

CoPe-ing with Cultural and Natural Resource Loss

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The idea in a nutshell:

Future climate variability and coastal processes will inevitably result in the loss of cultural and natural heritage, either through direct damage or as the product of mitigation, adaptation or migration. Included in these resources are those that record indigenous and colonial/historic occupations and the landscapes that illustrate the current natural world and create a “sense of place” for inhabitants.

In the face of post-disaster life-threatening situations and economic devastation, the importance of local cultural or natural heritage is often understandably forgotten. When the danger is past, however, the recognition of broader devastation becomes real and community-wide, as natural features and cultural icons are noted as missing. Ecological and cultural grief is recognized as a reaction to loss of natural features and cultural touchstones that provide an anchor to a place or a region following a disaster, or as climatic conditions change familiar landscapes (Cunsollo and Ellis, 2018).

In light of potential loss, cultural and natural resource preservation is already recognized as an important response to climate variability. Currently, though, action is often expensive and focused on high-profile features. The National Park Service has plans for responding to climate-related threats to cultural and natural resources in the national parks (Rockman et al. 2106). National agencies and local groups have successfully rallied to save iconic historic features. But, what of the landscapes and structures that speak of “home” to a community? ...or the archaeological and sacred sites that link indigenous people to their pre-colonial past? These vital links may not rise to the level of “national treasures”, but are important to the fabric our nation.

What is your specific, differentiated recommendation?

The route to broader, community-relevant preservation lies in a cost-effective, multi-pronged approach involving prioritization and planning brought to action by interdisciplinary teams of specialists and citizens using new techniques to recover and preserve our nation’s cultural and natural heritage. These methods include 1) building teams of well-educated and coordinated citizen scientists to monitor and record impacts and damage to coastal resources, 2) creating pre-identified and equipped teams of specialists to assist communities and state agencies to respond to imminent threats, 3) using new methods, such as structure-from-motion and virtual reality, to create digital records of disappearing landscapes, structures and cultural features, and 4) planning for population migration.

Prioritization: Prioritization of resources for recovery or preservation is a difficult challenge facing cultural and natural resource managers. At the national level, these decisions are already being made by large government agencies and broad-based organizations with large constituencies, and address features with wide public or academic support. This work is admirable and necessary, but

ignores the lesser known cultural and natural resources that provide a “sense of place” for coastal communities and indigenous people. Recognizing the importance of local cultural and natural features is important to creating a sense of solidarity for those outside agency or academic programs. These voices can be heard by bringing together interdisciplinary teams of citizens, state and local agencies, and scientists to examine and rank the importance of local and regional coastal cultural and natural resources. Initially, this process may be contentious, but the result will be a regional compilation of scientifically and locally ranked cultural and natural heritage locations with local or regional significance to form the basis for recovery or preservation decisions.

Planning: Planning for the cost-effective recovery or preservation of the ranked resources will be a multi-level process involving scientists and community members. Immediate planning efforts need to be focused on developing well-educated citizen-scientist teams to monitor and record conditions at the identified resources and create a database to store the information generated. Additional short-term planning should be applied to organizing and equipping regional rapid response teams to assist local communities and state agencies in recovery or documentation of severely threatened or damaged locations. Longer range planning accomplished by scientist/community teams will address working within in budgets to develop tactics for preserving identified cultural and natural resources through digital methods (structure-from-motion, virtual reality) complimented by traditional approaches (excavation, moving, structural alterations). Additionally, long-term planning will be required to identify and devise preservation strategies for cultural or natural resources in areas most likely to be targeted for migration and subsequent development by those displaced by coastal disasters.

What impact or value does it seek to develop?

Climate variability coupled with dynamic coastal processes guarantees that the coast of the future will not be the same as that seen and experienced at present. Preservation of threatened national natural and cultural treasures addresses this issue at one level. However, for local residents far removed from national sites, this coastal change represents a loss of familiar surroundings, cultural heritage and a “sense of place”. On a broader scale, we as a country, loose the detail that provides the context for our national identity.

Recognizing that a coast-wide preservation effort at a level of that afforded to high-status national treasures is economically unsustainable; “CoPe-ing with Cultural and Natural Loss” seeks to develop a cost-effective prioritization, planning, and action plan to 1) identify and prioritize locally relevant sites cultural and natural heritage sites, 2) create educated and monetarily supported citizen science networks to monitor, record, and react to cultural and natural heritage loss at those sites, 3) plan for recovery or preservation of threatened coastal cultural and natural heritage loss using cost-effective digital methods combined with traditional approaches, and 4) develop strategies to identify and preserve cultural and natural cultural resources most likely to be impacted by future population migration and development by displaced coastal residents.

Community participation with scientists throughout this process is important to forging a link to science for the general public, and an illustration of how science can help address future challenges. Participation in decision-making and action will support under-represented communities as they move into the future by providing a link to a valued and retrievable past that is local and relevant.

The SCHARP (Scotland's Coastal Heritage at Risk, www.scharp.co.uk) program is an excellent model for citizen science coastal monitoring, documentation, and site rescue/preservation. Beginning as an earlier program, SCAPE (www.scapetrust.org), in 2000, this program has involved hundreds of citizen-scientist volunteers in identifying and documenting endangered sites, as well as recovering artifacts. The program also instituted a citizen-science archaeology program focused on engagement of community members in preservation of threatened archaeological sites. While the SCAPE and SCHARP programs are focused on cultural heritage, it would be possible to broaden a US coastal program to include natural features, using a citizen-science approach to document a wide range of ecological information.

Digital recording methods (structure-from-motion, photogrammetry) are used to show buildings as they were prior to damage. A well-known example is the recreation of the Temple of Bel at Palmyra following its destruction by ISIS fighters (<https://www.theguardian.com/cities/2016/may/27/isis-palmyra-3d-technology-copy-rebuild-city-venice-biennale>). Currently in use by cultural heritage interests, this approach could be adapted to recording natural settings as they exist now, prior to change as a result of sea level rise or storm erosion. Virtual reality technology could allow examinations of destroyed landscapes for community or scientific use.

In summary, the coast of the future is not the coast of today. Disaster planning, mitigation/adaptations plans, and population migration considerations demand attention. However, the impacts on the coast will be impacts on people. These people will need to have the support of links to past heritage, both cultural and natural, to address future challenges.

References:

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