Strategies for meaningful engagement: A commentary on collaboration in archaeological climate adaptation planning

Courtney Hotchkiss, Erin Seekamp, and Alicia McGill

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.

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 Nations[1] 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.

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

Courtney Hotchkiss, North Carolina State University
Erin Seekamp, North Carolina State University
Alicia McGill, North Carolina State University

CORRESPONDING AUTHOR
Erin Seekamp
Department of Parks Recreation and Tourism Management, College of Natural Resources
North Carolina State University, 2820 Faucette Dr., Raleigh, NC 27695-8004
elseekam@ncsu.edu

Pu'uhonua o Hōnaunau National Historical Park. The older image (left) is from the 1960s. The more recent photo (right) shows a restored platform after a large storm. Native Hawaiians have deep connections to what is now the park and they are still stewards of the landscape. https://www.nps.gov/puho/learn/historyculture/hale-o-keawe.htm NATIONAL PARK SERVICE

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).

Indigenous Peoples and communities do not all perceive the world the same way, although many perceive it differently than the worldview informed by Euro-American values.

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 weaving 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 world-view 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 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 involving 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.

TABLE 1. Description of the multimodal approach to engagement.

Approach	Examples of data sources
Training in Traditional Knowledges and Indigenous science	Attended a 2.5-day workshop hosted by the College of the Menominee Nation on the creation and implementation of the Tribal Climate Adaptation Menu. 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. This 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: > *Dibaginjigaadeg Anishinaabe Ezhitwaad: A Tribal Climate Adaptation Menu* (Great Lakes Indian Fish and Wildlife Commission) > *Guidelines for Considering Traditional Knowledges in Climate Change Initiatives* (Climate and Traditional Knowledges Workgroup) > *Cultural Resources Climate Change Strategy* (NPS) > *Archeological Resource Management Plan* for Knife River Indian Villages National Historic Site (NPS) > Foundation Document for Grand Portage National Monument (NPS)
Listening sessions	Coordinated listening sessions at conferences hosted by associations of Tribal Nations and Indigenous people. This 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. 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 (2019, Choctaw, MS) > National Tribal and Indigenous Climate Conference (NTICC-ITEP) (2020, virtual)
Engagement workshops	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. > 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)
Interviews with NPS Staff	Conducted semi-structured interviews with NPS archaeologists and cultural resource specialists around the country to learn more about existing and upcoming climate adaptation efforts for archaeological 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 (number of interviewees: 14; number of NPS units: 10).
Supporting Tribal Interns	Co-advised 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, share wisdom from Elders with younger generations, and financially support students (number of interns: four).

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.

Traditional Knowledges are considered adaptive and holistic rather than finite and reductionist.

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" exist[2] 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. As 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).

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.

A key insight from our work is that there are several institutional barriers that challenge the integration of Western science and Traditional Knowledges.

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 weaving of Western science and Traditional Knowledges. Despite clear connections to Indigenous Peoples and Treaty Rights that mandate consultation with Tribal Nations,[3] 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 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 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,[4] 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).

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

TABLE 2. Suggested strategies for more meaningful engagement and collaboration.

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 historical 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.
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), 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.
Provide access	To inform and allow associated communities access to sites in the park so that they may practice their culture and help steward important places.	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 archaeologists go out for scheduled site assessments.

TABLE 2. Suggested strategies for more meaningful engagement and collaboration (cont'd).

Result/What	Description/Why	Example/How
Fund Indigenous site monitors	To support collaborative site stewardship, regular engagement, and to work towards co-management.	Some public land agencies, like the US Forest Service, 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 archaeological 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 archaeology by working with Tribal representatives and agency staff, furthering future co-management efforts and continuity of heritage values.
Foster data sovereignty	To assist Tribal Nations in governing their own data, including providing avenues for input on data that are collected and interpreted about them.	Some State Historic Preservation Offices (SHPOs) provide record storage for sensitive sites and the Tribal Nations control who has permission to access them (including SHPO staff).
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 Hōnaunau 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.

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 between places and people.

To help address the loss of landscapes, agencies have begun to integrate cultural and natural resource management by adding "cultural landscapes"[5] as a site designation type, as well as "traditional cultural places"[6] 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.

Western scientists have a legitimate seat at the table, but so too do Indigenous archaeologists and Traditional Knowledge holders.

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.[7] Western scientists have a legitimate seat at the table, but so too do 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 traditional perspectives (Vershuuren 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)[8] 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.[9] 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 a woven approach that fully incorporates Indigenous perspectives and Traditional Knowledges—particularly given the threats posed by climate change. Such multivocality should foster meaningful collaboration—and 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 and traditional use areas.

Grand Portage National Monument (GRPO), located in northern Minnesota along Lake Superior, includes some Tribal Trust land within its boundaries. Recently, management has included their relationship with associated Tribal Nations as a fundamental resource in GRPO's Foundation Document. NATIONAL PARK SERVICE, GRPO GEOLOGIC RESOURCES INVENTORY REPORT

Knife River Indian Villages National Historic Site is an archaeological landscape and ancestral homeland of the Mandan, Hidatsa, and Arikara (MHA) Nation. Successful collaboration with the MHA Nation led to an Archeological Resource Management Plan (ARMP), which calls for continued engagement and decision-making as climate change impacts occur at the site. Three of the five objects of the ARMP call for collaboration with the MHA Nation. Additionally, the action items listed with the ARMP can be implemented immediately because the planning document has already been approved, allowing for faster response from the park and the MHA Nation. COURTNEY HOTCHKISS

ACKNOWLEDGMENTS

We would like to thank the many citizens and staff of Tribal Nations who shared their time and wisdom with us during our engagement efforts, as well as the National Park Service staff who shared their knowledge as interview participants. We would also like to thank Michael Durglo Jr. (Confederated Salish and Kootenai Tribes), Casey Thornbrugh (Mashpee Wampanoag), and Bettina Washington (Wampanoag Tribe of Gay Head (Aquinnah)) for their contributions as partners in our engagement and learning efforts. Lastly, we would like to thank the following National Park Service staff for their partnership in our engagement efforts: Amanda Babson, David Goldstein, Sierra Mandelko (Turtle Mountain Band of Chippewa Indians), Karen Mudar, and John Turck. The research presented in this paper was supported by the National Park Service Climate Change Response Program through US Department of Interior Inter-Agency Agreement P17AC00794 (project title: "Assessing the

transferability of a historic resources decision support model for optimized budget allocation and adaptation planning"). This research was also funded by a US Geological Survey Southeast Climate Adaptation Science Center graduate fellowship awarded to Courtney Hotchkiss.

ENDNOTES

1. Archaeology sites are often connected to living groups of Indigenous persons, 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.
2. The eight definitions provided by Colwell-Chanthaphonh et al. (2010: 230) 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) a 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.
3. 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).
4. 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/.
5. See NPS guidelines for treatment of cultural landscapes: https://www.nps.gov/Tps/standards/four-treatments/landscape-guidelines/index.htm.
6. See National Register Bulletin 38 for designation guidelines: https://www.nps.gov/subjects/nationalregister/upload/NRB38-Completeweb.pdf.
7. 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 historical and archaeological sites. For more information, see: https://www.nps.gov/subjects/nationalregister/index.htm.
8. See: https://www.nps.gov/grpo/learn/education/reports-and-studies.htm.
9. The plan can be accessed at: https://parkplanning.nps.gov/document.cfm?parkID=145&projectID=34314&documentID=86288.

REFERENCES

Aikenhead, G., and H. Michell. 2011. *Bridging Cultures: Indigenous and Scientific Ways of Knowing Nature*. Toronto: Pearson Education.

Anderson, D.G., T.G. Bissett, S.J. Yerka, J.J. Wells, E.C. Kansa, S.W. Kansa, K.N. Myers, R.C. DeMuth, and D.A. White. 2017. Sea-level rise and archaeological site destruction: An example from the Southeastern United States using DINAA (Digital Index of North American Archaeology). *PloS One* 12(11): e0188142. https://doi.org/10.1371/journal.pone.0188142

Atalay, S. 2006. Indigenous archaeology as decolonizing rractice. *American Indian Quarterly* 30(3): 280-310. https://doi.org/10.1353/aiq.2006.0015

Atalay, S. 2012. *Community-based Archaeology: Research with, by, and for Indigenous and Local Communities*. Berkeley and Los Angeles: University of California Press

Ball, S.J. 2013. *Foucault, Power and Education.* 1st ed. New York : Routledge.

Baird, M.R. 2017. *Critical Theory and the Anthropology of Heritage Landscapes*. Gainesville: University of Florida Press.

Basso, K. 1996. *Wisdom Sits in Places: Landscape and Language Among the Western Apache*. Albuquerque: University of New Mexico Press.

Behr, H., and G. Shani. 2022. Rethinking critical IR: Towards a plurilogue of cosmologies. *E-International Relations*. 5 January. https://www.e-ir.info/2022/01/05/rethinking-critical-ir-towards-a-plurilogue-of-cosmologies/ (accessed 9 July 2022)

Berkes, F. 2017. *Sacred Ecology*. 4th ed. NewYork: Routledge.

Bloch, L.J. 2014. The unthinkable and the unseen: Community archaeology and decolonizing social imagination at Okeeheepkee, or the Lake Jackson Site. *Archaeologies* 10(1): 70–106. http://dx.doi.org/10.1007/s11759-014-9251-x

Bloom, R., and D. Deur. 2020. Reframing Native knowledge, Co-managing Native landscapes: Ethnographic data and Tribal engagement at Yosemite National Park. *Land* 9(9): 335. https://doi.org/10.3390/land9090335

Brown, M.F. 2003. *Who Owns Native Culture?* Cambridge, MA: Harvard University Press.

Carmichael, B., G. Wilson, I. Namarnyilk, S. Nadji, S. Brockwell, B. Webb, F. Hunter, and D. Bird. 2018. Local and Indigenous management of climate change risks to archaeological sites. *Mitigation and Adaptation Strategies for Global Change* 23(2): 231–255. https://doi.org/10.1007/s11027-016-9734-8

Christen, K. 2015. Tribal archives, Traditional Knowledge, and local contexts: Why the "s" Matters. *Journal of Western Archives; Native American Archives Special Issue*: 6(1) Article 3. https://digitalcommons.usu.edu/cgi/viewcontent.cgi?referer=&httpsredir=1&article=1046&context=westernarchives

Cipolla, C. 2021. Posthuman potentials: Considering collaborative Indigenous archaeology. *Cambridge Archaeological Journal* 31(3): 509–514. https://doi.org/10.1017/S0959774321000202

Colwell, C. 2017. *Plundered Skulls and Stolen Spirits: Inside the Fight to Reclaim Native America's Culture*. Chicago: University of Chicago Press.

Colwell, C., and C. Joy. 2015. Community and ethics in heritage bebate. In *Global Heritage: A Reader.* L. Meskell, ed. Hoboken, NJ: Wiley Blackwell.

Colwell-Chanthaphonh, C., and T.J. Ferguson. 2010 . Intersecting magisteria: Bridging Aarchaeological science and Traditional Knowledge. *Journal of Social Archaeology* 10(3): 325–346. https://doi.org/10.1177%2F1469605310377960

Colwell-Chanthaphonh, C., T.J. Ferguson, D. Lippert, R.H. McGuire, G.P. Nicholas, J.E. Watkins, and L.J. Zimmerman. 2010. The rremise and promise of Indigenous archaeology. *American Antiquity* 75(2): 228–238. https://www.jstor.org/stable/25766193

Dunbar-Ortiz, R. 2015. *An Indigenous Peoples' History of the United States*. Boston: Beacon Press.

Fatorić, S., and E. Seekamp. 2018. A measurement framework to increase transparency in historic preservation decision-making under changing climate conditions. *Journal of Cultural Heritage* 30: 168-179.

Gruber, S. 2011. The impact of climate change on cultural heritage sites: Environmental law and adaptation. *Carbon & Climate Law Review* 5(2): 209–219. http://www.jstor.org/stable/24324033

Hanson, K., S. Baumann, T. Pasqual, O. Seowtewa, and T. Ferguson. 2022. "This place belongs to us": Historic contexts as a mechanism for multivocality in the National Register. *American Antiquity* 87(3): 439-456. https://doi.org/10.1017/aaq.2022.15

Howard, A.J., D. Knight, T. Coulthard, K. Hudson-Edwards, D. Kossoff, and S. Malone. 2016. Assessing riverine threats to heritage assets posed by future climate change through a geomorphological approach and predictive modelling in the Derwent Valley Mills WHS, UK. *Journal of Cultural Heritage* 19: 387–394. https://doi.org/10.1016/j.culher.2015.11.007

Imbler, S. 2021. Training the next generation of Indigenous data scientists. *The New York Times* 29 June 2021. https://www.nytimes.com/2021/06/29/science/indigenous-data-microbiome-science.html (accessed 21 July 2021)

Jones, L.A. 2015. *A Directory of Oral History in the National Park Service.* 3rd ed. Washington, DC: National Park Service. https://www.nps.gov/parkhistory/oralhistory/directory.pdf

Joyce, R.A. 2021. Science, objectivity, and academic freedom in the twenty-first century. *International Journal of Cultural Property* 28(2): 193–199. https://doi.org/10.1017/S0940739121000230

Kautz, S., R. Leibowitz, and J. Doherty, J. 2019. *Repairing National Register Nominations: Underrepresented Communities and Integrity*. Historic Preservation, Inclusion, Working Group 20, National Register Of Historic Places. https://ncph.org/history-at-work/repairing-national-register-nominations-underrepresented-communities-and-integrity/

Lucas, G. 2018. *Writing the Past: Knowledge and Literary Production in Archaeology*. New York: Routledge.

Makondo, C.C., and D.S. Thomas. 2018. Climate change adaptation: Linking Indigenous Knowledge with Western science for effective adaptation. *Environmental Science & Policy* 88: 83–91. https://doi.org/10.1016/j.envsci.2018.06.014

Manrique, D.R., S. Corral, and G. Pereira. 2018. Climate-related displacements of coastal communities in the Arctic: Engaging Traditional Knowledge in adaptation strategies and policies. *Environmental Science & Policy* 85: 90–100. https://doi.org/10.1016/j.envsci.2018.04.007

Mazzocchi, F. 2006. Western science and Traditional Knowledge: Despite their variations, different forms of knowledge can learn from each other. *EMBO Reports* 7(5): 463–466. https://doi.org/10.1038/sj.embor.7400693

NPS [National Park Service]. 2014. *Climate Change and Stewardship of Cultural Resources*. Policy Memo 14-02, 10 February. https://www.nps.gov/subjects/policy/upload/PM_14-02.pdf

Nicholas, G. 2010. Seeking the end of Indigenous archaeology. In *Bridging the Divide: Indigenous Communities and Archaeology into the 21st Century*. H. Allen and C. Phillips, eds. Walnut Creek, CA: Left Coast Press.

Papadopoulos, N., D. Oikonomou, G. Cantoro, K. Simyrdanis, and J. Beck. 2021. Archaeological prospection in ultra-shallow aquatic environments: The case of the prehistoric submerged site of Lambayanna, Greece. *Near Surface Geophysics* 19(6): 677–697. https://doi.org/10.1002/nsg.12174

Pollard-Belsheim, A., M. Storey, C. Robinson, and T. Bell. 2014. The CARRA Project: Developing tools to help heritage managers identify and respond to coastal hazard impacts on archaeological resources. *2014 Oceans – St. John's*, 1–5. https://doi.org/10.1109/OCEANS.2014.7003289

Rockman, M. 2015. An NPS framework for addressing climate change with cultural resources. *The George Wright Forum* 32(1): 37–50. https://www.jstor.org/stable/43598399

Rockman, M., M. Morgan, S. Ziaja, G. Hambrecht, and A. Meadow. 2016. *Cultural Resources Climate Change Strategy*. Washington, DC: National Park Service, Cultural Resources, Partnerships, and Science and Climate Change Response Program.

Rockman, M., and C. Hritz. 2020. Expanding use of archaeology in climate change response by changing its Social environment. *PNAS* 117(15): 8295–8302. https://doi.org/10.1073/pnas.1914213117

Rubertone, P.E. 1999. Engaging monuments, memories, and archaeology. In: *Archaeologies of Placemaking: Monuments, Memories, and Engagement in Native North America*. 1st ed. P.E. Rubertone, ed. New York: Routledge. https://doi.org/10.4324/9781315434292

Schneider, T., and K. Hayes. 2020. Epistemic colonialism: Is it possible to decolonize archaeology? *The American Indian Quarterly* 44(2): 127–148. https://muse.jhu.edu/article/756930

Seekamp, E., and E. Jo. 2020. Resilience and transformation of heritage sites to accommodate for loss and learning in a changing climate. *Climatic Change* 162: 41–55. https://doi.org/10.1007/s10584-020-02812-4

Sesana, E., A.S. Gagnon, C. Ciantelli, J. Cassar, and J.J. Hughes. 2021. Climate change impacts on cultural heritage: A literature review. *Wiley Interdisciplinary Reviews: Climate Change* 12(4): e710. https://doi.org/10.1002/wcc.710

Simpson, N.P., J. Clarke, S.A. Orr, G. Cundill, B. Orlove, S. Fatorić, S. Sabour, N. Khalaf, M. Rockman, P. Pinho, S.S. Maharaj, P.V. Mascarenhas, N. Shepherd, P.M. Sithole, G.W. Ngaruiya, D.C. Roberts, and C.H. Trisos, C. 2022. Decolonizing climate change–heritage research. *Nature Climate Change* 2: 210–213. https://doi.org/10.1038/s41558-022-01279-8

Smith, C., and H.M. Wobst. 2005. *Indigenous Archeologies: Decolonizing Theory and Practice*. 1st ed. One World Archeology Series no. 47. New York: Routledge.

Thornton, T.F., and A.M. Scheer. 2012. Collaborative engagement of local and Traditional Knowledge and science in marine environments: A eeview. *Ecology and Society* 17(3). http://www.jstor.org/stable/26269064

Two Bears, D.R. 2006. Navajo archaeologist is not an oxymoron: A Tribal archaeologist's xxperience. *American Indian Quarterly, Special Issue: Decolonizing Archaeology* 30(3–4): 381–387. https://www.jstor.org/stable/4139019

Verschuuren, B., et al. 2021. *Cultural and Spiritual Significance of Nature: Guidance for Protected and Conserved Area Governance and Management*. Best Practice Protected Area Guidelines Series no. 32. Gland, Switzerland: IUCN. https://doi.org/10.2305/IUCN.CH.2021.PAG.32.en

Venture, T., C. DeSilvey, B. Onciul, and H. Fluck. 2021. Articulating loss: A thematic framework for understanding coastal heritage transformations. *The Historic Environment: Policy & Practice* 12(3-4): 395–417. https://doi.org/10.1080/17567505.2021.1944567

Walter, R.K., and R.J. Hamilton. 2014. A cultural landscape approach to community-based conservation in Solomon Islands. *Ecology and Society* 19(4): 41. http://dx.doi.org/10.5751/ES-06646-190441

Watkins, J. 2004. *Indigenous Archaeology: American Indian Values and Scientific Practice*. Walnut Creek, CA: Alta Mira Press.

Wildcat, D.R. 2013. Introduction: Climate change and Indigenous Peoples of the USA. *Climatic Change* 120(3): 509–515. https://doi.org/10.1007/s10584-013-0849-6

Whyte, K.P., J.P. Brewer, and J.T. Johnson. 2016. Weaving Indigenous science, protocols and sustainability science. *Sustainability Science* 11: 25–32. https://doi.org/10.1007/s11625-015-0296-6

Wood, M. C. 200). Symposium: The Indian Trust Doctrine after the 2002–2003 Supreme Court term: The Indian Trust responsibility: Protecting Tribal lands and resources through claims of injunctive relief against federal agencies. *Tulsa Law Review* 39: 355.
https://advance-lexis-com.prox.lib.ncsu.edu/api/document?collection=analytical-materials&id=urn:contentItem:4CoY-T310-00CV-W00T-00000-00&context=1516831

The Interdisciplinary Journal of Place-based Conservation

Co-published by the Institute for Parks, People, and Biodiversity, University of California, Berkeley and the George Wright Society. ISSN 2688-187X

Citation for this article
Hotchkiss, Courtney, Erin Seekamp, and Alicia McGill. 2022. Strategies for meaningful engagement: A commentary on collaboration in archaeological climate adaptation planning. *Parks Stewardship Forum* 38(3): 412–427.

Parks Stewardship Forum explores innovative thinking and offers enduring perspectives on critical issues of place-based heritage management and stewardship. Interdisciplinary in nature, the journal gathers insights from all fields related to parks, protected/conserved areas, cultural sites, and other place-based forms of conservation. The scope of the journal is international. It is dedicated to the legacy of George Meléndez Wright, a graduate of UC Berkeley and pioneer in conservation of national parks.

Parks Stewardship Forum is published online at https://escholarship.org/uc/psf through eScholarship, an open-access publishing platform subsidized by the University of California and managed by the California Digital Library. Open-access publishing serves the missions of the IPPB and GWS to share, freely and broadly, research and knowledge produced by and for those who manage parks, protected areas, and cultural sites throughout the world. A version of *Parks Stewardship Forum* designed for online reading is also available at https://parks.berkeley.edu/psf. For information about publishing in PSF, write to psf@georgewright.org.

The journal continues *The George Wright Forum*, published 1981–2018 by the George Wright Society.

PSF is designed by Laurie Frasier • lauriefrasier.com

On the cover of this issue
Climate change creates conditions conducive to larger, more frequent fires, particularly in the American West. As a result, historic structures and artifacts are at greater risk of fire damage. The Bent's Fort Fire started on the morning of April 12, 2022. Approximately 85% of the national historic site's 800 acres burned. Thanks to the efforts of fire crews, the reconstructed adobe fort was undamaged. | NATIONAL PARK SERVICE