

## ABSTRACT

HENDERSON, MALOREY. History at High Tide: Climate Vulnerability, Place Connections, and Cultural Resource Management at Cape Lookout National Seashore. (Under the direction of Erin Seekamp, Ph.D.)

As cultural resources become increasingly vulnerable to climate change impacts, especially in coastal areas, developing adaptive strategies for preservation is imperative. The National Park Service (NPS) identified \$40 billion of coastal assets at risk from climate change. As cultural values are deeply embedded in these vulnerable places, managers are faced not only with the threat of climate change impacts but also issues deriving from static policies and budget shortfalls. Moreover, climate change threatens not only physical assets but also the connections people have with culturally important places. Climate change impacts to natural resources and connections to natural places have been studied rather extensively. However, research on climate impacts to cultural resources and subsequent place meanings is limited. Current threats to cultural resources necessitate examining communities' connections to cultural resources and the impacts to those connections from environmental changes as well as the strategies that may be implemented to preemptively avoid resource damage. This thesis presents two studies conducted in the context of management challenges facing two vulnerable historic districts at Cape Lookout National Seashore (CALO). The first study evaluates the management options in current U.S. policy and identifies alternative strategies through an exploration of more flexible, holistic policies being implemented in European historic preservation. The second study comprises a qualitative assessment of CALO community members' place connections and perceived impacts from climate change and potential adaptation actions. Findings from these studies suggest that (a) climate change impacts are perceived to be inevitable at CALO, (b) intangible cultural resource values create place meanings, which inform vulnerability perceptions and reactions to

adaptive strategies climate impacts and (c) holistic, collaborative management is essential for successful adaptation planning to not only determine which historic buildings to preserve “in place” in the near-term but to leverage philanthropic support for preservation activities.

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History at High Tide: Climate Vulnerability, Place Connections, and Cultural Resource  
Management at Cape Lookout National Seashore

by  
Malorey Henderson

A thesis submitted to the Graduate Faculty of  
North Carolina State University  
in partial fulfillment of the  
requirements for the degree of  
Master of Science

Parks, Recreation & Tourism Management

Raleigh, North Carolina

2017

APPROVED BY:

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Dr. Erin Seekamp  
Committee Chair

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Dr. Jordan Smith

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Dr. Alicia McGill

## **BIOGRAPHY**

Born and raised in Gainesville, FL, my love for the outdoors began at an early age, with creeks, forests, and protected wetlands in my own backyard being my first playground. I grew up learning in Gainesville's excellent school system, receiving great support and knowledge from teachers who instilled in me the importance of considering multiple perspectives on a variety of historical and current issues. Throughout my childhood I was exposed to many beautiful places and many beautiful people from different cultures, and I developed a great interest in human existence and our relationships to the natural world.

After graduating from high school, I moved to Raleigh, NC for a change of scenery. I eventually finished my AA degree at Wake Technical Community College, aided by AP Credits and credits received from dual enrollment at Santa Fe College in Gainesville during my junior and senior years of high school. Inspired by an anthropology class taken at Wake Tech, I decided that I wanted to pursue my BA in Anthropology at NC State. I transferred to NC State in January, 2011 and graduated summa cum laude in December, 2012.

After graduation I worked for a telecommunications company for two years before deciding that I wanted to return to school for a higher degree. I had been exposed to NC State's Parks, Recreation & Tourism Management department through research conducted during my undergraduate degree. I attended the department's prospective student visitation day where I met my adviser, Dr. Erin Seekamp, who, at the time, was advertising the open position for a master's research assistantship. Combining my love of the outdoors with my love of studying culture, I began my work on the Cape Lookout National Seashore project. Throughout this project I was able to spend a lot of time in an amazing coastal location and speak to community members about their lives and connections to this beautiful place.

In the future I hope to continue working in this field, studying coastal areas and adaptation strategies, as our natural and cultural resources are in jeopardy from impending climate change impacts. I hope to contribute to planning efforts for coastal communities, where adaptation efforts can be beneficial to culture rather than destructive. I believe that all planning processes should be collaborative efforts between managers and local populations, and I hope to continue to speak on behalf of traditionally marginalized groups of people and contribute to an increase in community inclusion in climate adaptation planning.

## ACKNOWLEDGMENTS

Funding for this research was provided under Cooperative Agreement P13AC00443 between the United States Department of Interior, National Park Service and NC State University, Task Agreement Number P14AC01737: Informing Plans for Managing Resources of Cape Lookout National Seashore under Projected Climate Change, Sea Level Rise, and Associated Impacts.

Additionally, I would like to thank my adviser and committee members:

To Dr. Jordan Smith, thank you for being a great collaborator throughout this entire project and for enduring the swarms of deer flies during our trip to Portsmouth Village, all in the name of science. Also, thank you for all of your thoughtful edits and comments, as well as your always-brilliant title suggestions for papers and presentations. I truly appreciate your willingness to participate on my committee even through a move across the country to another university. You are a prolific social scientist, and I am very grateful to have had the chance to learn from you.

To Dr. Alicia McGill, thank you for being so receptive to me and my ideas when I sought out your guidance at the beginning of my program. Also, I cannot thank you enough for helping me connect my background in anthropology to my current research regarding resource management. Having the opportunity to conduct real, applicable CRM research in your class was invaluable and very fulfilling. Your understanding of culture is so vast and incredibly nuanced, and I really cannot believe the enormous amount of information I learned from you both in class and in general discussions. Thank you for being an effective, generous and kind teacher.

To my adviser, Dr. Erin Seekamp, thank you so much for all of your help and guidance throughout my program. You are an amazing mentor, and I truly admire the vast body of important work you have contributed to scientific literature, but even more so I admire how much time and effort you contribute to each and every one of your students, myself included. I appreciate your thoughtfulness, your sense of humor, and the fact that I can be my honest self in your presence. You are a force to be reckoned with both in academia and in life, and I could not be more thrilled that I found the coolest and most wonderful adviser around. I have so enjoyed learning from you and getting to know you. You have made me a better student, a better writer, a better speaker, and a better person. Most of all I want to thank you, from the bottom of my heart, for *always* believing that I could do this, even when I did not believe in myself. I think it goes without saying that I could not have done this without you.

Other acknowledgements:

I would also like to thank Pat Kenney and Jeri DeYoung from the National Park Service for their help with this project. Additionally, I would like to acknowledge the help and support of the Core Sound Waterfowl Museum and the Friends of Portsmouth Island. I would also like to thank my study participants for sharing their lives and stories with me.

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## **Chapter 1. Introduction**

### ***1.1 Background***

Cultural resources are vulnerable to climate change, particularly in coastal areas, and the U.S. National Historic Designation Act of 1966 mandates that designated historic and archeological sites be preserved. Thoughtful management of these cultural resources is becoming increasingly imperative in the face of our rapidly changing climate (Haugen & Mattsson, 2011). A recent report from the National Park Service identifies at least 40 billion dollars' worth of coastal park assets (i.e., infrastructure and facilities, including cultural resources) at risk from climate change-related impacts. To date, substantial effort has been made to model climate-related impacts to natural resources and prioritize natural resource conservation efforts to mitigate the loss of species, habitats, and ecosystem services.

As climate change poses increasingly more challenges in cultural resource management (CRM), it is important to develop adaptive prioritization strategies for historic preservation. Such strategies will enable cultural resource managers to respond to changing conditions and heightened vulnerability of historic cultural resources. However, climate change challenges “the core assumptions and traditional strategies” (Knapp, Chapin, Kofinas, Fresco, Carothers, & Craver, 2014) of cultural resource management and planning. As change threatens “the existence of and our connections to places important to us” (Scannell & Gifford, 2010, p.1), the need to examine bonds between places and people intensifies. Place meanings influence “how people perceive environmental conditions and how they react to environmental effects” (Brown & Raymond, 2007, p.91). Accordingly, informed decision-making and planning requires an examination of stakeholders' perceptions of vulnerability, heritage values, and place meanings.

Informed decision-making and planning also needs to acknowledge climate change and adaptation strategies could alter stakeholders' perceptions and their connections to place.

Within cultural resource management, it is essential to consider how culture is embedded in concepts of place, space, and landscapes. When humans engage with the landscapes they inhabit or visit, connections are formed between people and places, and cultural meanings are ascribed to physical places (Bender, 2002). The social construction of landscapes and cultural spaces often involves the development of personal and community connections to places. Humans and their places exist in a context of reciprocal influence, with people and landscapes simultaneously shaping and changing each other (Low, 2009). The intricate, complex interactions between people and their environment make nature and culture inextricable, and people's relationships to places are integral to the formation of cultural meanings (Bender, 2002). These interactions between people and places are fundamental to effective management of cultural resources, especially when considering impending climate change and its impacts to culturally significant places.

The goals of this thesis are to (a) explore and evaluate a range of available management options within both U.S. and European policy contexts, and (b) investigate the influence climate change may have on stakeholders' place meanings and connections to one of the United States' most prominent cultural resources – Cape Lookout National Seashore. Cape Lookout National Seashore was selected as the study area due to the presence of two distinct historic districts (i.e., cultural resources listed on the National Register of Historic Places) and the vulnerability of the cultural landscape (including the historic buildings contained within the districts) to climate change impacts.

### *1.1.2 Study Area – Cape Lookout National Seashore*

Cape Lookout National Seashore (CALO), established in 1966, encompasses 532 square miles of predominantly undeveloped barrier island on North Carolina's Outer Banks. Barrier islands are inherently dynamic and ephemeral, with the banks naturally moving with tides and storms (NPS, 2008). The island is only accessible by boat, which contributes to a unique and natural setting that is relatively undeveloped. The island is currently uninhabited, but once contained three individual settlements: Portsmouth Village, Cape Lookout Village, and Diamond City. Diamond City does not have any extant structures (disbanded after the San Ciriaco Hurricane in 1988), but Portsmouth Village and Cape Lookout Village are now designated historic districts (designated in 1976 and 2000, respectively) containing many culturally significant historic structures including federal maritime structures, community buildings, and private residences. Although many of the buildings in Portsmouth Village and the lighthouse and keeper's residence in Cape Lookout Village are open to the public, budget constraints and deferred maintenance<sup>1</sup> has resulted in many of the historic buildings being in poor or fair condition.

CALO's cultural resources are vulnerable to sea level rise and storm-related flooding and erosion; nearly all of the buildings in Portsmouth Village and a few buildings in Cape Lookout Village already experience periodic storm-related flooding and damage. Risks posed to coastal areas by climate change make management of this already volatile landscape even more challenging. The dynamic nature of barrier islands compounded with a maintenance backlog, limited funding, and increasing climate-related impacts are augmenting the already complex, burdensome maintenance of CALO's cultural resources. However, identifying and implementing

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<sup>1</sup> Budget constraints and deferred maintenance are issues that challenges the entire National Park Service system; see: <https://www.nps.gov/subjects/plandesignconstruct/defermain.htm>

adaptive strategies for planning could potentially enhance the park's ability to manage the historic buildings and cultural landscapes.

When considering adaptation strategies for a unique environment like CALO, it is necessary to recognize the vulnerability of the park's landscapes and structures, and acknowledge that the NPS has a limited budget that will likely not be sufficient to maintain all of the individual resources in the park (Beavers, Babson, & Schupp, 2016). Within these limitations, the best effort must be made to identify and preserve the structures and landscape elements that are most critical to maintaining cultural heritage values. More specifically, a recent policy memo (NPS Memorandum 14-02, 2014) provides managers guidance to prioritize the most vulnerable and the most significant cultural resources for climate change adaptation. However, defining and prioritizing CALO's most valuable cultural resources is particularly challenging since the historic structures were all simultaneously designated to be 'significant', as the designation for the National Register of Historic Places was at the district or village level. It is inevitable that tradeoffs and compromises will have to be made while managing expectations and weighing options (Wilson & Arvai, 2008).

Impending environmental threats will necessitate the implementation of planning initiatives ahead of potential climate events (Riggs, Ames, Culver, & Mallinson, 2011). To manage CALO's cultural resources in this challenging context, managers need to develop creative approaches and adaptive tactics to keep up with the changing environment. NPS managers are aware of the strong connections community members have to the cultural resources within the two historic districts, but planning efforts could stand to benefit from a more thorough exploration and analysis of the community's place meanings and connections, threat perceptions, adaptation preferences, and impacts to place connections. To address adaptation for a place like

CALO, it may be prudent to preserve the cultural resources that are most meaningful to the connected community, basing assessments on place meanings.

### *1.1.3 Landscape Change, Cultural Resources, & Place Connections*

Cultural landscapes and historic structures within them are subject to constant change, and these changes can alter associated cultural values and meanings (Trentleman, 2009). Climate change is one of the greatest threats facing our cultural resources today, and the impacts of climate change on natural resources have been generously attended to in the literature (e.g., Smith, Anderson, & Moore, 2012; Scannell & Gifford, 2011; Willox et al., 2012). However, very little research exists regarding how to manage cultural resources being affected by climate-related impacts (Caffrey & Beavers, 2008; Fatorić & Seekamp, 2017). This lack of research is problematic because cultural resources are particularly vulnerable to climate change, as their loss is permanent given the non-renewable nature of socially constructed places and physical structures (Knapp et al., 2014). Furthermore, coastal cultural resources in particular are even more vulnerable to climate impacts (Riggs et al., 2011; Peek et al., 2015), and their rate of loss will likely increase with accelerated storm impacts, as well as sea level rise (Haugen & Mattson, 2011).

The rapid deterioration of our coastal cultural resources necessitates a reevaluation of current historic preservation and cultural resource management policies that are becoming largely inadequate to address issues of a rapidly changing environment and potentially devastating effects to cultural meanings (Caffrey & Beavers, 2008; Poulter et al., 2009). Current policies that address cultural resources are noticeably static in comparison to our unpredictable climate, and they tend to dichotomize nature and culture, limiting our ability to address dynamic,

integrated cultural landscapes (Tishler, 1982; King, 2013). Innovative and flexible management plans will enable managers to respond more effectively to a changing environment and the heightened vulnerability of cultural resources (NPS, 2014). Thus, identifying, developing and implementing adaptive management strategies for coastal cultural resources will be critical to the preservation of cultural heritage in the face of climate change (Riggs et al., 2011; Beavers, Babson & Schupp, 2016).

Since cultural resources exist in a convoluted context of physical elements, cultural meanings, and connections to place, it is important that management plans include an assessment of community members' place connections and identities (Knez, 2005; Khakzad, Pieters, & Van Balen, 2015). As our landscapes are affected by climate change, our cultural resources are also affected, and changes to these landscapes and resources may in turn impact the place meanings and connections of the associated communities (Burley, Jenkins, Laska, & Davis, 2007; Agyeman, Devine-Wright, & Prange, 2009). Implementation of adaptive strategies for climate change should take these place-based values into account to reduce detrimental effects to community members' cultural values and connections to place (Manzo & Perkins, 2006; Devine-Wright, 2013). While it is certainly important to protect our cultural resources through adaptive actions where possible (Altschul, 2005), it is also crucial to know how any alterations made to cultural resources for the sake of protection may also impact the meanings of those places for their stakeholders. Managers would benefit from an understanding of these cultural and heritage values as a first-step, so that they can better determine what kinds of changes are appropriate and what kinds of changes may impact stakeholders' place meanings and connections to resources.

Farnum, Hall, and Kruger. (2005) noted the increasing recognition by researchers and managers that place-based meanings are a critical component of understanding people's

experiences of natural places as well as the public's role in, and reactions to, management decisions. Subsequently, researchers have examined public planning's failure to incorporate local ecological knowledge into land management decisions, the contributions of place attachment dimensions to management decisions regarding water-based recreations areas, and the potential impacts of climate change on place-based meanings and the relevance of culture and place attachment for climate change adaptation planning (Agyeman et al., 2009; Budruck, Stanis, Schneider & Anderson, 2011; Adger, Barnett, Chapin & Ellemor, 2011; Devine-Wright, 2013). However, none of this research addresses the issue of cultural resource management in terms of climate change or issues of adaptation planning for cultural resources. We argue that the study of place meanings are at least as essential as natural resource management within cultural resource and cultural landscape management. In particular, we purport a need exists to better understand the cultural experiences of community members, their reactions to and preferences for management actions, and their desired roles in planning efforts.

## ***1.2 Study Objectives***

The objectives of this thesis are twofold. First, this study reviews limitations of current cultural resource policy in the U.S. and explores the range of strategies being implemented in European cultural resource management contexts. Since our static management policies are becoming less viable in our rapidly changing climate, we intended to identify more creative, flexible, and holistic strategies for management in a dynamic environment and apply these potential strategies to management of CALO. Second, this study examines cultural resource impacts within a framework of place meanings, exploring how community members' place-based values influence their perceptions of cultural resource vulnerability and preferences for

adaptive strategies. This research aims to investigate impacts to place connections from both direct environmental changes and potential adaptive strategies and attempts to inform the incorporation of place meanings and cultural heritage values into adaptive cultural resource planning processes. The objectives described here will be addressed with research in the form of two manuscripts.

*1.2.1. Manuscript 1: Static policy in a dynamic environment: Identifying adaptive cultural resource management strategies for climate change in coastal zones.*

The first manuscript (chapter 2) attempts to answer the following research question: What CRM adaptive strategies are being implemented in the U.S. and Europe, and how can these strategies inform climate change planning for coastal cultural resources at Cape Lookout National Seashore? Specifically, this manuscript explores a range of available management options in current U.S. policy and identifies alternative historic preservation policies and management strategies based on more flexible principles that might be better suited to the current state of a rapidly changing environment. Additionally, this paper presents a critical analysis of the ‘fifty-year rule’ to generate needed discourse about changing cultural and historic conditions in the U.S. today. To provide context to this analysis, the management challenges facing two vulnerable coastal historic districts (Portsmouth Village and Cape Lookout Village) within Cape Lookout National Seashore are presented. Even though current policies may suffer from their static quality, the NPS does identify several important factors to consider when making decisions and compromises, including: (a) a changing landscape, or dynamic environment; (b) impacts from weather and climate, which make the changing landscape more complex; (c) fiscal constraints that affect both current conditions and possible strategies; and (d) stakeholder values

(NPS, 2008). It is our intention that this examination of U.S. preservation policy and tradition coupled with consideration of potentially more flexible European policies and strategies will shed light on the unique situation of vulnerable coastal landscapes and identify potential preservation approaches that could aid managers in crafting adaptive measures to protect CALO's cultural resources from climate impacts. The target outlet for this manuscript is the *Journal of Cultural Heritage Management and Sustainable Development*.

*1.2.2. Manuscript 2: Battling the tides of climate change: The power of intangible cultural resource values to bind place meanings in vulnerable historic districts.*

The second manuscript (chapter 3) is a qualitative assessment of CALO community members' cultural resource values, place meanings, impacts to connections, and place-based preferences for management. This manuscript will attempt to answer the question: What is the nature of community members' place attachments to CALO, and how might perceptions of change and potential adaptation strategies influence these place meanings? Specifically, it presents the findings from community member interview data that are part of a larger research project to inform cultural resource adaptation planning at CALO. This chapter explores themes of place meanings and place connections to CALO, their perceptions of vulnerability, their visions for the future management of CALO, and potential impacts to place connections from climate change and strategies for adaptation of historic buildings. Although this manuscript does not specifically examine a participatory decision-making process between community members and park managers, it takes a necessary first step toward more informed decision-making by enabling community members to: (a) articulate the place meanings they hold for the historic villages at CALO; (b) identify the threats they perceive to be making cultural resources

vulnerable; (c) suggest strategies for protecting their place-based connections given those threats; and (d) discuss how their place connections may be impacted by climate change and adaptive strategies. The research provides practical and theoretical conceptions of cultural resource vulnerability, place-based evaluations of change and adaptation, and impacts to community place connections, all within the context of climate change in coastal landscapes. The target outlet for this manuscript is *Landscape & Urban Planning*.

## **Chapter 2. Static Policy in a Dynamic Environment: Identifying Adaptive Cultural Resource Management Strategies for Climate Change Planning in Coastal Zones**

### ***2.1 Introduction***

Cultural resources connect people to the ways of life, beliefs, and values held by a culture. According to King (2013), cultural resources are “those aspects of the environment—both physical and intangible, both natural and built—that have cultural value to a group of people” (p. 3). The National Park Service defines cultural resources as sites, structures, objects, landscapes, or natural features that are culturally significant to a group of people associated with it either currently or traditionally (NPS, 2002). Within the U.S., cultural resources are typically physical evidence of culture such as structures and artifacts. However, King (2013) says that cultural resources also include intangible values and meanings. Both tangible and intangible cultural resources create cultural values. As such, cultural resource management is challenging since cultural resources are imbued with diverse meanings. Cultural resource management is further complicated by climate change, which complicates the role of diverse and changing values in cultural resource decision-making (Knapp et al., 2014).

Climate change presents unprecedented challenges to the “core assumptions and traditional strategies of protected areas management around the globe” (Knapp, et al., 2014, p.1). Threats to cultural resources from climate change are numerous (e.g., erosion, saturation, storm damage, disruption of access, inundation, deterioration from weather, and submersion), and the timing of many impacts is uncertain (Peek et al., 2015). In addition to these physical threats, heritage values and place meanings associated with these resources are also being threatened by changing environmental and climatic conditions (Brown & Raymond, 2007). To further

complicate the situation, preservationists are also dealing with, and attempting to manage, more copious amounts of, and more varied types of, heritage and cultural resources. These resources are “representing a wider variety of narratives and historical moments and a wider range of places and objects and scales” (Mason, 2006, p. 21). Within the U.S., this is largely due to the fact that as time moves forward, more and more cultural resources becoming eligible for designation under the U.S. National Register of Historic Places. Thoughtful management of these cultural resources is becoming more imperative in the face of our rapidly changing climate (Haugen & Mattsson, 2011).

The U.S. government has made considerable efforts and enacted numerous laws to preserve cultural resources; however, King (2013) explains that the unintended result is “a hodge-podge of laws, regulations, and executive orders, each dealing with a particular kind of cultural resource” instead of a system that is able to treat cultural resources holistically (p. 4). For example, the U.S. National Historic Preservation Act of 1966 mandates that designated historic and archeological resources be preserved in perpetuity, as losses are permanent given the non-renewable nature of cultural heritage and resources. Yet, losses will undoubtedly increase exponentially with the accelerated degradation caused by climate change (Haugen & Mattsson, 2011); therefore, it is increasingly necessary to change the way we think about historic preservation, as cultural resource management policies often fail to accommodate rapid change (Caffrey & Beavers, 2008).

Current static policy stands out in stark contrast against dynamic environments. Static policy is insufficient in a world where historic resources and cultural landscapes “contain a great deal of complexity and contradiction, as does any effort to preserve, develop, or manage them” (Mason, 2006, p. 23). Specifically, cultural resource planners, managers, and researchers need to

develop adaptation strategies that may include developing ways to prioritize which cultural resources can be preserved in the face of climate change (NPS, 2014). Such strategies will enable cultural resource managers to better respond to changing conditions, increasingly numerous and varied cultural resources, and heightened vulnerability of these resources.

In this paper, we aim to identify some potentially limiting aspects of static cultural resource management policy in the U.S., particularly related to federally managed historic buildings, and draw innovative and resourceful solutions from policy in Europe. We use Europe for our comparison of historic preservation policy and innovative adaptation for two reasons. First, a recent systematic literature review documented that, among the limited attention to cultural heritage and climate change, the majority of published research referenced sites in Europe (Fatorić & Seekamp, 2017). Our second reason is the contrasting approaches to conservation between the U.S. and Europe. Specifically, we believe the U.S. federal conservation approach that dichotomizes humans and nature may limit the range of adaptation strategies traditionally considered, whereas European countries tend to integrate preservation within human landscapes, resulting in adaptation strategies that are more widely accepted and integrated into other approaches to landscape and urban planning.

This exploration of creative preservation solutions is intended to inform potential strategies for historic and cultural resource management in dynamic environments, particularly historic buildings vulnerable to coastal climate change threats, such as sea level rise and storm-related flooding and erosion. The key objective of this research is to explore the range of strategies being implemented in various cultural resource management contexts, as static management policies for cultural resources are becoming less effective in the face of our rapidly changing climate. We begin by describing a specific case currently challenging the NPS' ability

to preserve historic buildings given the compounding preservation threats posed by climate change. Then, we provide an overview of U.S. preservation policy, followed by an overview of European preservation policy. Next, we describe lessons learned from our review of European policies and approaches that could enhance historic preservation in the U.S. and provide an array of climate change adaptation strategies currently being applied in the U.S. and Europe. We conclude by describing how these lessons and strategies could enhance historic preservation of buildings within our case.

### *2.1.1 U.S. Case Overview – Cape Lookout National Seashore*

Discussion of climate change and its effects on cultural resources has just recently (i.e., 2002) appeared in the literature, and there is little discussion and guidance about how to manage cultural resources in increasingly volatile environments (Fatorić and Seekamp, 2017). Caffrey and Beavers (2008) suggest that such limited guidance is likely related to the fact that many current cultural resource management policies are fixed rather than flexible, and these policies do not offer many provisions for applying creative solutions to very diverse management situations. However, the U.S. National Park Service (NPS) is investing heavily in identifying climate impacts and solutions (NPS, 2014), and recent policy guidance instructs managers to consider the most vulnerable and significant resources first (NPS Policy Memorandum 14-02). While climate change threats have the potential to affect cultural resources everywhere, they are particularly imminent in coastal zones (Caffrey & Beavers, 2008). Thus, adaptive management strategies in coastal zones will be critical to preserve cultural resources (Riggs, Ames, Culver, & Mallinson, 2011), and the NPS recently published a Coastal Strategies Adaptation Handbook

(Beavers, Babson, & Schupp, 2016) to provide additional management guidance for climate adaptation.

Further challenging cultural resource management, are the budgetary constraints facing the NPS. In addition to the backlog of billions of dollars in needed maintenance and repair projects (\$11.9 billion nationwide for all NPS assets in 2015<sup>2</sup>), a recent report from the National Park Service identifies at least \$40 billion of coastal assets as being ‘at risk’ from climate change-related impacts (Peek et al., 2015). Thus, decision-making will likely become more complex and controversial, as decisions will have to be made regarding which resources should be retained in the landscape and which should be removed or allowed to deteriorate.

To exemplify these complexities, we selected a coastal park unit managed by the NPS, Cape Lookout National Seashore, as our study case. Cape Lookout National Seashore (CALO) is the southernmost area of the Outer Banks that is under federal management by the National Park Service, and is one of only a few uninhabited barrier island systems left in the world (Garrity-Blake & Sabella, 2009). It was the relatively intact nature of the barrier island ecosystems that resulted in the establishment of CALO in 1966<sup>3</sup>. As a barrier island, CALO is a constantly shifting landscape (NPS, 2008). Barrier islands are “highly ephemeral in nature,” meaning the banks naturally move with tides and storms (NPS, 2008, p. 47). The island’s fluctuating state presents unique challenges for park management. The cultural resources and historic structures are especially difficult to manage as many already experience periodic flooding and are costly to maintain (NPS, 2008).

All of the buildings listed on the National Register of Historic Places are contained within two historic villages: Portsmouth Village and Cape Lookout Village designated in 1976 and

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<sup>2</sup> NPS Press Release: <https://www.nps.gov/aboutus/news/release.htm?id=1780>

<sup>3</sup> The State of North Carolina seized the lands through eminent domain, then turned ownership over to the NPS.

2000, respectively<sup>4</sup>. Although the last remaining inhabitants left CALO (from Portsmouth Village) in 1971, individuals were initially granted limited-time leases to utilize and maintain their traditional properties (Garrity-Blake & Sabella, 2009). The last of the leases within the two districts have since expired, and the National Park Service is currently responsible for the stewardship of the buildings and their associated cultural landscapes<sup>5</sup>.

The management issues posed by climate change are immediately apparent when observing the power and the closeness of the sea to the historic structures in the park. Such imminent threats—specifically sea level rise, coastal erosion, and storm-related flooding—are a major challenge in the management and planning for national parks like CALO. As we cannot stop sea level rise, prevent storms from hitting our coast, or mitigate the natural tendency of the barrier island to migrate toward land (Riggs, et al., 2011), adaptive strategies are needed to successfully manage cultural resources at CALO.

## ***2.2 U.S. Policy and Tradition***

The policies of preservation and cultural resource management were developed and implemented many years ago, prior to the overwhelming scientific knowledge we currently possess about climate-related impacts on our resources and before we could predict how quickly our cultural resources and built heritage would become so abundant. As explained by Mason (2006), “the connections between the preservation field and the larger trajectories of society are important for understanding how preservation actually works” (p. 21).

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<sup>4</sup> Some buildings were designated prior to the Cape Lookout Village designation, including a lighthouse and its station complex in 1972 and a Coast Guard Station complex in 1988.

<sup>5</sup> The NPS defines a cultural landscape as “a geographic area, including both cultural and natural resources and the wildlife or domestic animals therein, associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values” (<https://www.nps.gov/tps/how-to-preserve/briefs/36-cultural-landscapes.htm>).

Following the long-standing belief by settlers and early Americans that resources in the new world were infinitely abundant, the mid-nineteenth century brought to light the detriment caused by settlement, industrialization, and unfettered reaping of our resources for economic gain (Wellman and Propst, 2004). This new economic conscience coupled with a desire to commemorate our national heritage drew focus to our “monumental natural resources” as being important to preserve (Wellman and Propst, 2004, p.73). In attempts to preserve our lands vehemently against those who would exploit their resources, we have left ourselves few options and little flexibility for management (Strong, 1971). As Wellman and Propst (2004) explained, “the inherent nature of policies to lend order and predictability to how we act also makes them slow to change. New policies of radical reforms might be seen as breaking habits that we as a society...do not want to break” (p. 11).

Systems of representations such as politics, science, and administration, all of which are heavily involved in preservation (Keller & Keller, 2003), have long been rife with certain dualisms (Haraway 1991). One of the most persistent is the purportedly incontrovertible distinction between nature and culture. Brought into existence by the human tendency to dichotomize, the distinction has and continues to pervade most of our systems of knowledge production and representation (Margulis & Sagan, 2007). The nature–culture distinction is not tenable or productive for contemporary systems because anything that we deem *nature* or *culture* is in reality part of a multitude of complex systems that involve many different kinds of actors and agents. The arbitrary differentiation between nature and culture, or human and nonhuman, does not reflect how completely interconnected and interdependent everything is (Latour, 1991).

Stemming from this thoroughly ingrained dichotomy of nature and culture, another major limitation to the current U.S. system is its inability to account for, and properly treat, cultural

landscapes since they do not “fit very readily into the well-understood taxonomy of ‘building site, district, structure, and object’ used by the National Register” (King, 2013, p.255). Much preservation in the U.S. is based on antiquated notions of ‘wilderness’ stemming from early conservation efforts in the 19<sup>th</sup> century<sup>6</sup>. American preservation of nature and ‘wilderness’ has been mostly based on a belief that the only nature worth conserving was that which lacked human influence (Stockdale & Barker, 2009). Conversely, in the preservation of historic buildings, surrounding landscapes are typically neglected, ignored, or viewed simply as a backdrop for the main attraction. As Tishler (1982) explains, conventional historic preservation in the U.S. “has been disposed to a focus on structures, with occasional attention being paid to the landscape as a whole” (p. 94).

In the 1970s, U.S. preservationists began to realize the importance of recognizing landscapes as significant cultural resources “in their own right” (Keller & Keller, 2003, p. 189). The concept of landscape preservation has enhanced the understanding of complex spaces, such as rural landscapes, historic sites, parks, seashores, and urban environments (King, 2013). The NPS began developing guidelines regarding cultural landscapes in the 1980s, and much of the progress made in landscape preservation has been spearheaded by the NPS. However, physical treatment of resources within landscapes has traditionally been the focus of landscape preservation, with less attention being paid to landscape interpretation and planning for future changes and treatments (Caffrey & Beavers, 2008). Keller and Keller (2003) further assert that, although historic preservation has moved from a complete focus on built heritage or structures

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<sup>6</sup> It is important to note that we are not deliberating or undermining the value of federally designated wilderness, as defined by the Wilderness Act of 1964. Rather, we are arguing that the concept of wilderness—that is, land devoid of human occupation—has permeated conceptions of conservation (both natural and, in some cases, cultural) in the U.S. and may not allow the flexibility necessary for adapting cultural resources—specifically, historic buildings—to climate change. For an extensive examination of the wilderness concept, see: Callicott, J. B., & Nelson, M. P. (Eds.). (1998). *The great new wilderness debate*. University of Georgia Press, and Nelson, M. P., & Callicott, J. B. (Eds.). (2008). *The wilderness debate rages on: Continuing the great new wilderness debate*. University of Georgia Press.

and incorporated landscape considerations, “integrating landscape preservation back into a larger historic preservation context, along with effective landscape interpretation, remains to be accomplished” (p. 222).

Instead of treating the whole cultural landscape, traditional preservation efforts in the U.S. largely present aspects of either nature *or* culture, and policies fail to account for the historical significance of the synthesis of nature *and* culture. Natural resource specialists, while they likely have the expertise to deal with natural characteristics of a landscape, quite often fail to grasp its significant situation in history and its cultural features (Tishler, 1982). Conversely, historical preservationists have alleged that “the essence of our heritage...is displayed in buildings and structures” (Tishler, 1982, p.92), while the landscape is not afforded the same level of appreciation. It is important that managers on both sides work to bridge the divide and bring the same level of acknowledgement to the cultural landscape as a whole.

Outdated conceptions of preservation have also endured alongside a typical exclusion of local populations from any decision-making processes, whether concerning natural or cultural resources; instead, only the opinions of ‘experts’ are typically considered important in planning decisions (Knapp et al., 2014). This exclusionary attitude extends to historic preservation and cultural resource management where “the deck is stacked heavily against...affected people whose voices should be heard and attended to—by a system that puts all the power in the hands of project proponents and virtually requires impact assessors to play on the proponents’ teams” (King, 2013, p. 15). While most laws regarding cultural resources make mention of public involvement or assessment, these statements are largely defunct since it is so nearly impossible for local residents to make their voices heard (King, 2013). This authorized heritage discourse created by ‘experts’ and managers “focuses on aesthetically pleasing material objects, sites,

places and/or landscapes that current generations must: care for, protect, and revere so that they may be passed to nebulous future generations for their ‘education,’ and to forge a sense of common identity based on the past” (Smith, 2006, p. 29). This discourse turns the audience of heritage sites into a passive one that must simply receive the meaning of cultural resources promoted by those in power to make decisions and is detrimental to any public efforts to contribute to ‘official’ cultural meaning (Smith, 2006). If managers are to successfully manage historic and cultural resources in the face of so much change, it is essential to understand the wide range of values and meanings that are associated with a resource by soliciting “the views of congeries of stakeholders, both official and unofficial, experts, and laypeople” (Mason, 2006, p. 22).

Americans today are endowed with an extremely vast and diverse public domain, which includes thousands of parks and other sites based both on natural and cultural or historic resources (Wellman & Propst, 2004). Despite the wide range of heterogeneous areas contained in U.S. parks and their constantly changing conditions, policies are crafted in such a way that managers must attempt to treat the large array of differing landscapes and buildings under uniform standards (Cheever, 2007). Policies are based on the mindset that historic places are static phenomena rather than dynamic places; this causes our policy to stagnate, as we cannot quite grasp the ways in which landscapes and their multiple components—especially plants, animals, and human populations—are inherently dynamic (King, 2013). These complex landscapes are further convoluted by the rapid rate of climate change (Caffrey and Beavers, 2008).

Over the 20<sup>th</sup> century, historic preservation became more institutionalized with the involvement of government agencies and nonprofit organizations (Mason, 2006). This

institutionalization “helped cast the die for the current preservation culture” (Mason, 2006, p. 25), which tends to separate preservation from other involved activities. The National Historic Preservation Act (NHPA) establishes the infrastructure and procedures for historic preservation in the U.S. and establishes the NPS as stewards of federal cultural resources (NHPA, 1966). The NHPA, although it defines protection, does not actually include many provisions for protecting cultural properties fully or forever (King, 2013). Essentially, the NHPA promotes expanding protection by establishing programs and incentives to *encourage* preservation.

Although NPS standards for cultural resource management are fairly extensive, the agency focuses on four options for the treatment of historic properties: preservation, rehabilitation, restoration, and reconstruction (NPS, 2002). Application of a particular treatment is dependent upon the significance, association, and integrity of the property. Significance of a property is evaluated in terms of its affiliation with important culture, history, or science, which must be recognizable in the resource’s physical form. Association refers to a cultural resource’s situation in history, including important events or people, and/or its value to a cultural group. To have integrity based on these guidelines, a resource must retain evidence of its significance and association in its physical form (NPS, 2002). Given the involvement of federal and state agencies in NHPA compliance processes, the procedures unsurprisingly follow “formal, bureaucratic processes” (Altschul, 2005, p. 197) in which roles and results are predictable: the effect of this bureaucratic process is “a stilted and rigid approach that is not conducive to creative and innovative thinking” (Altschul, 2005, p. 197).

Although holistic consideration and evaluation of culturally significant landscapes can be exceedingly challenging for managers, cultural resource planners are attempting to address these issues more thoroughly, despite the “thin array of laws and programs specifically designed with

landscapes in mind” (King, 2013, p.257) and the insufficiencies of current static policies. As change is an inherent component of any landscape or structure, historic preservation and management must acknowledge and work *with* rather than *against* the dynamic environment.

### ***2.2.1 The 50-Year Rule & the Curation Crisis***

An example of a problematic static policy in the U.S. preservation system is the issues brought to light by the 50-year rule. The 50-year threshold for an asset to be considered for historic designation on the National Register has been the general rule of thumb since the NPS Advisory Board instituted the policy in 1948; specifically, 50-years is the age that enables the consideration and eligibility of a structure to be nominated as a historically significant site (Sprinkle, 2007). Despite issues of excluding significant sites below 50 years of age, the 50-year rule has thus far appeared to be a reasonable cutoff for managers and planners. The use of national criteria developed by the NPS has created much consistency in local, state, and national historic survey efforts (Fowler, 2003). However, as our country grows older and more crowded, using this rule on a site-by-site basis has created an unforeseen problem: we are going to run out of room for future preservationists to preserve important built cultural heritage (Baer, 1995). Three times as many buildings became eligible for preservation in the year 2000 than became eligible in all the years between 1900 and 1950 (Baer, 1995). Just as we are facing a curation crisis regarding archaeological collections and the impossibility of storing and preserving all collections of cultural materials (Bustard, 2000), we are also facing a similar crisis in the proliferation of historic structures that are eligible for preservation.

Since the fifty-year rule has been accepted into the conventional wisdom of the field (Sprinkle, 2007), planners have failed to account for the exponentially increasing number of

buildings becoming eligible (Baer, 1995). On one hand, the number of properties that have been evaluated and listed on the register is highly impressive, but on the other hand there “is a growing concern that too much is on the National Register and that the criteria for eligibility are too loosely applied” (Fowler, 2003, p. 44). Baer (1995) urges planners to reevaluate this threshold and stop treating historic preservation as a “piecemeal endeavor” (p. 82) and calls for planners to develop new strategies and techniques to think about preservation in the long-term by succinctly stating:

If today's preservationists fill up the closet, consecrating its holdings as patrimony or heritage, tomorrow's preservationists will have naught to do but ‘mind the store’ (museum) that their parents created. There may be little room for our children and their children to preserve their own prized possessions. (p. 85)

Long-term planning of this type will require historic planners and managers to conceptualize preservation in new and creative ways, likely subverting some of the principles on which their profession was founded.

It is possible that we may need to narrow our criteria for preservation to ensure that future generations are able to preserve what is important to them rather than simply tend to the sites we deemed important first. There is only so much space in which to preserve historic and cultural resources, and it is important to understand that what *is* preserved is a reflection of the society in the “choices of what gets preserved, how it is preserved and interpreted, and who makes the decisions” (Mason, 2006, p. 21). Making decisions about how to best preserve representative examples of culture and heritage will require flexible, adaptive strategies, and managers will need to be creative in their attempts to preserve these resources in the face of climate change and changing cultures and values. Of course it is not possible to suddenly and completely transform

U.S. parks, or more specifically historic districts that are managed to be devoid of human occupation, to mirror systems found elsewhere; rather, we are suggesting that the themes underlying the basic preservation philosophy in historically older and contemporarily more crowded nations may be useful in informing new and creative ways of managing a system that is rapidly facing issues of fiscal constraints and increasingly vulnerable resources. To overcome the challenges presented by the static and fragmented system in the U.S., it will be necessary to “develop new institutions, relationships, channels of communication, common goals, shared vision, increased cooperation, and creative new solutions to old problems” (Bryner, 1998, p.4).

### ***2.3 European Policy and Tradition***

Due to the significant limitations of the U.S. preservation system and in hopes of finding creative management strategies and solutions, we decided to explore foreign policies for preservation themes. We chose to focus more narrowly on Europe since it is one of the regions in the world with highest concentrations of heritage sites (Dragulanescu, Stanciulescu, Ion, & Stan, 2011); that is, European countries are managing much smaller spaces filled with many more centuries of built heritage filling those spaces. Additionally, most peer-reviewed research published to date has occurred within Europe (Fatorić & Seekamp, 2017). Although European countries have different systems of preservation, the basic principles and themes underlying their management of resources similarly involve the treatment of whole landscapes that typically do not dichotomize humans and nature; therefore, we purport that such an approach could potentially be better suited to the changing conditions of our planet and the increasing number of historic and cultural properties today. An overview of these themes we’ve discovered is portrayed in Table 2.1.

Table 2.1. *Lessons Learned from Abroad*

<b><i>Lesson from European Policy</i></b>	<b><i>Source</i></b>
Embrace the human element in nature and the relationship between the two.	Cheever, 2004; Gambino, 2002; Scazzosi, 2004
Entertain the notion of multi-use properties, districts, and landscapes, including repurposing.	Cheever, 2004; Janssen, 2014; Stockdale & Barker, 2009
Share management responsibilities with multiple agencies, organizations, and individuals.	Cheever, 2004; Gambino, 2002
Consider cultural landscapes' dependence on social and economic processes.	Cheever, 2004; Scazzosi, 2004
Integrate parks into the regional context by considering a resource's specific cultural and environmental setting.	Gambino, 2002; Stockdale & Barker, 2009
Embrace the interdependence of nature and society, and use local knowledge to facilitate adaptation.	Cheever, 2004; Scazzosi, 2004
Acknowledge the importance of 'working landscapes' as a part of heritage.	Cheever, 2004; Stockdale & Barker, 2009; Swensen & Saetren, 2014
Value and nurture relationships and cooperation with local communities.	Cheever, 2004; Janssen, 2014
Employ strategies of cooperative management and planning with local governments.	Cheever, 2004; De Rosa & Di Palma, 2013
Manage resources as dynamic cultural landscapes rather than static "monuments."	Cheever, 2004; Stockdale & Barker, 2009
Accept that landscapes and structures cannot be stopped from evolving.	Cheever, 2004; Gambino, 2002; Swensen & Saetren, 2014

Quite unlike U.S. preservation policies, most European policies regarding conservation are based on the idea that natural and cultural heritage are inextricable. For example, European nature parks emphasize their "traditional character as human landscapes, their cultural and social relevance, and their dependence on social and economic processes" (Gambino, 2002, p.1). In fact, most protected landscapes in Europe include significant human activity (Gambino, 2002). For European preservation sites, "the human/nature interface is at the core of valuable features

created by parks” (Cheever, 2007, p. 249). Rather than a focus on outstanding natural places or single monuments, European preservation does not adhere as closely to North American ideas of separating nature from culture, and policy increasingly embraces whole territories, or cultural landscapes, as areas worth protecting through cooperative management (Scazzosi, 2004; Gambino, 2002). Around 60% of protected areas in Europe are classified as ‘protected landscapes’ where “the interaction of people and nature over time has produced an area of distinct character with significant aesthetic, ecological, and/or cultural value” (Gambino, 2002, p. 1).

When considering more landscape-based approaches to preservation that are prevalent in Europe, it is crucial to consider the complex ways in which heritage and cultural values are tied to landscapes. In a variety of ways, heritage and cultural values have central roles in societies, often contributing to identity formation and self-definitions (Sorensen & Carman, 2009). Heritage is valuable not for intellectual purposes but for its symbolic and instrumental functions in society (de la Torre, 2002). Lennon (2006) suggests that managing protected areas is a social process that “takes place within communities of place and interest that are, in part, formed (and reformed) by their histories, cultures, institutions, economic circumstances and politics” (p. 41). It is this broader local context that managers and policy-makers must consider when making decisions about collective resources (Lockwood, Worboys, & Kothari, 2006). Since landscapes are imbued with cultural meanings and have co-evolved with the human communities inhabiting them, Brown, Mitchell, and Beresford (2005) suggest a protected landscape approach that promotes strategies that “respond to the local context and its cultural, natural, and social features” (p. 4). Additionally, Scannell and Gifford (2010) argue that “culture links members to place through shared historical experiences, values, and symbols” (p. 2). Therefore, studying

values that people assign to places can be useful in understanding contextual and sociocultural aspects of planning (de la Torre, 2002).

This brief overview of European preservation policy themes highlights concepts and lessons that U.S. preservationists could consider in adaptive planning efforts aimed at protecting vulnerable resources. Next, we identify several cases in which these lessons are applied in specific U.S. and European contexts to further contextualize the ways in which cultural landscapes are adaptively managed, both with specific reference to climate change threats in the U.S. and more broadly in Europe. Although there is limited research regarding specific adaptation strategies specifically for climate change (see Fatorić & Seekamp, 2017), the cases we selected demonstrate how land and built resources are being managed in a sustainable manner that takes cultural elements and values into consideration.

### ***2.3 Adaptive Landscape Management Case Studies***

Various cases, from both the United States and Europe, illustrate the different ways in which preservation can be addressed (Table 2.2). Sustainable planning for cultural landscapes has also been implemented in many European nations (Vos & Meekes, 1999). Additionally, the vulnerability of coastal areas and sustainable management of assets affected by climate change are being incorporated into many European management policies (Rotmans et al., 2000; Vallega, 2003; Nichols & Kebede, 2012). With the existence of these sustainability policies and the European distinctions between nature and culture being less rigid than in the U.S., European approaches to landscape management appear more holistic and better suited for an unpredictable, changing environment.

Table 2.2 Case Studies

<i>Strategy</i>	<i>Case</i>
Off-Site Measures	<p><i>Fort Massachusetts [United States] (Caffrey &amp; Beavers, 2008)</i></p> <ul style="list-style-type: none"> <li>• Nationally significant cultural resource.</li> <li>• Immovable structure threatened by sea level rise.</li> <li>• ‘Hard’ (groins, sea walls) and ‘soft’ (dredging/sand relocation) measures.</li> <li>• Expensive and temporary fixes.</li> </ul>
Extreme Structural Measures	<p><i>Cape Hatteras Lighthouse [United States] (Caffrey &amp; Beavers, 2008)</i></p> <ul style="list-style-type: none"> <li>• Initial efforts to control erosion through beach nourishment.</li> <li>• After initial efforts failed, the lighthouse was moved.</li> <li>• Cost-prohibitive in most situations.</li> <li>• Likely only a temporary fix given current sea level rise projections.</li> </ul>
Manage as Working Landscape with Extensive Human Occupancy	<p><i>Cinque Terre National Park [Italy] (Imeson, 2012; Montanarella, 2011)</i></p> <ul style="list-style-type: none"> <li>• Highly valuable cultural site locally, regionally, nationally, and internationally.</li> <li>• Soil quality issues threaten the cultural landscape.</li> <li>• Park status and designation as UNESCO World Heritage Site helped the region to protect its landscape and to prevent the degradation of the terraces.</li> <li>• Fully populated communities within the cultural landscape.</li> <li>• Many historic structures are integral components of daily life for the area’s communities.</li> <li>• Representative of the harmonious relationships between humans and natural elements,</li> <li>• Illustrates traditional lifeways that are still important to the community’s social and economic fabric.</li> <li>• Model for widespread policy measures in Italy.</li> </ul>

Table 2.2 Continued

<p>Manage as Working Landscape with Sustainable Development Component</p>	<p><i>Pembrokeshire Coast National Park [Wales, UK] (Scott, 2001)</i></p> <ul style="list-style-type: none"> <li>• Increasing emphasis on sustainable development in policy and planning.</li> <li>• Low-impact development planning with attention to local landscapes and lifestyles.</li> <li>• Home to rural communities</li> <li>• Debate about how agricultural, economic, social and environmental aspects are assessed and resolved within the planning system.</li> </ul>
<p>Adaptive Reuse or Repurposing</p>	<p><i>Urban Planning [The Netherlands] (Janssen, 2014)</i></p> <ul style="list-style-type: none"> <li>• 1970s government called for more awareness of adaptive reuse of built and landscape heritage.</li> <li>• Long-term structure vacancy leads to decay and disrepair.</li> <li>• Spatial Planning Decree: Local and regional governments legally compelled to consider heritage values in all land-use and spatial planning.</li> <li>• Heritage grant programs: Structure/land owners contribute to preservation funding.</li> <li>• Planning for decline: Heritage properties must be “continually adapted to new functions and ‘reintegrated’ into their surroundings” (p. 628).</li> </ul>

In the U.S., literature regarding climate adaptation is mainly focused on somewhat *off-site* or extreme *structural* measures. For example, the highly expensive and arduous process of moving culturally significant structures to less vulnerable locations or implementing off-site interventions such as jetties, seawalls, and groins or dredging and replacing sand are likely temporary measures that may also further disrupt the cultural landscape (Caffrey & Beavers, 2008). Inherent to off-site strategies is the issue of causing unintended consequences by interfering with natural processes. Any hard structural changes implemented have the potential to cause other detrimental impacts by changing the form and function of that part of the landscape. Actions like moving structures can be helpful for some time if funding is available to undertake the project, but it is likely that the structure will become increasingly vulnerable to the point

where it would need to be moved again to preserve it. Furthermore, moving a structure alters its cultural integrity by changing the structure's association with the surrounding landscape (Boyd, Cotter, Gadinier, & Taylor, 2005; King, 2013).

One strategy learned from European cultural heritage management is to manage cultural places as working landscapes capable of accommodating extensive human activity (Imeson, 2012; Montanarella, 2011). In Cinque Terre National Park in Italy (also a UNESCO World Heritage Site), the historic structures are managed within the context of Cinque Terre's five villages, all of which are occupied just like any other village. This approach embodies the relationship between culture and nature, with the landscape representing both traditional lifestyles and the modern communities. Italian coastal areas contain an abundance of rich cultural heritage, and they are also largely densely populated meaning that heritage plays a pivotal role in local economic and social systems (Callegari, 2003). Coastal heritage in these areas is increasingly threatened by many local and global forces including climate change, which further complicates management problems (Vallega, 2003). These confounding factors necessitate the integration of coastal culture and local heritage values into planning for this complex landscape.

Similarly, in the U.K., managing working rural landscapes with a sustainable development component was a strategy that emerged in the management of Pembrokeshire Coast National Park in Wales (Scott, 2001). Clark and Clarke (2011) discuss the development of sustainability policies in UK national parks as a way to mitigate impacts to nearby communities. Additionally, managers of UK cultural landscapes are increasingly recognizing the potentially devastating impacts of climate change to both natural and cultural resources within parks (Murphy, Thackray, & Wilson, 2009) and addressing these concerns in management plans. For example, UK managers are cognizant of the implications of coastal change for the communities

within protected areas, and policies include stipulations to “work closely with coastal communities to foster a sense of ownership and stewardship over the coastal environment and its resources” (Stojanovic & Barker, 2008, p. 345). The rural communities that exist in these settings are already being impacted by changing social and economic pressures. Managing these landscapes and communities sustainably requires an integration of cultural and natural elements, as well as cooperation with communities to successfully manage these protected areas while maintaining the economic viability of the rural communities within them since climate change will likely exacerbate these existing problems (Nicholls & Kebede, 2012).

Adaptive reuse of historic structures is a strategy that repurposes unoccupied historic buildings for human use, including residential<sup>7</sup> or commercial<sup>8</sup> functions (Janssen, 2014). Although adaptive reuse can call into question the integrity of structures that are repurposed, this strategy may address some of the issues related to the ‘curation crisis’ of historic structures and financial constraints. As it is very expensive to manage vacant structures, adaptive reuse is a strategy that can be used to attain less expensive management through cooperation with the structure’s new occupants (Bullen & Love, 2010; Janssen, 2014) or to eliminate the use (and maintenance) of non-historic buildings within a landscape (Bullen & Love, 2011). While certain aspects of cultural heritage may be affected, adaptive reuse is a strategy that can be employed to avoid letting a structure fall into disrepair. Adaptive reuse policy in Dutch urban planning addresses these issues of potential perceived lack of authenticity, impacts to structural integrity, and the possibility of diminishing intangible values. However, in the crowded structural spaces of these urban areas, adaptive reuse may be one of few sustainable approaches to heritage preservation. Janssen (2014) identifies the need to develop new principles, ethics, and language

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<sup>7</sup> Private residences, staff housing, guest housing, etc.

<sup>8</sup> Business operations, visitor centers, museums, etc.

applicable to adaptive reuse preservation and insists that the willingness of the heritage preservation community to change and innovate traditional strategies will largely affect the viability of adaptive reuse planning.

#### ***2.4 Adaptive Strategies for Cape Lookout National Seashore***

As we revisit our case of Cape Lookout National Seashore, there are several lessons that can be applied to this specific management context. First, the National Park Service's ability to retain all cultural resources, specifically historic buildings in our case, is limited. Budgetary constraints coupled with the high exposure of structures within coastal zones to climate change threats make it difficult and expensive to manage individual resources or structures without the context of the whole landscape (Gambino, 2002; Cheever, 2007). Roe (2003) argues that a better understanding of the connections between human culture and (previously or currently) occupied landscapes will "make us better stewards of the land" (p. 237). Addressing cultural resource management in terms of value-laden landscapes may allow for a more harmonious management of the whole area, rather than disjointed management of specific structures (Cheever, 2007; Knudson, 2001). For example, engaging stakeholders in determining which structures and landscape elements tell the most critical story could help managers set priorities for structural or off-site adaptation strategies, particularly when resources have a similar chance of persisting on the landscape.

Second, removing or at least redefining the distinction between nature and culture allows managers and stakeholders to see a bigger picture in which we are all part of the landscapes we preserve (Roe, 2003; Scazzosi, 2004; King, 2013). CALO is a particularly difficult case to manage because the island is completely uninhabited. There are no residents left on the island to

assume any responsibilities for upkeep and management as was illustrated through European examples of community collaboration within working landscapes. Adaptive reuse may mitigate some of these difficulties by skirting around the issue of vacancy (Janssen, 2014). There is potential for many of the residential structures in both historic districts to be adapted for private leasing as vacation homes.

In actuality, adaptive reuse was previously considered at CALO as a strategy to address the vulnerabilities from deferred maintenance; however, it may also be a useful strategy to consider in the context of adapting to climate change. In 2002, an adaptive reuse plan was developed for one of the historic districts, Cape Lookout Village, but was never implemented. Several obstacles—particularly costs associated with ensuring human health (water, sewage, and fire codes)—have prohibited the enactment of this plan (P. Kenney, CALO Superintendent, personal communication, January, 2015). Unfortunately, the inability to implement the plan has created further rifts between the agency and its local stakeholders—particularly, those individuals who previously resided in or vacationed in the former residences—and will necessitate concerted future efforts to mend those agency–community relationships (see Chapter 3 of this thesis). It is possible that technological advancements and private financial investments may enable reuse to be an option for climate adaptation for CALO’s historic buildings; this would reintegrate human occupation in the cultural landscape.

Augmenting flexibility in CALO’s management and integrating the concept of a holistic landscape may facilitate NPS managers’ ability to plan for inevitable climate change-related impacts. A focus on landscape-level preservation based on cultural values could conceivably create a functional and affordable adaptation strategy for climate change at CALO. Regardless, employing a participatory and comprehensive decision-making process that takes into account all

of the complexities of the natural and cultural resources located within the designated historic villages' landscapes, including fostering partnerships and philanthropic investment, will likely result in a more sustainable and publicly favorable management approach.

## ***2.5 Conclusions***

Due to the complexity of heritage values and the diversity of cultural resources being managed, cultural resource management is already a highly difficult task even before adding climate change to the mix (Boyd et al., 2005). Specifically, cultural resource management is often fraught with political and social conflicts resulting from disparate meanings held by multiple groups regarding the same resource or place (Smith, 2005). The additional complications added by climate impacts warrant more flexible management of cultural resources and an openness to reevaluating how we undertake historic preservation endeavors (Haugen & Mattson, 2011).

The temporary nature and potential for unintended consequences of off-site measures (e.g. impacts to neighboring landscapes caused by hard structures), as well as the high cost of extreme structural changes, may prove that these strategies are less appealing in a world where change is becoming the norm. Furthermore, it is unlikely that costly adaptive strategies are feasible when applied to every historic building, which suggests that regional or national-level prioritization efforts will be needed. Stakeholder perceptions are critical in management discussions given management has to make value-laden decisions regarding the prioritization of which landscapes and resources will be preserved and how. It is also important to note that policy discussions are needed simultaneously with the development of creative adaptation options to increase the sustainability of cultural resource adaptation decisions.

To apply static policies to our varying and changing protected sites is a futile exercise. Though it is much simpler to craft policies that fit static conditions (King, 2013), in our rapidly changing environment, plagued with tremendous uncertainty about the timing and extent of impacts, adaptation is the only way forward. To successfully preserve important places and structures, managers must be willing and able to continually reevaluate tools and strategies used for the management of these resources (Janssen, 2014). Fortunately, more recent trends—particularly those in the European cases reviewed here—show that managers are becoming progressively more concerned with the necessity of addressing cultural landscapes.

Clinging to certain principles underlying the beginnings of the preservation movement certainly limits our options. In our rapidly changing coastal landscapes, it matters little on what our preservation philosophy is based if we no longer have any resources to preserve. If we are to change the current situation, it is essential to “encourage more varied and diverse approaches” to the study of cultural resources and built heritage (Althschul, 2005, p. 198). To look elsewhere for guidance may be uncomfortable, but it is preferable to the alternative wherein we sit back and watch our policies fail to effectively manage changing landscapes and the cultural resources located within them.

## **Chapter 3. Battling the Tides of Climate Change: The Power of Intangible Cultural Resource Values to Bind Place Meanings in Vulnerable Historic Districts.**

### ***3.1 Introduction***

The concepts of landscapes, space, or place are highly convoluted and exceedingly important in regards to how people connect to their environments. People engage with landscapes in a variety of ways, creating connections between people and places or what is often termed ‘a sense of place’ (Tuan, 1974; Bender, 2002). Moreover, “places are socially constructed by the people who live in them and know them; they are politicized, culturally relative, and historically specific” (Low, 2009, p. 21-22). Bender (2002) describes human interventions in a landscape as being done with the landscape rather than to the landscape, as this is not a one-way street; humans and landscape form and change together, through each other, and not independently (Low, 2009). Further, spaces and places are constructed through people’s “daily use of the material setting” (Low, 2009, p. 24). Humans’ untidy and often contradictory encounters with landscapes are an integral part of forming cultural meanings, forever entangling people and their places. In other words, landscapes are culture, landscapes form culture, and culture is embedded in landscapes (Bender, 2002).

In addition to being intertwined with culture, landscapes are also subject to constant change. As landscapes change, their relationship to that culture changes as well. Changes to cultural landscapes and the structures within them—whether due to neglect or climate-related impacts—can alter the meanings associated with these places (Trentleman, 2009; Adger, Barnett, Chapin, & Ellemor, 2012). Thus, it is imperative to consider concepts of place connections and the effects of change on these meanings when managing and making decisions about landscapes and the cultural resources within them. As cultural resources—particularly in coastal environments—are vulnerable to climate change impacts (e.g., storm-related flooding and erosion, sea level rise; Caffrey & Beavers, 2008; Riggs, Ames, Culver, & Mallinson, 2011; Peek et al., 2015), research is needed that can assist managers in understanding how adaptation strategies could alter place connections for people who have strong meanings associated with the landscape.

Climate change and the resulting impacts to natural resources, particularly in the context of recreation destinations, have been previously explored in scientific literature (e.g., Smith, Anderson, & Moore, 2012; Scannell & Gifford, 2011; Willox et al., 2012); furthermore, a small body of research exists regarding climate change and resulting impacts to place meanings and attachment (e.g. Feitelson, 1991; Fresque-Baxter & Armitage, 2012; Devine-Wright et al., 2015). However, a recent systematic literature review revealed that research related to managing cultural resources under changing climate conditions is nascent (Fatorić & Seekamp, 2017). As there is significant uncertainty regarding when and how climate change will impact our resources, it is critical to develop adaptive strategies that allow us to incorporate individuals' place-based values into resource management (Riggs et al., 2011). According to Poulter et al. (2009), coastal areas are facing the most imminent and some of the most devastating effects of climate change. Impending sea level rise and increased storm intensity and frequency make our coastal areas and resources extremely vulnerable to irreparable damage. A recent report by the National Park Service (NPS) (Peek et al., 2015) identified that forty billion dollars' worth of coastal assets (i.e., infrastructure and cultural resources) are at risk from climate change by 2100. Without prompt and decisive action, many of these resources—and the meanings associated with them—are in profound danger of being lost forever.

The purpose of this research is to explore how people known to have strong meanings tied to a specific place perceive the vulnerabilities to the cultural resources within that place, how those vulnerabilities may alter their place connections, and their preferences for climate change adaptation strategies related to the cultural resources within that place. We will examine these place connections at Cape Lookout National Seashore (CALO), a National Park Service site located within North Carolina's Outer Banks region that includes two designated historic districts. Using thematic analysis of in-depth interviews with a set of former residents and descendants of former residents, as well as prior lessees, this research will provide managers with a better understanding of stakeholders' perceptions of climate change and the consequences of any attempts to enhance the persistence of the buildings located within the two historic districts.

### **3.2 Theoretical Framework**

Concepts regarding place meanings, attachment, and sense of place have been garnering scientific attention in multiple fields for several decades (Lewicka, 2011). As increasing environmental problems “threaten the existence of and our connections to places important to us” (Scannell & Gifford, 2010, p.1), our awareness of the need to examine bonds between places and people intensifies. When socially constructed environments and landscapes are subjected to change from outside forces (i.e., climate change), meanings and cultural values ascribed to those places by their communities also become vulnerable to these forces. Therefore, it is essential to understand how place meanings and heritage values may be affected by impending climate-related impacts (Burley, Jenkins, Laska, & Davis, 2007).

#### **3.2.1 Place Connections**

In terms of research within the domain of park and protected area planning, place attachment is likely the most prevalent construct used to explore place connections. Place attachment, closely related to and sometimes used interchangeably with the phrase ‘sense of place’ (Jorgensen & Stedman, 2001), involves the relationships that humans develop with the landscapes, or places, they inhabit. According to Stedman (2002), “places include the physical setting, human activities, and human social and psychological processes rooted in the setting” (p. 561). Jorgensen and Stedman (2001) define sense of place as “the meaning attached to a spatial setting by a person or group” (p. 233). Providing additional clarification, Jorgensen and Stedman (2001) explain that sense of place is not inherent to the physical setting, but is lodged in human interpretations of that place. Thus, Stedman (2002) contends that place attachment relies on symbolic meanings, and that we become attached to the meanings we attribute to cultural resources and landscapes. Additionally, any landscape can be imbued with various degrees of meaning and multiple meanings at once.

Integrating an emotional-type of connection into their definition, Altman and Low (1992, as cited by Manzo & Perkins, 2006) describe place attachment as “an affective bond between people and places” (p. 337). Williams and Patterson (1999) describe the emotional aspect of place attachment, or *emotionality*, as the “depth or extent of meaning” (p. 143). The emotional aspect of place attachment is “the most variable and individualized aspect of meaning” (Williams

& Patterson, 1999, p. 143). It is this aspect of place attachment that typically emerges as the focus of conflicts over resources due to the instinctual nature and depth of emotional meanings (Williams & Patterson, 1999).

Place attachment can occur at the individual or group level, with individual place attachment contributing to a person's identity and group place attachment contributing to culture and community values (Scannell & Gifford, 2010). Cultural groups bestow meanings upon natural environments, creating landscapes through their social interactions (Greider & Garkovich, 1994). Some researchers describe places as closed or bounded entities while others define them as more open crossroads or meeting places. Tuan (1974) describes place attachment as the "steady accretion of sentiment" (p. 33) through which people develop emotional ties to a place, which are strengthened through multiple experiences in that location. Despite nuances in definitions and an abundance of related terms, which is to be expected with such a multifaceted concept (Scannell & Gifford, 2010), Manzo and Perkins (2010) explain that place attachment literature "has people's relationships to place at its core" (p.337).

Early studies of place in the 1960s and 1970s attempted to "draw critical connections among people's experience of place" (Manzo & Perkins, 2006, p.336) and the implications these experiences might have for planning efforts. Some researchers conceptualize place-related meanings as attitudes, framing place attachment as "a complex psychosocial structure that organizes self-referent cognitions, emotions, and behavioral commitments" (Jorgensen & Stedman, 2001, p.237). Often the sense of place concept is framed as three separate constructs: dependence, identity, and attachment, where place dependence and identity combine to create place attachment (Jorgensen and Stedman, 2001). Place dependence refers to the functional meanings associated with a place (Williams & Roggenbuck, 1989) or values based on activity-related desires (Moore & Graefe, 1994). Place identity is a deeper, more emotional level of meaning that is related to what a place symbolizes for a person, and is often formed from very personal meanings (Proshansky, Fabian & Kaminoff, 1983). Impacts to place identity are more likely to affect place attachment than impacts to place dependence due to the depth of emotion involved in place identity (Williams & Roggenbuck, 1989).

The study of place meanings has been popular in environmental and community psychology (Manzo & Perkins, 2006). Environmental psychologists in particular have developed much of the literature regarding our relationships to place (Tuan, 1974; Proshansky et al., 1983;

Altman & Low, 1992), and through studying place-related attitudes and behaviors, have “brought relationships to place to the forefront as a critical element of our lived experiences” (Manzo & Perkins, 2006, p.336). Since “places underlie how we make sense of the world as well as drive our actions” (Davenport & Anderson, 2005, p.627), understanding place meanings is essential to effective planning and management. The relatively unexplored context of cultural resource management and well-documented connections between place meanings and cultural landscapes (Greider & Garkovich, 1994) necessitates an exploration of place-based meanings through an approach that draws on the experiences and opinions of community stakeholders. As places are integral to the formation of both individual and group identity (Davenport and Anderson, 2005), it follows that research, planning, and management would benefit from an analysis of place values and attachment when making decisions about our protected areas (Manzo & Perkins, 2006). Moore and Graefe (1994) recommended that managers recognize that place attachment to recreation sites, such as those managed by the NPS, may “warrant special consideration for these places during planning processes” (p. 28). Investigations of place connections can provide a more comprehensive understanding of a community’s dynamics and their relationships with the land they inhabit or to which they feel connected regardless of residency. Exploring community-level place connections sheds light on shared identity and has been found to be useful in planning for cultural landscapes (Manzo & Perkins, 2006).

Place connections scholarship has clearly advanced in natural resource management (e.g., Moore & Graefe, 1994; Farnum, Hall, & Kruger, 2005; Ednie, Daigle, & Leahy, 2010; Smith & Moore, 2013; Smith, Siderelis, & Moore, 2010); however, very little attention has been paid in the literature to cultural resources. Davenport and Anderson (2005) argue that “current place attachment scales may not do justice to the complexities of community members’ connections to natural areas” (p. 637). Additionally, most place-based research has focused more on recreation, natural resources, and visitors’ attachments to their recreation sites. Focusing research on natural resources and visitors when studying place attachment has the tendency to simplify an extremely complex reality in which community members may have much more intricate and convoluted attachments than visitors might have (Davenport & Anderson, 2005). Assessing place connections is likely even more convoluted when the place includes cultural landscapes (i.e., cultural and natural resources that are jointly managed to convey a specific point in time or aspect of heritage).

### *3.2.2 Cultural Heritage and Place Connections*

Where cultural resources exist, meanings and connections exist within the associated communities. Overlooking place meanings connected to cultural resources in planning and management can have detrimental effects on communities, including loss of identity (Khakzad, Pieters, & Van Balen, 2015). It is quite a monumental task to attempt to distill a wide range of cultural, heritage, and place values into a format capable of informing management and policy (de la Torre, 2002) because “place-related attachment and identity are phenomena that evolve over time and are guided by interwoven and interrelated psychological and sociological elements in a most complex way” (Knez, 2005, p.217). Furthermore, if ecosystems and landscapes are caches for social meanings, connections to these places have implications for “how we conceptualize and value ecosystems, and how we integrate this knowledge into theory and practice” (Williams & Patterson, 1999, p. 144). Therefore, it is essential to understand the relationships that stakeholders have with a resource and how deeply their identity is tied to the place in order to predict and address their responses to changing environmental conditions (Williams & Roggenbuck, 1989).

To prepare for the physical and sociocultural impacts of climate change, consequences of environmental changes to human populations must be understood from “the many cultural definitions that create the landscape” (Greider & Garkovich, 1994, p. 2). More effective management of change can be achieved through an understanding of the social construction of meanings attached to places that will be affected by the change, as altered meanings can affect cultural groups that have incorporated a place into their self-identity. In particular, sociocultural impacts of environmental change are seen in the new definitions and meanings that are formed when a group negotiates new conditions of a valued resource (Greider & Garkovich, 1994). Essentially, resource decisions should be “guided by an understanding of the social processes that define, structure, and alter the meaning of landscapes” (Williams & Patterson, 1999, p. 156-157).

Consequently, the imminent threats to our cultural resources from climate change necessitate an examination of what happens to cultural meanings when cultural resources are impacted. In examining cultural resources in the context of a rapidly changing environment, it is advantageous to have a comprehensive understanding of community members’ place connections before implementing any adaptive strategies. Furthermore, to manage cultural

resources in accordance with the values of the connected community, an evaluation of impacts to place meanings/connections must occur prior to taking action. While impacts to place meanings resulting directly from climate change-related impacts have been studied previously, research on this subject remains limited (Devine-Wright, 2013) even two decades after Feitelson (1991) identified the need to examine this interaction. Additionally, it is just as important to evaluate how climate change adaptation strategies made in response to climate change can impact individuals' place meanings, a relationship that has yet to be examined.

While climate change adaptation strategies may technically be 'saving' a resource, it is possible that unintended consequences might include an impact to the cultural meanings held by community members. Place connections are by no means fixed or permanent; rather, cultural meanings are constantly in flux. As environments change, cultural meanings can be altered, expressed differently, and renegotiated. Like any relationship, individual and community place connections are always under construction—being torn apart, built back up, strengthened, weakened, and reimagined. Davenport and Anderson (2005, p. 630) asked “what happens to sense of place when places change?” In this study, we ask more specifically, how are place connections and cultural heritage affected when cultural resources are impacted by climate change or are altered through climate change adaptation strategies?

### ***3.3 Methods***

Participants for this study were identified using strategic and chain-referral sampling (Corbin & Strauss, 2008) to contact community members. Our sampling strategy did not aim to generate a representative sample, but rather to gain in-depth information about important community connections to CALOs cultural resources. Our initial sampling began by gathering a list of individuals from park managers and the director of a NPS partner organization (Core Sound Waterfowl Museum and Heritage Center) with known connections to the buildings within the two historic districts. Specifically, the individuals on this list were people who had previously expressed interest in the decision-making process for cultural resources at CALO and community members who were former residents or decedents. From this list, we used chain-referral sampling to expand our sample by requesting referrals from both those who participated in the study and those who declined participation. When thematic saturation (Creswell, 2003) was reached, sampling was concluded.

Individuals identified from either sampling strategy were contacted via telephone and/or email (depending on the availability of contact information). When contacted, we described the purpose of the study and asked whether they would be willing to participate. If willing, a date, time, and location of their choosing for the interview was scheduled. Prior to beginning the interview, participants received a more detailed explanation of the study purpose, a reminder of the voluntary nature of the research, and an explanation of risks and benefits involved in participating. No direct incentives were provided for participation. All of this information was additionally contained in an informed consent form, which participants reviewed and signed prior to completing the interview. All procedures and instruments were reviewed and approved by the researchers' Institutional Review Board and the NPS review team.

Data for this study were generated using an in-depth, semi-structured interview guide. The interview guide was designed with open-ended questions to evoke detailed qualitative responses and included the potential for follow-up questions (i.e., probing) to extract more detail or to clarify previous answers. Questions aimed to elicit place meanings, resource impacts, and threats, and changes to place meanings without specifically using the phrase 'climate change.' However, specific probing questions about climate change were included if participants' narratives lacked detail (i.e., specific climate change threats and examples of specific climate adaptation strategies).

The qualitative data generated from this research were analyzed through thematic analysis and coding (Creswell, 2003). In preparation for analysis, all interviews were transcribed verbatim, and two researchers performed a first reading of the data to facilitate a basic understanding of participants' statements, note what meanings were being conveyed, and discern the contextual tone of each interview. After the initial reading, we initiated the coding process. The first phase of open coding helped to identify themes, critical terms, and pivotal events. The second phase, axial coding, was applied as a strategy to organize and group the initial concepts and categories, identify interactions among codes and themes, and to frame causes and consequences. Lastly, selective coding was utilized to identify major themes and narrow our analysis of the data by explicitly looking for relationships to place meanings variables (place attachment, individual place identity, and community place identity). The themes were used to guide this step of the coding process while we searched through the data for illustrative cases and places where data demonstrated concurrence or contradictions. QSR N\*Vivo software was used

to aid data organization throughout the coding process. The software was particularly helpful in exploring density within each theme, as well as the relationships between themes.

### ***3.4 Study Area – Cape Lookout National Seashore***

CALO was established in 1966 (NPS, 2007). CALO is the southernmost area of North Carolina's Outer Banks region. Located within Carteret County, NC and stretching fifty-six miles from Beaufort Inlet to Ocracoke Inlet, CALO covers 532 square miles. CALO is only accessible by ferry or private boat, with its "primarily undeveloped qualities in contrast to neighboring barrier islands" being among its most valued attributes and setting it apart from other parks in the area (NPS, 2012, p. 15). Although currently uninhabited, three distinct settlements (Portsmouth Village, Cape Lookout Village, and Diamond City) once existed on the islands that comprise the park unit. However, only Portsmouth Village and Cape Lookout Village had residents and salvageable structures when the NPS acquired the land. Provoked by a destructive 1899 hurricane, the last residents of Diamond City left by 1902.

Highly unique and constantly shifting, CALO's landscape exemplifies the ephemeral nature of barrier islands (NPS, 2008) wherein the islands naturally move and roll over with tides and storms shifting the sand. The first known use of CALO was for fishing encampments built by pre-Columbian peoples. Subsequently, it was continuously inhabited by maritime communities that were involved in shipping, whaling, commercial fishing, port activities, and federal maritime operations when the Lifesaving stations, and later Coast Guard stations, were created (Garrity-Blake & Sabella, 2009). Early settlers of the area made a living fishing, farming, whaling, and boat building, which eventually transitioned toward fishing and hunting camps and vacation properties. Today, CALO is one of a small number of uninhabited barrier island systems remaining in the world.

The two remaining settlements, Portsmouth Village and Cape Lookout Village, are now designated historic districts. Portsmouth Village is located at the northernmost point of the park, only a few miles from Ocracoke across the water. Portsmouth Village residents were historically associated with the shipping and lightering industries; Portsmouth used to be the largest town on the Outer Banks, but the shipping industry eventually dwindled. The Life-Saving Station was established in 1894, which helped sustain the village, but the harsh and difficult way of life in the early 20<sup>th</sup> century resulted in fewer and fewer permanent residents remaining within Portsmouth

Village (Garrity-Blake & Sabella, 2009). Yet, descendants and their friends and family formed the Friends of Portsmouth Island, an official NPS partner organization, in 1989 under the sponsorship of the Carteret County Historical Society. At the southernmost tip of the park lies Cape Lookout Village. Unlike Portsmouth Village, Cape Lookout Village was never a fully established settlement. Occupation of the area began with the construction of a lighthouse and keeper's residence in the early 1800s and a Life-Saving Station in the late 1880s, which was located about two miles south of the lighthouse. By the mid-1900s, most of the residents of Cape Lookout Village were affiliated with the Coast Guard station (workers and their families, who often only visited at certain times of the year). Also in the mid-1900s, several former federal maritime buildings were sold and new buildings were being constructed as private vacation homes. Some of the structures in both historic districts at CALO have already been moved from their original locations at various points in the past.

The histories of these villages tell stories of a resilient community and illustrate our relationships to the land and sea. The communities who inhabited these islands were faced with an isolated existence and the need to survive in a harsh environment. Residents of CALO were challenged with the harsh conditions of the outer banks, but responded by adapting to and finding a way to work with these conditions. Ultimately, climatic and environmental conditions, which threaten the persistence of the physical remains today, dictated the fate of these vulnerable barrier island settlements (Garrity-Blake & Sabella, 2009), as few year-round residents remained in 1966 when the NPS acquired the land; the last residents left Portsmouth village in 1971, at which time the NPS gained ownership of the land and buildings within Portsmouth Village. Property owners were offered lifetime leases on their houses in Portsmouth Village, while occupants in Cape Lookout Village who could prove ownership of their property at the time of acquisition were offered the option of taking a twenty-five-year lease or a life estate. Garrity-Blake and Sabella (2009) describe the bitter conflict between the NPS and the community arose when these twenty-five-year leases expired.

The acceleration of sea level rise and increase in storm activity poses many threats to North Carolina's coast; these threats include elevated tides, an increase in floods, escalating erosion, rising water tables, increased salinization, and countless ecological changes (Dolan & Walker, 2006). In addition, North Carolina's coast is particularly vulnerable due to the fact that it has more than 5900 sq. km of land below one-meter elevation (Poulter et al., 2009). Climate

change-related impacts “pose some of the most significant practical and civic / governmental policy challenges” for management of natural and cultural resources on the barrier islands due to the range and intensity of impacts that can occur in this type of location (NPS, 2012, p. 11). Barrier islands are inherently dynamic, and climate change is exacerbating already cumbersome maintenance of cultural resources (NPS, 2012).

Today, climate change impacts—in addition to ongoing deferred maintenance<sup>9</sup> of the districts’ buildings, particularly in Cape Lookout Village—threaten the likelihood that these cultural resources will remain on the landscape. Yet, climate adaptation planning could enhance the agency’s ability to enhance the persistence of, at least some, historic buildings. The history of human occupation reviewed here, as well as anecdotal evidence from past engagement in planning efforts, illustrate that NPS managers know that members of the local community have strong connections to the cultural resources within the historic districts. However, NPS managers would benefit from a more systematic documentation and understanding of community members’ place connections, perceptions of threats to the cultural resources, and how climate change adaptation may alter their place connections.

### ***3.5 Findings & Discussion***

#### *3.5.1 Participant Attributes*

A total of 36 names were collected as potential participants for the study (12 were provided by the NPS, 15 were provided by the director of the partner organization, and nine new names were provided by other participants). Of these 36 total individuals, 22 had current contact information. Six did not have current contact information, five did not respond to messages, and three did not wish to participate for reasons such as not feeling qualified, not having time or interest, and not being able to schedule an interview during the sampling period. The chain referral approach increased the breadth of our sample beyond just those who were residents or

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<sup>9</sup> As of September 30, 2015, there was \$11.927 billion in deferred maintenance (transportation & other built assets, including historic buildings) across the National Park System. At CALO, this figure was estimated to be \$16,665,731 (<https://www.nps.gov/subjects/plandesignconstruct/upload/FY-2015-DM-by-State-and-Park.pdf>).

descendants of former residents, as we followed all suggested leads for people with ‘strong connections’ to one or more of the districts.

At the time when thematic saturation was reached, a total of 18 participants completed the interview process for this study. Of those, 13 participants were male, and five were female. Only three participants were under the age of 50, while the rest of the participants were between the ages of 50 and 85. Participants were connected to CALO in a variety of ways including: being born on the island, being descendants of former residents, having previously owned homes in one of the villages, growing up in the area and frequently visiting one or both districts, vacationing within the districts, and volunteering and/or working for the NPS within the districts. The types of connections and the number of participants who held that connection type, including whether their connections were to Portsmouth Village, Lookout Village, or both, are presented in Table 3.1. As connections are not discrete categories, individuals may hold multiple connection types.

*Table 3.1 Participant Connections*

<b>Connection Type</b>	<b>Number of Participants</b>	<b>Village Association</b>
Born at CALO	1	Portsmouth Village
Ancestors Lived at CALO (pre-park)	4	Lookout Village
	2	Portsmouth Village
Respondent and/or Family Owned Property at CALO and Subsequent Leases	2	Lookout Village
	1	Portsmouth Village
Grew Up in the Area	9	Lookout Village
	1	Portsmouth Village
	3	Both
Lifetime Vacation Destination	3	Lookout Village
Volunteering / Work	1	Portsmouth Village
	1	Both

### 3.5.2 *Place Meanings are Intangible Cultural Resource Values*

Results of this study indicate that the place meanings of CALO community members are informed by *place identity* and *place dependence*. These components of place meanings correspond to the intangible cultural resource values identified by participants. CALO and its cultural resources hold profound and various meanings for the participants of this study. The deep sentimental values and feelings of pride associated with CALO give community members the sense that CALO is *home*. The iconic Cape Lookout lighthouse is a symbol of this home, contributing heavily to community and individual identity. Fond memories of tradition and a powerful sense of heritage contribute to participants' strong place meanings. Participants are proud of this 'home,' and they have a deep affection for CALO's cultural resources. Strong emotional attachments became apparent as participants described CALO as an escape or sacred retreat, and as they fondly described how CALO's special qualities make it such a remarkable place—their favorite place to be. Participants' relationships with CALO have formed strong place connections; through these relationships, participants noted that their lives have been shaped significantly by their connections to CALO. Many participants formed their connections because they lived or vacationed in the area, while others made their connections through volunteerism and/or work. In turn, some participants have been inspired by their connections to partake in historical research or volunteerism. These place meanings themes correspond to various cultural resource values that were vividly illustrated in participants' narrative responses. Specifically, these intangible values help form and continuously contribute to the special meanings community members associate with CALO. The elements of place identity (individual, family, and community) and place dependence, and their corresponding cultural resource values, are illustrated in figure 3.1.

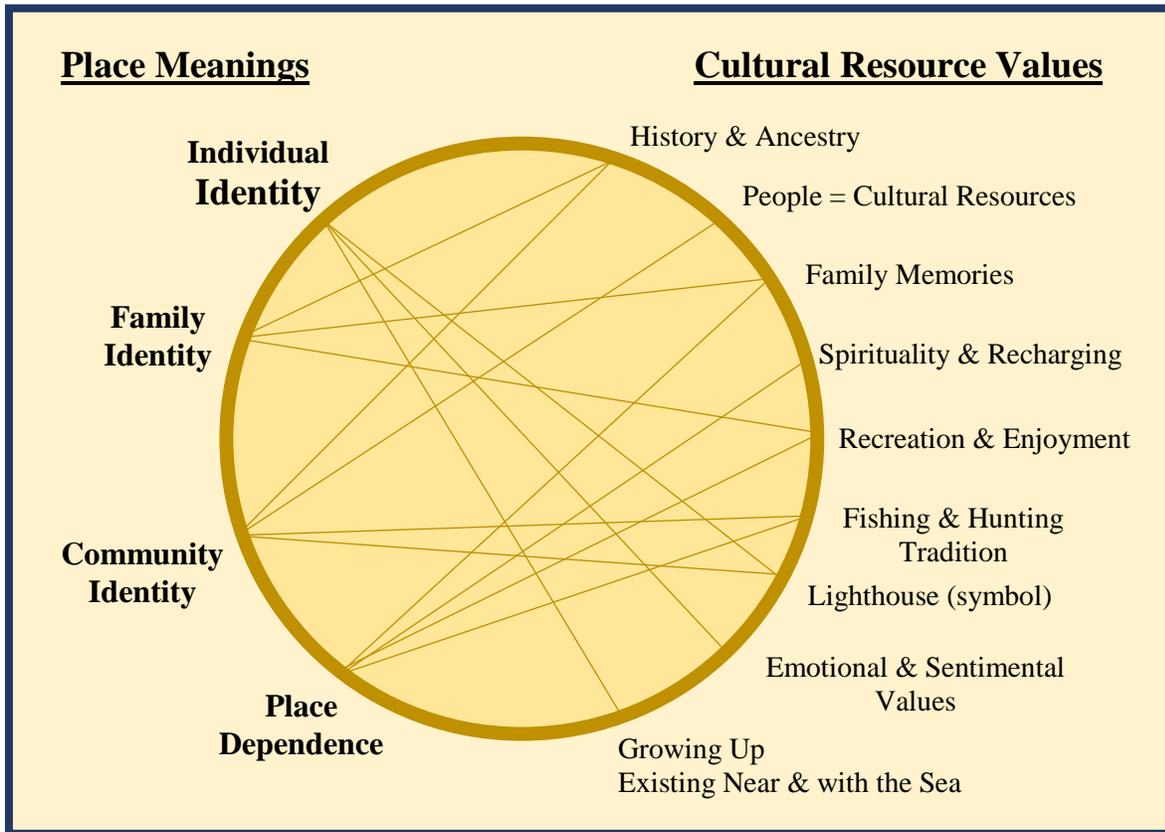


Figure 3.1. Place Meanings & Cultural Resource Values

The following subsections illustrate the roles of place identity and place dependence in creating participants' place meanings. Data are illustrated by providing quotes that exemplify the themes. Then, we use the same format to describe the participants' connections to specific tangible resources within the historic districts, their perceptions of resource change, and their perceptions of how change impacts their connections to CALO. The lighthouse structure itself was an exception, as participants regarded the lighthouse to be a symbol representative of their intangible cultural values.

### 3.5.3 Cape Lookout and Place Identity

The place meanings described by study participants are informed by their place identity, comprised of individual identity, family identity, and community identity. The values that make up these three identity types are contained in the dimensions of *CALO as home*, with the Lighthouse being a symbol of this home, and *CALO as heritage*, which includes concepts of *deep roots, family memories, and Banks tradition*. Elements of participants' place identities were strongly linked to intangible cultural resource values rather than tangible cultural resources.

#### *Individual Identity*

The sense of individual identity was strong across the majority of participants' narratives. For almost all participants, CALO (generally referred to by participants as "The Cape") was *home*. The notion of *home* varied across participants depending on the type of connections they had. For some participants, CALO literally was their home/residence for some time: "There's still some people who spent a lot of time there as children that remember it; they're leaving us fast, though. But they remember it as home and loved it" (P #15). Other participants owned (and subsequently leased from the NPS) homes at CALO that were their homes on weekends and/or summers. Other participants who never lived there or did not own property there still considered themselves to be at home at The Cape: "It's home. I never lived there, but it's home, I think" (P #1).

Most participants felt that CALO was an innate part of themselves and expressed that their lives and personal identities were inextricably linked to CALO as their *true* home, regardless of their past and current residence status. Community member disclosed that their connections to and identities associated with CALO were carried with them wherever they went. Whether they lived in the area or not, CALO was still considered to be home. Regardless of where they were or what they were doing, participants revealed that CALO never really left them, as this home was part of their identity no matter their proximity to the physical space: "I was gone for nine years, but I never really left, if you know what I mean. It's still home" (P #1). Many participants noted how comfortable they felt being at CALO by expressing such sentiments as, "As a child I could remember going to the banks and getting out of the boat and wading ashore and...I remember feeling so relieved to be there and so comfortable being there and I wasn't even conscious of it at the time" (P #1).

Participants' narratives revealed many deep emotional connections to CALO and expressed intense sentimental values associated with the time spent and memories made at CALO. For community members, CALO is a cherished place, and one participant described these emotional and sentimental values as "incredible, irreplaceable, and indispensable" (P #18). The emotional ties and sentimental values of CALO community members are so intense that participants described their connections as being so strong that leaving the island after visiting is quite painful, and that returning is a great relief; such sentiments are exemplified in the quote, "It actually runs so deep within most of us that...when we come off the island we're depressed for like a month. And you're so happy the next time you pull your truck on that boat and you know where you're going. It's hard to put into words what the place does for you" (P #16).

### *Family Identity*

Participants' connections to CALO also heavily inform their family identities, which in this case include both ancestral identity and direct experiences of family activities and memories. Ancestry was very important to many community members. Several participants have ancestry dating as far back as colonial Portsmouth when it was a major shipping hub, including ancestors who made their living from whaling, boat-building and lightering; these deep roots and family ancestry are exemplified through such reflections as: "Because that's the land where my ancestors trod for 200 years basically uninterrupted, I have a kinship with that, lots of stories about whaling and living on the banks that are pretty much a part of our family culture" (P #6). Other participants have more recent ancestors who worked for the Life Saving Service and the Coast Guard, as well as ancestors who were commercial fishermen in the area. Participants identified with these ancestors and their immediate family members who truly embodied a seafaring/maritime existence by expressing such sentiments as: "Oh well, everybody will have a story to tell you. Their family had camps out there. Their great-grandfather was a keeper, either Life Saving or lighthouse keeping" (P #16).

In addition to ancestry, participants placed great importance on their family memories associated with CALO. Many participants spent countless weekends and summers at CALO with their families. Participants described this family time as truly quality time and a major aspect of their family identities:

“Well, I think for most of my family we think it’s one of the most wonderful places in the world. Our families have been going there for years: the fishing, the surf fishing, the surfing. The families we’ve known, the connections we’ve gotten out of it over the years...you know, Cape Lookout is very much like...it’s just part of the family. I mean, there wouldn’t be any other way to describe it.” (P #2)

For participants and their families, CALO is *the* place where they spend time together and go to vacation. Participants who enjoyed CALO growing up in turn enjoy passing on their love for this special place:

“Well, Cape Lookout, for my family, for my four daughters, it was just a wild place that they loved...and when they were little kids all their lives, my four girls...they grew up on it. Even [living in] Washington, DC...my connection is one that is primal...it’s almost like a genetic fabric of my being. So that’s pretty constant for me and my family. And they do it even without me...Two of my girls can run the boat just as well as I can...they go down there. They do the same things that I did.” (P #9)

A subtheme that emerged from interviews regarding family and ancestry was the concept of *roots* in place and how those ancestral and familial roots inform identity and keep community members feeling connected to their ancestors and their culture:

“To me it’s very personal. It’s our roots...roots is what grounds the tree. It’s what holds the tree in place. And for people, especially today when we’re all so mobile, the roots is what brings us back together and calms us and tells us who we are and gives us a chance to find ourselves. And to me Portsmouth Island is that...And it helps ground me and make things very solid and helps me know who I am.” (P #7)

Themes of family memories and tradition were very prominent in discussions of heritage and deep roots associated with CALO. Living life, growing up, and spending family time with and near “The Banks” holds extraordinary meaning for CALO community members. Participants also expressed a strong desire to pass on family stories and traditions to future generations so that they can continue to enjoy and feel connected to their special place.

### *Community Identity*

Participants' place meanings also revealed a strong sense of community identity, which includes "meanings associated with local character and culture" (Smith et al., 2012, p. 387). Participants were very proud of CALO's rich and unique history and the history of the area and its people:

"There was a tremendous amount of energy going through and there was a large village with a lot of people there...that type of thing. So I see that culture of shipping, of maritime type of business going on with people going in and out of the harbor.

Lightering, piloting, all of that. To me, culture...is an extremely important part. And that is totally gone. You just don't have that anywhere anymore." (P #7)

Community heritage and identity was heavily associated with a connection to the ocean environment and harsh but beautiful seafaring lifestyles lived in tight-knit communities.

Preserving the community's way of life through its physical remains was a common sentiment: "I think it's very important to save...structures so that people can understand what the people that used to live on these islands and [made] their living from whaling and fishing, what they lived in, what their life was like" (P #13).

In addition to pride in community heritage and history, participants revealed a strong sense of friendship and community cohesiveness that resulted from the connections to other families who spent their time at CALO and lived in the area:

"To me the greatest resource is that connection our crowd still has to [CALO]. It's not tangible. It's the allegiance and the pride...and that sense of commonality. I feel close to people...I may not know their name, but I know them. And I know in unspoken ways what's important to them, and there's great comfort in that." (P #1)

### *Cape Lookout Lighthouse: the Symbol of Home*

The conceptions of individual, family, and community identity in relation to CALO described above are also deeply tied to the image of the Cape Lookout Lighthouse, particularly for community members who feel a stronger connection to Cape Lookout Village. The lighthouse structure itself has become symbolic of the place meanings associated with CALO:

"The lighthouse has become the symbol for Carteret County. It's on all the locally owned [businesses]...the county government vehicles, people's personal [vehicles]...on

mailboxes...even on my father's gravestone, his boat...So it really is a totem for us, you know? It is a marker for who we are." (P #3)

For CALO community members, the lighthouse is a "cultural icon" (P #6) for the community. It is a sentinel of personal and ancestral connections to place. In addition to naming the lighthouse as the most historically significant structure on the island, participants also described it as being symbolic of the idea of *Cape Lookout as home*. Additionally, it is seen as a source of reverence as well as being a symbol of a strong and resilient community:

"It's an amazing edifice, the lighthouse is. And I learned at an early age...it's revered by the locals. It's *their* lighthouse...It's an important symbol to us. That's the reason I love to see it on trucks and vans and stuff. I've learned in studying this stuff that it represents a structure of stability. We've been through the storms...we've weathered every kind of situation you can weather, and since 1859 that [lighthouse] has stood like a rock. So people revere it." (P #15)

Many informants could not imagine CALO without the lighthouse and would be devastated if it were lost. For example, one participant said, "it's just unthinkable that it would not be there" (P #4).

#### 3.5.4 *Cape Lookout and Place Dependence*

Participants' descriptions of their place connections also exemplified the concept of *place dependence*. Place dependence makes a particular place the only or best place in which connected people can do the things they want to do; essentially, place dependence suggests that a person or community feels that no other place will satisfy their needs or desires in the way that their particular place does. Elements of place dependence are evident through responses in which participants describe CALO as an *escape*, as *sustenance*, and as a place which holds highly *unique and fundamental elements* that are perceived as being impossible (or at least nearly impossible) to find elsewhere. Elements of place dependence identified by CALO community members were more tied to tangible cultural resources unlike elements of place identity that were more strongly associated with intangible cultural resources.

### *Escape: Sacred Retreat, Recharging, & Recreation*

CALO conceptualized as *escape* encompasses meanings that include the place being considered a “sacred retreat” (P #18) and a place that holds strong spiritual value. For example, one participant explained, “You know, it’s almost like sacred ground...So many of us that go out there we literally treat the place like its sacred” (P #18). Another participant explained this connection by expressing, “To me it’s like the biggest cathedral in the world. That’s my appreciation of it” (P #4). Thus, CALO is a place where one can spiritually and mentally recharge by removing themselves from modern daily life and feel refreshed after spending time on the quiet, uninhabited island. Participants expressed the belief that this particular place positively impacts their mental health and overall wellbeing by expressing such sentiments as, “I actually go there to regain my sanity” (P #18), “natural vistas...escape from lights...escape from anthropogenic sound” (P #10), and “Everybody goes there to de-stress and unwind and have a good time and get on island time, where nobody’s in a hurry” (P #3).

CALO participants also depend on the island and surrounding waters as the place they prefer to recreate or vacation and where they enjoy themselves and enjoy existing the most:

“All the villages, all the people Down East...Friday night, came home after supper, after working all week, and started getting ready to go...to The Cape...and then on Saturday morning they got on their boats and everyone went. And when you say recreation and going over there, a lot of people think of like, you know, *bzzzz* in the boat, and active things. But...my experience, [is that] it’s the way people feel about their environment, it’s where you exist. You go to exist and we just existed and were absorbed into it and it felt like home. You know?” (P #11)

### *Livelihood and Sustenance*

CALO community members also conveyed that CALO is and has been a critical source of livelihood and sustenance. Participants noted the historical importance of CALO’s land and its surrounding waters as the sole means of subsistence and livelihood for past residents. As far back as the whaling and lightering industries, CALO residents made their livings from what the land and sea had to provide. This experience of surviving on sparse provisions obtained from fishing and hunting is highly valued by CALO community members:

“I remember what my mom and dad, and my grandmother, the stories they told me about how they survived. Basically, in the summertime it was a feast. Clams and oysters and shrimp and whatever. Seafood. And you had to look out in the fall of the year when the fish started migrating, you get enough to salt in kegs to last you through the winter.” (P #12)

Commercial fishing has been a fundamental activity of CALO residents and residents of the surrounding communities since the very early settlements on the island.

“My dad was a fisherman here. He grew up. He was the traditional Harker’s Island, Carteret County commercial fisherman...He would have done that all his life had not Pearl Harbor happened, which caused us to have to move. But because of his connection, even in the 40s and 50s, this was his home and he had his own contracting business...A vacation there was only one vacation we ever took. We never went anywhere else. We just came down here and we fished” (P #4).

Commercial fishing persists as an important source of income for a large portion of the areas surrounding CALO and is an integral aspect of CALO and Down East culture: “I was a commercial fisherman for a while. We shrimped, mainly, and set gill nets off of Core Banks” (P #14).

After the shipping industry activity began to fade and recreational fishing and hunting gained popularity, many CALO residents made a living from being fishing and hunting guides for tourists. Several participants and many of the residents of surrounding areas still make a living from guiding fishing and/or hunting trips as well as from private sightseeing tour services. Participants appreciate the tourism revenue provided for the area by visitors to the park; however, they also recognize that these tourism activities have the potential to impact some of the most valued aspects of CALO, such as solitude. In addition to commercial and recreational fishing, many community members participate in fishing, clamming, oystering, and hunting as a subsistence or supplemental source of food. One respondent explained, “We ate from the sea. Any time you wanted some clams you didn’t go to the store, you just got in your skiff and went to get ‘em. Or oysters or anything else. So we grew up eating really good food out of the ocean” (P#4). Overall, both currently and historically, fishing and hunting tradition is a fundamental value of CALO culture.

### *Unique Elements of CALO*

Throughout the interview process, participants revealed several specific elements of CALO that they perceived to be unique, valuable, and rare; moreover, participants did not imagine being able to find all of these unique elements anywhere else. This uniqueness is valued and also contributes to the formation of a strong sense of place for community members. These elements were: Incredible beauty, a magical quality, rawness, the feeling of human survival in the natural elements, the Banks way of life, a resilient community, isolation, solitude, tranquility, valuable nature, and ecology. For example, participants expressed these themes through statements such as, “Once you spend the night out there, once you go to CL and that sun goes down and you spend the night out there, you are hooked... That’s one of the things about one of the most beautiful places in the world” (Informant #2); “the untapped resource... because there is a sense of being wild and on the edge. I call it that magic edge, the twilight zone, between the land and the sea” (Informant #9); and “... just the raw nature of that place... when you first see it, it’s breathtaking because it’s in such a, like almost a perfectly natural state (Informant #18). Additional evidence of these unique elements are provided through participant quotations in Appendix A.

### *3.5.5 Connections to Tangible Cultural Resources (Structures)*

In terms of historic structures themselves, some participants pointed out particular buildings they felt were significant, but the overall sentiment expressed through the interviews was that the village as a whole tells the story and represents the culture of CALO. Participants agreed that the story of the villages could really only be told well if all types of buildings were included and interpreted:

“Portsmouth does a very good job of recreating what living there might have been like. And that’s not done in any one structure, but the combination of structures and... like the back road and the cemeteries and all that. It’s the whole picture that gives you that story. One building could not do it. If all that was there was the church, as important as that is, that would be, that would be hard to go there and imagine what it was like to go to school there, or where the post office was... It’s the context. It’s the landscape and the buildings in relationship to each other and the story they tell” (P #1).

Another informant explained: “Community buildings. And employers...the Lifesaving Service... The schoolhouse, the church, post office. Those are all important community buildings. I think they should...come first” (P #3). These quotes demonstrate a tendency to prioritize the meanings held within community buildings on Portsmouth Island as they tell a story of community life.

As previously mentioned, the lighthouse was the most commonly mentioned tangible resource, which is not surprising as it was also the most salient and integral connection to sentiments of place identity. Given the lighthouse’s connection to federal maritime history, it is not surprising that some informants also expressed the significance of the buildings that reflect this history.

“The lighthouse is number one because it has probably the most historical significance of anything that is out there. After that, I think the old lifesaving station...because of its heritage in this part of the world being the graveyard of the Atlantic and having so many shipwrecks out here. So that’s a huge part of our history and culture around here... After that probably the coast guard station.” (P #13)

While the majority of informants generally prioritized community and federal maritime structures over personal homes, a few participants explained that they would be affected by the loss of personal homes in terms of sentimental value: “I think it would be a very bad thing for all of us; I think we’d be terribly sentimental and very emotional about it” (P #3). However, they also felt that many of the meanings associated with their personal homes had already been stripped away throughout the acquisition of the land by the state and eventually the NPS. One informant who had previously owned a home in Cape Lookout Village stated, “toward the end of our 25-year lease we realized that we were leaving...it finally struck us and hit us hard” (P #11), and when asked what the village means to him now after losing the home, he said, “I can’t speak for my family. I can speak for myself. Nothing...It means nothing” (P #11). Much bitterness was felt regarding the actual acquisition of the property, but the most acute sense of loss was experienced when the private leases ran out and they truly lost access to their homes forever. Participants described this loss in the past tense, though, as if they had already mourned a loss and moved on from it. One participant noted, “I have my memories but I don’t have any plans for the Cape” (P #11). The general sentiment was that if they could still feel a strong love and deep connections to the place after this traumatic loss, then climate impacts would likely not

profoundly affect their connections to CALO, its community, or their heritage. Discussing the hypothetical situation of total loss of all or most of the structures, one participant stated, “I’d still have the same [connections]...I’d be sad, but I’d still have the same feeling about the area whether or not those resources were there” (P #13).

While it was clear that physical structures were important to community members and their culture, it is also important to note that many participants strongly expressed that they felt that the true cultural resources are the people of the community.

“I think it’s in people really, the cultural-based resources. The people who had folks who lived over there, the people who had camps in the past over there, who have strong connections... The people who have grown up here and live here feel a great ownership. Those are the people, in my mind, that hold the cultural resources of Cape Lookout.” (P #14)

“My only point is that cultural resources are, include but do not begin and end with physical structures... The people and their stories... To me the greatest resource is that connection our crowd still has to it. It’s not tangible. It’s the allegiance and the pride. And that sense of commonality.” (P #1)

Thus, for some participants, the history, stories, and cultural values they carry around within them are where the greatest value is to be found.

### *3.5.6 Perceptions of Vulnerability and Change: Timing is Everything*

Interviews revealed two equally threatening, overarching issues: (1) climate impacts and (2) deferred maintenance/neglect, including the exacerbation of maintenance issues by weather and storms. However, another threat, the aging community, was also discussed as another force that makes the districts vulnerable. For example, one participant explained, “After my generation is gone, there’s not gonna be any connections there. Not personal connections. And that’s not gonna be long” (P #12).

Perhaps surprising given the rural, conservative nature of eastern North Carolina and general public opinion polls on climate change beliefs (e.g., McCright & Dunlap, 2011), all participants accepted that CALO was threatened by impending climate change and sea level rise:

“I think it’s terribly vulnerable! Mostly with hurricanes and rising sea levels because there’s not much of [the island] that’s very high above sea level... The rising sea levels is over the next 10, 20, 30, 50 years, so that’s the biggest threat I think” (P #8)

Many participants even offered anecdotes illustrating how climate change has impacted them personally or the area in general:

“Is it rising? Oh yeah. No doubt about it... I know that [the] year before last as I was coming back in from the ocean I came around the end of Shackleford Banks, the eastern end of Shackleford Banks, and I was getting ready to take what they call the ‘short turn’ back through up the long Shackleford Banks to get back to Beaufort. Every. Single. Island. Except for Morgan’s Island and Bird Island, were under water. Every single one of those islands was underwater. I had never, ever in my life seen that. So, sea level’s definitely rising.” (P #13)

Participants also expressed that although climate impacts and sea level rise may be the most *destructive* threats to CALO, they believed that most climate change impacts would be unlikely to occur in their lifetime. Participants generally judged sea level rise to be an impact that would occur within the next 50-100 years. It is important to note that while participants viewed these climate impacts as unavoidable and quite catastrophic, they also deemed them to be a problem that can’t be fixed, generally explaining that “Mother Nature” will have her way and we are powerless to stop it.

Other climate-related impacts included short-term weather patterns and associated flooding and erosion. For example, one participant said, “I suppose the biggest threat would be the weather and the hurricanes” (P #17). Another participant commented, “There’s things they can’t do anything about like flooding and hurricanes... It’s really not even the wind that you’re worried about, it’s the water” (P #14). Some participants illustrated problems with erosion through their own observations of the island stating, “Even in my lifetime there’s been a tremendous change geographically...you know the lighthouse used to be a long baseball throw from the shore” (P #6), and “We’ve had a lot of erosion, near the lighthouse mainly...But I was just out there yesterday and noticed that these storms this winter had really eaten into the bank toward the lighthouse and the keeper’s quarters... There’s really a lot of erosion there” (P #13).

In general, participants identified neglect and weather as being the most *immediate* threats to CALO's cultural resources; neglect and weather are perceived as having taken a toll already and as being the most salient threats throughout the next 25 years. For example, one participant claimed, "I think the biggest threat to the structures, the most immediate threat to structures is neglect... They're wooden structures, so just the normal things [like] weather [is] three to four times the normal rate on Cape Lookout... The elements will get them long before sea level rise" (P #2). These threats were perceived as being somewhat manageable through proper maintenance and care of the structures, as neglect was perceived as being the most fixable problem. Participants expressed that they thought improving maintenance would help immensely to curb weather impacts. One participant described the difficulty of striking a balance between maintenance and natural forces, stating, "I think neglect is the biggest deal... Growing up there it was all about how to fix things so you wouldn't have to do it twice. It's a battle of corrosions...salt and sun and all sorts of stuff... It was a constant effort" (P #5).

To conceptualize the threats to the historic structures within a temporal context, we developed a timeline to illustrate perceived vulnerabilities (see Figure 3.2). As previously mentioned, deferred maintenance (i.e., "neglect" in the voice of our participants) is the most pressing, current threat. In the next 25-50 years, participants expect that community members with connections to CALO will have all passed away, leaving only children and grandchildren with less direct connections to carry their cultural meanings into the future. Flooding and erosion were also perceived as being unavoidable threats, but participants did not expect to see these impacts for at least 25 years or more. Lastly, participants perceived that the structures would be vulnerable to impacts from sea level rise between 50 and 100 years from now.

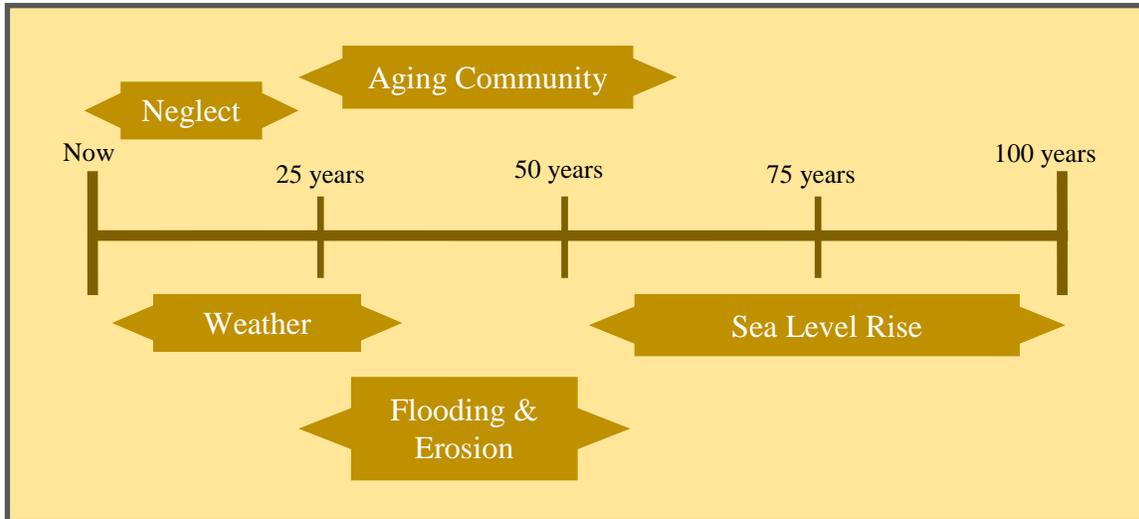


Figure 3.2. Threats Timeline

### 3.6 Preferences for Adaptive Strategies and Impacts to Place Meanings

Speaking strictly of structures, our analysis suggests community members’ place meanings would be directly impacted by the loss of the lighthouse, the Portsmouth church, and other community buildings. Nevertheless, participants still asserted they would feel a sense of connection to CALO with or without specific structures because their place meanings are based on the intangible values of the place. While the tangible cultural resources are nice to have and do hold special meaning for community members, participants’ place meanings were so strong that they believed place connections would persist because they are held within themselves and within the community:

“People. People that not only lived and worked those islands and the past history, but also the people that created what’s now Cape Lookout National Seashore...That’s the true resource we have.” (P #13)

When prompted to discuss potential adaptive strategies, the actions identified fit into two basic categories: Structural or landscape changes and interpretation. In terms of structural and landscape changes, some participants voiced some support for beach nourishment. Beach nourishment was perceived as one of the less culturally invasive actions that could be taken to slow the effects of erosion. One informant commented, “I think the beach nourishment that they did in front of the lighthouse helped for a while, so that could be something that could be

evaluated again” (P #13). As beach nourishment projects were perceived to be less impactful to the landscape, it is not surprising that there was no support for more permanent landscape changes such as groins or jetties. For example, one informant discussed permanent structures, saying, “A dynamic problem requires a dynamic solution. They always think you can just do it once. You can’t do a rock jetty” (P #5).

A few participants reluctantly showed some support for elevating or moving buildings, explaining that these actions would be preferable to total loss of the structures. One informant stated, “Having spent most of my life in the construction business and in marine construction, I mean, it’s raise it, move it, or lose it. Those are your only options” (P #2). However, most participants did not support these drastic actions due to the detrimental effect on the integrity and character of the historic districts. Quite vividly, one participant explained: “I can’t imagine the Portsmouth church up on stilts. I just can’t imagine it! Nor can I imagine it in downtown Harker’s Island, or downtown Ocracoke or somewhere. I just can’t imagine it there. It would lose its soul” (P #16).

Despite a general lack of support for moving and elevating buildings, some participants were more supportive of either moving or raising structures and not receptive to the other. Preference for moving structures corresponded to the perception that authenticity and integrity of the architecture were more important attributes to consider. One informant explained,

“I’m not sure what the value is in trying to raise a house ‘cause...you know you gain saving everything above that level, but you lose how it is people used to live. You don’t know what it really looked like ... I’m not sure how much time or energy...I would put into trying to move stuff around to preserve it” (P #8).

Participants who advocated raising structures over moving them supported these beliefs by explaining the importance of keeping the structures in their original context. A participant explained, “Moving buildings... I really have trouble with moving ‘em from where they are now... Historically they are where they are and I have trouble with moving one” (P #7). However, some of the buildings have previously been moved from their original locations. Overall, whether they supported structural and landscape adaptations or not, participants frequently acknowledged that these engineered solutions are likely to have unintended consequences that could potentially be even less desirable than just leaving the buildings as they are, potentially having negative impacts to place connections. For example, one informant

explained: “There’s danger in that, in that it changes the characteristics of it, you see” (P #9). Participants largely did not want to see drastic measures like moving and raising structures because it would impact the cultural meanings *and* still be only temporary, with natural forces reclaiming the structures at some point in the future. Some informants felt that there really was no way to address the problems of vulnerability: “There’s nothing they can do...I don’t think there are any solutions, except to let nature take its course” (P #11).

Restoration and maintenance efforts were considered preferable to expensive, drastic measures that would affect the cultural context or familiar aesthetic of the villages. In fact, increased restoration and maintenance was, on the whole, the most popular strategy discussed by participants. They considered strengthening the buildings against current and future impacts to be the most worthy use of time and money. For example, participants said, “Shore up the buildings; make sure they’re sound and that strong winds aren’t going to blow them down” (P #13), and “Maintenance, always. Be prepared to do that and be committed to doing that. That’s obvious” (P #15). Essentially, most participants wanted to see resources spent on improving the resilience of structures against shorter-term threats like weather and storms. One participant stated, “At least restore it enough that it’ll be preserved...a good windstorm and rainstorm can do a lot of damage. So a good strong roof will help protect the building itself. And good windows, that type of thing. Good maintenance on ‘em” (P #7).

Concern about the loss of cultural integrity from neglect was much more salient in the mind of participants than losses that might be sustained from natural causes or climate impacts. They felt that losing structures to neglect was a much more egregious offense to their culture and place meanings than losing structures to “Mother Nature.” Since climate impacts were viewed as unavoidable, and although participants said they would be very sad about it, they did not think it wise to spend too much time worrying about inescapable future impacts. Maintenance, on the other hand, was perceived by participants as an action that can be taken to keep cultural heritage intact for as long as possible. One participant asserted, “The threats are unavoidable and the responsibility [of] the caretaker, in this case the Park Service, is to...reinforce what they’ve got, to take care of it...not to abandon it” (P #1).

Additionally, support for increased interpretation was essentially unanimous. Participants who discussed interpretation and related strategies advocated for more public displays to represent CALO culture and its community’s way of life: “I would love to see more money being

put into the structures and houses...There a collection there of original materials that they used to do research...and the only thing I'd like to see is maybe some more of that stuff out for the public to see" (P #3). Some participants also argued for the inclusion of signage for more of the non-extant structures to explain what used to be there, who used it, and why it is gone: "Maybe if they can if they can preserve just...even the foundations and, and maybe what we'll have is a more digital display...just some sort of electronic version of being able to experience that, as opposed to a physical version of it because that may be all you have (P #8).

Many participants also articulated a desire for increased documentation, research, oral histories, and other forms of off-site cultural preservation:

"I feel like we need oral histories, and books, and documentation...as much of that as possible, and that can be the preservation of the Cape [Lookout] Village... I think a documentary should be made. I think everybody who is alive whoever had anything to do with the Cape should be documented." (P #11)

These participants hoped that CALO's cultural heritage could be documented as thoroughly as possible so that future generations would at least have the opportunity to learn about CALO and its community.

Interpretation and documentation strategies were generally considered more favorable than costly structural or landscape adaptations since participants generally accepted that the physical structures, and possibly the island itself, would likely be at least partially, if not completely, lost eventually. Participants were hopeful that maintenance and restoration would provide enough time for future generations to develop their own connections to CALO and its culture: "I mean, the island would still be there if the village was not there, but I just really hope and pray that we can somehow maintain those structures so our, your, children and my grandchildren can actually see those places and walk up and touch these things and touch history" (P #18).

### *3.6.1 Strategies to Prioritize Adaptation*

When prompted to discuss prioritization strategies, three broad categories of strategies emerged: structure-based prioritization, value-based prioritization, and collaborative

prioritization. With any of these categories, participants mentioned the importance of creating short and long-term goals within prioritization plans:

“Take all of the items that need to be done...and write ‘em down, and say, ‘This is what needs to be done,’ and then rank ‘em...So you have short-term goals and then you have long-term goals...this is what we need to accomplish in a year, this is what we need to accomplish in maybe the next five years, and then over the next ten years...And then actually work at setting out and accomplishing those goals.” (P #7)

For structure-based prioritization strategies, participants thought that managers should consider previous investments put into a structure and the current condition of the structure (need-based). For example, participants said, “I’d just prioritize by need of the structure. Roof and windows are important, rain protection” (P #5), and “I think [to] look at the condition of the building...and I’m talking about the physical condition of the building. That would be an important part” (P #7). Additionally, some participants asserted the importance of considering the age of the structure:

“I would think age of the structure would probably be a good [criterion], probably paramount. How old the structure is. How long the structure has been around. That would probably be the number one. Other than that it’s difficult to say. I would say, how the structure relates to the overall history and heritage of the whole area.” (P #13)

However, some participants recognized that age should not be the only factor determining prioritization: “I don’t think age is the first. I think it’s what took place in those buildings and how that affected everything around it... Just because it’s old, doesn’t make it valuable” (P #1).

Value-based prioritization strategies demonstrated that participants also considered factors such as the historical significance of the structure, the cultural significance of the structure, the importance of the structure to the existing community, and representation of traditional use of ‘The Banks.’ For example, one informant explained: “If it’s a traditional use of The Banks. So I think they have value in that. Not because they’re old, but it’s traditional use” (P #3). Another informant expressed a more direct connect to the ways in which traditional uses created specific link to buildings:

“How the structure relates to the overall history and heritage of the whole area. Obviously the lifesaving people were a huge influence in these areas. And then the families that lived out there with the whaling communities and the fishing

communities...look at the specific attachment to the past to the root heritage of the area.”  
(P #13)

Collaborative prioritization strategies suggested highlighting the vital importance of communicating with local communities, consulting experts when needed, and establishing cooperation and partnerships with invested stakeholders. For example, one participant explained: “It seems to me, from the past and even now, the local people are not considered helpful in maybe knowing what to try saving, what not to save, you know? But if they would consult with the local people they might...make better decisions” (P #17). Many participants noted that it is important to acknowledge that the NPS has budget constraints and that any planning initiatives must acknowledge these limitations. For example, one participants explained, “It’s like I say, it sucks up a lot of resources, I think they do the best they can with it” (P #14), and “The Park Service doesn’t have a reliable source of funding. Sometimes they get a lot of money, sometimes they get no money” (P #5). One participant expressed the hope philanthropic investments could provide:

“So the priority is not so much on what to save, I think the priority needs to be on how to partner to get the resources necessary to save as many as you can. The priority needs to be working together. And then I think you could save ‘em all. That’s my philosophy. Let’s don’t ration the money, let’s figure out how to get ‘em all... I’m very optimistic that it can be done. But it will take the cooperation and the belief.” (P #2)

In addition to specific strategies and prioritization tactics, participants also advocated the need to accept most adaptive measures as temporary actions against an unstoppable force. Though reluctant to imagine the loss of any structures, participants were realistic in acknowledging that in some cases the only option will be to let nature take its course. Participants succinctly explained, “I don’t think there are any solutions. Except to let nature take its course” (P #11), and “You’re living on the Atlantic Ocean. It’s probably the most powerful force on the planet. So there are certain things that you might be able to do, and certain things that you’re just helpless to prevent” (P #4). Participants also conveyed the critical nature of understanding potential ramifications of any adaptive measures, cautioning against half-measures that may end up being more wasteful than helpful as well as unintended impacts to nearby

resources that could be caused by adaptive measures. For example, one participant stated, “Any time you change the course of nature, you come up with an engineering plan...something else is gonna change down the road” (P #12).

Advanced or proactive planning was another significant theme that emerged where participants encouraged managers to make thorough plans and follow through with them. For example, there were some negative sentiments expressed regarding the last Cape Lookout Village Plan, which included third-party leasing of structures, that was never implemented. Community members still perceive third-party leasing of structures as a way to overcome the budgetary shortfall: “I think a lot of those people were doing a good job and helping the park save a little bit of money and it was a good working relationship with them” (P #3). Regardless, participants most enthusiastically expressed the importance of involving the public in planning for adaptive strategies. They argued that getting people interested, connected to, and invested in preservation is essential for successful adaptation planning: “There needs to be more community involvement... Once it becomes sterile, then you’re just riding people over to look. People need a connection. And that’s true of everything” (Informant #2). Thus, local knowledge was highly valued by participants, and they expressed that community cohesiveness was an important part of their culture.

### ***3.7 Limitations***

Although we concluded sampling when themes were becoming redundant (i.e., thematic saturation was reached), we uncovered a few unique perspectives that could be considered negative cases. The profile of these informants suggests that we may not find other similar, and contrary, perspectives (e.g., we were only able to reach one former resident of Portsmouth Village). Additionally, the chain-referral sampling method could have potentially left out important participants if they were not identified by anyone else. However, we explicitly used different locators (i.e., key contacts of different networks; see Penrod, Preston, Cain, & Starks, 2003) to expand our sample, as well as seeking additional contacts at a biannual community event within one of the historic districts. Moreover, our goal was not to generalize but rather gain in-depth insights into the connections to and meanings of CALO to community members. Although specific insights are limited to CALO, it is likely that the overarching themes are transferable to other NPS units and other cultural resource sites with historic districts that have

strong community associations. As such, we discuss our implications for climate adaptation planning more generally.

### ***3.8 Discussion & Implications***

Study findings build upon existing conceptualizations of place meanings and connections. CALO community members have strong place connections informed by deep and abundant cultural meanings and values. Beyond the basic definition of place attachment as a bond between people and places, data from this study corroborate the conception of place meanings as a function of both *place identity* (Williams et al., 1992; Proshansky et al., 1983; Devine-Wright, 2009) and *place dependence* (Williams et al., 1992; Moore & Graefe, 1994; Trentleman, 2009; Budruck et al., 2011). Additionally, results from the study demonstrate that place connections are predominantly based on intangible resources, a finding not yet uncovered in the literature. Specifically, the cohesive community studied here has strong connections to the place; yet, their strongest connections are intangible, not tangible, and they are willing to accept the inevitability of climate change. Our study also revealed the importance of considering the timing of impacts, both climate and non-climate related, when prioritizing strategies to maintain cultural heritage and place meanings. Moreover, we uncovered that previously severed ties to physical resources may have transformed place meanings to reside in the intangible connections to cultural heritage and, as such, the impact of climate change on intangible values may not further deteriorate place meanings. Yet, integrating these voices into climate adaptation planning—or any other type of planning for that matter—is critical, particularly to avoid unforeseen impacts to place identity (Khakzad et al., 2015).

#### ***3.8.1 Place Meanings: Identity and Dependence***

Consistent with existing research (Davenport & Anderson, 2005; Burley et al., 2007; Smith et al., 2012), place meanings described by the participants of this study encompass values that correspond to *individual identity*, *family identity*, and *community identity*. This research supports previous assertions that individual identity, informed by personal experiences and significant memories, is an important component of place identity (Scannell & Gifford, 2010; Smith et al., 2012). Additionally, data support the inclusion of family identity in place identity,

which mirrors the findings of previous studies (Davenport & Anderson, 2005; Smith et al., 2012). Community identity in the context of place attachment has been explored as a process by which a community or cultural group ascribes collective meanings to places through shared histories, practice of local cultural traditions within a place, and shared values (Greider & Garkovich, 1994; Smith et al., 2012; Mihaylov & Perkins, 2013). Data from this study corroborate these interpretations of community identity, as participants identify very strongly with the CALO community, and consider the place to be a venue where “they may practice, and thus preserve, their culture” (Scannell & Gifford, 2010, p. 2).

Although most investigations of place dependence have occurred in a recreation and tourism context where exposure to a place is limited or intermittent, place dependence is also applicable to community members connected to a particular place (Trentleman, 2009) or cultural site. CALO community members in this study exhibited signs of place dependence in terms of *sustenance*, *escape*, and *unique elements* of the place itself. Consistent with Davenport and Anderson’s (2005) findings that community members attached to the Niobrara River regarded the river as a source of sustenance, CALO community members in the past and today have come to depend on CALO as a source of *sustenance*, mainly related to fishing and hunting tradition. Just as Davenport and Anderson (2005) found that people with attachments to the Niobrara river regarded the place as a *tonic*, CALO community members depend on CALO as an *escape* where they can relax, recharge, and feel spiritually fulfilled.

Another aspect of place dependence exhibited was based on the unique elements of CALO that were alleged by participants to be spectacular, unrivaled and impossible to find elsewhere. These distinctive qualities are highly valued by community members and verify previous research that argues place dependence occurs when a place’s functional meanings cannot be replaced by or transferred to a different setting (Williams & Roggenbuck, 1989; Moore & Graefe, 1994; Budruck et al., 2011). In the case of CALO, however, these unique elements hover somewhere between tangible and intangible values; they are essentially intangible qualities that happen to be inextricable from the physical landscape (details of these unique elements can be found in appendix A). This finding suggests that place dependence may not only include functional meanings of a place, but also values which, while inextricable from the physical landscape, are more related to feeling than to function.

### *3.8.2 Place Connections to Intangible Cultural Resources*

Study results indicate that place connections are more linked to intangible cultural resource values than to tangible cultural resources. In accordance with Stedman's (2002) claim that people become attached not to places themselves but rather to the meanings and values they attribute to resources and landscapes, our findings suggest that CALO community members' place connections are bound to intangible cultural values and symbolic meanings. Overall, participants indicated that physical elements of place are neither as integral to their connections nor as important to their identities as are their memories, heritage, and culture. Unlike the intangible meanings associated with place identity, the cultural values corresponding to participants' place dependence were largely tangible because they stem from, rely on, and are embedded in the physical setting and cultural landscape. This research reveals that CALO community members are not reliant on the physical setting (e.g., the landscape and specific structures) for meanings that inform their identities. Instead, their place identities are informed by their place meanings, which consist of the intangible cultural values.

According to Adger et al. (2012), in places imbued with culture and associated with a strongly connected community, climate change impacts may potentially "also change the cultures and communities, often in ways that people find undesirable and perceive as loss" (p. 112). However, participants in this study did not really perceive climate change impacts as an avoidable loss. They accept the reality of climate change, and they also acknowledge that Mother Nature will have her way with the island eventually. It was the opinion of most participants that no matter when climate impacts happen, place connections, cultural meanings, and identities associated with CALO will remain intact since the cultural resources are predominantly held within the community members themselves, their memories and stories, and the intangible cultural resource values of the community. This is not to say that individuals would not be deeply saddened by the loss of the physical structures and landscape, but participants explained that their connections are so strong and their place meanings are such an intrinsic aspect of their identities that they would remain intact in the face of any environmental impacts and some adaptive changes. Yet, preservation of the resources—specifically, maintaining physical structures and enhancing interpretation and documentation in the near-term—are needed to ensure that younger and future generations form the place connections necessary to sustain CALO's cultural heritage.

### *3.8.3 The Temporal Aspect of Climate Adaptation Planning*

Since cultural landscapes are socially constructed (Altman & Low, 1992; Bender, 2002; Brown & Raymond, 2007), and climate change impacts will inevitably change these landscapes (Devine-Wright, Price, & Leviston, 2015; Adger et al., 2011), managers of cultural resources and cultural landscapes must plan for the social impacts that these changes will have on communities. Planning for climate impacts requires an examination of place-based meanings related to change, and we must try to discern “what that [change] means for a group as well as for the individuals who are part of the group” (Burley et al., 2007, p. 350). When change happens to a place, the ramifications are quite complex because the social structures and meanings that are associated with these places are also complex (Agyeman, Devine-Wright, & Prange, 2009; Trentleman, 2009). Such was the case in this study of CALO community members, whose deep emotional ties to the area make adapting and prioritizing a highly convoluted task. Applying a temporal timeline, such as the one developed in this study, can help managers determine where and when to allocate monetary assets and implement adaptive strategies in accordance with community members’ threat perceptions.

In this study, participants expressed great sadness and a certain sense of loss associated with impacts to existing cultural resources at CALO, particularly from the ongoing deterioration of buildings related to the backlog deferred maintenance. However, our informants expressed that their feelings and connections would always remain intact, no matter what happens to the physical place. Participants were much more interested in addressing current and short-term threats to cultural resources, and the findings from this study introduced a distinct temporal component to evaluating and implementing adaptive strategies for climate impacts. Participants identified three basic timeframes for threats and impacts: immediate threats (e.g., neglect, weather and storms), mid-range threats (e.g., flooding, erosion, and a fading community), and long-range threats (i.e., climate impacts such as sea level rise). Participants were adamant that immediate threats should be addressed as a first priority in management plans, remarking that long-range threats like sea level rise were not only far in the future, but also inevitable and unstoppable. Since participants viewed climate impacts as unavoidable and occurring only in a future that they likely would not be around to see, they focused more on how regular maintenance and increased interpretation and outreach could at least preserve their cultural heritage throughout their lifetimes and the lives of their children and grandchildren. None of the

participants in this study denied the inevitability of climate impacts, and all agreed that climate change planning is important. However, in the minds of the participants, it is more important to plan for more imminent threats—and seek private funding in situations where federal funding is insufficient—since nature will take its course eventually despite any human interventions or adaptations. The question that remains for future research is: at what point in the future are climate impacts too near-term to continue investing in vulnerable resources?

#### *3.8.4 Altered Place Connections Transforms Place Meanings*

Many participants interviewed had already experienced loss from the land acquisition and subsequent loss of their homes, expressing that even after that immensely painful loss their connections remained intact, so there was nothing nature could take from them that hadn't already been taken as their connections are more to intangible cultural resource values from which they can retain their place meanings. This finding is comparable to Davenport and Anderson's (2005) discovery that some Niobrara River community members became "detached" (p. 638) from the river due to increases in due to increases in government regulations. Similarly, Devine-Wright, (2009) found that changes in the legal designation of a place can have ramifications for people's emotional attachments to that place. In the case of CALO, a change in designation occurred twice: first, the acquisition of CALO by the state and subsequently the NPS caused feelings of anger, bitterness, and resentment among many community members; second, when the leases on personal homes ran out, former homeowners were quite devastated, and they described experiencing a great sense of personal loss as well as detrimental impacts to their place connections and meanings.

Khakzad et al. (2015) emphasize how disregarding place meanings in planning and management can have detrimental effects on associated communities, including loss of identity; they further advocate the importance of evaluating the ways in which place meanings may be affected by adaptive strategies implemented in response to climate change. Our findings provide additional support for this advice, as we found that participants' place connections were likely to be impacted more by avoidable threats (e.g., neglect/deferred maintenance), adaptive strategies (e.g., structural and engineered solutions), and acquisition of property (e.g., expiration of leases) than by unavoidable future impacts from climate change. Put simply, participants perceived impacts from climate change and natural forces to be less offensive to their identities and culture

than impacts and loss caused by neglect or deferred maintenance—or the initial loss experienced during eminent domain and the subsequent expiration of leases. Devine-Wright (2013) argues that place meanings are particularly relevant for comprehending direct impacts to a resource or place, impacts created by interventions meant to preserve that resource, and how those impacts will affect stakeholders. Our study findings similarly indicate that examinations of community members' place meanings are advantageous for evaluating direct and indirect impacts to place connections. Specifically, this study expands on previous research by shedding light on how place connections will be affected by direct climate impacts to cultural resources, as well as by indirect impacts resulting from adaptive measures taken to preserve those cultural resources. More research is needed to explore other contexts—particularly where historic buildings were not lost to local communities from eminent domain—to better understand how climate change impacts and adaptation strategies can alter place meanings and connections to cultural resources.

### ***3.9 Conclusions***

The findings of this study enhance the current body of knowledge regarding place-based meanings and perceptions of landscape change by introducing evaluations of place meanings as they relate to the impacts of climate change on cultural resources and place connections. Although most research on climate change adaptation focuses on the tangible or material aspects of climate impacts (Fresque-Baxter & Armitage, 2012), it is equally important to attend to the cultural dimensions of climate adaptation (Adger et al., 2012). However, research in this area is significantly less developed, with assessments of climate impacts to place meanings associated with cultural resources being quite nearly absent from existing literature. This study addressed this gap in the literature by gaining in-depth insights into the intangible aspects of climate change adaptation planning. These insights yielded theoretically new information suggesting that community members' place meanings *are* intangible cultural resource values and that place connections are tied more strongly to intangible cultural values than to tangible cultural resources. Thus, it follows that intangible cultural resource values are a vital, indispensable component of any climate adaptation and prioritization planning processes which aim to minimize impacts to community members' place connections and cultural heritage.

The strong place meanings and culturally situated management preferences defined by participants reiterate the need to integrate the perspectives of community members into planning,

especially for contentious issues like adaptation and prioritization, where impacts of potential management decisions “can be better understood by identifying and examining place meanings” (Davenport & Anderson, 2005, p. 639). Using community place connections and cultural resource values to inform planning can help managers craft holistic, value-based management strategies with minimal impacts to a community’s place meanings. Participants’ suggestions for adaptation and prioritization strategies reveal opportunities for managers to incorporate community values into adaptive plans and to increase community engagement and involvement in these planning processes through collaborative preservation and prioritization. Consistent with Agyeman et al.’s (2009) assertion that understanding communities’ connections to places has the potential to diminish conflict between managers and communities, our findings suggest that using a collaborative and inclusive approach to planning will ease tensions and build trust between the community and managers. Explicitly incorporating community values and heritage into planning can enhance the preservation of tangible and intangible connections to cultural resources, as well as sustain place meanings in the context of landscape change.

## **Chapter 4. Collective Conclusions**

Climate change is increasingly affecting cultural resources everywhere, especially in coastal areas (Beavers, Babson, & Schupp, 2016; Haugen & Mattson, 2011; Khakzad, Pieters, & Van Balen, 2015). For managers to effectively preserve cultural resources, flexible, holistic, collaborative adaptation strategies will need to be implemented. As places are imbued with cultural meanings, it is important to manage cultural landscapes with consideration and inclusion of place-based values (Trentleman, 2009; Caffrey & Beavers, 2008; Adger, Barnett, Chapin, & Ellemor, 2011). In this thesis, Cape Lookout National Seashore (CALO) was selected as a study site to explore strategies for adapting cultural resources to climate change and how climate change (and climate change adaptation strategies) will affect the place meanings of the park's nearby community members. This study expands applications of place meanings to climate change research, contributes to literature by applying concepts of climate change impacts to cultural resources, and provides insights into the interactions between climate impacts, adaptive strategies for cultural resources, and community place connections.

### ***4.1 Summary of Findings***

As cultural resources—especially those in coastal landscapes—become increasingly vulnerable in our rapidly changing environment, the need to plan for maintenance and adaptation will accelerate. Climate change is presenting managers with unprecedented challenges to preservation of built heritage and cultural landscapes. Consequently, the implementation of flexible, holistic, community-based management strategies will be critical to the preservation of cultural resources. Communities and meanings connected to cultural resources and places will

undoubtedly be affected by both natural and adaptive changes. If managers are to implement adaptive strategies to preserve cultural resources, they need to know what changes are acceptable and what changes would be detrimental to community values and place connections. Thus, the research presented in this thesis can help managers better understand alternative approaches to cultural resource management in coastal zones threatened by climate change, and provides a first look into how community/place connections and cultural meanings could be impacted by climate change and adaptation decisions.

#### *4.1.1 Manuscript 1 Findings*

The findings from manuscript 1 revealed that U.S. policies, though developed with good intentions, challenge cultural resource management under changing climate conditions, particularly for the National Park Service (NPS). As an agency charged with managing cultural resources and cultural landscapes within a preservation tradition that dichotomizes humans and nature and operating under a traditionalist paradigm of bureaucratic rigidity and decision-making by experts, examples of climate adaptation strategies highlight costly options that may affect the resources' cultural meanings by altering the resource itself or the landscape within which it is situated. Moreover, the National Historic Preservation Act of 1966's '50-year rule' eligibility requirement will likely only further compound the backlog of deferred maintenance—and consequently increase the vulnerability of the nation's heritage—by creating a curation crisis.

On the other hand, the study revealed that European policies for cultural resource management tend to be holistic and integrative, embracing the interdependence of nature and culture and managing protected areas as dynamic cultural landscapes. These policies also allowed opportunities for shared management with landscape inhabitants by the inclusion of

multi-use properties and landscapes that acknowledge and leverage the inextricability of places and their inhabitants. In Europe, heritage areas are often managed as ‘working landscapes’ where human occupancy is seen as an integral part of the landscape. These working landscapes range from densely populated coastal cities to rural agricultural areas. Sustainable development was also revealed to be an important component of European cultural resource management, with adaptive reuse gaining popularity as a sustainable way to manage a multitude of cultural structures.

This study’s findings suggest that a better understanding of the interdependence of intangible culture and physical resources may improve land stewardship by addressing cultural resources with a holistic, landscape-level approach that not only avoids disjointed preservation efforts but also incorporates locals into decision-making and sharing the burden of adaptation costs. The concept of working landscapes may not be specifically applicable to CALO since it is now uninhabited, but it illustrates the importance of community involvement in cultural landscape management. Findings also suggest that stakeholder and community perspectives and values are a necessary component of successful cultural resource management. An emphasis on adaptation implies that managers should be open to reevaluating and reinventing strategies for preservation if we want to be able to manage our threatened cultural resources and effectively preserve culturally important places, spaces, and landscapes.

#### *4.1.2 Manuscript 2 Findings*

Study findings from the second manuscript (chapter 3) support the need for more place-based research on climate adaptation for cultural resources, which should incorporate place meanings and connections, cultural resource values, concepts of place identities, and dimensions

of place dependence into planning initiatives. CALO community members were found to have very strong place meanings associated with their cultural resources, as well as strong opinions regarding emphasis on collaboration and partnerships in planning. Some participants indicated that participation in adaptation planning and involvement could actually form or strengthen place meanings and connections.

Perhaps most importantly, this study found that CALO community members' place meanings are comprised of intangible cultural resource values, which suggests that these values should be a predominant component of cultural resource evaluations. Also important was the discovery of a timeline of concern regarding cultural resource threats; in particular, the study revealed that although community members perceive climate change impacts as imminent threat, they perceive more time-sensitive threats exist that affect their connections to the resources. Additionally, the greatest impacts to these community members' place meanings occurred at both time periods of acquisition (eminent domain and the expiration of leases) and that—in the case of CALO—climate change won't likely impact their place meanings unless specific types of adaptation strategies are taken that change the historical context of the structure (i.e., elevating and/or moving buildings). Therefore, it seems prudent that in future planning efforts managers consider the intangible cultural heritage values that stem from and are embedded in the tangible cultural resources (e.g., historic structures, landscape components) under their purview.

An awareness and comprehension of a community's place connections and potential impacts to those connections can assist planners in developing adaptive strategies for climate change based on the cultural values that make a place or landscape meaningful to the community. Attention to intangible culture and heritage serves the connected community by helping to develop inclusive, collective management plans that address the community's most

valuable cultural resources and determine where and when to implement adaptive strategies for maximum retention of cultural meanings, while minimizing impacts to community members' place connections. The study indicates that any planning efforts regarding cultural resources should incorporate cultural and place-based values of the community to minimize detrimental impacts to place meanings and connections throughout implementation of any adaptive measures. CALO participants explicitly called for this inclusion of the local community's values and voices in planning for adaptation and prioritization. Our findings suggest that managers should integrate an evaluation of place meanings and intangible values (e.g., consult community members) to determine which climate impacts and/or adaptive strategies will least affect cultural heritage, place connections, and identities.

#### ***4.2 Insights for Future Research***

While participants perceived inevitable loss of cultural resources from future climate impacts, they still wanted the NPS to maintain the structures and had difficulty committing to any type of decision-rule that would determine when structures should be considered beyond repair or when climate change impacts render a building too vulnerable for continued investment. Future investigations of climate change and cultural resources should attempt to identify the point at which investment in a vulnerable resource is no longer practical or feasible. If loss is inevitable, then there must be a point at which the resource is deemed beyond saving. If a structure reaches the point where money spent to maintain it exceeds the cultural value of the resource and depletes funds that could be used to maintain salvageable structures, it follows that the NPS should stop spending money on it and, as so many participants stated, let nature take its course. However, research is needed to determine how to judge when a structure has reached a

level of destruction where it would be appropriate to cease maintenance attempts and let it go. Moreover, determining the point at which a building's cultural value is exceeding will also be needed, as cultural heritage values do not monetize readily. Yet, perhaps the threats timeline (figure 3.2) could be expanded to include stages of resource degradation so that it can be used as a tool for managers and community members to determine the juncture at which a structure transitions from a resource worth maintaining to an irretrievable victim of nature's unstoppable forces.

Participants similarly had difficulty with determining how to best prioritize CALO's historic buildings and were hesitant to make firm commitments ranking structures. They wanted to save all of the cultural resources but simultaneously acknowledged that all of the structures could not possibly be saved in reality. Participants were able to prioritize short-term maintenance and interpretation projects over drastic structural or landscape changes for long-range climate impacts; it was very difficult for participants to choose which buildings should be kept and which should be let go. Future research should address how community members and managers can reach a consensus regarding an actual ranking process for cultural assets. Although participants were hesitant to name specific structures, they did provide suggestions for types of prioritization strategies: structure-based, value-based, and collaborative prioritization. They also proposed recommendations to incorporate local knowledge, involve community members, and leverage partnerships. If loss of cultural resources is inevitable as conceived by participants, prioritization decisions will have to be made if any structures are to be properly maintained and preserved. Perhaps implementing participants' recommendations for inclusive planning processes can foster progress in developing collective solutions.

### ***4.3 Concluding Remarks***

Both studies combined suggest the need for a collaborative approach to cultural resource management that takes into consideration all natural and cultural elements of protected landscapes. The examination of place-based values can inform a management framework that allows for informed, collaborative planning for climate impacts to cultural resources.

Assessments of impacts to place connections can help managers better understand how to implement adaptive strategies, while attention to place meanings and cultural values can enrich prioritization planning processes. Understanding the relationships between people and their places in a context of change provides managers with vital information that can be applied to adaptation planning. Appreciating that community members' place-based perceptions of cultural landscapes can shape their attitudes toward vulnerability and preservation actions will facilitate effective adaptations aimed to serve the community and their cultural values.

These two studies jointly emphasize four key findings: (1) climate adaptation requires a flexible, holistic approach to management, which takes into account cultural values embedded in coastal cultural landscapes as well as identities shaped by place meanings and cultural resource values; (2) intangible cultural resource values create place meanings, which in turn inform perceptions and preferences regarding adaptive management of vulnerable cultural resources; (3) community members' place connections can be affected by climate impacts, but they are more likely to be impacted by perceived neglect of structures or undesirable adaptive actions; and (4) collaboration with communities is essential for successful management of threatened cultural resources. These findings provide cultural resource managers with valuable information regarding the effects of climate change on cultural resources and the impacts of those effects on place connections and cultural values.

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## APPENDICES

*Appendix A. Unique Elements of CALO*

<p><b><i>Incredible Beauty:</i></b> Informants describe the immense and allegedly unmatched beauty of CALO.</p>
<ul style="list-style-type: none"><li>• “I’ve been a lot of places and seen a lot of things, but nothing, I think, as beautiful and, the characteristics of it, the seasons and how it changes.” (Informant #2)</li><li>• “For me it’s a visual thing. I mean, just to see either from the Harker’s Island side or coming on the ocean side, it’s just an extraordinary venue. It doesn’t matter what your thoughts are, whether you’re a sea person or a land person, if you are there for a moment...it has a certain dramatic visual impact. The bight. The rock jetty. The lookout shoals. Shark Island and all that...It just shouts out that you are in nature. You are in this fresh, clean place. And the beauty of it is something that is imprinted on anyone who sees it.” (Informant #9)</li><li>• “Once you spend the night out there, once you go to CL and that sun goes down and you spend the night out there, you are hooked...That’s one of the things about one of the most beautiful places in the world.” (Informant #2)</li></ul>
<p><b><i>Magical Quality:</i></b> Informants attempt to explain a special and admittedly indescribable quality that CALO possesses.</p>
<ul style="list-style-type: none"><li>• “When people come and I want them to get the essence of the place...we’ll go down there. And because this goes back to the draw of CL, the untapped resource...because there is a sense of being wild and on the edge. I call it that magic edge, the twilight zone, between the land and the sea.” (Informant #9)</li><li>• “When you come back, the benefit is you know you’ve had an unusual experience. You’ve had an experience of the sea, of the closeness of it, and I do believe this, there is an aura about it that you don’t have to describe to people, that they’re gonna sense if they go.” (Informant #9)</li><li>• “Well it’s a special place. And that’s hard to define.” (Informant #15)</li><li>• “I think that the people that go down there experience something – the thing with these parks and particularly this one, is that it has things you cannot see anywhere else...It’s different here because it’s undeveloped and you’ve got birds and sea gulls and ocean and sky and now and then you see a foal with its momma. And it’s an experience that really, there’s very few places in the world that you can find.”</li></ul>
<p><b><i>Rawness:</i></b> Informants recount the ways in which CALO has a very raw, primitive, and natural feeling.</p>
<ul style="list-style-type: none"><li>• “The raw? Just the raw beauty of the place? I know some, to me that’s what attracts so many of us to it. It’s not commercialized. The only power to the island is to the light. It’s those things and just the raw nature of that place...when you first see it, is breathtaking because it’s in such a, like almost a perfectly natural state.” (Informant #18)</li><li>• “Well, you know Core Banks remains so rustic, so primitive...it was intended to be a wilderness and it remains a wilderness.” (Informant #6)</li><li>• “Over there there was no privacy. And that really was very raw. There were no bathrooms...the camps were all one big room...It was primitive, a hand pump at the kitchen sink, and the whole thing. But there was just something about that rawness that I suppose people touch on when they go camping.” (Informant #1)</li></ul>

*Appendix A Continued*

<p><b><i>Human vs. Nature:</i></b> Informants comment on the way in which the landscape creates a feeling of being very close to the elements and how CALO represents humans vs. nature in a struggle to survive in a harsh environment.</p>
<ul style="list-style-type: none"><li>• “It’s amazing to me when you look at vegetation how sparse it is. And they lived there. Try to find fresh water, you gotta work at it. And they did, but they lived there. That says something. So what you do, you look at what they had and that was home to them, and then you see where you are and you think, ‘They’re tougher than I was.’ And they are.” (Informant #15)</li><li>• “And I like going there, but...to me you have to approach CL on its terms. And I think that is a stronger bond once you do that. You know, it’s like, ‘I came to Cape Lookout! I toted my own water! I did that! I fought off all those gnats!’ It is a challenge. It’s not easy to get around.” (Informant #3)</li><li>• “But like I said, the main thing is the banks themselves b/c you can go over there on that banks and so many times you’re by yourself, if you don’t go in the height of the tourist season. And the ocean, the sky, the gulls, you see wild horses if you look across the inlet. To me it’s like the biggest cathedral in the world. That’s my appreciation of it.” (Informant #4)</li></ul>
<p><b><i>Banks Way of Life:</i></b> Informants discuss the uniqueness and value of the culture, lifeways, and traditions which belong to those who lived on or near The Cape.</p>
<ul style="list-style-type: none"><li>• “I often think about what the life, what the culture and everything must have been. Especially at a time like this, the winter when it’s so dark and stuff and when the only mode of transportation was a sales skiff, how isolated they must have been and how dark their days and nights and stuff. And how they must have looked forward to spring each year, if for nothing else for daylight.” (Informant #6) “The structures at Portsmouth...I mean those structures are livable. They’ve been repaired, they’ve been shingled... the church has been straightened, which I’m not sure it should’ve been, I liked the way it leaned. Everything there is secure. As secure as it can be and still be true to what it was.” (Informant #1)</li><li>• “But there was just a spirit of community. And that word gets used way too much, but I remember, you know, whatever, whatever people had to eat everybody else knew. So if somebody had been clamming, everybody ate out of that pot. It was a very free-roaming, you know, nobody hesitated to go to somebody else’s camp...Over there there was no privacy.” (Informant #1)</li><li>• “But we, this culture is determined by the geography and by the history and the environment.” (Informant #1)</li></ul>
<p><b><i>Resilient, Isolated Community:</i></b> Informants comment on the aspects of the lives of CALO residents that were informed by the harsh, volatile, sparse and unforgiving environment.</p>
<ul style="list-style-type: none"><li>• “I remember what my mom and dad, and my grandmother, the stories they told me about how they survived. Basically in the summertime it was a feast. Clams and oysters and shrimp and whatever. Seafood. And you had to look out in the fall of the year when the fish started migrating, you get enough to salt in kegs to last you through the winter. If it was winter it was oyster and clams and wild fowl and things of that nature. So when spring came you were certainly glad it come and get of all those ducks.” (Informant #12)</li><li>• “Well, the history over there is incredible. Dating back to the whaling communities on Diamond City and other areas along Shackleford Banks. The creation of the life saving service, with the life saving stations at Portsmouth and Lookout both.” (Informant #13)</li><li>• “I think it’s very important to...understand what the people that used to live on these islands made their living from whaling and fishing, what they lived in, what their life was like...A lot of things like that in Carteret County we find very valuable simply because the represent what we feel like, [as though] we are possibly survivors also. And that’s part of the history for sure, of the Banks people.” (Informant #15)</li></ul>

Appendix A Continued

<p><b><i>Isolation, Solitude &amp; Tranquility:</i></b> Informants describe how they are able to experience feelings of quiet and calmness, both literally and emotionally.</p>
<ul style="list-style-type: none"><li>• “A place to go hide. Really! We, uh, we love to go out there. We love to fish, we love to clam, we love to dive.” (Informant #13)</li><li>• “I just like the, primarily sparsely inhabited, I mean, it has people on the weekends, but that’s it.” (Informant #5)</li><li>• “The fishing, the beauty. The solitude, it’s quiet. If you’re not there in the middle of the summer when all the tourists are there.” (Informant #17)</li><li>• “It’s a get-away from the bridges and the noise and the downtown, and the Walmarts, and the traffic lights. Unfortunately, or fortunately, it’s also an attraction to a lot of people that don’t live here.” (Informant #15)</li></ul>
<p><b><i>Nature &amp; Ecology:</i></b> Informants point out CALO’s important, rare, and distinctive flora, fauna, and natural landscape elements.</p>
<ul style="list-style-type: none"><li>• “It’s different here b/c it’s undeveloped and you’ve got birds and sea gulls and ocean and sky and now and then you see a foal with its momma. And it’s an experience that’s really, there’s very few places in the world that you can find.” (Informant #2)</li><li>• “The thing that I think most people don’t see, or overlook, is the natural history. The flora and fauna...because it’s rich in both of those... The birding there. And the turtles and all of that is just a rich, fascinating part... And I guess there are snakes on the island...there’s other animals too. There’s raccoons and all sorts of stuff...when I was there I got to see two otters play...I was on the dock and watched two otters play and lay on their backs and crack open oysters and clams and stuff like that.” (Informant #7)</li><li>• “I treasure it as a natural place. That reflects my background and personal passions. I don’t treasure it for its cultural history or historic structures.” (Informant #10)</li><li>• “Well, the cultural resources, in part [are] defined as natural resources, which are turtles and birds and things.” (Informant #16)</li></ul>
<p>Note: <b><i>Theme</i></b> in bold italics. <i>Description</i> in italics. Examples of participants’ quotes bulleted.</p>

Cape Lookout National Seashore  
Cultural Resource Values and Vulnerabilities  
Community Member Representative Interviews

*The following questions will guide semi-structured interviews with key informants from individuals with access to community groups with associations/ties to Cape Lookout National Seashore (CALO). The questions are designed to be open-ended and for interviewers to follow-up at any time with questions such as, "Can you describe that in more detail?" "What did you mean when you said, xxx?" Additional probes for specific information are included below to elicit responses about specific subtopics if the subtopic did not arise during the initial response to the open-ended questions.*

**Paperwork Reduction and Privacy Act Statement:** The National Park Service is authorized by 54 USC 100702 to collect this information. This information will be used by park managers to understand the perceptions of partner organizations concerning the cultural resources of Cape Lookout National seashore. Responses to this request are voluntary and anonymous. Your name will never be associated with your answers, and all contact information will be destroyed when the data collection is concluded. No action may be taken against you for refusing to supply the information requested. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number and expiration date.

**BURDEN ESTIMATE STATEMENT:** Public reporting burden for this form is estimated to average 60 minutes per response. Direct comments regarding the burden estimate or any other aspect of this form to: [pponds@nps.gov](mailto:pponds@nps.gov) (email).

**INTERVIEW GUIDE**

Thank you for agreeing to participate in an interview about the cultural resources at Cape Lookout National Seashore. The National Park Service contracted with NC State University because managers are concerned about the vulnerability of the historic structures and cemeteries, particularly related to flooding, erosion and sea level rise. Specifically, managers would like to know more about the connections people have to Portsmouth and Lookout Villages and the types of changes to the Villages that have been observed overtime. They would also like to collect local insights on strategies for adapting to changing conditions.

I am particularly interested in knowing more about your connections to the historic structures and cemeteries located within Portsmouth Village on Portsmouth Island and within Lookout Village near and including the Cape Lookout Lighthouse, as well as your thoughts on the cultural landscape. By cultural landscape, I mean not only the historic buildings and cemeteries, but also the surrounding land, plants, wildlife and water, including fish.

I am also also interested in your family's and your community's connections to these cultural resources. When talking about your community's connection, I mean the people of the "Down East" communities of North Carolina, as well as those in Beaufort and Moorhead City with ties these resources.

I'm also going to refer to Cape Lookout National Seashore as "Cape Lookout".

As I indicated when we scheduled this interview, this study is voluntary and you are free to stop the interview at any time. There are no known risks or benefits to you for participating in the study. I'm going to start the audio recorder now and begin the interview. At the end of the interview, I will ask you to recommend other community members with strong ties to the villages that you think I should also interview.

**Theme 1: Connections to Place**

1. How many years have you lived in the “Down East” community?
2. Can you please describe your connection with Cape Lookout National Seashore?
  - a. [Probe]: Do you have personal connections to the history or culture associated with Lookout Village or Portsmouth Island?
3. What meanings does Cape Lookout hold for your family?
4. What meanings does Cape Lookout hold for your community?
5. How frequently do you visit Cape Lookout?
  - a. Where do you go?
6. What benefits does Cape Lookout provide to you?
7. What benefits does Cape Lookout provide to your family?
8. What benefits does Cape Lookout provide to your community?
9. Have you or anyone in your family taken any actions to preserve the cultural resources at Cape Lookout (including passing down oral history, fostering historic designation, fundraising, or volunteerism)?
  - a. If so, what actions and what were the results?
    - i. How has this affected your connections to Cape Lookout?
10. Have members of your community taken any actions to preserve the cultural resources at Cape Lookout?
  - a. If so, what actions and what were the results?
    - i. How has this affected your connections to Cape Lookout?

**Theme 2: Perceptions of Cultural Resource Conditions**

10. When you think about the cultural resources of Cape Lookout, what first comes to mind?
  - a. How would you describe the condition of those cultural resources?
11. When you think about the cultural landscape of Cape Lookout, what do you picture?
  - a. What components of the cultural landscape mean the most to you? Why?
12. How would you describe the conditions of the cultural resources at Lookout Village?
13. How would you describe the conditions of the cultural resources at Portsmouth Island?

**Theme 3: Perceptions of Vulnerability, Change and Cultural Resource Management**

14. In the past 5 or 10 years have you seen any changes in the cultural resources or cultural landscape at Cape Lookout? Please explain.
  - a. How have you seen the cultural resources or cultural landscape at Lookout Village change over time?
  - b. How have you seen the cultural resources or cultural landscape at Portsmouth Village change over time?

15. Some people are concerned about the cultural and natural resources at Cape Lookout and their vulnerability to future threats. What is your perspective on the vulnerability of Cape Lookout to future threats?
  - a. Would you describe the cultural resource or landscape as vulnerable? [Probe: If so, what makes the cultural and natural resources within the cultural landscape vulnerable?]
16. What are the greatest threats to the cultural resources at Lookout Village? [Probe: sea level rise, storm surge flooding and erosion]
  - a. How will these threats impact cultural resources and the cultural landscape?
  - b. How concerned are you about the threats you mentioned? [Probe: Why?]
17. What are the greatest threats to the cultural resources at Portsmouth Island? [Probe: sea level rise, storm surge flooding and erosion]
  - a. How will these threats impact cultural resources and the cultural landscape?
  - b. How concerned are you about the threats you mentioned? [Probe: Why?]
18. In your mind, what should be done to prevent the threats you've identified?
  - a. If the threats you note are unavoidable, what strategies should be taken to adapt to the changes or impacts? (Provide examples, if needed, such as elevating structures, documenting then removing structures, and moving structures.)

**Theme 4: Visions for the Future**

19. Would changes to the cultural landscape affect your connection to Cape Lookout?
  - a. How?
20. Protecting historic structures in changing environments, like barrier islands, is challenging. Do you have suggestions for managers on cultural resource management into the future?
  - a. What structures, resources or landscapes are most critical to preserving cultural heritage?
    - i. Why?
21. Current policy of the NPS is to prioritize management based on the vulnerability and significance of particular resources. Do you have any advice for NPS managers in their prioritization of cultural resources? (Probe: In other words, how should the National Park Service determine which resources are most significant? What other criteria do you believe the Park Service should consider when making prioritization decisions?)
  - a. Is the age of a structure important when making management decisions?
    - i. Why?
22. How would you characterize communication between the NPS and local communities?
  - a. What's working?
  - b. What's not working?

Appendix C. IRB Approval

3/25/2017

North Carolina State University Mail - Seekamp - 6339 - IRB Protocol assigned Exempt status

**NC STATE**

Malorey Henderson <mhender2@ncsu.edu>

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**Seekamp - 6339 - IRB Protocol assigned Exempt status**

1 message

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IRB Administrative Office <pins\_notifications@ncsu.edu>  
Reply-To: debra\_paxton@ncsu.edu  
To: mhender2@ncsu.edu

Tue, Oct 13, 2015 at 4:36 PM

Dear Malorey Henderson:

IRB Protocol 6339 has been assigned Exempt status

Title: Cape Lookout National Seashore: Cultural Resource Values and Vulnerabilities

PI: Seekamp, Erin Lynn

The research proposal named above has received administrative review and has been approved as exempt from the policy as outlined in the Code of Federal Regulations (Exemption: 46.101. Exempt b.2). Provided that the only participation of the subjects is as described in the proposal narrative, this project is exempt from further review. This approval does not expire, but any changes must be approved by the IRB prior to implementation.

NOTE:

1. This committee complies with requirements found in Title 45 part 46 of The Code of Federal Regulations. For NCSU projects, the Assurance Number is: FWA00003429.
2. Any changes to the research must be submitted and approved by the IRB prior to implementation.
3. If any unanticipated problems occur, they must be reported to the IRB office within 5 business days.

Please forward a copy of this notice to others involved in this research, if applicable. Thank you.

Thank you,  
The IRB Team