

ABSTRACT

HOTCHKISS, COURTNEY. Meaningful Engagement in Climate Change Adaptation Planning for Archaeological Sites/Traditional Use Areas (Under the direction of Dr. Erin Seekamp)

Archaeological sites—one type of cultural heritage—are important sources of information about human behavior, preferences, and values in the past (e.g., how humans have adapted to changing climate conditions), but they are also connected to living groups of people today. Yet, Tribal Nations and Native people face challenges to having their values, perspectives, and preferences included in site stewardship—including climate adaptation planning—when these traditional use areas are located on publicly managed land. Major hurdles that Tribal Nations, who have their own sovereign governments and a right to decide how their heritage is to be stewarded, face policies and institutional barriers in cultural resource management that are rooted in Western science. Archaeology will not be decolonized until Indigenous and Traditional Ecological Knowledge (ITEK) are treated as equal and woven into Western science in policy and practice guidance.

This dissertation contributes to a larger project funded by the US National Park Service (NPS) to support climate change planning of archaeological sites by examining how local and Traditional stakeholder values and perspectives are being integrated into such efforts in the scholarly literature (study one) and within the NPS (study two), as well as critically reflecting on strategies for meaning collaboration between agency staff and citizens and staff of Tribal Nations and Native communities (study three). The systematic literature review (2014 – 2021) shows that there is a call to action to include ITEK in heritage site management, as well as an overall increase in climate change adaptation planning for archaeological sites; however, it is also documented that the values and perspectives of local and Traditional stakeholders are not consistently incorporated in adaptation planning efforts (study one). Semi-structured interviews

with NPS staff (2020 – 2022) reveal a variety of barriers to working with associated Tribal Nations, but that stronger relationships with Tribal Nations are forming, the weaving of values and perspectives in climate change adaptation planning for archaeological sites is increasing, and optimism within agency staff for continued improvement is rising (study two). A critical reflection of a multi-modal approach to engaging with citizens and staff of Tribal Nations not only further documents institutional barriers and the challenge of epistemological differences in understanding the world, but also provides guidance for strategies, such as co-creating shared definitions and meanings of terms and terminology, for more meaningful engagement during climate adaptation planning and recommend pathways toward co-management of traditional use areas situated on federal land (study three). This dissertation emphasizes that climate change adaptation planning is an opportunity to decolonize archaeology and its related policy through the process of meaningful engagement and elevating ITEK.

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Meaningful Engagement in Climate Change Adaptation Planning for Archaeological
Sites/Traditional Use Areas

by
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DEDICATION

To Michael Durglo, Jr. of the Confederated Salish and Kootenai Tribe, and all of our Tribal partners for your patience, guidance, and hope. You made this work possible and meaningful.

BIOGRAPHY

Courtney Anne Hotchkiss was raised in upstate New York where she also earned her Bachelor's degree from Binghamton University in Global Management and Cultural Studies. After graduating, she served in AmeriCorps in Northern California. She continued her education at Brandenburg Technical University in Cottbus, Germany, earning a Master's degree in World Heritage Studies. During this time, she completed an internship at the Mourne Heritage Trust in Northern Ireland, which is where her thesis work focused. It was in the Mourne Mountains where she discovered her love of learning from stakeholders in protected areas, as well as an interest in qualitative research methods. After returning to the U.S., Courtney worked for the National Park Service in a variety of capacities, including as an interpretive park ranger and cultural resource assistant. She decided to improve her knowledge of cultural resource management by accepting a job at the Maryland Historical Trust (Maryland's State Historic Preservation Office) as a capital grants administrator. With a desire to expand her skills in historic buildings and monuments and to be back in the international community, she left Maryland to intern at ICCROM in Rome, Italy. It was in Italy where she met Dr. Erin Seekamp who happened to be on sabbatical and a fellow at ICCROM. Excited at the prospect of climate change adaptation planning for cultural resources and working with the National Park Service again, Courtney applied and was accepted to the doctoral program at North Carolina State University. After a few more adventures, Courtney moved to Raleigh in August of 2019 to pursue her doctoral degree and continue her interests in working with stakeholders on the stewardship of important places.

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CHAPTER 1

Introduction

Heritage is threatened by climate change (Fatorić & Seekamp, 2017; Gruber, 2011), with impacts that can alter the cultural context of places, degrade or destroy tangible cultural resources (e.g., buildings, plants, artifacts), and alter the intangible aspects (e.g., traditions, customs, identities) associated with cultural objects and places (Sesana et al., 2021). As climate change impacts to heritage are projected to intensify (Simpson et al., 2022), questions about how to prepare, adapt, or let go of important places and objects amplify (Seekamp and Jo, 2020). These questions lead to further questions of what resources should be prioritized and who needs to be included in adaptation planning and decision-making. Public land managers are faced with these questions regarding the resources they are mandated to protect, as well the deeper social and environmental justice issues that are expanding and revealing themselves in new ways.

This dissertation explores the extent to which associated communities—specifically, members of Indigenous communities and Tribal Nations—are being integrated in climate adaptation planning efforts for one specific type of heritage: archaeological sites¹. Additionally, this dissertation seeks to explore how one public land agency—the U.S. National Park Service (NPS)—is currently conducting climate adaptation planning of archeological sites and what barriers exist for collaborating with affiliated Tribal Nations. Lastly, this dissertation seeks to provide a reflective and critical commentary on meaningful collaboration with Indigenous communities and Tribal Nations.

¹ Archaeology is the selected spelling for this work. However, the alternative spelling of archeology without the ae diphthong (-ae) is also accepted (see Griffin (1985) for reference to spelling and the influence of the Society of American Archaeology). The National Park Service and other US agencies typically drops the -a, even though an important and influential policy—the 1979 Archaeological Resource Protection Act—uses the -ae spelling.

Cultural Resource Management and Climate Adaptation in the US National Park Service

Cultural resource management for public agencies is guided by the National Historic Preservation Act (NHPA) and the National Environmental Protection Act (NEPA), which divides resources into the categories of cultural and natural (NHPA 1966; NPSAB 2016). As defined by National Park Service (NPS)—a US federal agency tasked with cultural resource preservation—cultural resources “have important historical, cultural, scientific, or technological associations and [they] must manifest those associations in its physical substance” (NPS-28 1998), referring to both tangible and intangible elements that manifest their significance. Cultural resources are categorized into types: archeological resources, cultural landscapes, structures, museum objects, and ethnographic resources (ibid). Also referred to as heritage, cultural property, and historic resources (NHPA, 1966), cultural resources can be both moveable and immovable.

The NPS has three broad goals for managing the cultural resources in their jurisdiction: to locate and substantiate resource significance, balance protection and use, and to provide appropriate treatment (NPS-28 1998, Chapter 1). Cultural resources shape and are shaped by communities, they unify societies (Gruber 2011) and they provide “an inherent capacity to mold and reinforce our identities as social creatures” (NPS-28 1998). Inscription on or eligibility for the National Register of Historic Places (NRHP) is a way to heighten the need and desire for increased protection of a site, allowing NPS and other agencies and organizations to have standardized treatment approaches, as well as qualify for maintenance funding from federal preservation programs (Sprinkle 2014). Because cultural resources have tangible components, they exist in a 'place' and will be affected by the geophysical forces of the environment in which they exist. Yet, cultural resources also have intangible values that can be inherent or assigned

(Milligan 2007), so it is both the fabric and context of these resources that could become irreversibly damaged or destroyed by the effects of significant changes in our climate and weather patterns (Dastgerdi et al. 2019). The loss of fabric and context is particularly concerning because it is also often associated with the loss of collective heritage and memory (Milligan, 2007).

Climate change impacts are a complex reality that public land managers are facing, particularly to finite and vulnerable cultural resources (Rockman et al. 2016; Harvey and Perry 2015; Seekamp et al. 2019). Organizations around the world are working to create climate models with anticipated impacts (Shukla et al. 2009) and are urging land agencies to prepare and to serve as leaders in preparedness and response (Kelly 2020). Global efforts such as the United Nations' Intergovernmental Panel on Climate Change (IPCC) reports² and the United Nations' Sustainable Development Goals³ are just two prominent examples of international cooperation and agreement on the necessity of climate change adaptation planning. More specifically, non-governmental organizations such as UNESCO⁴, ICCROM⁵ and IUCN⁶ have released their own publications on preparing for climate change impacts to cultural and natural resources.

In the US, the NPS has developed broad categories of actual and anticipated threats from climate change impacts to cultural resources such as temperature change, sea-level rise, precipitation change, combined stressors, and increased greenhouse gas emissions (Rockman et al. 2016). Cultural heritage is being lost through climate change impacts such as erosion (Casey and Becker 2019), wildfires (Fattore et al. 2021), and sea-level rise (Elliot and Harris 2019).

² To learn more about the IPCC goals and series of reports, see: <https://www.ipcc.ch/report/ar6/wg2/>

³ To learn more about the UN Sustainable Development Goals, see: <https://www.un.org/sustainabledevelopment/sustainable-development-goals/>

⁴ UNESCO is the United Nations Education, Science and Culture Organization, see: <https://www.unesco.org/en>

⁵ ICCROM is the International Centre for the Study of the Preservation and Restoration of Cultural Property, see: <https://www.iccrom.org/>

⁶ IUCN is the International Union for the Conservation of Nature, see: <https://www.iucn.org/>

Weather-related stressors, as a result of climate change, are predicted to become more extreme and will exacerbate damage, deterioration of the fabric and context, and the geophysical setting of cultural resources (Clark et al. 2022; Daly, 2014; Sesana et al. 2021).

Adaptation planning for cultural resources is crucial because the extent and timing of some climate change threats are unknown or can only be predicted to a certain degree and resulting damage could be irreversible (Gruber 2011). The International Council on Monuments and Sites (ICOMOS) *Futures of Our Past Report* (2019) warns, “it would be foolish to imagine the practice of heritage remaining static while the world goes through the rapid and far-reaching transitions discussed in the [International Panel for Climate Change] recent Special Report on Global Warming” (p. ii). Climate change impacts will not only affect ecosystems and the built environment but will also disrupt the social fabric of relationships and interactions with the environment (Thornton and Manasfi 2010). For public land agencies, this means that managers will need to consider both physical and socio-cultural impacts as they prepare for the future.

Heritage places provide “an inherent capacity to mold and reinforce our identities as social creatures” (NPS-28 1998) based on intrinsic and external values. It is argued that the built environment has inherent value due to the human genius attributed to the design, construction technique, and/or materials (Milligan 2007), and all the events and emotional connections that develop post-construction. Because values are constantly evolving over time, planning for the protection and adaptation of cultural resources must be flexible and a continual process. As Williams (2018) describes, “values-based management recognizes that values are attributed by people, are not necessarily intrinsic to the physical remains of the past, and are changeable, not static, driven by opinions, ideas, perspectives, and new circumstances” (p. 5). Therefore,

considering a resource's value can be both inherent and dynamic; planning and decision-making for heritage sites should have mechanisms built into it that reflect human values.

Although managed as separate entities with different planning and protection responsibilities, cultural and natural resources are intertwined because of their influence on and interface with each other, making adaptation planning by public land agencies even more challenging. Planning efforts to reduce the negative impacts of climate change generally include mitigating and adapting techniques tailored to the place, system, or people that will be affected (ICOMOS 2019; NPS 2016). From an NPS perspective, mitigation refers to the efforts of reducing adverse effects of human actions such as energy efficiency and greenhouse gas emissions, whereas adaptation is the implementation of strategies to reduce negative impacts from climate change (Rockman et al. 2016). In other words, adaptation can be conceptualized as a behavioral change in response to the changing environment (Thornton and Manasfi 2010). Adaptation options being considered for cultural resources by the NPS includes the possibility of losing resources and context (Rockman et al. 2016). As more climate change impacts are actualized, organizations, communities, and individuals will need to make decisions on how to prepare and respond.

One type of cultural resource that will need a unique adaptation strategy is archaeological sites. Looking closely at NPS guidelines, an archaeological resource is defined as “any material remains of past human life or activities which are of archaeological interest” (NPS-28 1998, Chapter 6) and “are the physical evidences of past human activity, including evidences of the effects of that activity on the environment” (ibid Chapter 1). Resources include “pottery, basketry, bottles, weapons, weapon projectiles, tools, structures or portions of structures, pit houses, rock paintings, rock carvings, intaglios, graves, human skeletal materials, or any portion

or piece of any of the foregoing items” (NHPA 1966), as well as “prehistoric and historic period sites, materials found in museum collections, and the records associated with these sites and materials” (NPS-28, 1998, Chapter 6). Site significance is determined by “identity, age, location, and context in conjunction with their capacity to reveal information through the investigatory research designs, methods, and techniques used by archeologists” (ibid Chapter 6). Considering the definition of an archaeological resource from federal laws and management guidance, the function of an archeological site is for research in current and future investigations. This differs from the function of other cultural resources, such as historic buildings, which are often used as a residence, a museum, storage, or to maintain an original function such as a lighthouse or mill. Resources like historic buildings, monuments, and structures are often immovable and intended to be viewed by the public.

Furthermore, archaeological site locations and data are often restricted to the public to try to minimize vulnerability from looting or damaging of small objects or context. Archaeological objects can be unearthed, conserved, cataloged, stored, and put on display, but many sites are only partially excavated or intentionally left buried (in-situ) for their protection. The impacts of climate change could disturb excavated sites or unearth sites previously undiscovered. However, issues arise when restricting access to sites and collections serves as a form of protection, as doing so simultaneously disrupts the cultural connection to these sites by living groups of people (Fatorić and Seekamp 2017).

The National Park Service's Calls to Action

In 2014, then director of NPS, Jon Jarvis, issued Memo 14-02⁷ calling for climate change adaptation planning for cultural resources managed by NPS. Specifically, the memo calls for management strategies that focus on determining resource significance and vulnerability to climate change impacts so that funding can be directed towards sites prioritized as being both significant and at risk. Although this call for action is laudable, on-the-ground application of the policy directive challenges cultural resource managers, particularly when having to distinguish between equally vulnerable (i.e., both sensitive and exposed to climate impacts; Rockman et al. 2016) cultural resources that are also listed on the National Register of Historic Places (i.e., significant) (Xiao et al. 2021). Processes and frameworks have been developed for some types of cultural resources (e.g., historic structures; Fatorić & Seekamp 2018); however, adaptation planning for archeological sites becomes particularly challenging when the heritage is that of living ancestors (i.e., cultural affiliation of Tribal Nations and Native communities) whose knowledge and values are mandated to be considered via consultation because they are sovereign nations (with their own governments) that have a cultural affiliation with prehistoric (and historic) archaeological sites (NAGPRA, 1990).

Mandated consultation for Tribal Nations is intended to be beneficial but can also create harm and disingenuous relationships (Blumm and Pennock 2021). Regarding archaeological sites, there are several laws that require consultation with affiliated Tribal Nations, including the National Environmental Policy Act (NEPA), Native American Graves Protection and Repatriation Act (NAGPRA), and Section 106 of the National Historic Preservation Act (NHPA). Having consultation mechanisms built into project reviews is important to capture

⁷ <https://www.nps.gov/policy/PolMemos/PM-14-02.htm>

values and preferences; yet, consultation alone is not always an effective or meaningful way to incorporate traditional values and perspectives. Holding consultation but not incorporating feedback and suggestions from Tribal Nations can enhance the contentiousness of management actions and deteriorate already fragile relationships (Whyte 2019) and provide a false consensus (Peterson et al. 2021).

Because of the treaty rights and ancestral connections to what are now federal lands, citizens of Tribal Nations and communities have also been referred to, more accurately, as “rightsholders” (Smith 2017). Watkins (2003) describes policies and laws overseeing the management of archaeological sites as “regulatory ‘concessions’...that should have been the right of those groups as sovereign nations all along; [citizens and staff of Tribal Nations] still are limited in their rights to control their own heritage, and still have to rely primarily upon archaeologists to protect their heritage and that of their ancestors.” (pg. 281). Cultural heritage sites of Tribal Nations continue to be managed and interpreted by mainly white and heteronormative males, where Indigenous and Native voices are some of the most underrepresented individuals in the discipline and academic publishing of archeology (Fulkerson and Tushingham 2019).

Many members of federally and non-federally recognized Indigenous groups have strong connections to their ancestral objects and places, which are often a part of their active cultural practices and beliefs; yet, they have had their histories interpreted and retold through the practice of archeology. Unearthing objects, studying them, and giving them an identification code is a very Western thing to do; archeology and the study of ancient societies has been predominantly practiced by Western societies since its inception (Johnson 2019). As Linda Tuhiwai Smith (2000), a member of both an Indigenous group and the scientific community, broaches western

researchers in her book *Decolonizing Methodologies*, stating, “[t]he West can desire, extract and claim ownership of our ways of knowing, our imagery, the things we create and produce, and then simultaneously reject the people who created and developed those ideas and seek to deny them further opportunities to be creators of their own culture and own nations” (p. 1). With colonization, many Indigenous communities have had their histories described for them through a Western lens.

Additionally, it has been documented that Indigenous communities feel their input is ignored or they are consulted only after plans for resource management on their ancestral lands have already been developed and approved (Blumm and Pennock 2021; Smith 2000; Tribal Adaptation Menu Team 2019). Tribal Nations and Native communities are not only the main stakeholders/rightsholders but also the long-term stewards of these sites, as communities with the strongest place attachment tend to be the best stewards (Wolf 2014; Smith 2000). Furthermore, decisions about what sites should be left in place and what should be revealed should be made jointly between the Tribal Nation and the landowner, depending on what is known, or suddenly known, about a site (NHPA 1966; Routel and Holth 2013). As Williams (2018) suggests, archaeological resource managers “must engage with stakeholders to consider what is excavated, what we leave in situ, and why” (p. 9). While some agencies are working towards building long-term relationships with affiliated Tribal Nations (Dockry et al. 2018), consultation and engagement will need to consider planning and reactive decision-making processes if they are to appropriately reflect values of affiliated Tribal Nations.

To begin addressing the need to more fully consider the knowledge and values of Tribal Nations and Native communities, former NPS Director Jarvis issued Director’s Order #100⁸ in

⁸ https://www.nps.gov/policy/DOrders/DO_100.htm

2016, calling for an update in resource stewardship, the addition of new language related to climate change impacts, and an integration of cultural, natural, and Traditional Ecological Knowledge (TEK) resource stewardship. However, the Director's Order was rescinded in 2017 under the Trump administration. In November 2021, the President's Science Advisor and Director, Eric Lander, issued a memo⁹ on Indigenous and Traditional Ecological Knowledge (ITEK) and federal decision making, calling for an interagency working group to enhance how ITEK is woven into planning and management. ITEK explicitly acknowledges that Tribal Nations and Native people have their own knowledge systems, beliefs, and ways of sharing information, and are connected to places for generations that shape their values and worldviews (Maldonado et al. 2013).

Honoring ITEK by treating it equally to Western science acknowledges that Tribal Nations and Native people have been forced to adapt to changes in climate in the past, and, in doing so, have created empirical, generational knowledge and related cultural practices. ITEK is different than Western science (Maldonado et al. 2013), and better understanding how ITEK can inform climate adaptation planning for ecosystems, biodiversity, and sacred places will lead to holistic management (Hatfield et al. 2018; UMASS 2022), as well as the opportunity to learn from generations of knowledge and wisdom. However, shared decision making is challenging because of differences in Western and ITEK perspectives, as well as the legal aspects of introducing new ideas or processes without having an existing protocol (Dockry et al. 2018). Several authors, Indigenous and non-Indigenous, have described how conventional Western archaeology is dehumanizing to Indigenous groups by turning them into specimens to be studied

⁹ <https://www.whitehouse.gov/wp-content/uploads/2021/11/111521-OSTP-CEQ-ITEK-Memo.pdf>

and reinforcing the idea that they are ‘in the past’ (Atalay 2006; Colwell-Chanthaphonh and Ferguson 2010). Exclusion of their perspective and knowledge systems from methods and theory, including archaeology, is a form of epistemicide (Carroll et al. 2019). As Atalay (2012) points out, consultation “does not necessarily allow for Indigenous people to play an active role in the entire research process, including research design, grant writing and funding processes, analysis and interpretation of results, production of reports, and sharing of research results in a culturally effective way” (p. 293).

Although the NPS and other land managers can learn from ITEK, doing so has the potential for exploitation of intellectual property (Bala and Joseph 2007). To avoid misusing or misinterpreting information, resource managers need to be culturally sensitive and ethically responsible. Guidance from the Northeast Climate Adaptation Science Center states, “it is important to note that TEK is culturally sensitive and sacred. . . .knowledge exchange between [T]ribes and scientists should always be informed and respectful of the history and purpose of TEK, the risks and benefits tribes face when sharing TEK” (NE/CASC n.d.). Climate adaptation planning for archaeological sites will be strongly dependent on the co-creation of knowledge to determine site significance as well as the appropriateness of adaptation strategies. In other words, resource managers need to weave ITEK with Western science and management planning to create meaningful, sustained dialogue about adapting archaeological sites on public lands.

Watkins (2001) suggests mutual education and more dialogue is lacking and should be built into the consultation process. Yet, “positional superiority” remains a concern, as Western scientists dominate epistemological organization and ‘regimes of truth’ (Smith, 2000, p. 21) and laws and policies created and enforced by Western scientists require Tribal Citizens to conform (Baird 2017). There is also the assumption that Tribal Nations wish to share their ideas, history,

and perspectives with the NPS and Western scientists but trust is often lacking (Watkins 2001), As Brown (2003) elaborates, “political sovereignty is meaningless without cultural sovereignty” (p. 6).

Although archaeological theory and practice is interdisciplinary in nature and making recent strides to become more inclusive of Tribal Nations and Native communities (Colwell and Joy, 2015), mainstream practice used by resource managers is a post-modern, positivist approach in how archaeology is conducted, managed, and interpreted (Johnson 2019; Watkins 2001). A positivist approach, which took foot in the 1960’s, may no longer be at the direction of current archaeological theory, but it is perpetuated through policy and compliance of federal policies, which we can see in the archaeological record, data collection, and information sharing. For example, a key barrier to inclusion in archaeology is the standardization of qualifications for the education and training of archaeologists. Schneider and Hayes (2020) suggest “undisciplining” Western archaeologists by studying through a critical Indigenous studies lens. Bloch (2014) states “archaeologists must practice humility before Indigenous leadership. This is a key step in acknowledging the colonial conditioning of archaeology” (p. 71). Archaeology is practiced within the realm of cultural resource management, which strongly divorces cultural and natural resource management, even mimicked in department titles in the NPS system. Taking a closer look at the US system of management for resources and protected areas is significant because much of the concept of nature, wilderness, and the professionalization of heritage management was strongly influenced by US policies and programs. For example, the 1964 Wilderness Act influenced the categories of wilderness and protected areas used by IUCN (Casson et al. 2016), and it was the US Congress that called for the protection of cultural and natural heritage that lead

to the creation of the 1972 UNESCO World Heritage Convention¹⁰ (UNESCO, n.d.).

Furthermore, the US is a settler colonial nation that displaced and assimilated much of its Indigenous population, which still affects populations today. US policy, research, and professionalization is rooted in a Western science and ripples around the world.

Western ideologies and approaches dominate archaeology approaches and narratives (Newsom et al. 2021), and the exclusion of Indigenous communities in research, collection, and decision-making of their ancestral places and objects is what Lucas (2018) refers to as “epistemic silence”. When working with Indigenous communities and Tribal Nations, it is important to understand human and non-human relationships that people have with the environment (Tribal Adaptation Menu Team 2019) and to acknowledge Indigenous history in the US as well as ongoing systems of oppression including in the practice of Western archaeology (Atalay 2006; Carroll et al. 2019). Tribal Nations are working hard to rebuild their Nations through self-determination by regaining governance over a multitude of things that represent them, such as their livelihoods, the data collected about and used to describe them, and cultural heritage and significant places (see Kukutai and Taylor 2020). Humbleness and cultural humility will help towards working alongside and empowering Tribal Nations.

Dissertation Overview

The dissertation uses a grounded social constructivist approach (Charmez, 2017; Flick, 2018). Ontologically, within this paradigm, this study promotes the integration of multiple worldviews and constructed perceptions of reality. Epistemologically, this study promotes the co-production of knowledge and science. Ideologically, embedded values will be challenged,

¹⁰ The full title is the 1972 The Convention concerning the Protection of World Cultural and Natural Heritage.

specifically challenging expert-driven criteria and policies. Rhetorically, this study is written in English and acknowledges that language is limiting. It is the hope that this research leads to practical solutions and tools. Charmez (2017) emphasizes the focus on location-specific information of both the researcher and the participants so that experiences can be better incorporated and to prevent reducing cultural groups into once representative voice (i.e. Tribal Nations rather than specific Nations or Bands). For qualitative research, triangulation serves as an alternative to validation and fosters knowledge production at different levels (Flick 2018). This dissertation will primarily use triangulation to bolster findings by using multiple methods to collect and analyze data, as well as additional data quality checks for each study.

The research in this dissertation here will further extend the effort to provide site and national-level guidance on strategies for the inclusion of ITEK in adaptation planning for cultural resources on public lands. It is important to note that the research proposed here is part of a larger research project that seeks to create a climate adaptation planning framework¹¹ for national park units, other public land agencies, and Tribal Nations to set priorities for decision-makers. Ultimately, the framework is intended to foster co-management of archaeological sites. My specific contributions focus on the role of collaboration with associated Tribal Nations and Indigenous communities within adaptation planning of archeological sites by focusing on three primary goals, each reflected as a separate chapter and presented as a manuscript for publication in a peer-reviewed journal. The dissertation's conclusion (Chapter 5) weaves together my reflections on the multiple engagement activities we had with citizens and staff of Tribal Nations, both virtual and in person. The reflection is written as a commentary on our team's

¹¹ None or part of the proposed framework are published and are prohibited to share or reproduce without permission.

interactions and lessons learned about the challenging, yet necessary, need to decolonize archaeology, as well as providing strategies on how to work towards change. Below is an overview of the chapters:

Chapter 2. A systematic literature review on climate change adaptation planning for archaeological site management and the prevalence of stakeholder engagement.

Target Journal: Journal of Community Archaeology & Heritage

This research seeks to systematically document the actions being taken and tools being created to address climate impacts on archaeological sites, and to assess the degree to which local and Traditional knowledge is considered in adaptation planning. The study results provide documentation of limited stakeholder engagement in climate adaptation planning of archeological sites at a global level, creating a call to action within scholarship.

Chapter 3. Agency Perspective on Tribal Engagement and Climate Change Adaptation for Archaeological Sites.

Target Journal: Journal of Cultural Heritage

This research seeks to explore how NPS practitioners are adapting archaeological site management to climate change impacts and reveal the barriers to and opportunities for working with associated Tribal Nations. The study results provide suggestions for best practices and describe how meaningful engagement is crucial for decolonizing systematic Western approaches to determining site significance, particularly the criteria standardized by the National Register of Historic Places.

Chapter 4. Strategies for Meaningful Engagement: A Commentary on Collaboration in Archaeological Climate Adaptation Planning.

*Published in Park Stewardship Forum*¹².

This research aims to deconstruct Western archaeology practice and stewardship by providing a synthesized commentary on the importance of acknowledging and integrating Traditional Knowledge through meaningful collaboration. The study results identify gaps in archaeological theory and practice of valuing ITEK and provides strategies towards decolonization.

Brief Summary of Authorized Heritage Discourse and Positionality Statement

Authorized heritage discourse stems from the field of critical heritage studies, which—although evolving—is a Western discipline that has been strongly influenced by UNESCO and a few canonical authors, such as David Lowenthal, that are driving theory and practice (Gentry and Smith 2020). Built from the socio-political contexts of heritage (Baird 2017), critical heritage studies is, indeed, very political in nature. Critical heritage studies borrows from—and has evolved from—other epistemological and philosophical ideas and concepts, particularly through feminist theory, Marxist theory and cultural relativism (Johnson 2019; Atalay 2012). Laurajane Smith developed and is credited for the concept of authorized heritage discourse, described by Baird (2017) that it is “the idea that a larger hegemonic discourse mediates heritage laws and practices” (p. 9). To be a heritage expert, such as an archaeologist, is an enormous privilege, where even having the ability to take a position on a topic creates authority (Johnson 2019).

¹² Hotchkiss, C., Seekamp, E., & McGill, A. (2022). Strategies for meaningful engagement: A commentary on collaboration in archaeological climate adaptation planning. *Parks Stewardship Forum*, 38(3). <http://dx.doi.org/10.5070/P538358980>

A common question in critical heritage studies is *for whom are we having places* (Harrison 2020; Harrison et al. 2020)? The concept of heritage is itself created by people and the interactions between people and places; therefore, embedded values and meanings are created and given (Harrison 2012; Baird 2017). Defining ‘community’ remains a challenge (Waterton 2005; Colwell and Joy 2015). The professionalization of heritage site stewardship and cultural resource management are disciplines and their related institutions are designed by heritage “experts”, mainly from Western countries (i.e. Europe, North American, and Australia) (Smith, 2017). Although there are calls to include local communities into decision making, authorized heritage discourse argues that this does not happen on the ground as decision making processes continue to privilege expert opinion (Smith 2012). This research amplifies local and Traditional Knowledge systems to help me continually reflect upon and understand the pervasiveness of Western values.

I am not an enrolled member of a Tribal Nation nor do I have an affiliation with any Indigenous or native cultural group. My perspective and bias come from a Western science approach, but I am an ally to local and Traditional Knowledge holders. I do not intend to represent traditional knowledge or claim to understand it; rather, I intend for my research to contribute to the justification of the necessity to integrate different knowledge systems for better planning and decision-making for cultural resources, reveal existing gaps in research for integrating values and perspectives in archeological resource management, and to identify existing barriers and challenges. In 2019, I joined a research team seeking to develop an adaptation planning framework for archeological sites after the research design was completed and data collection was underway.

My bias is also shaped by my academic studies and lived experiences in the US and abroad. I attended schools and universities that use a Western science approach to understanding the world, including my time studying in Europe. My master's degree is based in the 1972 UNESCO World Heritage Convention, shaping my early knowledge of cultural resource management and heritage site stewardship. Although my master's program was rooted in Western approaches, the 55 students from 25 different countries continually challenged the conceptual and practical processes for inscribing and stewarding significant places, enhancing my own reflexivity.

Professionally, I worked for the National Park Service for two years, including a park unit with which our team has engaged. Additionally, I worked for a State Historic Preservation Office (SHPO) that assisted with federal policy compliance and grant administration. I recognize that I have a bias for how heritage value is determined from a U.S. policy perspective based on my professional background. Experience with the NPS and a SHPO is a reason I was asked to help with this research project, yet I continually try to understand and reflect upon how these experiences influence my own values and perspectives, particularly in the context of the research approach employed in this dissertation.

I continually strive to be reflexive about my own biases and have tried to develop trusting relationships with project partners who are members of Tribal Nations. My role is to amplify the needs, perspectives, and hopes of Tribal and Indigenous citizens everywhere, and I use my knowledge and power to try to influence changes in current theory and practice that is harmful and exclusionary. I continue to read articles and books by Indigenous people and scholars, and I participate in trainings about working with Tribal Nations, including different epistemologies, and co-creating knowledge. I am grateful for the support that citizens and staff of Tribal Nations

and communities give to me, and I will continue to work to support them in whatever they deem as valuable from my dissertation research and contributions to the broader project effort.

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CHAPTER 2

A Systematic Literature Review on Climate Change Adaptation Planning for Archaeological Site Management and the Prevalence of Stakeholder Engagement

Abstract

This paper presents a systematic literature review of publications from 2014-2021 using “archaeological site” and “climate change” as keywords in addition to several terms representing forms of stakeholder engagement. Of the 1500 total results from searches within the Web of Science database, 100 publications were identified as meeting search criteria. Papers were thematically coded to explore trends at the intersection of climate change, archeology, and local and traditional stakeholders. Results show that nearly half of the selected publications did not include local and Traditional stakeholder engagement in studies related to climate adaptation planning for archaeological sites. Synthesizing the results with insights gained from other literature on decolonizing archeology, potential reasons for this gap include: (a) the academic publishing culture, (b) archaeology as a predominantly Western discipline, and (c) increasingly available tools for climate change adaptation planning for archaeological sites. This paper calls on the academic community to consider holistic stewardship using a landscape approach, and to use climate change adaptation planning to elevate local and Traditional stakeholder input and values.

Keywords: archaeology, cultural heritage, climate change, Indigenous and Traditional Ecological Knowledge (ITEK), stakeholders, resource management, literature review

Introduction

Climate change impacts will affect the material, context, and intangible values of archaeological sites (Sesana et al. 2021), requiring specific adaptation planning addressing site exposure and vulnerability (Fatoric and Seekamp 2019; Rockman and Hritz 2020), sensitive site locational information (both culturally and to prevent looting) (McCoy 2018), and stakeholder input (Atalay 2012). Archaeological site management differs from other historic sites because of their inclusion of subsurface materials and the information they hold about human behavior (Sprinkle 2003). Climate change impacts will affect archaeological sites globally and, therefore, the management of significant and important places will need to be anticipated by those responsible for stewarding its sites.

Yet, archaeological sites are not just objects of the past to be studied but rather they are often still connected to living groups of people. Stakeholders of archaeological sites typically include local and Traditional stakeholders, sovereign Tribal Nations, and Native and Indigenous communities. For example, in the United States, there are over 570 federally recognized Tribal Nations, as well as many state and local community groups (NCSL 2022), with approximately 65 state recognized Tribes (NCSL 2020) and over 200 non-federally recognized Tribal communities (O’Neil 2021). Yet only federally recognized Tribal Nations must be consulted on projects, such as climate adaptation planning or decision making of archeological sites located on state or federal lands, as government-to-government entities. The Advisory Council for Historic Preservation (ACHP) provides guidance on working with non-federally recognized Tribes¹³, but reiterates that formal consultation is not required. The ACHP guidance states, “the question of

¹³Advisory Council on Historic Preservation’s “Guide to working with non-federally recognized Tribes in the Section 106 process” is available at: <https://www.achp.gov/sites/default/files/whitepapers/2018-06/GuidetoWorkingwithNon-FederallyRecognizedTribesintheSection106Process.pdf>

whether to invite non-federally recognized tribes to participate in the review process can be both complicated and sensitive” and “is a discretionary decision by the federal agency” (ACHP 2018). Despite archaeological sites being the cultural heritage of Tribal Nations, Native and Indigenous People, and other local communities often removed from the land, the continuity between past and present is neglected and the values and knowledge of living descendants is minimized or considered optional.

In the U.S. and around the world, many archaeological sites can be found on publicly owned land, and, consequentially, public land agencies must take care of the cultural heritage that are often the ancestral heritage of local and Traditional communities associated with the objects and landscapes. Many pre-contact archaeological sites and landscapes are the cultural heritage of associated Indigenous peoples and Tribal Nations and, therefore, these associated cultural groups have the right to be a part of the management—including knowledge creation and decision making—of sites that are important to them and provide them with heritage continuity (see Atalay, 2008; Gosden, 2012; Gupta et al., 2020; Nalau et al. 2020). Climate change adaptation planning must reflect the values, perspectives, and preferences of descendant communities (Nalau et al. 2020), which may not align with agency goals and Western science approaches. As such, there can be tension between resource managers and local and Traditional stakeholders when resource stewardship is mandated to incorporate Indigenous and Traditional Ecological Knowledge (ITEK) and reflect Indigenous preferences (Khazraee 2018).

ITEK is often not always accepted or included in scientific inquiry (Whyte et al. 2016) and is often misused or ignored (Xanthaki et al. 2022). In the U.S., resource managers, such as those employed by the National Park Service (NPS) are required to consult with associated, federally recognized Tribal Nations on strategies for resource stewardship (NPS Memo 16-01)

and have the responsibility to integrate ITEK as a legitimate and important body of knowledge (Lander 2021). As such, adaptation planning and implementation includes consulting “broadly” to enable understanding of the significance of cultural resources to the descendant communities (NPS Policy Memo 14-02).

Archaeological site significance is determined, in part, by a sites’ authenticity and integrity—defined and described and in the 1972 UNESCO World Heritage Convention—which should be collaboratively determined by culturally associated groups, stakeholders, and technical experts (Egloff 2006). The Strategic Objectives of the UNESCO World Heritage Convention include the critical importance of Traditional and local communities in heritage site management¹⁴ (UNESCO 2007). The United Nations Declaration on the Rights of Indigenous Peoples (2007) state that Indigenous peoples have the right to identify, protect, share, manage, and live their cultural heritage; therefore, their input and perspectives on authenticity, integrity, value, and management must be incorporated in site stewardship. National and international organizations that focus on the stewardship of heritage sites and protected areas are robustly promoting: (a) Indigenous and Traditional Ecological Knowledge (ITEK, sometimes referred to as TEK) and local and Traditional perspectives as integral to holistic site stewardship (see UNESCO 2013; Dawson et al. 2021; Lander 2021; ICOMOS white paper by Orlove et al. 2022); (b) cultural heritage site stewardship by associated groups as a human right (see: UN General Assembly 2011); and (c) people-center approaches to heritage site management (see ICCROM 2015). Yet, the extent to which these guidance documents and policies are being implemented in practice is not well known.

¹⁴ See Decision: 31 COM 13A.

The US is no exception in neglecting Tribal and Indigenous values and perspectives, despite creating mechanisms to solicit feedback and input. This neglect can mainly be attributed to the fact that consultation processes—mandated with federally recognized Tribal Nations but optional with non-recognized Tribal communities—are based in standardized regulations of cultural resource management and policy, which are rooted in Western science (Newsom et al. 2021). To address this, it has been suggested to integrate approaches to site stewardship which can lead to adaptation planning that is more holistic (Andrade et al. 2022). Holistic site stewardship, in this case, refers to the integration of cultural and natural resource management (Helmer et al. 2020), as well as the co-production of approaches found in Western science and cultural values and perspectives (Wu 2017). Holistic site stewardship values local and Traditional knowledge and expertise (Armitage et al., 2011; Simpson et al. 2018) and leads to more sustainable practices (Makondo and Thomas 2018).

Acknowledging that archaeological sites require unique adaptation planning and management coupled with an increase in calls for incorporation of ITEK in site stewardship, this paper looks at the recent literature to better understand the extent of this work within academia. Analysis of recent academic literature is an important way to get a pulse on topics that are important to researchers and to identify gaps in the body of knowledge and areas where calls to action may not align with current and ongoing research priorities (Petticrew and Roberts, 2000). The aim of this paper is to systematically review recent literature on the intersection of archeology and climate change, with a specific focus on the prevalence of local and Traditional stakeholder input in planning and stewardship of archeological sites. This study provides a US context and lens for cultural resource management and policy for archaeological site stewardship, in part because the US has a robust academic foothold and influence on

archaeological theory and practice globally; yet, this study has implications at a global context and a greater look at the roots of Western science.

Research Methods

This paper presents a systematic literature review guided by the following overarching and sub research questions:

1. What literature exists about climate change adaptation planning for archaeological sites?
 - a. Given calls for the inclusion of ITEK in heritage site management, to what extent does this literature include the knowledge and perspectives of local and Traditional stakeholders in site stewardship?
 - b. What management suggestions are offered in the literature and do they include opportunities for working with local and Traditional stakeholders?

The specific objectives of this study are to: (a) document the prevalence of academic publications that address climate adaptation planning of archeological sites and (b) identify the extent to which those publications include or recommend the integration or consideration of local and Traditional input. The systematic literature review will follow the approach adapted by Fatorić and Seekamp (2017a) for cultural heritage and resources at risk from climate change (Table 1.1).

Table 1.1 Data collection and analysis for systematic literature review

Steps	Process
Step 1: Develop questions	This step develops research questions based on inductive reasoning supported by background research.
Step 2: Create keywords	This step requires the development of search terms based on the objective of the research questions.
Step 3: Conduct search	This step requires selecting an appropriate database, entering key search terms, and determining if results from the search are relevant based on publication titles. This is an exhaustive process where all search keywords are reviewed and search results recorded.
Step 4: Select publications	This step accepts or rejects publications based on a review of their abstract. Accepted publications are downloaded, citations collected in Excel, and publications uploaded to NVivo.
Step 5. Analyze publications	This step requires review of each publication where a codebook using open coding is created based on the aims of the research question.
Step 6: Inter-rater reliability	This step requires a peer to review a random sample of accepted publications once all publications were coded. Coding must match the primary researcher's coding by 60%. Conversations for changing or refining codes can happen during the step to reduce biases.
Step 7: Report and discuss	This step will use NVivo to create matrices and other outputs based on file classifications and case codes. Results will be analyzed and interpreted by the researcher to identify patterns, gaps, and anomalies.

Data collection for this study included the creation of keywords, selection of relevant publications, development of a codebook, and coding the selected publications (Steps 2-6). The keywords used to identify the literature (Step 2) consist of three search terms. The first two terms remained consistent for each search query: climat* chang* AND Arch?eolog* site*. The third

search term changed with each search. Third search terms varied to capture more publications that include site stewardship, management practices, and local and Traditional knowledges.

The database selected for this study is the Web of Science because it is a multidisciplinary platform covering both natural and social sciences with almost two billion cited references (Clarivate 2022) (Step 3). The Web of Science was selected because it is a popular, open-access platform with multiple indexes used by academic researchers for over 50 years, and, therefore, a reflection of current and frequently mentioned topics and themes within academia (Clarivate 2022). This database is not all encompassing, but it serves as a hub for researchers to find refereed literature on a topic or idea. All publications from the search were downloaded (Step 4) and abstracts scanned for selection. Following abstract review, articles were “accepted” if they met all the themes of the research question: 1) cultural resource management and 2) climate change as a driver for action. This also aligns with the two consistent search terms of *arch?eolog* site** and *climat* chang**.

A codebook (Step 5) for the accepted results of the literature review (i.e., meet the criteria of Step 4) was developed a priori but iteratively revised as new themes emerged. Individual articles were also coded for publication year, publication type, heritage resource type, and implicit/explicit/ignored stakeholder engagement. QSR NVivo v10.0, a qualitative data organization software, was used to store the publications and conduct the analysis (Step 6). This software allows for the creation of file codes and classifications, as well as visualizations and outputs (e.g., matrices and graphs across multiple codes and classifications) to help identify trends and patterns.

Based on an approach by Fereday and Muir-Cochrane (2006), thematic coding was both deductive (a priori) and inductive (emerging themes). Inter-rater reliability (IRR) was employed

to enhance data quality of the codebook (see Appendix A) and iterative coding. Six accepted publications were selected using an online random number generation (<https://www.randomizer.org/>) and were given to a peer along with the descriptions of the three deductive themes of climate change, heritage site, and stakeholder prevalence. IRR was only conducted on the three deductive themes because inductive codes were emergent codes that were recorded, described, and refined throughout the review of the publications. Inductive, emergent codes focused on management suggestions and best practices. As described in Hemmler et al. (2022), using a statistical coefficient like Cohen's kappa can be helpful for determining inter-rater reliability, which increases trustworthiness, validity and rigor of qualitative research methods. After discussing the themes and descriptions with the other rater, Dr. Kibria SMG Abu, the Cohen's kappa coefficient was calculated by hand and using R, resulting in 0.97 between the two raters. This coefficient can be interpreted as "almost perfect" (see Gisev et al. 2013).

Protocol for Search Terms

First, we selected the temporal range of our search. Early results from a temporally unconstrained search revealed a spike in publications results after 2013, influencing the decision to describe "recent" publications from 2014 to 2020. This decision is also intuitive in that it follows from Fatorić and Seekamp's (2017) seminal literature review on cultural resources and climate change with minimal (two years) overlap. Next, we selected two dependent search terms that are specific to the overarching research question. A third search term was added, replacing the previous independent search term, in each iteration of the search that focused on the research question related to management and local knowledge systems.

Each accepted publication met the following criteria:

1. Must focus on the management and planning of archaeological sites, and
2. Must include climate change and impacts as a driver for management action, planning or assessment.

To make sure search results included both criteria, the search terms arch?eolog* site* and climat* chang* were always used. Site* was always paired with arch?eolog* to eliminate archaeology science and focus on management of places and resources. The intention of the phrase “arch?eolog* site*” is to keep the focus on site stewardship and management rather than excavation, testing or interpretation that happens when a site is still being investigated. The third search term (variable term) was changed for each search and 14 additional variable terms were added (see lists below). Terms related to managing archaeological resources include management, adapt* plan*, priorit?ation, priorit*, framework, plan*, steward*, and framework. The terms related to local and Traditional stakeholder groups included Indigenous, “traditional knowledge”, “ecological knowledge”, trib*, native, communit*.

Consistent search terms

arch?eolog* site*
 climat* chang*

Variable search terms

Management
 Adapt* plan*
 Plan*
 Prioriti*ation
 Significan*
 Framework
 Indigenous
 “Traditional knowledge”
 “Ecological knowledge”
 Trib*
 Native
 Native knowledge
 “Native people”
 Communit*

Although not directly related to archaeological site management or local and Traditional stakeholder groups, the term communiti* was explored as an attempt to capture publications including culturally associated communities. Of the 122 results for communiti*, 104 focused mainly on relations of past communities, biological or vegetation communities, fossil communities, or research and academic communities. Results relevant to the research question accounted for the remaining 18 publications, of which 15 publications were captured in other search terms (three additional publications were accepted).

After reviewing the abstracts, 100 publications were retained for a more detailed review (Table 1.2) (see Appendix B for list of accepted publication). One of the accepted publications focused on the management of archaeological sites out of context (buildings that house archaeological objects).

Table 1.2 Search term results

Variable search terms	All results
Management	182
Adapt* plan*	65
Plan*	279
Prioriti*	8
Prioriti?ation	46
Significanc*	100
Framework	31
Indigenous	4

Table 1.2 (continued)

“Traditional knowledge”	2
“Ecological knowledge”	18
Trib*	23
Native	190
Native knowledge	437
“Native people”	110
Communit*	5
Total	1,500
Accepted	100

Coding Strategy and Analyses

When reviewing abstracts, it became clear that the definitions of some words and phrases needed to be narrowed or broadened given the research question.

1. An **archaeological site** is defined from a Western science perspective as “the study of past peoples through their material remains. ...resources include sites, collections, and documentation associated with excavation and curation activities... [and] hold relevance and significance to people today” (NPS Archeology Guide, 2006). This includes materials at surface or subsurface levels, as well as marine. Sites and objects must be in situ and can be partially or completely excavated.
 - a. **Heritage sites** is included as a code in this study as long as archaeological sites are a component of the broader heritage site.

2. Local and Traditional stakeholders are grouped together for this study, yet there are some important distinctions. **Local stakeholders** refer to communities that give meaning to places or claim cultural connection to sites and landscapes. **Traditional stakeholders** refer to Indigenous, aboriginal, and native peoples, who are often colonized or displaced from their ancestral homelands. Traditional stakeholders can also refer to sovereign Nations with rights to govern their own heritage, cultural property, and data.
 - a. **Knowledge systems** include local and Traditional stakeholders and their knowledge systems and ways of conducting science. As such, the local knowledge and ITEK knowledge systems were combined conceptually to cast a broader net on differing knowledge systems and ways of life (not just Indigenous Knowledge or Traditional Ecological Knowledge). Epistemic differences between local knowledge and ITEK systems are not addressed, but it is understood that different knowledge systems shape values and priorities in managing heritage sites and places (Taylor and Lennon 2011).
3. Direct input from local and Traditional stakeholders was easy to capture, yet some publications only mentioned that local groups exist or failed to acknowledge them at all; therefore, **stakeholder engagement** is categorized as explicit, implicit, or ignored.

Publications were also assigned case classifications to give a broad scope of the fundamental focus of the study and publication, the archaeological site(s) studied, prevalence of stakeholders, and climate change impacts. Case classifications and their codes are as follows:

1. Geographic scope: where research is focused or took place.
2. Publication type: journal article, report, book chapter, etc.

3. Heritage resource: a standalone archaeological site or a heritage landscape.
4. Climate change impacts: primary or non-primary driver for action.
5. Stakeholders: implicit, explicit, or ignored.

Themes and intersections explored from the deductive codes look at accepted publications overall for geographic scope, archaeological sites as the focus or part of a larger heritage site, trends in relevant publications over the selected time period (2014-2021) and climate change as a main driver for action, and the prevalence of local and Traditional stakeholder perspectives. Deductive codes focused on the array of management suggestions. Intersections between inductive and deductive codes look at relationships between stakeholder prevalence and climate change as a driver for action, and continuity with living descendants, as well as management suggestions that imply opportunities for stakeholder engagement and incorporation of their values. See Appendix A for codes, file classifications, and descriptions.

Results

Results of the keyword searches used 18 unique terms, produced 1500 total results, of which 100 (n=100) were selected as relevant publications. Overall, there has been an increase in the number of publications related to climate change impacts to archaeological sites (Figure 1.1). The trend (dotted) line shows an upward trend despite declines in some years.

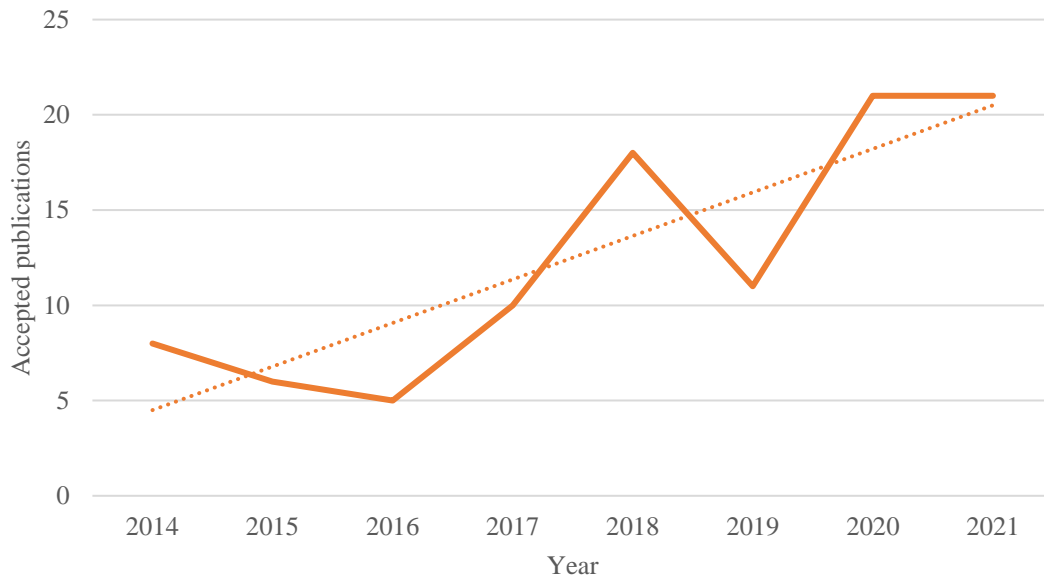


Figure 1.1 Publication results by year

Additionally, there has been an increase in the number of publications where research or studies are conducted where climate change impacts are the main threat or issue to archaeological sites (Figure 1.2).

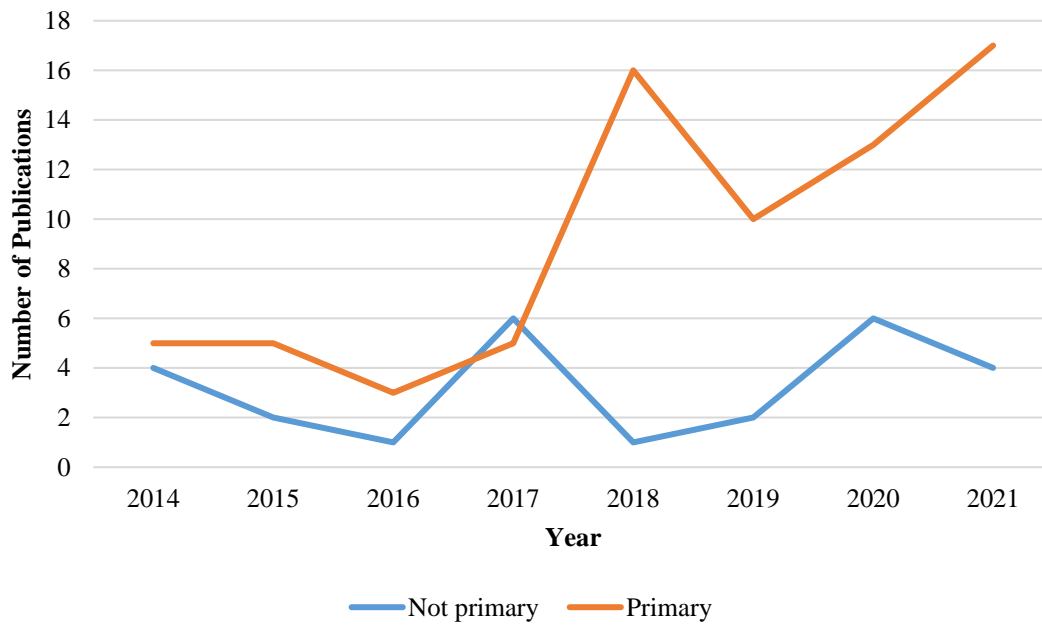


Figure 1.2 Climate change as a driver for research by year

Archaeological sites can be treated and managed as individual sites or as part of a heritage site or cultural landscape. The greatest proportion of accepted publications were coded as standalone archaeological sites (52%), closely followed by heritage landscapes that include archaeological sites (47%). The category of “other” (1%) included a publication that was focused more broadly on archaeological sites and archival material (Figure 1.3).

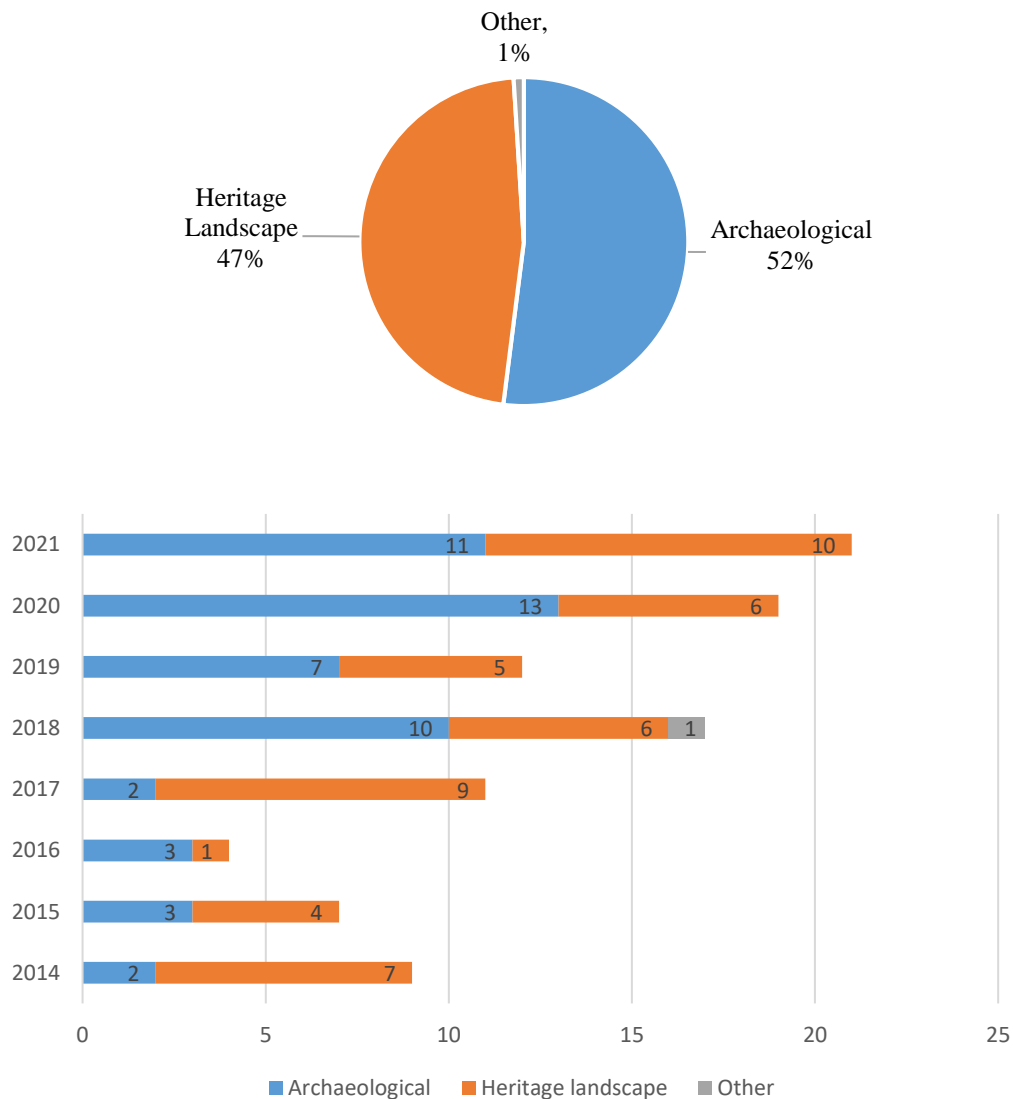


Figure 1.3 Heritage site type by proportion and by annual proportions

The geographic distribution of the accepted publications by region of the world shows a heavy representation from North America and Europe (Figure 1.4). This does not refer to the authors' affiliation; categorization of the publication is based on the case study or location where research was being conducted. Geographic scope was organized into Europe including Greenland (n=39), North America (n=25), multinational (n=13), Middle East (n=8), Australia (n=7), Antarctica (n=3), Asian continent (n=2), African continent (n=2), and Central and South America (n=1).

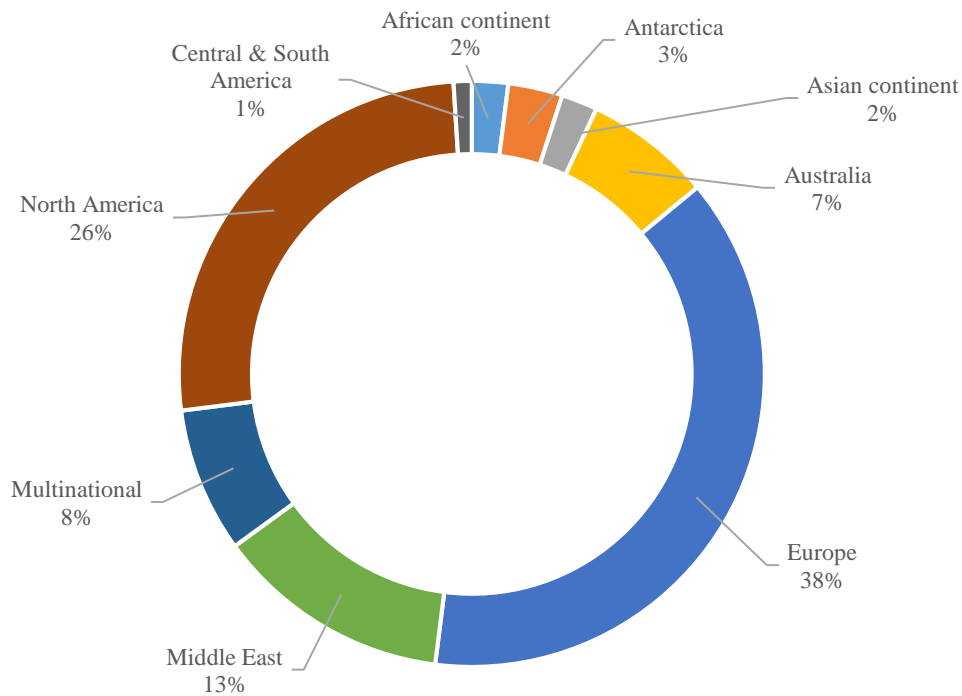


Figure 1.4 Proportion of publications representing different geographic scopes

Each publication was coded for the relevancy of stakeholders in the research or management recommendations. Stakeholders were coded as directly identified and included (explicit), not mentioned but alluded to (implicit), or not mentioned at all (ignored) (Figure 1.5). Approximately half of the accepted publications (48%) ignored stakeholder connection to the

sites and did not mention their values or perspectives in site stewardship; almost one quarter (24%) explicitly mentioned or worked with an associated cultural group; and one quarter (28%) mentioned or recommended working with local and/or Traditional stakeholders but did not specifically mention or work with any associated cultural groups related to their study.

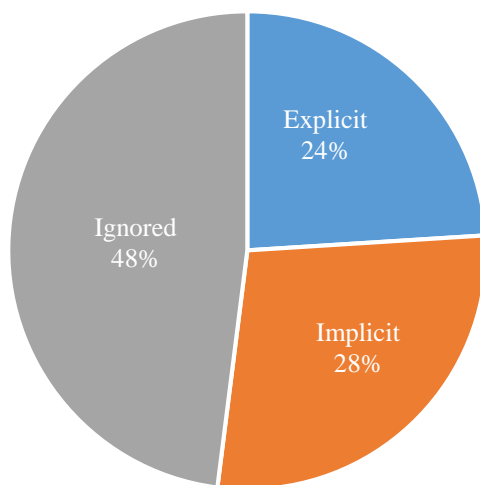


Figure 1.5 Prevalence of local and Traditional stakeholders mentioned in publications about climate adaptation of archeological sites

Analyzing stakeholder prevalence by year, accepted publications coded as “ignored” had the steepest upward trend (dotted) line, where “implicit” and “explicit” had a flatter increasing trend line (Figure 1.6). In 2020 and 2021, 21 publications were accepted for both years, resulting in “ignored” making a noticeable increase and “explicit” and “implicit” numbers decreasing. Proportionally, “ignored” has the highest share for half of the years (2015, 2016, 2019, and 2021), which is not a clear trend over the entire span of time.

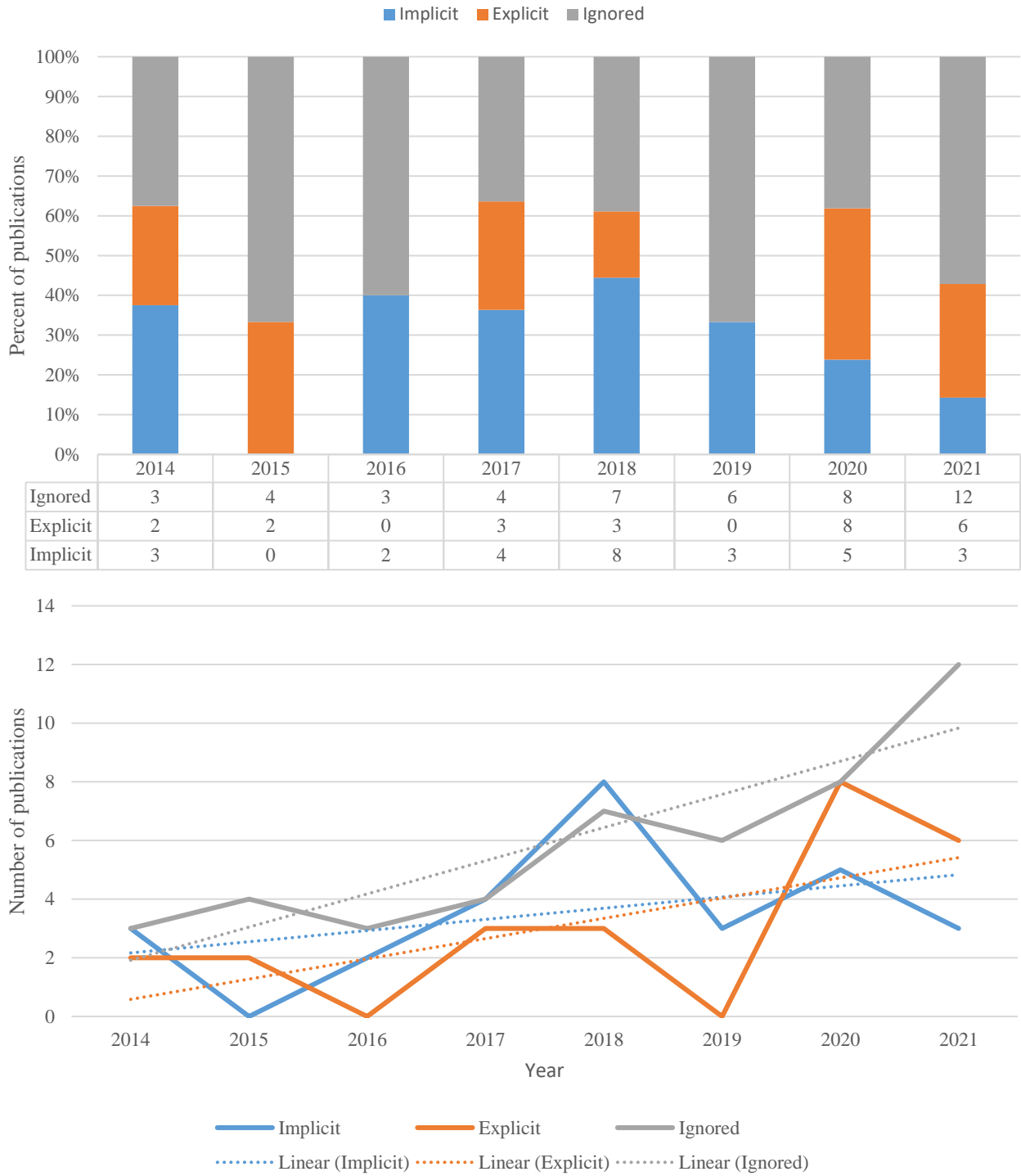


Figure 1.6 Stakeholder prevalence by year

Stakeholder prevalence in accepted publications (implicit, explicit, or ignored) and their relation to heritage site continuity (connected to living descendants) show a clear connection of explicit stakeholders (n=24) and their current connection to archaeological objects and places (n=19) (Table 1.3). The inclusion of stakeholder insights (local knowledge and ITEK systems) is included in two thirds of publications (n=16) that explicitly mention stakeholders (n=24), but otherwise low overall (Table 1.3).

Table 1.3 Stakeholder prevalence compared to continuity and perspectives

Stakeholder prevalence	Connected to living descendants	Local knowledge & ITEK systems
	n (% of stakeholder prevalence category)	
Implicit (n=27)	7 (26%)	3 (11%)
Explicit (n=24)	19 (79%)	16 (67%)
Ignored (n=49)	2 (4%)	2 (4%)

Where climate change impacts were coded as a primary driver for action, approximately one third of the selected publications did not include stakeholder input or perspectives in their study (Table 1.4).

Table 1.4 Stakeholder prevalence and climate change

Stakeholder prevalence (n=100)	Climate change: not primary driver (n=26)	Climate change: primary driver (n=74)
	n (% of stakeholder prevalence category)	
Implicit (n=27)	7 (26%)	21 (78%)
Explicit (n=24)	3 (11%)	22 (92%)
Ignored (n=49)	16 (33%)	31 (63%)

Over 20 management suggestions were identified in the publications, with the most frequently mentioned suggestions showing up in over 20 publications (Table 1.5). The most frequently mentioned management suggestion was “assessments and frameworks” in over 30 publications. Consultation and engagement (n=24), specifically, ranked number three in terms of frequency, indicating a desire to engage with partners and stakeholders. For the publications that mentioned consultation and engagement, stakeholder prevalence was 10 for implicit (n=27), 13 for explicit (n=24), and 1 for ignored (n=49), showing an expected consistency. Less frequently mentioned management suggestions that are also related to working with stakeholders, included collaborating (n=11), creating training and guidance (n=9), encouraging citizen science (n=7), and, very directly, building relationships with stakeholders (n=6). See Appendix A for definitions for each code.

Table 1.5 Management suggestions (n=100)

Management suggestions	n
Assessments and frameworks	31
Survey and inventory	29
Consultation and engagement with stakeholders	24
Prioritize sites/determine value	24
Develop planning tools	22
Monitor sites	22
Multiple approaches	14
Geospatial/modeling	11
Collaborate	11
Create training and guidance	9
Prepare for loss	9
Support local management	9
Improve communication	8
Encourage citizen science	7
Build relationships with stakeholders	6
Create protected areas	6
Create supportive policies	6
Background research	5
Proxy data	5
Find more funding	3
Develop dynamic, continual process	3
3D or virtual displays	2
Physical barriers or relocation	1

*Bold indicates references to direct engagement

Through deductive coding, adaptation and management suggestions were provided, including opportunities engaging with local and Traditional stakeholders (Table 1.6). Of the 23 codes for adaptation and management suggestions, eight codes centered on the inclusion of stakeholder input in planning and decision making. Publications that implicitly or explicitly mention stakeholder input are suggesting management and planning actions that have the opportunity to increase meaningfully engaging with stakeholders.

Table 1.6 Management suggestions including stakeholder input within publications by prevalence of stakeholders

Management suggestion including stakeholders	Stakeholder prevalence in publications*		
	Implicit (n=28)	Explicit (n=24)	Ignored (n=48)
	n (% within stakeholder prevalence)		
Include stakeholder input	14*(50%)	13 (54%)	1 (2%)
Collaboration	4 (14%)	4 (17%)	1 (2%)
Consultation or other formal stakeholder engagement	10 (36%)	9 (36%)	1 (2%)
Continual, dynamic process/adaptive management	1 (4%)	1 (4%)	0 (0%)
Include local management	1 (4%)	4 (17%)	0 (0%)
Prioritize and value stakeholder input	6 (21%)	6 (25%)	3 (6%)
Relationship building with stakeholders	2 (7%)	2 (8%)	1 (2%)
Develop training and guidance for practitioners and/or stakeholders	5 (18%)	3 (13%)	0 (0%)

*number indicates the occurrences of that code for each stakeholder category. Most accepted publications had multiple management suggestions.

Limitations

Both a strength and a limitation of this literature review include the use of only one database (Web of Science). Although comprehensive and recognized, this platform is a strong representation of the body of knowledge in Western science, but is restricted to academic publications written and submitted through a system designed by Western scientists.

Practitioners or non-academics often share information and best practices through other channels (i.e., non-peer reviewed articles or non-traditional forms of publishing), including white papers, grey literature, reports, conference presentations and proceedings, and various formal and informal meetings where information is shared verbally. Moreover, this platform and method of sharing information may not be accessible to, preferred by, or inclusive of Indigenous groups.

Additionally, this literature review only covered publications written in English and from a specific timeframe (2014-2021). Similar to Fatorić, and Seekamp (2017), this review's results show that the geographic scope of the results is heavily in Europe, which is not unusual in the heritage sector nor in academia. It is also unsurprising that North America is highly represented; the heritage studies field is rooted in European and North American (Western) ideology (Winter, 2014; McNiven 2016). While a broader scope is typically encouraged, it is important to exclusively use a Western science platform to better understand the prevalence of non-Western perspectives and wisdom to reveal whether archaeologists and cultural heritage researchers are in fact responding to national and international calls for inclusivity and multivocality. One way would be to develop targeted initiatives with international heritage organizations (e.g. ICOMOS, ICCROM, UNESCO) to expand the scope of research, case studies, and available publications. The PANORAMA platform¹⁵ has a collection of case studies, empirical examples, and suggested

¹⁵ More about the platform PANORAMA Solutions for a Healthy Planet can be found here: <https://panorama.solutions/en/explorer>

strategies, but is not peer-reviewed or submitted to an academic journal. Consequentially, this platform might not reach the academic community and researchers in this field.

Reflecting on the creation of the codebook and results from the IRR test, challenges with solid descriptions for the deductive coding was challenging, but important. Inductive coding also proved challenging because of the nature of interdisciplinary research. Identifying the methods used in a study was sometimes difficult to categorize because some studies referenced work or research that had been completed that informed their methodology, but they did not conduct it themselves. For example, the code “secondary data” was a broad, inductive code that captured direct mention as well as indirect mentions of secondary data that was used as a major component of a study. Upon reflection, almost all studies used secondary data in some way, especially when using climate change projection and downscaled data. In mixed methods and interdisciplinary research, secondary data is often used to bridge social and natural sciences (Tobi and Kampen 2018); in this case, accepted publications are incorporating climate science and archaeology/anthropology. Inductive coding can be helpful in identifying themes throughout the coding process, but themes and codes must be easily identified to achieve consistent, replicable coding.

Discussion

Major trends in this study are 1) an increase in publications with climate change impacts as the primary driver for studies on archaeological site stewardships and 2) increasing trends of ignored stakeholders, where three quarters (76%) of accepted publications ignored or implicitly mentioned local and Traditional stakeholders. Another noteworthy finding is the categorization of archaeological sites, where about half were grouped into heritage landscapes (n=47%). The

following subsections describe implications of these trends and findings on a larger scale of climate change adaptation planning for archaeological sites, and identify opportunities for further research in holistic site stewardship and inclusion of local and Traditional stakeholders.

Bias for this study comes from the author's own experience working with the US National Park Service, academic background in UNESCO World Heritage Studies, and lived experience as a non-Indigenous or Native person. Below are suggestions based on the author's role as an ally and experiences as a researcher working alongside citizens and staff of Tribal Nations who were displaced from their ancestral homelands lands across what is now the US.

Opportunity for holistic site stewardship

Half of the accepted publications combine archaeological sites with other types of built heritage. In the U.S. and internationally, guidance for the protection and treatment of heritage site stewardship often separates archaeological sites and buildings, yet large areas could include both kinds of sites within its boundaries¹⁶. Archaeological sites and other built heritage (namely, historic buildings and structures) have important distinctions and similarities that will affect how managers prepare for and respond to climate change impacts. Both archaeological sites and historic buildings have connections to living groups of people that contribute to the sites' meaning, value, and significance, and both need to be interpreted and managed within the greater landscape. However, it is important to note that their stakeholder groups and treatment plans will differ. This study shows an almost even split between archaeological sites and heritage

¹⁶ Guidance from UNESCO states broad typologies include "urban centres, archaeological sites, industrial heritage, cultural landscapes and heritage routes" (UNESCO, 2013, p. 12). The US National Park Service lists specific plans for the following cultural resource categories: archeological sites, cultural landscapes, historic and prehistoric structures, museum objects, and ethnographic resources" (NPS 1998, chapter 3).

landscapes, indicating fluidity in management between archaeological sites as a standalone site or included with other historic buildings and structures.

When planning for climate change impacts to the built environment, the conversation leads to the structure of resource management and the separation of cultural and natural resources. In Western science approaches, the natural environment and built environment are managed separately and are considered different disciplines (Verschuuren et al. 2021). However, it is also common to categorize sites into “mixed” sites (UNESCO 1972) or cultural landscapes (Page et al. 1998), which can include both cultural and natural elements, as well as different types of built heritage (e.g. archaeological sites and historic buildings). As mentioned earlier, holistic stewardship practices help address the siloing of cultural and natural resource management, and by looking at sites within the greater landscape captures natural and cultural resources, as well as archaeological sites and other built heritage sites (Helmer et al. 2020). A landscape approach can help soften dualities between archaeological sites and historic buildings, and cultural and natural resource management, fostering holistic site stewardship.

Opportunities to include local and Traditional stakeholders

Overall, there is evidence of an increased awareness of stakeholder engagement and incorporating local knowledge and ITEK systems into climate change adaptation planning; yet, stakeholders are often implicitly mentioned or completely ignored in some studies. Despite a growing, decentralizing movement for more inclusive archaeology theory and practice (Hollowell and McGill 2014; Clark and Horning 2019), site stewardship is rooted in a Western system and predominately expert-driven. Furthermore, literature claims a shift in archaeological

theory and practice that is morphing to be more inclusive in methods, recording, and interpretation (Mathers et. al, 2004, Colwell-Chanthaphonh 2010).

Although the literature on climate change adaptation planning for archaeological sites is increasing, it is not necessarily reflecting the imperatives (and often mandates) for including local knowledge and ITEK systems in planning and management of sites. It is evident that local and Traditional communities have been removed from the landscape when they are not mentioned as a part of the research methods or management recommendations. Additionally, the exclusion of these voices is evident when the stewardship focuses exclusively on technical and expert knowledge (or Western science). As climate change impacts worsen and adaptation planning becomes more urgent, resource managers must find ways to collaborate with local and Traditional stakeholders to plan for the protection, documenting, or letting go of sites. When considering funding requests for adaptation and mitigation, meaningful collaboration will also help archaeological site stewards prioritize sites based on the values of local and Traditional stakeholders (Hotchkiss et al. 2022).

Despite a lack of explicit mention of stakeholders, results show a variety of management recommendations that include the opportunity for stakeholder engagement. Some of the management suggestions can be directly linked to stakeholders, such as “collaboration” and “building relationships”, but some are more subtle. For example, “monitoring sites” can mean having local and Traditional stakeholders as monitors, like described in Carmichael et al. (2018). Such breadth in data collection and engagement approaches offers flexibility and the ability for stewards to tailor their approach to be most effective for the site and its stakeholders. Western science and local knowledge and ITEK systems are not opposing or dichotomous (Mazzochi 2006). Research projects, data collection and documentation, and adaptation planning for

archaeological sites can be designed collaboratively (Clark and Horning 2019; Simpson et al. 2022) and should be dynamic in the response to stakeholder values and climate change impacts (Whyte 2013).

Although the geographic scope of the results is heavily from Europe and North America, we see adaptation planning for archaeological site stewardship addressed globally; yet, this literature review suggests that global prevalence within the academic literature is still in its nascent stage, challenging “best practices” contributions. In particular, there were only 21 papers published in 2021 and only 11 papers published in 2019 specific to climate change adaptation planning for archaeological sites, and publications tend to be Euro- and North American-centric since 2014. Moreover, the research focus remains on Western science perspectives rather than the weaving of multiple knowledge systems, which would enhance inclusivity in climate change adaptation planning (Makando and Thomas 2018), framing and re-framing of issues (Bohensky and Maru 2011), and strategies for resilience (Thorton and Scheer 2012).

The lack of integration of local and Traditional values, perceptions, and input, or not integrating feedback in a meaningful way will exacerbate current social and environmental justice issues and Indigenous rights (Aikenhead and Ogawa 2007). Weaving different knowledge systems and perspective can also help identify gaps in research and policy (Ericksen and Woodley 2006). Management recommendations happening now and for the future must include opportunities for co-creation, collaboration, and co-management. Creating opportunities for collaboration, participatory research, and relationship building are strategies that managers of heritage sites and protected areas can implement to increase meaningful engagement with local and Traditional stakeholders (Hotchkiss et al. 2022). Documenting and sharing practices from and within the research community can create dialogue about success stories of holistic site

stewardship and challenge existing policy on archaeological site management. The research community can deconstruct and decolonize existing theory and practice, and use climate change adaptation planning to empower and elevate local communities and ITEK systems.

Conclusion

Archaeological site stewardship and climate change adaptation planning must include local and Traditional stakeholders' values, perspectives, and preferences, but recent literature is slow to document stakeholder engagement and relevancy in research and management suggestions. Meaningful engagement and collaboration gives more authority to local and Traditional stakeholders over their cultural heritage and address the specific adaptation needs for archaeological sites (Hotchkiss et al. 2022). Low prevalence of stakeholder input does not mean it is not happening; academic literature may not accurately represent current efforts or efforts that do not necessarily include researchers with expectations to publish in refereed journals. In other words, there is hope that more intentional engagement of local and Traditional stakeholders in climate adaptation planning of archeological sites as the Web of Knowledge database used in this study does not capture non-academic research, case studies, or practice. Yet, trends in published literature exposes the priorities of funders and researchers. As such, this study reveals increasing recognition of the need for climate change adaptation planning for archaeological sites by funders and an opportunity for scholars—both trained in Western science and Indigenous archeology—to increase theoretical, methodological, and practical guidance for cultural heritage experts and archaeological site stewards.

Despite engagement having a limited prevalence in the literature, several opportunities for meaningful engagement with local and Traditional stakeholders were identified. For example,

Breen et al. (2021) suggests incorporating stakeholder values, describing a stage of the process to be “designed as a participatory, inclusive engagement process that address the knowledge, understandings, needs and concerns of all parties associated either directly, or indirectly with the [marine protected area]” (p. 8). Another example can be found in Dawson et al. 2020 describing how collaboration can inform citizens of climate change impacts, make decision-making process more transparent, and can empower communities by giving them more tools and influence.

Archaeological site stewards who integrate local and Traditional values and perspectives will work towards holistic site stewardship by weaving different knowledge systems and breaking down siloes for cultural and natural resource management. Addressing the gap in literature will increase the body of knowledge on climate change adaptation planning for archaeological sites, elevate local and Traditional stakeholder input and meaningful engagement, and foster holistic approaches to archaeological site stewardship.

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CHAPTER 3

Agency Perspective on Tribal Engagement and Climate Change Adaptation for Archaeological Sites

Abstract

As climate change impacts continue to affect archaeological sites, adaptation planning and prioritization will include assessments of site significance, which (in the U.S.) is often determined by a site's eligibility for the National Register of Historic Places (NRHP). However, many archaeological sites and landscapes are the cultural heritage of sovereign Tribal Nations and Native people whose values, perceptions, and priorities for stewardship are often missing or not integrated into planning efforts. Using semi-structured interviews with 15 U.S. National Park Service personnel, this study explores how climate change adaptation plans for archaeological sites are being developed. Specifically, this study documents these individuals' perspectives on the relationship with citizens and staff of Tribal Nations and the integration of these associated communities' values and Indigenous and Traditional Ecological Knowledge (ITEK), as well as barriers to and suggestions for engaging with Tribal Nations and Native people. Results show strong perceived relationships and increasing integration of values in adaptation planning, but a need to address institutional barriers, particularly related to funding streams and expert-driven criteria. Suggestions focused on valuing ITEK and more meaningful engagement are provided.

Keywords: archaeological sites, climate change, adaptation planning, interviews, engagement, site significance, National Register of Historic Places, National Park Service

Introduction

Archaeological sites and other types of cultural heritage are subjected to criteria that determine how important they are and why, much of which is based on systems created by cultural heritage experts (Baird 2017), which is a process renewed when planning for impending impacts from climate change. In the U.S., lead federal agency for cultural resource management is the National Park Service (NPS), which develops guidance on criteria and site stewardship and treatment, as well as overseeing the National Register of Historic Places (NRHP)¹⁷. Unlike other countries, the US does not have a federal agency dedicated to the stewardship and management of cultural resources (Rockman and Hritz 2020). However, NPS and cultural heritage experts are not the only ones who are invited to determine site significance; federally recognized Tribal Nations must also be consulted when their cultural heritage could be impacted by a federal project (National Historic Preservation Act 1969; Executive Order 13175). The U.S. government has issued several memos in recent years with calls to recognize the importance of Indigenous Traditional Knowledge (ITEK) in federal decision making (White House Memo 2021), respect treaties and Tribal sovereignty (EPA 2021; Order 3402 2021), and include Tribal perspectives and values in policy (Lander 2021). Furthermore, because damage or destruction of archaeological sites and their context is irreplaceable (ARPA 1979) and the concern of loss is exacerbated in a changing climate (Casey and Beckett 2019), stewardship of sites on NPS public lands now must focus on adaptation planning for the impacts of climate change (NPS Policy Memo 14-02). In fact, the NPS policy specifies that all heritage funding decisions will be directed toward resources that are both at risk to climate change stressors and significant (ibid).

¹⁷ Information about the National Register of Historic Places program can be found here: <https://www.nps.gov/subjects/nationalregister/index.htm>

Although methods for assessing archeological sites' vulnerabilities are becoming standardized (Daly 2014; Sesana et al. 2020), the challenge of determining site significance can create tension between experts and descendent communities, creating sites of contested heritage where differing values, uses, and histories can lead to disagreements about protection and site stewardship (Kryer-Reid and Zimmerman 2018). Determining site significance can be especially challenging on public lands where federal agencies are mandated to protect heritage sites within their boundaries, sites that are often the cultural heritage of sovereign Tribal Nations.

Archaeological sites and landscapes can hold deep, spiritual connections to living descendants who have a right to decide how their heritage should be protected and stewarded (Verschuuren et al. 2021). The Department of the Interior has a trust responsibility to federally recognized Tribal Nations to protect land, assets, and resources of Tribal citizens, including working in partnership and allowing Tribal Nations to make decisions in their best interests (Order No. 3335 2014). Yet, values and perceptions of Tribal Nations are not always meaningfully integrated into decision making (Rubertone 1999; Blumm and Pennock 2021).

Expert-driven criteria used for determining site significance has been identified in authorized heritage discourse, a concept predominately developed by scholar Laurajane Smith. As Smith (2006) states, "dominant Western discourse about heritage... works to naturalize a range of assumptions about the nature and meaning of heritage" (p. 4). Smith describes archaeology—like other Western science disciplines—acts as a neutral, objective lens, but the construction of heritage values is laden with political and cultural motives that gives power and legitimacy to the "expert" (ibid). The assumption is that the inherent knowledge and information from the materials and context can benefit humanity, and the objects and property belong to greater authorities and not the individual communities to whom the heritage sites contribute to

continuity and identity (Bienkowski 2014). Essentially, expert-driven criteria and frameworks for determining site significance do not always include or reflect the values, perspectives, and desires of descendant communities. Funding decisions for climate change adaptation rely heavily on vulnerability and site significance (NPS 2014) yet, deriving site significance is still controversial. If determinations of site significance continue to be expert-driven, associated communities may lose places—or access to places—that are important to them.

The impetus for this study sprouted from an inquiry about determining site significance to help NPS resource managers prioritize adaptation actions for archaeological sites that will be impacted by climate change. The request was to create a framework that will help agency staff identify sites that are most significant and most at risk to inform funding archeological site stewardship and adaptation decisions. Understanding values not only helps site managers determine how to best protect a site, but also where and what to prioritize (de la Torre and Mason 2002). During a 2018 workshop with NPS personnel, archaeological site attributes were selected that should be considered when determining site significance. Yet, debate over how to integrate stakeholder values from associated cultural groups became a sticking point, particularly with integrating values from sovereign Tribal Nations. It quickly became clear that site significance should not be exclusively determined at an “expert” level, nor could an entry in a database capture the values and perceptions of citizens from associated Tribal Nations and communities.

Despite the stalemate in creating an agency-wide archeological site significance assessment, climate change adaptation planning is moving forward and archaeological site stewards are using determinations of site significance to guide their decision making about prioritizing adaptation actions. Predominately, NPS managers are following guidance on

strategies for cultural resources and climate change, which includes planning for impacts to archaeological sites (Rockman et al. 2016). The guidance document supports the NRHP criteria as an important basis for determining site significance, which emphasizes the inclusion of Indigenous and Tribal Ecological Knowledge (ITEK) in decision-making about site stewardship, acknowledges that the loss of materials is also the loss of human knowledge, and articulates the importance of learning from past peoples about their methods for adapting to climate change. Moreover, the guidance document recognizes that “prioritizing” is not easy (p. 12) and that managers can add to previous statements of significance (p. 33). But without processes in place to meaningfully engage with associated groups about their assessments of site significance and adaptation preferences (i.e., ITEK)¹⁸, how is this happening on the ground?

This paper explores the ways in which input and perspectives from associated Tribal Nations and Native people are being (or should be) included by NPS practitioners who are planning to adapt archeological sites to climate change impacts. Using data generated from semi-structured interviews with NPS staff currently (or recently) working on climate change adaptation planning for archaeological sites, this study aims to better understand agency perspectives about: (a) the strength of relationships between the NPS and associated Tribal Nations and Native people; (b) the ways in which associated Tribal Nations’ and Native peoples’ values are being considered during climate adaptation efforts; (c) the barriers that exist during such engagement and how expert-driven criteria hinders the integration of ITEK; and (d) opportunities for meaningful engagement based on participant experiences and in relation to

¹⁸ ITEK is a term used to describe different ways of knowing and understanding the world as it relates to Indigenous and Native people, and it does not imply that there is one voice or perspective reflected in ITEK. See Ray (2012) and Kovach (2017) for more about the multiplicity of Traditional Knowledges and Indigenous methodologies. There are differences in heritage values of multiple associated groups of sites stewarded within the boundaries of the same NPS unit. See chapter 4 discussion for further description of multiple perspectives and knowledge systems.

perceptions of the relationships. Bias for this study includes the author's previous experience working for the NPS and a SHPO, an academic background in cultural resource management and heritage studies, and non-Indigenous lived experience. Attention and promotion of local and Traditional stewardship of places is elevated by the author as an ally. The results of this study will help agencies use adaptation planning for archaeological sites as a way to ensure the stewardship of sites emphasizes the values and perspectives of Tribal and Native communities.

Methods

This study employed semi-structured interviews with NPS staff, focusing on archaeologists, cultural resource specialists, and superintendents working on climate change adaptation planning for archaeological sites. Participants were chosen using strategic (purposive) sampling from recommendations by NPS project partners. Participants were selected because of their listed contributions to publications on climate change adaptation planning for archaeological sites, and additional participants were identified through chain referral sampling. Interview questions centered on adaptation plans and assessments from the past 5-10 years (or forthcoming) that include climate change impacts, the level of involvement with associated Tribal Nations, and perspectives on barriers and best practices for engaging with Tribal Nations for climate change adaptation planning for archaeological sites.

Interviews were conducted between December 2020 and August 2022 with personnel from five of the nine NPS regions. Two participants work at regional offices and several participants have worked in different regions during their careers with NPS, so the scope of experience is beyond the five regions they represented during the interview. Additionally, participants had a variety of roles within the agency, including archaeologists, cultural resource specialists, superintendents, and an ecologist. Each participant was given the same interview

protocol in advance of the interview (Appendix A), but the interview itself was semi-structured to allow for broader conversation about barriers and opportunities, as well as to accommodate archaeological sites as part of a cultural landscape or heritage site.

Archaeological site locations are considered sensitive and their connection to associated Tribal Nations or Native peoples restricts the information that can be shared about the sites. Additionally, the ITEK shared during collaboration is the intellectual property of the members of the associated Tribal Nations and Native peoples. Therefore, interviews were summarized rather than directly transcribed. As a form of member checking (Flick, 2018), participants were asked to review the summary of the interview and approve or provide additional comments. Place locations, names of people, and names of places were redacted to protect site locations and to allow participants to speak openly about potentially sensitive topics. Once the summary of the interview was approved by the participant, any video and audio recordings were deleted. Interview summaries and any exchange of documents occurred through an encrypted server. Once interviews were approved by the participant, they were uploaded into the qualitative data organization software QSR NVivo v.12 and coded thematically. A codebook with definitions was created (see Appendix B). Developing the codebook occurred iteratively while conducting and summarizing the interviews.

Coding was both a priori (deductive) and inductive (see Fereday and Muir-Cochrane (2006)). Deductive coding addresses the research objectives and was developed before the interviews were summarized (Table 2.1). The inductive codes are thematic and include the types of plans and assessments, actual and perceived barriers to working with Tribal Nations and Native People, and best practices and suggestions for integrating values and perceptions of citizens and staff of Tribal Nations. Inductive coding was chosen to capture the different barriers,

opportunities, and suggestions that emerged from the interview questions and the conversations that occurred from the semi-structured format.

Table 2.1 Deductive coding for interview summaries

Deductive themes	Deductive codes
Climate change adaptation plans	Direct, Indirect
Living heritage	Yes, No
Perceived relationship	Strong, Successive increase, Moderate, Successive decrease, Weak
Value integration	Values fully integrated, Successive increase, Values somewhat integrated, Successive decrease, Only mandated consultation, No values integrated

The use of summaries for analyses restricts the ability to provide “rich descriptions” of participant perceptions, which limits the contextual nuances of the dataset. As such, the analyses conducted focused on being as expansive as possible with the inductive coding of barriers to and opportunities and suggestions for meaningful engagement and to explore how the barriers and opportunities/strategies were related to perceptions of the relationships with associated Tribal Nations and Native people. The results are presented as coding frequencies and the discussion focuses on how the NPS personnel describe the relationship with associated Tribal Nations and extent of value integration in adaptation planning for archaeological sites, barriers to working with Tribal Nations on adaptation planning, and suggestions for integrating Tribal values and perceptions into planning efforts.

Results

A total of 15 participants were interviewed for this study from 9 units and two regional offices managed by the National Park Service (NPS); 13 people were interviewed over Zoom and two were interviewed together in person. One participant is both an NPS employee and a citizen of an associated Tribal Nation at the park unit where they are employed.

Climate change adaptation plans and assessments that include archaeological sites were coded as “direct” or “indirect” based on whether the participants’ work primarily addressed current or anticipated climate change impacts or if climate change impacts are just a part of a bigger assessment or strategy (Table 2.2).

Table 2. 2 Climate Change Adaptation Planning for Archaeological Sites

Code	Description	Occurrences	Example
Direct	One or more of the management plans or assessments focus on addressing climate change impacts.	6	Climate Change Scenario Planning
Indirect	One or more of the management plans or assessments does not directly address climate change, but impacts are acknowledge and/or indirectly addressed.	8	Cultural Landscape Report

Participants were identified for their work on a plan that included climate change adaptation planning for archaeological sites, but during the interviews, several additional types of planning and management documents were discussed that participants contributed to and which included archaeological sites (Table 2.3). Several participants contributed to more than one plan and some contributed to the same plan.

Table 2.3 List of planning and management documents to which participants contributed

Type of documents
Archaeological Resource Management Plan
Climate Friendly Parks
Fire Management Plan
Unit Management Plan
Vegetation Management Plan
Cultural Landscape Report
Climate Change Vulnerability Assessment
Climate Change Scenario Plan
Environmental Impact Assessment/Statement
Resource Stewardship Strategy

Every participant understood archaeological sites as living heritage sites, indicating a recognition of the continuity with past communities and current living cultural groups, namely associated Tribal Nations or Native peoples. Participants were asked how they perceive their relationship with the associated Tribal Nations with whom they work (Table 2.4). Most view their relationship to be strong or getting better (successive increase), with no one viewing their relationship to be weak or getting worse (successive decrease). One participant felt the relationship was moderate and expressed a desire to increase frequency of meetings and identifying shared goals.

Table 2.4 Perceived relationship between NPS and associated Tribal Nations

Perceived relationship strength	Number of Participants
Strong	9
Successive increase	4
Moderate	1
Weak	0
Successive decrease	0

Interviews were coded to better understand the extent of which Traditional stakeholder values were integrated into plans and assessments (Table 2.5). Some participants worked on more than one plan or assessment so the total number of responses (n=21) is more than the number of interviews (n=14). Most participants expressed a positive response to the integration of Traditional stakeholder values as fully integrated (n=8) or an improvement of value integration from previous plans and assessments or from their predecessors (n=9).

Table 2.5 Extent of values integration

Perceived level of integration	Number of participants
Successive increase	9
Values fully integrated	8
Values somewhat integrated	2
Only mandated consultation	1
Values not integrated	1
Successive decrease	0

A variety of barriers to working with citizens and staff of Tribal Nations were identified by participants (Figure 2.1). Almost every interview (n=15) mentioned institutional barriers (n=11) as a challenge to working with Tribal Nations. Examples of these institutional barriers included: hierarchy within the agency, projects fading away because of time or funding periods ending, not enough time built in to build trust, conforming to Western science and other antiquated perspectives or resource management, and some agency staff relying only on mandated consultation. Many barriers overlap or beget each other, such as being short-staffed, lacking expertise and depending on regional staff or contractors, and funding streams that do not provide enough funds to meet compliance mandates, do not provide long-term support, or are heavily supporting natural resources as opposed to cultural resources.

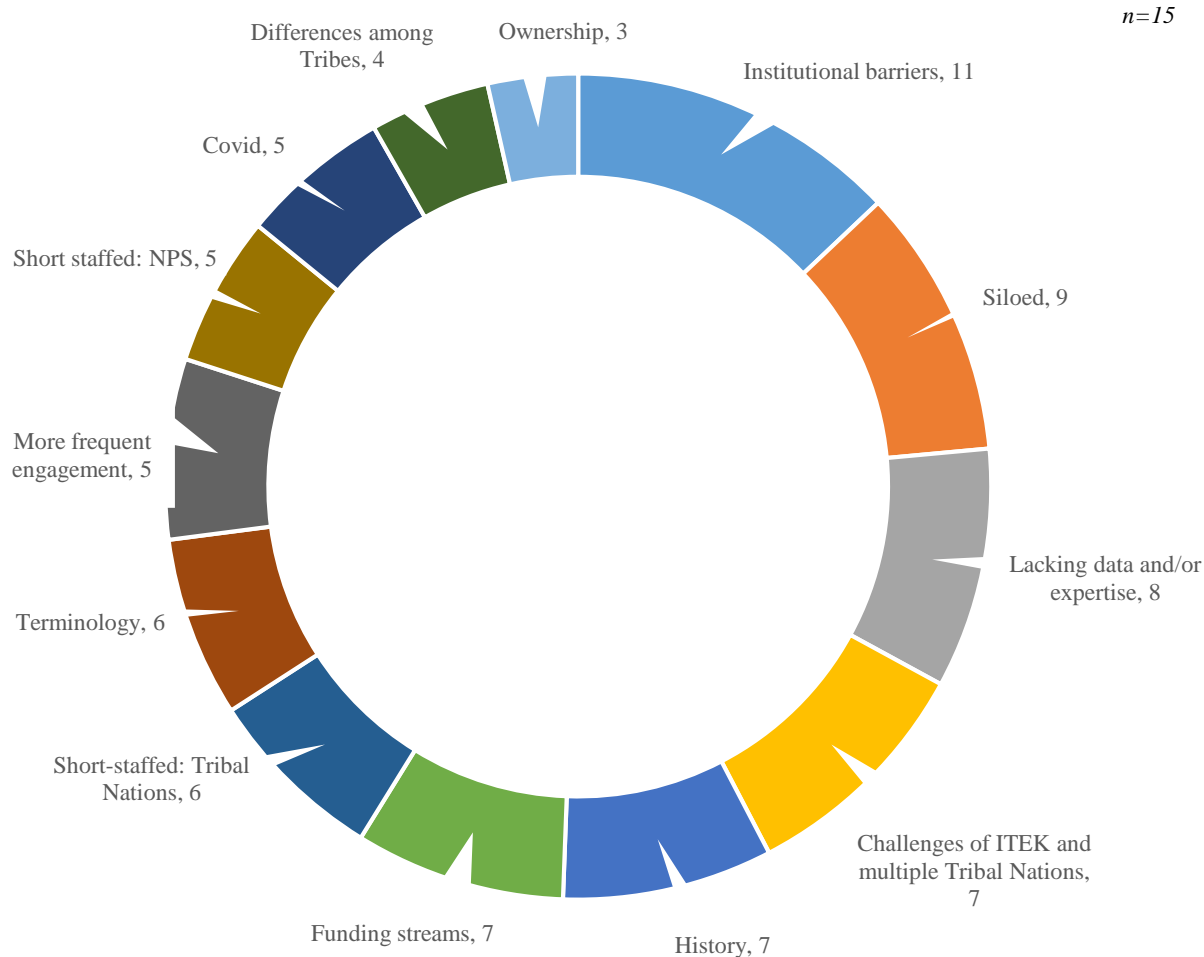


Figure 2. 1 Frequency with which barriers to working with associated Tribal Nations were mentioned by participants

Considering the most frequently mentioned barriers to working with Tribal Nations, more than half of participants with a perceived strong or successively increasing relationship found challenges with integrating ITEK when working with multiple Tribal Nations, institutional barriers, and siloing of cultural and natural resource departments (Table 2.6). However, one barrier that did not make it to the most frequently mentioned but was proportionally high for strong relationship was the barrier terminology (n=5, 56%). This indicates that misunderstandings with terms and terminology is considered challenging to more than half of those with a perceived strong relationship.

Table 2.6 Interactions between perceived relationship and more frequently mentioned barriers to working with associated Tribal Nations

Perceived relationship	Challenges of ITEK & multiple Tribes	Funding streams	History	Institutional barriers	Lacking data	Siloing
n (% of stakeholder prevalence category)						
Strong (n=9)	5 (56%)	4 (44%)	4 (44%)	8 (89%)	4 (44%)	5 (56%)
Moderate (n=1)	0	0	0	0	1 (100%)	1 (100%)
Weak (n=0)	0	0	0	0	0	0
Successive increase (n=4)	3 (75%)	3 (75%)	3 (75%)	3 (75%)	3 (75%)	3 (75%)
Successive decrease (n=0)	0	0	0	0	0	0

Participants were asked to discuss best practices and to offer suggestions for engaging with citizens and staff of Tribal Nations on climate change adaptation planning for archaeological sites, and over 30 suggestions were identified (Table 2.7). Nearly half of the suggestions were mentioned by at least half of the participants, but not necessarily by all of the same participants. A couple of the suggestions were also identified as barriers, such as not enough staff and defining terminology. Definitions for the suggestions and best practices codes can be found in Appendix B.

Table 2.7 List of suggestions and best practices for engaging with citizens and staff of Tribal Nations

Suggestions and best practices	Number (n=15)
Relationship building	12
Value ITEK	11
Informal engagement	11
Collaborate	11
Invite from beginning	9
Re-learning	9
Listening	9
Continued communication	8
Develop dynamic plans	8
Integrated management	7
Power sharing	7
Ease burden for Tribal Nations	7
Formal agreement (e.g. MOU)	7
Creativity	7
Identify shared goals	6
Hire Tribal staff	5
Landscape-level approach	5
Meet in person	5
Patience	5
Protect Tribal rights	5
Compensate Tribal citizens	5
Share information	4
Work together	4
Contextualize	4
Reciprocity	4
Discuss terminology	3
Staff-level engagement	3
Need more guidance	3

Table 2.7 (continued)

Strong leadership	3
Culture-nature divide	3
Contract out	2
Shared ceremony	2
Use Tribal guidance	2

Of the suggested engagement actions suggested by agency personnel, the most frequently mentioned actions include collaborating, informal engagement, relationship building, and valuing ITEK (Table 2.8). Examining these suggestions in relation to responses from participants who perceived their relationship as strong or successively increasing (Table 2.8) illustrate that most of these participants (67% or more) suggested the same engagement action, except for continued communication. One reason for a lower score in continued communication for perceived strong relationships could be because strong lines of communication have already been established.

Table 2.8 Perceived relationship and suggested engagement actions

	Collaborate	Continued communication	Informal engagement	Integrate from beginning	Listening	Relationship building	Re-learning	Value ITEK
Perceived relationship (total n)	n (%) of perceived relationship category							
Strong (9)	7 (78%)	4 (44%)	8 (89%)	6 (67%)	6 (67%)	8 (89%)	6 (67%)	8 (89%)
Moderate (1)	0	0	0	0	0	1 (100%)	0	0
Weak (0)	0	0	0	0	0	0	0	0
Successive increase (4)	4 (100%)	4 (100%)	3 (75%)	3 (75%)	3 (75%)	3 (75%)	3 (75%)	3 (75%)
Successive decrease (0)	0	0	0	0	0	0	0	0

Limitations

This study was limited to agency staff due to challenges with time and process for Tribal review of the research proposal. Each Tribal Nation has a different process for reviewing and approving research requests, which can take time, trust, and reciprocity. Not all Tribal Nations have an Institutional Review Board process, but their citizens must be protected from potential negative impacts from conducting research with human subjects and protecting their own data (as intellectual property; see Kukutai and Taylor 2020) and its interpretation. Requests to review research proposals was never achieved; therefore, research could not move forward with citizens of associated Tribal Nations and Native People. However, one participant is an NPS employee and a Tribal citizen but the interview focused on solely the NPS role.

Another limitation, which restricted the ability to triangulate the interviews and challenges transferability of the findings, is that relatively few climate change adaptation plans for archaeological sites are published and available. This is consistent with other cultural resources and a lack of available climate change adaptation planning at a federal level (Casey and Beckett 2019) or worldwide (Matthiesen et al. 2022). A consequence of only having a few plans to review is that the variety of responses and experiences was not as broad in scope as it could be. As more adaptation plans are developed, published and implemented, as well as the more locations and contexts in which they are applied, future studies will be needed to enrich the empirical and practical knowledge documented in this paper that could be used to suggest best practices for meaningful engagement. Additionally, because the plans have not been in circulation for many years or seasons, long-term success—particularly in terms of how implementation of adaptation actions are perceived by associated Tribal Nations and Native people—is unknown.

Discussion

In a changing climate, archeological site stewards are challenged by the need to prioritize adaptation for vulnerable sites that are also significant, particularly when those sites are the heritages of living communities forced from their ancestral homelands. Integrating other ways of knowing—specifically Indigenous and Tribal Ecological Knowledge (ITEK)—into climate adaptation planning of archeological sites stewarded by resource management agencies is critical for such adaptation planning and is fostered through meaningful engagement with Tribal Nations and Native people. This study highlighted that within one such agency, the National Park Service (NPS), relationships are strong or strengthening but that continual relationship building and informal engagement are critical—and valuing ITEK is imperative—to meaningful engagement. This finding aligns with other scholars’ call for ITEK and other ways of knowing being regarded the same way in which Western science is regarded and accepted (Whyte et al. 2016; Simpson et al. 2022). Yet, archaeological site stewards are still facing several challenges and many of the challenges directly impact the extent to which continual relationship building, informal engagement, and valuing ITEK occurs.

Through the perceptions of strong relationships and suggestions for meaningful engagement with Tribal Nations and Native people, there is a feeling of optimism from agency personnel. There is the perception that relationships are strong or improving and that the values and perspectives of descendant communities, as well as ITEK, are becoming more holistically considered during adaptation planning. Of those who had strong perceived relationships, suggestions for working with Tribal Nations and Native people was consistent, showing patterns that can lead to developing successful processes and best practices. However, not using the NRHP criteria could be a challenge for current archaeologist and cultural resource managers that

have spent their entire careers making decisions centering on NRHP criteria, archaeological site stewards who might need to reflect and re-learn the discipline. This relearning can be offered as trainings by a resource management agency (Seekamp et al. 2021), as well as initiatives from archaeologists at a park unit level and at headquarters. Several participants mentioned or alluded to informal engagement with Tribal Staff—planned or unplanned—and how those encounters led to deeper discussions of resource stewardship. What can be gathered from these interviews is that meaningful engagement is a process that requires time, creativity, and unlearning, where engagement means meeting together in some way and meaningful refers to listening, sharing, and embracing other ways of understanding the world.

Institutional challenges are being increasingly documented as barriers to cultural resource climate adaptation planning (Fatorić and Seekamp 2017; Bloom and Deur 2020; Rivera-Collazo 2020). Hence, it is not surprising that institutional barriers were a commonly mentioned barrier in this study. For example, some NPS planning documents, like a Resource Stewardship Strategy (RSS), are focused on long-term planning and can include climate change adaptation; however, the creation of a RRS does not require (nor invite) any input from outside stakeholder groups. One participant explicitly described how all park units require some planning documents, but they do not live up to their goals and intentions towards integrating preferences from Tribal Nations and Native people. Specific institutional barriers were mentioned during interviews, but the thematic code also included specific challenges caused by policy, separate resource management divisions, and funding streams (often related to the separation of different resource divisions). NPS and other public land agencies are the stewards of archaeological sites and landscapes that are the cultural heritage of living, sovereign Nations, who gave meaning to places long before NPS arrived. With the expectation of contested heritage sites (Kryder-Reid

and Zimmerman 2018), conversations through meaningful engagement will need to take place before the sites are damaged or lost. However, one theme that emerged was related to everyone being “stretched thin” as a barrier, specifically referring to both NPS and Tribal Nations being short-staffed, as well as institutional barriers and funding streams that affect the process of formal and informal engagement.

The issue of being understaffed and underfunded has been an ongoing issue for NPS (Fehir 2021; Kizer 2021). Being short-staffed and underfunded is also exacerbated by some parks having several associated Tribal Nations with whom they must consult. Some parks have over 20 federally recognized Tribal Nations, which means that even meeting basic compliance can be overwhelming. An added challenge to not enough staff is that larger or more rural park units’ archeological sites are undocumented and, therefore, personnel do not know everything that is on the landscape, making climate adaptation planning inherently difficult. For example, Yellowstone National Park as 3% of the park surveyed (Hale et al, n.d.). With the creation of Tribal Historic Preservation Office grant program in 1990 to help meet compliance and consultation requirements, Tribal Nations are receiving some funding from the US government but still experience shortages (National Academy of Public Administration 2009; Law 2016; Grussing 2022). Moreover, other public land agencies are also mandated to consult with Tribal Nations, who often experience overlapping consultation requests. A potential strategy to overcome the enormous burden facing Tribal Nations and Native people—but surprisingly one that did not emerge from this study’s participants—would be to create a regional and coordinated approach for consultation and compliance that is firmly grounded in ongoing relationship building. With climate change impacts impacting large landscapes and landforms that span

boundaries, working across agencies and associated Tribal Nations could help ease the burden for staff and create adaptation plans that are both value-focused and efficient.

Creatively overcoming such institutional barriers will become increasingly necessary—particularly as structural change within resource management agencies takes time (Lucas 2018)—to ensure that the values, preferences and priorities of associated Tribal Nations and Native people are represented. Of the most frequent suggestions for integrating Tribal input in adaptation planning, almost three quarters of participants mentioned informal engagement as a successful strategy. Examples of informal engagement included regular phone calls, meeting for coffee or a meal, inviting each other to events at the park or at the reservation, and visiting sites in the park together. One participant explained how a park superintendent solicited input *before* the RSS team meetings, which, as previously mentioned does not necessitate external stakeholders input, began preparations so that they could enter those meetings with Tribal input in hand. Stakeholders and rightsholders were not allowed in the planning meetings, but a park leader found a way to make sure their values and perspectives were included in discussions. Informal engagement is not something that can be written into policy, but it can serve as an important way to share values through meaningful engagement.

Although creatively working within the system can enhance relationships, the greater need is to update the policies and guidelines that restrict funding streams and initiatives that resource managers can make, particularly the use of the National Register of Historic Places (NRHP). Several participants mentioned a desire to move away from using NRHP designations (or nominations) as qualifying criteria for funding or for prioritizing sites. This issue is especially poignant for archaeological sites, which only make up 6% of the list, meaning criteria was developed with a focus on architectural sites (Hanson et al. 2022). Most federal funding for

heritage sites is based on or linked to the NRHP (Kautz et al. 2019), and, unsurprisingly, participants mentioned putting less emphasis on this criteria to help expand narratives for site significance. Until policy language is updated (and decolonized; Ritenberg et al. 2014; Belfi and Sandiford 2021), archaeological site steward will need to continue to find ways to weave the values and perspectives of Tribal Nations and Native people into NRHP eligibility, as well as other planning and adaptation guidance that prioritizes sites using site significance. It is important to note that meaningful engagement is a process to be determined in collaboration with every Tribal Nation and Native community, as each has their own values and preferences and addressing issues with contested heritage sites will require a process of continued conversations, re-learning, and trust.

Conclusion

Policy mandates—coupled with actualized impacts—are forcing archeological site stewards to plan and react to a changing climate. Addressing current and anticipated climate change impacts is an opportunity to make deeper, systemic changes to expert-driven criteria for determining site significance. There is no one size fits all solution for meaningfully engagement with the associated Tribal Nations and Native people of archeological sites and those fostering the weaving of ITEK and Western perspectives recognize the conceptual and practical barriers that exist. This study offers some suggestions from an agency perspective for fostering meaning engagement, including when institutional barriers restrict engagement, but a broader paradigm shift is needed within the field of archeology to fully embrace ITEK, as well as substantial changes to heritage policy. Through the process of weaving ITEK and Western criteria, an act of sharing power will emerge, deconstructing and decolonizing the ways in which site significance is understood and used to make decisions for climate change adaptation planning.

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CHAPTER 4

Strategies for Meaningful Engagement: A Commentary on Collaboration in Archaeological Climate Adaptation Planning¹⁹

Abstract

There are calls from cultural resources professionals, academics, and diverse stakeholders for multivocality, co-creation of knowledge, and inclusion of local and traditional input in the management of cultural resources situated on public lands. Yet, associated communities often have little control or influence on management of their heritage sites beyond mandated consultation, particularly for archaeological sites. In a US National Park Service (NPS) context, managers are guided by standardized criteria, existing data management systems, and policy- and eligibility-based funding streams. The influences of these criteria, systems, and policies are particularly powerful when managers are prioritizing action for climate adaptation, as policy guidance focuses attention to cultural resources that are both significant and vulnerable to climate stressors. The results of a variety of engagement activities with Tribal Nations and NPS staff show that the co-creation of knowledge requires meaningful engagements, the valuing of Traditional Knowledges, and bridging the culture–nature divide. This paper highlights successful examples of such meaningful engagements and offers strategies for collaboration between NPS and citizens and staff of Tribal Nations in climate change adaptation planning for cultural resources on public lands.

¹⁹ This chapter is published in *Parks Stewardship Forum*: Hotchkiss, C., Seekamp, E., & McGill, A. (2022). Strategies for meaningful engagement: A commentary on collaboration in archaeological climate adaptation planning. *Parks Stewardship Forum*, 38(3). <http://dx.doi.org/10.5070/P538358980>.

Scholars are increasingly documenting the exposure of archaeological sites to climate change stressors (e.g., Rockman 2015; Anderson et al. 2017; Sesana et al. 2021). The impacts of these stressors to sites are also being documented with more frequency, such as the deterioration of materials from increasingly salinized soils and extreme fires (Gruber 2011), and the displacement and loss of materials and physical context from erosion caused by riverine flooding (Howard et al. 2016), storm surge (Pollard-Belsheim et al. 2014), and sea level rise (Papadopoulos et al. 2021). On federal lands, climate adaptation guidance for archaeological sites typically focuses on minimizing physical deterioration or loss given management agencies' mandate of responsible cultural heritage stewardship (Rockman et al. 2016; Venture et al. 2021). Yet, many archaeological sites require unique climate adaptation planning and management because of their connection to sovereign Tribal Nations²⁰ and the consequential sensitivity of data and locational information associated with pre-contact sites (Wildcat 2013). In this commentary, we explore the challenges of climate change adaptation planning for archaeology sites and the opportunities for agency staff and the citizens and staff of Tribal Nations to steward cultural heritage sites located on public lands.

Keywords: cultural heritage, archaeological sites, engagement, climate change, epistemologies, Traditional ecological knowledge

²⁰ Archaeology sites are often connected to living groups of Indigenous people, which make sites the cultural patrimony of Tribal Nations. The freedom to practice and express cultural heritage is a human right, according to the United Nations Universal Declaration of Human Rights: <https://www.un.org/sites/un2.un.org/files/2021/03/udhr.pdf>. Further information on Indigenous cultural heritage rights can be found in the United Nations Declaration on the Rights of Indigenous Peoples: https://www.un.org/esa/socdev/unpfii/documents/DRIPS_en.pdf

Commentary Motivation and Overview

During a meeting with an archaeology advisory committee for a US National Park Service (NPS) unit and associated Tribal Nations, our team of university researchers and NPS collaborators made a presentation about the need to develop a framework for prioritizing climate adaptation strategies for vulnerable archaeological sites. We shared our previous efforts at developing a framework for measuring the relative significance of historic buildings (Fatorić and Seekamp 2018) and provided inundation projection maps of a few archaeological sites with known associations to the Tribal Nations represented on the committee. Before we could even ask about what they thought might be priorities for their heritage sites, members of the committee challenged our approach and its focus on prioritization as not being culturally sensitive to their Ancestors and expressed that proposing to do so created unnecessary psychological harm. The meeting ended—after some excellent feedback and productive sidebar dialogue—with some committee members agreeing to host a meeting of Tribal historic preservation officers (THPOs) and/or Elders from the Tribal Nations to decide if and how they would engage with us. The COVID-19 pandemic disrupted the momentum for continued engagement but provided the project team time to rethink its approach.

This paper is a reflection of our formal and informal conversations, and explores the challenges to and opportunities for integrating heritage values, perspectives, and priorities of Tribal Nations associated with what are now NPS units into climate adaptation planning processes. Such efforts to consider these aspects of Indigenous heritage may help NPS meet its mandates to steward archaeological sites and uphold trust responsibilities. First, we provide an overview about our multimodal approach to fostering meaningful collaboration, which was not sequential but iterative and recursive. Second, we describe theoretical barriers to meaningful

collaboration, as well as the continual challenge of the nature–culture divide, providing examples from our experiences to illustrate the barriers and challenges. Third, we offer strategies for meaningful collaboration we have learned throughout our engagement efforts that may benefit those tasked with stewarding Indigenous heritage in ways that promote collaborative governance. Lastly, we offer a brief conclusion to our commentary that summarizes our call for multivocality in future collaborative endeavors for climate adaptation planning of archaeological sites.

Critical Reflexivity, Multimodal Engagement Efforts, and Situating Terminology

Our perspectives are not those of practicing archaeologists or cultural resource managers but of scholars in related fields based on our research and engagement experiences, serving as allies to the Indigenous Peoples and communities we work with and whose heritage is at risk. We assert that climate change impacts are happening now and that determinations of significance and adaptation strategies cannot be static. Additionally, we acknowledge that sites undocumented by archaeologists can suddenly be exposed and long waiting periods for response actions and consultation can inadvertently cause more harm, destruction, or total loss of materials or context. We contend that adaptation planning for cultural heritage needs to anticipate climate impacts, diverge from normal preservation actions, and employ adaptation strategies by meaningfully collaborating with local and traditional stakeholders (Seekamp and Jo 2020).

We recognize the anticipation of destruction and loss caused by climate change impacts can lead to fears and anxieties by cultural resource specialists who must abide by current policies and guidance. Obstacles with terminology (Rubertone 1999), current theory and practice of archaeology site management and treatment (Two Bears 2006), and the devaluing of Traditional

Knowledges (Thornton and Scheer 2012) are the major barriers identified to integrating Western archaeology and Traditional Knowledges. As such, we advocate for multivocality through meaningful engagement to enable the co-creation of knowledge in ways that embraces Western archaeology and Traditional Knowledges as equally legitimate frames of reference and forms of science. Both frames of reference “constitute different pathways to knowledge, but they are rooted in the same reality” (Mazzocchi 2006: 466), and engaging in dialogues that foster shared meanings may enable compatible solutions to complex issues such as climate adaptation of archaeological sites.

This paper looks at one public land agency, NPS, and identifies ways in which existing policy, practice, and disciplinary history pose challenges for meeting agency responsibilities and integrating other ways of knowing into climate adaptation planning for archaeological sites. Since 2019, we have been conducting formal and informal conversations with NPS staff and citizens and staff of associated Tribal Nations, while simultaneously analyzing relevant policy and literature. Our efforts included several approaches to gather information while allowing for the integration of different epistemologies (i.e., ways of knowing) and identifying barriers rooted in Western worldviews. Valuing and embracing other ways of knowing will create more opportunities for creative solutions, develop respect and trust needed for meaningful collaboration, and help break down barriers to more equitable treatment and management of important heritage sites.

It is important to note that the plural term “Traditional Knowledges” conveys that Indigenous Peoples and communities do not all perceive the world the same way, although many perceive it differently than the worldview informed by the Euro-American values embedded in US institutions and academia and which are the basis for Western archaeology and NPS policy

and guidance. Federally recognized Tribes are sovereign Nations and, therefore, work with federal agencies on a government-to-government basis; however, as a whole, Tribal Nations are subject to federal law and have a history and legacy of suppression, marginalization, and exclusion by government agencies (Brown 2003; Dunbar-Ortiz 2015; Colwell 2017).

Additionally, it has been argued that community-based and participatory models are beneficial but do not fully address the issue of Indigenous Rights (Baird 2017), which, in this case, include the right to make decisions about cultural heritage.

Our engagement with citizens and staff of Tribal Nations occurred through a variety of places, spaces, and networks (Table 3.1). This multimodal approach allowed the team to encourage different communication styles through formal and informal settings, individual and group dynamics, and the opportunity to participate in pre-arranged meetings and conferences sponsored by associations of Tribal Nations and Indigenous Peoples, as well as reviewing adaptation planning guidance published by coalitions of Tribal Nations and Indigenous Peoples and participating in a climate adaptation training developed and administered by one such coalition. Except for a few instances from publicly available documents, we do not identify specific Tribal Nations or NPS park units to follow the agreed-upon protocol for sharing information and to protect specific knowledge and wisdom that should not be shared; rather, we identify patterns and general approaches to further meaningful engagement. Not identifying specific people and places reinforces the fact that each Tribal Nation and NPS unit will need site-specific approaches to foster meaningful engagement based on existing park–Tribal Nation relationships and cultural contexts. Our engagement efforts depended on the interest and willingness of project partners from Tribal Nations to ask Elders and other citizens and staff for their participation. Additionally, we sought to understand the perspectives of NPS staff and

explore how some NPS managers are integrating Traditional Knowledges and Indigenous science in their engagement—and co-management—efforts.

Table 3.1 Description of the multimodal approach to engagement

Approach	Example Data Sources
Training in Traditional Knowledges and Indigenous science	Attended a 2.5-day workshop hosted by the College of Menominee Nation on the creation and implementation of the <i>Tribal Climate Adaptation Menu</i> . This training furthered our understanding of Traditional Knowledges and Indigenous science approaches. We used the training and its associated document to guide further inquiry into terminology and concepts related to perspectives of Traditional stakeholders on cultural heritage and the environment.
Document review	Reviewed existing guidance for climate adaptation published by coalitions of Tribal Nations and Indigenous people and the National Park Service allowed us to gain a better understanding of priorities and existing efforts, perspectives of climate change impacts, and ways of measuring impacts and adaptation success. Documents reviewed: <ul style="list-style-type: none"> - <i>Dibaginjigaadeg Anishinaabe Ezhitwaad: A Tribal Climate Adaptation Menu</i>. Great Lakes Indian Fish and Wildlife Commission - <i>Guidelines for Considering Traditional Knowledges in Climate Change Initiatives</i> (Climate and Traditional Knowledges Workgroup) - <i>Cultural Resources Climate Change Strategy</i> (NPS) - <i>Archeological Resource Management Plan</i> for the Knife River Indian Villages National Historic Park (NPS) - Foundation Document for Grand Portage National Monument (NPS)

Table 3.1 (continued)

<p>Listening sessions</p>	<p>Coordinated listening sessions at conferences hosted by associations of Tribal Nations and Indigenous people allowed us to reduce travel time and effort by Tribal Citizens who wished to participate. Additionally, our proposed efforts were reviewed by the conference organizers ahead of time, confirming the topics and objectives were relevant and appropriate. Conversations allowed us to better understand and refine our understandings of the climate adaptation priorities and preferences of attendees, as well as to refine the way in which we would ask questions in future engagement efforts.</p> <ul style="list-style-type: none"> - Sessions included: United South and Eastern Tribes (USET) Climate Resilience Summit (2019, Verona, NY) - Environmental Protection Agency (EPA) Tribal Environmental Conference (Uncasville, CT, 2019) - South and Eastern Tribes (USET) Annual Meeting (Choctaw, MS, 2019) - National Tribal and Indigenous Climate Conference (NTICC-ITEP) (virtual, 2020)
<p>Engagement workshops</p>	<p>Co-designed engagement workshops to meet with Elders through the assistance of a project partner who is both a citizen and staff member of a Tribal Nation. Cultural customs were explained and regulated by our Tribal partner. Our Tribal partner served as a guide and reviewer for designing the workshops, reviewing our work ahead of time, and suggesting appropriate approaches to respectfully meeting with Elders.</p> <ul style="list-style-type: none"> - July 2020: site visit with Tribal Historic Preservation Office and a visit to the park with a Tribal intern - December 2021: workshop (13 attendees) - March 2020: pre-recorded video description of the project and upcoming workshop distributed to Elders - May 2022: workshop (seven attendees)
<p>Interviews with NPS Staff</p>	<p>Conducted semi-structured interviews with NPS archeologists and cultural resource specialists around the country to learn more about existing and upcoming climate adaptation efforts for archeological sites. The interview protocol includes questions about the type of data used to guide decision making, as well as the level of engagement with associated Tribal Nations. Results will yield best practices, challenges, and opportunities for better engagement and co-management with citizens and staff of Tribal Nations.</p> <p>Number of interviewees: 14 Number of NPS units: 10</p>

Table 3.1 (continued)

Supporting Tribal Interns	Co-advised four interns who are citizens of a Tribal Nation and enrolled in a Tribal College through the National Council for Preservation Education program. Through the students’ insight and perspectives, we were able to create co-learning opportunities between NPS staff, Tribal Citizens, and the researchers, and to help ensure Traditional Knowledges were protected and appropriately shared. Supporting Tribal interns also provided opportunities to share Western professional standards, wisdom from Elders with younger generations, and to financially support students.
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For this commentary, we find it is important to first look at the term “science” and describe some distinctions between the terms “Western archaeology,” “Traditional Knowledges,” and “Indigenous archaeology,” as not all managers or practitioners may have considered these nuances. “Science,” generally, is how one systematically organizes the natural world and its processes (Aikenhead and Michell 2011). For this study, “Western archaeology” refers to the epistemological and ontological interpretations of *academically derived* science, serving as the basis for widely accepted—and taught—explanations and descriptions of the world based on claims of “objectivity” and “the scientific method,” which created and perpetuated power and power dynamics through the creation of disciplines and authorized experts (Foucault, as described by Ball 2013). In other words, academia is often considered synonymous with research and reasoning that are isolated from emotions and values, and that different disciplines are legitimized through the credentials earned by scientists who graduated from an accredited university (Joyce 2021). “Knowledge” includes information derived from science, but also incorporates experiences. “Traditional Knowledges” as science differ from academically derived science as they are considered adaptive and holistic rather than finite and reductionist, and are developed from multi-generational experiences, observations, and

spirituality passed down via oral traditions and beliefs rather than the publication of written documents (Berkes 2017).

Multiple definitions of “Indigenous archaeology” exist²¹ and it does not have one theoretical approach or standard for practice; rather it encompasses many concepts and goals for expanding Western archaeological approaches to studying and understanding cultural heritage (Colwell-Chanthaphonh et al. 2010). Moreover, Indigenous archaeology is not just one set of standards, aligning with the many groups of Indigenous Peoples organizing information according to their knowledge systems (Whyte et al. 2016). For this commentary, we understand Indigenous archaeology to contribute to Indigenous sovereignty and autonomy in the management and stewardship of cultural heritage and important places by working towards decolonization of current theory and practice. Furthermore, Indigenous archaeology is not only beneficial to Indigenous Peoples. Sonya Atalay (2006) has noted “One need not be an Indigenous person to engage in the practice of Indigenous archaeology—it does not include such essentialist qualities” and goes on to observe:

Archaeology on Indigenous land, [if] conducted by Native people without a critical gaze that includes collaboration, Indigenous epistemologies, and Native conceptions of the past, history, and time or that neglects to question the role of research in the community[,] would simply replicate the dominant archaeological paradigm. (Atalay 2006: 293–294).

²¹ The eight definitions provided by Colwell-Chanthaphonh et al. (2010) include: (1) the proactive participation or consultation of Indigenous Peoples in archaeology; (2) a political statement concerned with issues of Aboriginal self-government, sovereignty, land rights, identity, and heritage; (3) a postcolonial enterprise designed to decolonize the discipline; (4) aA manifestation of Indigenous epistemologies; (5) the basis for alternative models of cultural heritage management or stewardship; (6) the product of choices and actions made by individual archaeologists; (7) a means of empowerment and cultural revitalization or political resistance; and, (8) an extension, evaluation, critique, or application of current archaeological theory.

There are many examples of archaeologists who are working alongside local and Traditional communities (Atalay 2012), expanding narratives (Bloch 2014), creating more access to heritage (Colwell and Joy 2015), and weaving together Western science and Traditional Knowledges (Whyte et al. 2016). In NPS, there are archaeologists on staff who are members of Tribal Nations and Native communities as well as people who have substantial experience working in collaboration with Indigenous archaeologists or community archaeology within Tribal Nations or Native communities.

The discipline of archaeology, as practiced in the US, is based on academically derived science. The process of data collection, determinations of significance for the National Register of Historic Places, and site preservation and treatment are based on federal law and guidance. As such, the foundation of the systems used to organize, codify, and give meaning to archaeology sites are rooted in academically derived sciences and disciplines and are thus derived from associated power imbalances (Lucas 2018). The distinction between Western archaeology and Indigenous archaeology is abstract, but crucial for understanding how integrating different worldviews is challenging but necessary to be more inclusive and respectful of cultural heritage site stewardship. Indigenous archaeologists and their allies have made important advances by creating pathways for updating the archaeological record and inviting multivocal interpretations of and perspectives on site meaning and stewardship. Notably, NPS has co-created an ethnographic database with members of associated Tribal Nations at Yosemite National Park that was designed to be “a living record of cultural significance” (Bloom and Deur 2020: 19). However, Bloom and Deur (2020) note that this project is still not sufficient to overcome some of the Western science foundations of “significance” as a static baseline for decision-making about cultural heritage sites.

Reflective insights

Theoretical barriers facing climate adaptation of archaeological sites

A key reflective insight from our work is that there are several institutional barriers that challenge the integration of Western science and Traditional Knowledges. Despite clear connections to Indigenous Peoples and Treaty Rights that mandate consultation with Tribal Nations,²² archaeology as a discipline has historically been practiced and interpreted from a Western perspective, often excluding Traditional Knowledges as an equivalent form of science and way of explaining the world (Wood 2003; Aikenhead and Michell 2011; Cipolla 2021). In response to conversations with Tribal partners, we organized a working group at the 2020 National Tribal and Indigenous Climate Conference to foster dialogue on terminology used to describe important places and climate change impacts on them as a pathway for creating a space to address misunderstandings and an opportunity to promote collective learning. This listening session demonstrated some of the problems associated with language and terminology used in federal policy and law being written by “experts” trained in Western academic perspectives. For example, attendees at the working group stated that the terms “archaeology site” and “artifacts” imply a disconnect between the past and the present, and described a collective preference for terminology related to “traditional use areas” and “ancestral objects.”

Academic literature has demonstrated how Traditional Knowledges are not valued and are often absent from climate change adaptation planning (Makondo and Thomas 2018) and archaeology practice (Watkins 2004), both of which reinforce power dynamics and influence the interactions between federal agencies and Traditional Knowledge holders. We acknowledge that many

²² The Department of the Interior has a trust responsibility to federally recognized Tribal Nations to protect land, assets, and resources of Tribal citizens, including working in partnership and allowing Tribal Nations to make decisions in their best interests (Order No. 3335 2014).

archaeologists, including those working for federal land and resource management agencies such as NPS, recognize the need for change in current archaeology practices and are actively working to collaborate and build relationships; however, some Western cultural resource practitioners suffer anxieties from the potential loss of the cultural record and changes to long-standing theory and practice (Smith and Wobst 2005). Schneider and Hayes (2020) describe how Western experts, fearful of losing power as the field of archaeology changes, often express their fears through a paternalistic desire to teach non-Western archaeologists how to conduct rigorous science. This is similarly evident in the context of climate adaptation planning, which is viewed by Western scientists and agencies as an urgent issue that needs to be addressed now. However, we have learned that some Indigenous Peoples and communities view climate change as prophecy, consider the abstract notion of time differently, face more urgent challenges as communities, and have faced underfunded requests for consultation within THPO programs prior to more recent requests for climate adaptation consultation.

During a workshop with Elders on climate change adaptation planning at a park unit that is on their ancestral homelands, feedback included a request to ask how Elders “feel” about a landscape and climate adaptation planning, not just what they “think” about climate adaptation strategies (see Table 3.2 for more reflection of our recent engagement efforts with citizens and staff of Tribal Nations). Such a request (i.e., reframing how Western scientists and agency managers speak about and consider climate change stressors and adaptation strategies) demonstrates that Western scientists have a great deal to learn from Traditional Knowledge holders and that in doing so there is an opportunity to further legitimize Traditional Knowledges in climate adaptation planning efforts. For example, adaptation of archaeological sites from climate stressors has typically focused on Western archaeological approaches to excavation,

documentation, or constructing off-site protections; yet, in our engagement efforts, we heard a preference for the reintroduction of wildlife to landscapes over human-engineered solutions. Legitimizing Traditional Knowledges can result in more creative solutions to heritage conservation in a changing climate (Simson et al. 2022). As mentioned, archaeological theory calls for the inclusion of associated cultural groups,²³ but faces obstacles from policy and standard practice (i.e., criteria from the National Register of Historic Places program), as well as institutional barriers (Casey and Becker 2019) and resistance from Western practitioners worried about easing standards and losing their authority (Schneider and Hayes 2020).

²³ See the Memorandum from the Executive Office of the President on Indigenous Traditional Ecological Knowledge and Federal Decision Making (released 15 November 2021): <https://www.whitehouse.gov/ostp/news-updates/2021/11/15/white-house-commits-to-elevating-indigenous-knowledge-in-federal-policy-decisions/>.

Table 3.2 Strategies for meaningful engagement during climate adaptation planning of archeological sites

Result/What	Description/Why	Example/How
Hold regular meetings	To continue and sustain engagement creates a strong line of communication and builds relationships.	Set up regular times to meet and share information so that meetings are not just requests of one another. Convene at each other’s workplaces or a neutral facility to reduce historic power imbalances.
Create opportunities for co-management	To determine ways to share power and learn from others in a work environment, which expands perspectives, identifies barriers, and provides an opportunity for creative, integrated solutions.	Grand Portage National Monument (implementing the Tribal Self-Governance Act) gives the associated Tribal Nation authority to hire maintenance staff for the park unit ²⁴ .
Define terms and terminology together	To better understand embedded values in terminology by co-constructing common definitions that will facilitate cultural meanings and perspectives, create better dialogue, and help alleviate misunderstandings.	Policy and compliance documents are predominately written from Western perspectives. Create a shared, living document of common definitions that is continually revisited and updated.
Share information	To facilitate access to archives and databases for associated Tribal representatives (e.g., Tribal Historic Preservation Officers, THPOs), which will enable them to know what information the park unit holds about their heritage.	Agencies share data and information with representatives from associated communities (e.g., Tribal Historic Preservation Offices) to enhance their ability to provide more informed insights during consultation and shared decision-making.

Table 3.2 (continued)

<p>Provide access</p>	<p>To inform and allow associated communities access to sites in the park so that they may practice their culture and help steward important places.</p>	<p>At some park units, associated communities have not had access to their ancestral homelands, or they do not know what the park holds in its archives and records. Organizing site visits can be an important step in building relationships, perhaps when archeologists go out for scheduled site assessments.</p>
<p>Fund Indigenous site monitors</p>	<p>To support collaborative site stewardship, regular engagement, and to work towards co-management.</p>	<p>Some public land agencies, like the Forest Service,²⁵ train and hire Tribal monitors to conduct site assessments, identify climate change threats and disturbances, and maintain sites. This should include opportunities for refining methodologies informed by Traditional Knowledges and Indigenous archeological practices. Developing internship programs for monitoring can provide opportunities for Tribal youth to connect with their heritage and learn how to integrate Western technical skills with Traditional Knowledges and Indigenous archeology by working with Tribal representatives (e.g., THPOs) and agency staff, furthering future co-management efforts and continuity of heritage values.</p>
<p>Foster data sovereignty</p>	<p>To assist Tribal Nations in governing their own data, including providing avenues for input on data that is collected and interpreted about them.</p>	<p>Some SHPOs provide record storage for sensitive sites and the Tribal Nations control who has permission to access them (including SHPO staff).</p>

²⁵ For more information about the U.S. Forest Service Tribal Monitor program, see here: <https://www.usda.gov/media/blog/2018/04/13/tribal-members-trained-and-hired-hunt-resources-cultural-value>

Table 3.2 (continued)

Develop site-specific planning	To encourage park units to develop proactive and reactive planning and management so that climate change impacts can be better mitigated and severe damage can be quickly assessed and addressed.	Knife River Indian Villages National Historic Site developed an Adaptive Management Plan that has been approved so that certain actions already have the green light, allowing for faster response and built-in consultation and engagement with the associated Tribal Nation (MHA Nation).
Develop site-specific responses	To encourage NPS staff to understand and value local and traditional stakeholders’ deep knowledge of places. Funding for adaptation and mitigation efforts are generally restricted to certain boundaries, but the stories and connections of places goes beyond site boundaries. Furthermore, climate change scenario planning is not uniformly available and may not adequately anticipate all severe impacts.	Pu’uhonua O Honaunau National Historical Park is working to develop Memorandums of Understanding with Native Hawaiians to create avenues for quick response to consultation when sites are suddenly exposed.

Overcoming the culture–nature divide in climate adaptation of archaeological sites

Another challenge to comprehensive heritage site management in a changing climate is the dichotomous classification of resources as either “cultural” or “natural” (Rockman and Hritz 2020), with some overlap in the concepts of cultural landscapes and traditional cultural properties. Separating the treatment and management of cultural and natural resources makes taking care of “places” a superficial effort. Siloing the built environment and the natural environment erases the connection people have with the meaning and histories of places (Christen 2015). This is evident when considering the enormous forces brought by climate change impacts altering entire coastlines, forests, cities, and all ecosystems in between—thereby damaging the material aspects of sites, their context, and the greater story of the landscape. As

examples of connections between Indigenous Peoples and place, certain rock formations or roadway intersections have names that hold lessons and oral traditions (Basso 1996); shrines or ceremonial dwellings are gathering places where knowledge and power are shared and passed down (Walter and Hamilton 2020); or archaeological deposits holding the story of a group’s identity, cosmology, and values (Carmichael et al. 2018). These examples demonstrate how the loss of cultural material from climate change impacts can disrupt continuity of the connection of places and people.

To help address the loss of landscapes, agencies have begun to integrate cultural and natural resource management by adding “cultural landscapes”²⁶ as a site designation type, as well as “traditional cultural places”²⁷ focusing on spiritual and associative values. This preference for a more holistic and landscape approach to climate adaptation planning was expressed to us by a citizen of a Tribal Nation serving as an intern funded by the National Council for Preservation Education, as well as other THPO staff, during site visits with members of the project team. These on-site discussions helped us better understand how considering the holistic connections within landscapes will require a broader range of adaptation strategies to be considered, focused more on places than on material.

Similarly, our engagement efforts also highlight the barriers of federal climate adaptation planning guidance—such as NPS’s Policy Memo 14-02 that directs funding to cultural resources that are both significant and most at risk (NPS 2014)—being situated in Western evaluations of what is worthy of saving.²⁸ Western scientists have a legitimate seat at the table, but so too do

²⁶ See NPS guidelines for treatment of cultural landscapes: <https://www.nps.gov/Tps/standards/four-treatments/landscape-guidelines/index.htm>.

²⁷ See National Register Bulletin 38 for designation guidelines: <https://www.nps.gov/subjects/nationalregister/upload/NRB38-Compleweb.pdf>.

²⁸ The National Register of Historic Places is authorized by the 1966 National Historic Preservation Act and managed by NPS. The National Register program identifies, evaluates, and provides treatment guidance for

Indigenous archaeologists and Traditional Knowledge holders, such that non-Indigenous scientists do not define value and meaning for Tribal communities. We learned about how the interconnectedness of tangible objects embedded in landscapes with deep intangible values—related to both human and non-human Ancestors—make everything worthy of saving, challenging Western science and NPS calls for prioritization of sites for climate adaptation. As such, NPS archaeology program practice and policy need to include avenues for the inclusion of climate adaptation strategies that not only reinforce the connections of living, associated groups of people to places but also elevate Traditional Knowledges as equal to Western approaches to archaeology.

Strategies to enhance meaningful collaboration for climate adaptation planning of archaeological sites

To begin addressing the challenges of institutional barriers and the culture–nature divide, we advocate for prolonged, meaningful engagements between NPS staff and citizens and staff of Tribal Nations. In doing so, we assert that more creative and culturally sensitive solutions for climate change adaptation planning will emerge. Here we present a culmination of what we heard from our engagement activities on ways to collaborate, build stronger relationships, and to address power dynamics between Western cultural resource specialists and Tribal citizens.

Several strategies born from this work may help NPS resource managers and staff of other agencies charged with stewarding Indigenous heritage and collaborating with citizens and staff of Tribal Nations through co-learning (for more on co-learning, see: Manrique et al. 2018).

For the disciplines of archaeology and anthropology, there is a movement to include local and

historical and archaeological sites. For more information, see:
<https://www.nps.gov/subjects/nationalregister/index.htm>.

traditional perspectives (Verschuuren et al. 2020), but there are documented sentiments of unease by practitioners stemming both from changes to standardized theory and practice (Nicholas 2010) and from processes that move away from the dichotomy of “colonized” and “colonizer” (Behr and Shani 2022). Western scientists need to be aware of their own misunderstandings of—and inherent biases associated with—authority and objectivity that come from the institutionalization and history of their discipline.

One example is the information and wisdom held in oral histories. Although NPS has a rich, well-established oral history program that helps capture an extensive amount of knowledge and perspectives, Western scientists do not always consider oral traditions as legitimate data because of their subjectivity (Manrique et al. 2018; Tsosie in Imbler 2021) and many assert that since Traditional Knowledges may incorporate religion their rigor is invalidated (Colwell-Chanthaphonh and Ferguson 2010). Although oral histories are used by many park units to help with management decisions (Jones 2015), claims of significance still go through established sets of criteria and several levels of experts (archaeologists, state historic preservation officers, the keeper of the National Register, etc.) before sites are considered eligible for or listed on the National Register. Furthermore, only 6% of properties on the National Register are archaeology sites (Hanson et al. 2020) and only 3% have been updated since the inception of the National Historic Preservation Act in 1966 (Kautz et al. 2020). Despite the greater institutional barriers, incorporating knowledge from oral histories and interviews with citizens of associated Tribal Nations for the management, treatment, and interpretation of archaeological sites on public lands is vital and can create paths towards power-sharing opportunities, such as co-management of sites.

Few parks have operationalized co-management or joint stewardship with associated Tribal Nation(s); however, there are some key examples of formalizing the benefits of relationship building and power sharing that can lead to meaningful collaboration. For example, the Foundation Document for Grand Portage National Monument (GRPO)²⁹ lists the park's relationship with the associated Tribal Nation, the Grand Portage Band of Lake Superior Chippewa, as one of the fundamental resources. Where the term "resource" often implies a tangible object or place, GRPO exemplifies an intangible process of continual relationship building and explains how potential harm can occur from weakened communication or distrust. Another example of building-in mechanisms for ongoing, dynamic collaboration is the Knife River Indian Villages National Historic Site (KNRI) Archeological Resource Management Plan.³⁰ The plan emphasizes the importance of both proactive and reactive involvement with the associated Tribal Nation (the Mandan, Hidatsa, and Arikara Nation) in decision-making about archaeological sites by using an adaptive resource management plan. As such, KNRI has fostered an approach that allows for consultation such that actions are approved ahead of time, accelerating response time, and providing transparency.

Conclusions

Archaeology theory and practice, and the policies that dictate treatment and management of sites, need to shift from exclusively Western perspectives to an integrated approach that fully incorporates Indigenous perspectives and Traditional Knowledges—particularly given the threats posed by climate change. Such multivocality should foster meaningful collaboration—and

²⁹ To learn more about co-management at Grand Portage and other NPS examples, see the statement from current NPS director Chuck Sams here: <https://www.doi.gov/ocl/tribal-co-management-federal-lands>

³⁰ The plan can be accessed here: <https://parkplanning.nps.gov/document.cfm?parkID=145&projectID=34314&documentID=86288>.

hopefully co-management—with the associated cultural groups whose heritage is at risk from climate change impacts. While local and Indigenous communities and their allies, including many NPS and other federal agency archaeologists, are working to change current practice, barriers persist rooted in policy, historical legacies, and an attachment to existing approaches to managing the archeological record. Meaningful collaboration can empower Tribal Nations and Indigenous Peoples and help agencies better meet their mandates. Ultimately, meaningful collaboration will also provide creative, holistic, and culturally sensitive climate change adaptation strategies for archaeological sites.

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CHAPTER 5

Conclusion

Summary of Findings

This study looks at the integration of local and Traditional stakeholder input and values in climate change adaptation planning for archaeological sites in both literature and on the ground to better understand the extent of integration, barriers to including Indigenous and Traditional Ecological Knowledge (ITEK) in planning efforts, and strategies for collaboration and meaningful engagement. Chapter 2 documented the extent of local and Traditional stakeholder input and values in climate adaptation planning of archeological sites within recent (2014 – 2021) scholarly publications. Chapter 3 explored perceptions of how managers within one resource management agency, the National Park Service (NPS) are beginning to weave ITEK into climate adaptation planning efforts, the barriers they face, and the strategies for enhancing these efforts into the future. Chapter 4 identified strategies for meaningful collaboration during climate adaptation planning of archeological sites with Tribal Nations through a reflective commentary of multiple efforts undertaken between 2019 and 2022. Results show that, despite agency calls to include ITEK in federal decision-making, there is a lack of actionable change in policy related to cultural resource management, as well as the need to elevate ITEK to that of Western science. However, there is optimism within agency staff that relationships and weaving of ITEK is happening, and consistency in the suggestions for strategies shows efforts towards meaningful collaboration.

This research is part of a larger study to develop a prioritization framework for adapting archeological sites located within the boundaries of U.S. National Park units. As an effort to build a planning support tool, the framework address the NPS' policy directorate for resource

managers to prioritize sites that are both significance and at risk (i.e., vulnerable) to climate change stressors. The early structures of the framework were developed through workshops and elicitation surveys with NPS staff, resulting in attributes that could be pulled from an existing cultural resource database—which includes criteria from the NRHP—and from “technical judgment” of archaeologists and cultural resource specialists. From this reflection, two issues can already be identified: 1) citizens and staff of Tribal Nations are not part of the research design, and 2) there are only NPS staff in the room determining attributes for site significance. A barrier to integrating ITEK into adaptation planning for archaeological sites is the practice of archaeology itself, and the policies that guide. The National Register of Historic Places (NRHP) is the crux of criteria related to cultural resources and dictates funding streams that support stewardship and climate change adaptation of archeological sites. Determinations of site significance and the theory and practice of archaeology are severely limiting meaningful engagement with local and Traditional stakeholders, despite ongoing efforts to weave ITEK into agency stewardship, including climate adaptation. This dissertation furthers the call to use climate change adaptation planning for archaeological sites as an opportunity to change the process in which site significance is determined by valuing ITEK and weaving Western and Traditional knowledges.

Practical Implications and Theoretical Contributions

There are epistemological and ontological challenges of weaving Western and Traditional ways of knowing and understanding the world. A stark moment when our team came across epistemological differences was when submitting Chapter 4 for publication. In an effort to submit to a special edition for cultural resources and climate change, interactions with the guest editors demonstrated the continuance of misunderstandings. The most poignant comment from a

reviewer asked our team to change “Western science” to just “science”. Taken aback, we wondered, *isn't this exactly the problem?* We reduced some of the content related to epistemological differences, but kept the term Western science to distinguish it from Traditional Knowledges.

Upholding ITEK as a form of science and weaving knowledge systems will take effort in cultural sensitivity and an act of *unlearning* Western disciplines, which currently dictate policy, treatment of materials, and management practices. The act of unlearning will necessitate listening, a change in beliefs, and an openness (Cegarra-Navarro et al. 2021). It is recommended that unlearning happen formally (e.g. changing university curriculum for archaeology and anthropology disciplines), through dedicated trainings for current NPS personnel, and in the field (conducting site visits together). The challenge will be to learn from Tribal citizens while respecting their time, energy, and sovereignty.

Western scientists may never understand a Tribal perspective, but many, including members of the research team, are actively trying to listen and change. Part of unlearning that we consistently came up against was terminology; not just the words we talk about climate change impacts and archaeological sites, but the deeper meaning—and potential harm—they can have for Tribal citizens. One example is the term archeological site, which implies the past and past communities. A Tribal partner suggested we use the terms “traditional use areas” and “ancestral objects” to emphasize continuity with the past and living groups of people. Additionally, since beginning this study, Tribal partners suggested we use “weaving” instead of “integrating” Western and Traditional knowledges to represent the differences working together and strengthening one another. One consequence of differences in terminology led our team to work an intern from the University of Chicago, Selin Oh, to analyze policy and guidance

documents related to cultural resources and climate change from both Western scientists and Tribal Nations (publication forthcoming). Results of the analysis emphasized that policy is rooted in Western ways of knowing and that terminology, as a portal to values, can be used to reveal differences, misunderstandings, as well as shared values.

One approach to meaningful engagement is through participatory research, which can incorporate perceptions and values from the very beginning research and design phase, an important step in identifying shared goals and building trust (O'Connor et al. 2019). A recent, explicit example of this from a federal agency is the USGS Participatory Science chart (USGS n.d.). Developing partnerships and co-management opportunities are important, but inherent bias towards the legitimacy of Western science can hinder collaboration and power-sharing. However, this paper argues that scientists should go beyond participatory approaches and calls for meaningful engagement. Part of this is approaching Traditional knowledges as plural; Tribal Nations have a shared trauma experienced from colonization that continues today in the form of policies and regulations that constrain Tribal self-determination and sovereignty (Moreton-Robinson 2015; Warner 2021; Millhauser and Earle 2022) and misrepresent Tribal through Western-influenced data (Walter et al. 2020).

Furthermore, it can be said that nature has agency despite acting and responding innately to its surroundings (Ingold 2000), which aligns with feedback and perspectives we received from the Tribal Nations and Indigenous peoples about the environment consisting of non-human beings. Humans shape nature, but nature also shapes humans and their intentions (Nash, 2005). From our engagement activities, nature as an agent seems to be more visible and acknowledged by Indigenous and Native peoples, as well as non-human beings referred to and honored as their ancestors. This is a stark difference from Western ideology that treats the environment as a

“resource” to be managed and controlled. Considering the Indigenous point of view we heard, it can be said that climate change adaptation is inherently open to decolonization because recognizing the agency of nature takes power away from those trying to control or change it (i.e. humans). The environment, from this perspective, is sentient and, therefore, one of the actors in decision making.

A major hurdle will be uprooting current systems rooted in Western science and perspectives and the sharing of power in archeological site and landscape management. Authorized Heritage Discourse describes how experts run the show, which is apparent in theory, policy, and practice of archaeological sites and other cultural heritage sites, firmly planting determinations of heritage site significance in Western perspectives. This inevitably delegitimizes other values and ways of knowing (Smith and Waterton 2012). How to change the dominant paradigm and “standard” practice is the challenge. One recommendation is to lessen the importance of National Register Criteria so that it is not the main deciding factor in statements of significance. Not only does National Register Criteria categorically reduce meaning and exclude narratives (Rubertone 1999), they dehumanizes archaeology sites and the landscape in which they exist. Like other suggestions in this study, determining site significance must be a process rather than a static set of criteria, especially when working with a myriad of sovereign Tribal Nations and communities.

Holistic Site Stewardship

One key takeaway from all of the interactions and engagement activities we had with Tribal citizens was to use a landscape approach. As previously mentioned, Tribal Nations are not a monolith and each cultural group—federally recognized or not—has their own values and ways

of understanding the world. A couple of common themes that do not represent all Tribal Nations and cultural groups, but was consistently mentioned and brought to our attentions, was to include archeology sites at a landscape level and to treat living and non-living beings as ancestors. This request was important for changing our own perspectives and helped us see why a landscape approach is important for the citizens and staff of Tribal Nations with whom we engaged. Furthermore, Tribal citizens and Indigenous groups are not the only cultural groups that give meaning to non-living beings and landscapes; people all over the world have connections to place. Archaeological sites hold important information about humans and their interactions with the environment and each other, but they are also important places of ceremony, oral tradition, and non-living beings. As such, archeological sites need to be viewed and considered within the greater landscape to ensure connectivity from the past to the present and connectivity between materials and the environment.

The use of a landscape approach is also evident in the literature. Chapter 2 identified that archeological sites are often included as part of a heritage landscape and not always as a standalone site. Archaeologists use boundaries to locate, map, and assess sites, but interpretation and adaptation planning must go beyond boundaries. There were discussions of other ways to “group” sites together when trying to understand site sensitivity to climate change impacts (e.g. deposit types, material types, location on a landform or slope, etc.), but conversations often went back to landscape. NPS has a strengthening cultural landscape program, which could be an opportunity to incorporate archeological sites in a more robust way, including strategies for more engagement with associated Tribal Nations during climate adaptation planning. Currently, the

“tree” of stakeholders for the NPS cultural landscapes program does not include values and input from Tribal Nations³¹.

Holistic site stewardship (i.e., removing the false dichotomy of natural and cultural resources) will also address a barrier identified by agency staff of the siloing of resource divisions and their related funding streams. Integrating cultural and natural resource management divisions by having staff and funding streams work together could help implement a landscape approach to site stewardship and climate change adaptation planning. Individual disciplines are important, but they cannot operate in isolation to each other; it will be important to plan for archeological sites within their landscapes to better understand and protect contextual elements. Two approaches that have already been addressed in the literature to landscape approaches are including archaeological sites as part of a heritage landscape (Baird 2017) and understanding archaeological sites as part of the climate story (Rockman). NPS has started to adapt the “Every Story” initiative³², but more research needs to be done to see if this approach affects how sites are managed.

Study Limitations and Insights for Looking Ahead

This study was limited by the amount of interactions and engagement with Tribal partners, as well as the scope of Tribal Nations with whom we partnered. Many factors played a role in the low interactions; the Covid-19 pandemic, lack of time and money to travel to meet and conduct workshops, the unwillingness of some Tribal citizens to work on this project (by choice or by limitations in their time), and the time it takes to build relationships. The semi-

³¹ NPS cultural landscape program “tree” can be found here: <https://www.nps.gov/orgs/1557/index.htm>

³² More about the “Every Story” initiative can be found here: <https://www.nps.gov/articles/000/every-place-has-a-history.htm>

structured interviews (Chapter 3) were limited by the missing input and perspectives from Tribal Nations and Native people because Tribal IRB was unsuccessful. The IRB process is a new process that many Tribal Nations are still working through to develop protocols, which means they are unable to work with researchers in the interim. The Tribal IRB process will likely not be standardized and will be according to the council of each Nations or Confederated Nations.

Our team had a few setbacks as part of the learning we needed to do, which is an important part of the process, but it took time. The most successful learning experiences we had were when our team was invited by a Tribal Citizen who was interested in this work to participate and work together. Although that Tribal Nation was still working on building its IRB process, together we sought creative and collaboration solutions, such as securing funding from the NPS to hire Tribal college interns who conducted interviews with Tribal Elders, only sharing the information that were deemed appropriate by our project partner who managed the Tribal Historic Preservation Office and is a citizen of the Tribal Nation.

As Harrison et al. (2020) point out, the community of heritage practitioners need to critically examine for who or whom they are protecting places. Looking ahead, case studies, best practices, and expanded definitions of meaningful engagement and holistic site stewardship will be needed as they relate to current archaeology practice and climate change adaptation planning. One interview participant said engagement with associated Tribal Nations was just meeting requirements, and that they “need more” engagement. However, when asked how to do that, the participant did not give a clear answer. Other participants shared that continual relationship building through informal interactions would facilitate more meaningful engagement. This study provides only a small sample of current practices and suggestions, and is geared towards land

owned by the National Park Service, but a larger shift—as acknowledged by the international community—is needed.

Recommendations

This research is predominately focused on U.S. policy, public land systems, and the descendant communities, but implications go beyond this context. An important step will be to integrate cultural and natural resource divisions in public land agencies including the National Park Service. It is suggested to take a landscape approach when looking at archaeological sites. Site boundaries can be helpful in identifying site locations, but harmful when attempting to prioritize and rank sites for adaptation planning and funding requests. Climate change adaptation planning for archaeology sites as part of the greater landscape will help integrate cultural and natural resource management, as well as tell the story of the landscape, both past and present.

Meaningful engagement and weaving Western and Traditional knowledges will serve to help decolonize cultural heritage theory and practice globally. However, any changes to policy, guidance, and processes must protect Tribal sovereignty and enhance self-determination. There are several guidance documents developed by Indigenous scholars and collaborative groups of citizens and staff of Tribal Nations with ways to protect Indigenous knowledge and data. Some of these include the CARE principles³³ and Native-centered principles³⁴, as well as countless guidance documents developed by federal agencies, universities, think tanks, and ally groups. Another important way to decolonize cultural resource management is to focus on and honor

³³ CARE is an acronym for Collective Benefit, Authority to Control, Responsibility, and Ethics. More about the CARE principles can be found in this article by Carroll et al. 2020: <https://datascience.codata.org/articles/10.5334/dsj-2020-043/>

³⁴ Native-centered principles are focused on needs and values of Native and Indigenous communities, and emphasize the need for representation of Tribal citizens and Native people in research design. More can be found in the collaborative guidance document here: https://www.aastec.net/wp-content/uploads/2016/04/Guiding_Principles_v1.pdf

government-to-government relationships and agreements. Not all Tribal Nations and Indigenous Peoples are federally recognized, but an improvement in the respect and diplomacy between the US government agencies and sovereign Tribal Nations will create an atmosphere and practice of mutual respect. More concerted efforts—particularly Western science trained archeologists and site managers being willing and open to change—to provide similar respect and power to non-federally recognized Tribal Nationsas Indigenous Peoples continues to be an urgent need to overcome colonized cultural resource management decision-making.

It is important to recognize that many of the suggestions and recommendations will take time and the sharing of power. Not only will it take time to make changes in policy and practice, it will take time to build relationships and trust and to unlearn and reflect. It will take time for Western conservation practices to change, especially for leaders in modern conservation like Europe and the US (Mason 2018). Meaningful engagement is a process of relationship building, and it is recommended that agency personnel and other allies take the time to learn about the trauma as well as the hopes of the Tribal Nations and Native people with whom they work.

There are many ways to become an ally to Indigenous groups and Native peoples including; learning the history of the Nations and communities you work with (NCAI 2019); taking a training or course on cultural sensitivity and history of Tribal Nations; making sure treaty rights are met (NCAI 2019); and reciprocating by honoring requests for research, survey, or management approaches. The First National Development Institute (2018) published a guide developed by citizens of Tribal Nations that proposes a framework centered on the importance of allies to learn values, understand history, bring attention to the ongoing injustice to Native peoples and communities (visibility), and create focused calls to action. One way to expand perspectives and continue the process of relearning is to read academic and non-academic

literature authored by Native and Indigenous peoples. Protected area and public land managers can work towards being better allies by hiring more Indigenous staff, providing Indigenous-led tours, provide opportunities for co-managing sites and landscapes, and work with Tribal citizens to make sure interpretive information is prominent and accurate. Sharing in site stewardship does not mean giving up power; sharing power means gaining insight to the knowledge and wisdom that is shared, empowering and giving access to communities, and creating a path towards justice and self-determination for people who have been removed from their homelands.

Concluding Remarks

During a virtual conference in 2020, some of our partners were giving a presentation about our work and the other a presenter—a Tribal citizen—said “I never thought I’d hear a [National] Park Service person say ‘decolonize’”. It was evident that there exists allyship and a desire to change, but there is also much work to do. The Biden administration has created an important window to include Tribal and Indigenous perspectives in policy and planning, particularly the appointing of Tribal citizens Chuck Sams III as the Director of the National Park Service and Deb Haaland as the Secretary of Interior. Their cultural affiliations and high-ranking government positions empower Tribal Nations and Native communities, which can create pathways for systemic change. For example, Sams has stated that the NPS will do a better a job in including Indigenous history at all park units and reinforce the connection to living groups (Phinney 2022). With more power given to citizens and staff of Tribal Nations, as well as more advocacy from archaeologists, the academic community, and other allies, climate adaptation planning may be the necessary driver to update cultural heritage policy, create pathways towards

meaningful engagement that can help weave Western science and ITEK, and help decolonize by co-stewardship of archeological sites.

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APPENDICES

Appendix A: Systematic Literature Review Codebook

Deductive codes

Stakeholder prevalence

Implicit	Local and/or Traditional stakeholders are not mentioned by name, but researchers strongly allude to culturally associated groups in method and/or management recommendations.
Explicit	Local and/or Traditional stakeholders mentioned by name (or a specific cultural group is identified) and researchers worked directly with them. Researchers will likely include associated groups in adaptation planning and management recommendations.
Ignored	Local and Traditional stakeholders are not mentioned, or only briefly acknowledged in the discussion or conclusion.

Site type

Archaeological	The site or sites discussed in the study are focused on archaeological sites (not habitable).
Heritage landscape	The site or sites discussed in the study include archaeological sites, but also include other built environment like buildings and structures.

Climate change

Not primary	Climate change impacts are a motivating factor for the study, but not the main driver for action, or is one of several reasons for the study.
Primary driver	Climate change impacts are the impetus and/or primary motivator for the study, or the main driver for a need to take action.

Implications and findings

Methodological	Results reveal findings that can offer or improve methods for protecting archaeological or heritage sites.
Practical	Results provide examples of that can be implemented in different places, for example the creation of a tool.
Stakeholders	Results recommend stakeholder involvement as a part of site management or protection.

Theoretical Results build the body of knowledge, reveal new information, or provide broader concepts in how we approach the question.

Knowledge Systems

Devalued The study mentions that local knowledge or stakeholder input is considered not relevant or not important to decision making; the authors “de-value” local or other types of knowledge and emphasize technical or Western knowledge.

Local The study mentions or emphasizes knowledge or input from local communities (non-indigenous).

Traditional The study mentions or emphasizes importance of knowledge from traditional groups (Indigenous).

Inductive Codes

Management

3D and virtual displays Results recommend using 3D imaging or virtual reality to inform or protect information held within objects or sites.

Assessments and frameworks Results suggest using an assessment or framework for decision making or propose their own assessment of framework that can be used to assess, protect, or prioritize sites.

Background research Results suggest background research is useful for informed decision making

Build relationships with stakeholders Results suggest building relationships with other stakeholders when planning for site protection.

Citizen science Results suggest incorporating citizen science in protecting or managing sites.

Collaboration Results suggest collaborating or creating partnerships to make decisions about site value and/or protection and adaptation measures.

Improve communication Results suggest developing or improving communication between partners or to the public as a way to improve site protection and management. This includes advocacy work.

Consultation and engagement with stakeholders Results suggest consultation and/or engagement with stakeholders when planning for site management.

Create protected areas	Results suggest protecting a site by creating a protected area.
Develop dynamic, continual process	Results explicitly suggest that planning is a continual process.
Develop planning tools	Results suggest creating planning tools or suggests a planning tool for long-term stewardship of sites.
Geospatial/modeling	Results suggest using or collecting geospatial data and/or modeling to make decisions about site protect and management.
Support local management	Results suggest partial or full management or monitoring from local stakeholders.
Monitor sites	Results suggest that regular monitoring of sites should be included in management. This includes remote sensing and monitoring with cameras.
Multiple approaches	Results suggests multiple approaches to protecting and treating the site(s).
Physical barriers or relocation	Results suggest constructing physical barriers to protect sites or relocating some or all of the site to a geographically safer place.
Prepare for loss	Results suggest preparing for the loss or partial loss of archaeological sites as a part of their planning.
Prioritize sites/determine value	Results suggest prioritizing sites to protect or invest in, based on their value, or identifying the need to explicitly determine site value in order to plan for their protection.
Proxy data	Results suggest using proxy data such as historical data and records to help make decisions, including using proxy data to monitor changes over time.
Survey and Inventory	Results suggest surveying and inventorying sites to make decisions and to create records in case they are lost. This includes an emphasis on the importance of sharing data and making it available to others.
Training and guidance	Results suggest training others to monitor or evaluate sites, includes providing guidance to decision makers on how to plan for or manage sites.

Methodology

Assessments	The study uses some type of formal or standardized assessment, including applying existing frameworks.
Case study	The study uses one or more case studies.
Consultation	The study uses consultation with stakeholders.
Develop plan	The study results in the development of a plan.

Develop scope	The study results in the development of a scope for decision makers.
Education and Outreach	The study uses education and outreach.
Excavation	The study uses some level of site excavation.
Geophysical data collection	The study uses geophysical data collection, including field work, soil testing, etc.
GPR	The study uses ground penetrating radar to collect data for this study.
Evaluate capacity	The study evaluates capacity as a way to plan, including identifying barriers.
Interviews and workshops	The study uses interviews and workshops to collect data.
LiDAR	The study uses LiDAR as a way to collect data.
Lit Review	The study uses a literature review to inform the study.
Local monitoring citizen science	The study uses local monitoring and/or citizen science to collect information. The information is used to make further decisions, or the process of collecting information is analyzed.
Mapping and GPS	This study uses mapping, GPS data and satellite imagery.
Measuring decay	This study measures decay of sites.
Modeling scenarios	This study includes modelling scenarios and includes projections.
Monitoring	This study includes site monitoring and include analysis of changes over time.
Photogrammetry and TLS	The study uses photogrammetry and terrestrial laser scanning to collect data on sites or as a way to monitor and evaluate sites.
Proposed framework and prioritization	The study uses or pilots a proposed framework for evaluating or ranking sites. This includes mention or a call for prioritization of sites.
Remote sensing	The study collects information through remote sensing
Secondary data	The study includes secondary research and archaeological reports/data, comparison/collection of information to find gaps. Ariel photos are included.
Significance and value	The study aims to determine site significance and/or value.

Site access	The study evaluates site access.
Survey	The study conducts typical archaeological survey work or uses some kind of survey as a part of an assessment, scoping or inventory. This is a broad category. Questionnaire surveys should be included in workshops.
Technical judgment	The study calls on technical judgment as a tool to assess or evaluate sites.
Workshop and trainings	The study uses workshops and/or trainings as a part of collecting data, including analyzing workshop and training results.

Appendix B: List of Selected Publications

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Appendix C: Interview Protocol

Question 1: Please state your name, occupation and the National Park unit where you are employed.

Question 2: Please state the name of the climate change adaptation or resource management plan or assessment to which you contributed.

Prompt: How did you become involved with the development of this plan/assessment?

Question 3: Please describe the types of archeological sites and materials that were included in the plan.

Question 4: Please describe the types of climate change impacts to those sites and materials that the plan addressed.

Prompt: Were any type(s) of climate adaptation suggested to protect those sites from impacts? If yes, please describe those adaptation actions including what types of actions were suggested and how the actions would protect the site. If not, why were specific adaptation actions not suggested?

Prompt: What data were used to identify climate change impacts to the archeological sites/resources? What resources were used to identify adaptation actions to minimize negative climate change impacts?

Question 5: Did you or your team consult or engage with Tribal Groups in preparing the plan?

Prompt: If yes, please describe the engagement process with Tribal Groups. What worked well? Did you encounter any challenges (if yes, please describe)?

Prompt: If no, why was there little or no engagement?

Question 6: Did you incorporate any traditional knowledge into the planning process? If yes, please explain how traditional knowledge was integrated into the planning process and how that traditional knowledge is reflected in the plan.

Prompt: Do you feel Tribal values, perceptions and preferences were adequately incorporated into the management plan or assessment?

Question 7: Do you have any suggestions for enhancing Tribal engagement in future NPS planning efforts that address climate impacts to archeological sites or adapting archeological sites to avoid projected impacts?

Appendix D: Interview Codebook

Deductive codes		
<i>Theme</i>	<i>Code</i>	<i>Description</i>
<i>Climate change impacts</i>		
	Direct	One or more of the management plans or assessments focus directly on climate change impacts.
	Indirect	One or more of the management plans or assessments does not directly address climate change impacts, but includes impacts in plan or assessment.
<i>Living heritage</i>		
	Yes	Participant emphasizes the connection of archaeological sites to living groups of people and that the landscape is actively used, emphasizing continuity between past and present.
	No	Participant does not emphasize the connection of archaeological sites to living groups of people.

Inductive Codes		
<i>Theme</i>	<i>Code</i>	<i>Description</i>
<i>Perceived relationship</i>		

Strong	Participant describes the Park's relationship with the associated Tribal Nations as strong.
Moderate	Participant describes the Park's relationship with the associated Tribal Nations as moderate.
Weak	Participant describes the Park's relationship with the associated Tribal Nations as weak.
Improving	Participant describes the Park's relationships and engagement with Tribal Nations is improving.
Decreasing	Participant describes the Park's engagement and relationship with the associated Tribal Nations as static or decreasing.

Value integration

Only mandated consultation	Participant mentions planning or assessment efforts included only mandated consultation with associated Tribal Nations.
Values fully integrated	Participant mentions planning or assessment efforts fully integrated Tribal perspectives and values.
Values somewhat integrated	Participant mentions perceptions and values of associated Tribal Nations were somewhat integrated into planning and assessment efforts.

Values not integrated	Participant mentions perceptions and values of associated Tribal Nations were not meaningfully integrated into planning and assessment efforts.
Successive increase	Participant mentions perceptions and values of associated Tribal Nations are successively increasing.
Successive decrease	Participant mentions perceptions and values of associated Tribal Nations are successively decreasing.

Types of strategies and plans

RSS	Participant was involved in the development of a park unit's resource stewardship strategy
Foundation document	Participant was involved in the development of a park unit's Foundation Document
Vulnerability assessment	Participant was involved in the development of a park unit's vulnerability assessment
Vegetation Management	Participant was involved in the development of a park unit's vegetation management plan.
Fire management	Participant was involved in the development of a park unit's fire management plan.
Scenario planning	Participant was involved in the development of a park unit's scenario planning

Best practices and suggestions

Terminology	Participant mentions or suggests the need to define terms, meanings, and/or problematic language.
Valuing Traditional Ecological Knowledge (ITEK)	Participant mentions the collection and/or integration of ITEK into planning and assessments.
Power sharing	Participant mentions or alludes to sharing power with Tribes.
Integrate from beginning	Participant mentions integrating Tribal values and preferences from the beginning and throughout the planning process.
Relationship building	Participant mentions the importance of building a relationship between park and Tribal staff.
Formal processes (ie. MOU)	Participant mentions developing formal agreements with associated Tribal Nations.
Informal engagement (sharing a meal)	Participant mentions the importance of informal engagement.
Continued communication	Participant mentions the need or practice of continued communication with Tribes.

Protecting Tribal rights	Participant mentions or suggests the protection of intellectual property, cultural heritage, and Indigenous rights.
Leadership	Participant mentions a leader in at the park unit who is working to build relationships.
Shared ceremony	Participant mentioned hosting ceremonies at the park (ie. before a traditional burn, reburying artifacts, etc.).
Integrating divisions & management	Participant mentions working collaboratively across divisions and/or planning efforts.
Listening	Participant mentioned the importance of listening to requests and/or concerns from Tribal staff and citizens.
Culture-nature divide	Participate mentions the separation of cultural and natural resource management.
Reciprocity	Participate mentions giving something to the Tribes that they need.
Sharing information	Participants mentions sharing information with Tribes about collections, data recovery, and/or how decisions are made related to archaeological site management and protection.
Contracting	Participant mentions contracting out some services that they do not have the capacity for.

Dynamic vs. static	Participants mentions plans and assessments need to be dynamic and flexible.
Hire more staff	Participants mentions the benefits of having more NPS and/or Tribal staff.
Meeting in person	Participant mentions or alludes to the importance of meeting in person, including visiting sites together.
Working with nearby agencies	Participant mentions working with nearby federal agencies to reduce overlap in consultation and compliance.
Ease burden for Tribes	Participant mentions easing the burden from compliance for Tribal staff.
Use Tribal guidance documents	Participant mentions or suggests using Tribal guidance documents and assessments.
Patience and persistence	Participant mentions that working with citizens and staff of Tribal Nations takes patience and takes time to learn from each other and build trust.
Creativity	Participant mentions a creative solution, a need for creative solutions for working with Tribes, or for working within the system.
Staff-level engagement	Participant mentions or suggests staff engaging with Tribal counterparts and not just superintendent.
Shared goals	Participant mentioned or suggested the need to identify shared goals and common interests with

Tribes or across divisions.

Need guidance Participant mentions the need for more guidance to working with citizens and staff of Tribal Nations.

Landscape-level Participant mentions using a landscape approach to understanding or managing an area.

Barriers

Short staffed:
NPS Participant mentions the need for more NPS staff for more opportunities to meet regularly and collaborate with associated Tribal Nations, as well as meeting compliance requests.

Short-staffed:
Tribal Nations Participant mentions Tribal Nations need more staff for more opportunities to meet regularly and collaborate with NPS staff, as well as meeting compliance requests.

Institutional
barriers Participant mentions feeling restricted by policy, law, or institutional practices.

Lacking data
and/or expertise Participant mentions data is lacking, including survey and inventory of sites.

History Participant mentions trauma caused by the federal government to citizens and staff of Tribal Nations.

Funding streams Participant mentions or suggests the challenges of funding streams to support NPS or Tribal staff and/or projects, or needing to find additional funding.

Challenges of ITEK and multiple Tribes	Participant mentions the challenging nature of working with Tribal Nations because of the different ways of knowing and understanding the natural world, as well as needing to consult with several associated Tribal Nations.
Terminology	Participant mentions challenges with definitions and meanings of terms and terminology, as well as the use of jargon.
Differences among Tribes	Participant mentions the challenges of having many affiliated Nations and/or inter-Tribal politics.
Desire for more engagement	Participant mentions the desire to engage with Tribes more but is unable or finds it challenging to do so.
Covid-19	Participant mentions a pause in relationship building with Tribal Nations because of Covid-19 spread and quarantine restrictions.
Ownership	Participant mentions that archaeological sites are situated on public lands and are the property of the U.S. government.