of models of human social change
- As means of storing and retrieving narratives and stories

Cultural Resources as Paleoenvironment

Archaeological sites, landscapes, occupation histories:

 Human barometer for paleoenvironmental data

Test for shifting baselines

- Site/landscape data provide context for natural resource capacity
- Landscape data leads to scope of previous human management of environment
- What does "natural" really mean?



Cultural Resources in Models of Culture Change

Archaeology and built environment from isolates to landscapes, ethnography

FIGURE 7.4. Do not different of plant admitted out Earge. Same Alen bail and Lord Shan and Iwaness Cault Man. To Gair Mean-Propose. The Human of December of Johnson Proc. Math. Man. 2016;11:11





Macro/cultural evolution (≠ biological evolution)



Information transmission (horizontal, vertical)

Cultural Resources in Narrative Building/Preservation

Artifacts, archaeological sites, built environment, landscapes and battlefields, ethnographies:

 Importance of affect in perception of climate change – stories generate this
Ex. Jamestown colonization, Pensacola settlement
Built connection to place
Antidote to data – easier to remember than unconnected facts







Thank you

Contact: Marcy_Rockman@nps.gov