

Article

Name It and Its Yours: Toponym Disputes Between Native and Settler Colonials in North America

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Abstract

Humans tend to mark their presence and thus their lands by naming charismatic places such as mountains, canyons, rivers, and lakes. Toponyms is the term for marking places with names. In doing so, cultural groups claim the lands and the recognition of their presence through names in their language and behaviors reflecting their culture. When other cultures occupy these lands, they similarly mark them with their own place names, thus replacing earlier names and evidence of occupation. A conflict of toponyms occurs when one cultural group uses their power to maintain a superior attachment to the land. This chapter uses six toponym ethnographic studies to understand the origins of debates between Native American and settler colonial peoples in North American. Research findings from these studies define both the importance of toponyms to cultural groups and possible resolution of heritage conflicts. All studies have been reviewed and approved for public use for place interpretations, visitor education, and culturally appropriate management by funding agencies and participating Native American tribes and Pueblos.

Keywords: toponyms; cultural landscapes; geoscapes; decolonization; settler colonialism; Indigenous peoples; place names



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1. Introduction

Traditional Native American Elders say, “You don’t just go up to it without asking permission and explaining who you are and your purpose. And you do not proceed to interact with it until you get permission”. This toponym protocol about places that count [1], was taught by (1) Larry Eddy about the Spring Mountains, an origin place, (2) by Mary Lou Brown about picking Indian Rice Grass (also known as *Waii*) in the Mohave Desert, (3) by Clifford Jake about a deep canyon spring in a volcanic caldera, (4) by Yetta Jake about calling the Mother Wind (also known as *Monontis*), needed to remove cedar tree gnats at Zion National Park, (5) by Richard Arnold about radioactive materials (also known as the Angry Rock), (6) by Clyde Whiskers about the Colorado River when beginning a heritage monitoring trip, (7) by Vivian Jake about entering a space travel rock shelter in Kanab Creek, and (8) by Dan Bullets about viewing a solar calendar in Utah. (The

sources of these protocols shared for public education are (1) Larry Eddy, the recognized spiritual elder for the Chemehuevi people and a member of the Colorado River Indian Tribes, (2) Mary Lou Brown, a plant specialist and Chemehuevi Basketmaker from the Chemehuevi Tribe, (3) Clifford Jake, a Southern Paiute spiritual leader from the Indian Peaks Band of the Paiute Tribe of Utah, (4) Yetta Jake, a Southern Paiute elder from the Paiute Tribe of Utah, (5) Richard Arnold, a spiritual person and Chairperson of the Pahrump Paiute Tribe, (6) Clyde Whiskers, a San Juan Southern Paiute Tribe elder, (7) Vivian Jake, a Kaibab Band of Paiute Indians elder, and (8) Dan Bullets, a Sothern Paiute spiritual leader from Kaibab and elsewhere).

A shared Southern Paiute epistemological stipulation that is a cultural foundation of all of these instances is that the elements of the Earth are alive with agency, rights, and responsibilities in relationship to each other, including humans. These relationships were established and defined at Creation, so we must talk with Nature to achieve balance [2]. We are all the same family, only some of us have five fingers (a Navajo Elder at Canyonlands National Park).

In his book *The Invasion of America*, ethnohistorian Francis Jennings documents that the conquest of North America was as much about intellectual control as it was force of dominance [3]. Using an old English term the Cant of Conquest, Jennings points out that raising and winning intellectual debates about land ownership, rights to define history, and the ability to speak the truth not only win conquests but are essential for maintaining authority over the people being suppressed by the settler colonial system. The Cant of Conquest is the public debate controlled by the settler colonial system. See Chartrand [4] and Norgaard [5] and for an update of Jennings's interpretation of Settler Conquest. One aspect of colonial quest is to re/name geographically charismatic, culturally important topographic places that had previously been singled out for celebration by the people being suppressed. The notion of Name It and Its Yours is a well-understood description of a conquest process by settler-colonial society.

Toponyms is a term used in this analysis to reference scholarly studies of place names as they have been established and disputed over time by different cultural groups and nation states. The term is also used more broadly in the vernacular where it is interchangeable with terms such as place names. Use of Native names for places creates a situation which Greenberg refers to as when Autonymia Meets Cartography [6]. In other words, using Native names for their traditional places increases their rights and agency for self-directed freedom and independence. The names are used to refer to places that matter to individuals, communities, cultures, and nations alike.

In this analysis, toponyms are culturally and historically based and can reference various physical dimensions of the Earth including small geosites, vast ceremonial landscapes based on established trails, and massive geoscapes that are functionally integrated by geology, climate, and human use. Many of the geosites discussed in this paper have been celebrated by nations in recent times as national parks and world heritage sites.

Scholarly interest in toponyms derives from their being geofacts; that is, they are composed of scientifically understood components of physical geology and socially derived conceptions of that geology. They thus are understood as deriving from social constructions, therefore representing an aspect of how humans adapt and co-adapt with their physical and social environments. The Yurok people, for example, view traditional lands along the Klamath River including the coastline, the river, estuarine areas, and spiritually significant highlands as more-than-human lands that exist with the Yurok in a direct, kin-based relationship [7,8].

As social constructions, toponyms are often viewed as critical aspects of cultural identity, the subjects of systematic ethnographic studies, and the focus of local, national, and world heritage preservation rules and regulations.

This analysis derives from six research-based ethnographic studies of selected toponyms that are both culturally important to multiple peoples and have become components of significant intercultural environmental disputes. These case studies, which include Bears Ears, help contribute and frame the overall discussion on how to manage, protect, discuss, and understand culturally significant places and landscapes, especially the ones that have multi-tribal and layered attachments through space and time.

During these studies, Native people provided more than a thousand field-based cultural heritage interviews. The studies were all conducted by the authors of this paper, funded by US federal agencies, and approved by Native governments. These studies all include discussions on toponym disputes that are a result of worldwide human events over the past 500 years. All these cases of Toponym disputes have occurred or are occurring between the Native and Settler Colonial peoples. The cases involve geosites, geotrails, and geoscapes. The overall findings from these case studies are publicly available, but this paper focuses in-depth on the topic of indigenous place names and the disputes surrounding this topic.

The explicit aim of this paper, therefore, is to analyze contemporary toponym disputes between Native American and settler colonial perspectives, using six ethnographic case studies to examine how place names reflect and shape cultural identities, heritage claims, and environmental management practices (see also [9]). It seeks to identify the roles of multivocality and epistemological divides in these disputes, and to explore how culturally informed environmental communication can contribute to more inclusive and accurate recognition of Indigenous toponyms in heritage policy, heritage interpretation, and the practice of heritage preservation.

This paper is guided by three interrelated questions, which are addressed cumulatively across the case studies and discussion: (1) How do toponym disputes articulate deeper epistemological and political conflicts between Indigenous peoples and settler colonial institutions? (2) How is multivocality operationalized—and constrained—in contemporary heritage management? (3) What practical pathways exist for recognizing Indigenous toponyms without reproducing new forms of essentialism or exclusion?

By addressing these questions, this paper contributes to ongoing debates on place-naming and postcolonial heritage by shifting attention from symbolic recognition to the practical conditions under which Indigenous toponyms become governable, negotiable, and actionable within contemporary institutional frameworks. Despite growing scholarship on place-naming and postcolonial heritage, few studies offer comparative, ethnographically grounded analyses of how Indigenous toponyms are contested, negotiated, and operationalized across multiple governance contexts.

1.1. *Multivocality and Epistemological Divides*

This analysis argues that resolution of toponymic disputes between cultural groups can be facilitated through environmental communication [1]. This might result in multivocality as the USA federal government might assign multiple names for the same place, reflecting the cultural affiliation of groups. The analysis also argues that some disputes appear to be challenging to resolve because they involve epistemological divides, i.e., fundamental differences in how knowledge is defined, valued, and produced across cultures [10]. Toponym disputes are especially difficult to resolve because the geological environments they reflect lack inherent cultural meanings that are key to their use as social constructions and management as heritage places [11].

Wisdom Sites in Places by Keith Basso [12] is an ethnography by a scholar who devoted a significant portion of his career towards understanding Apache cultural attachments to traditional places. His findings are well represented in the book's title; Basso shows that when Apache people talk about places, they speak to them much as they would a grandfather or grandmother, asking them to share their special wisdom. Similarly, Southern Paiutes also talk of places with traditional peckings and paintings as *Tumpituxwinap*, translated as *Storied Rocks* [13]. The people of Taos Pueblo talk with their living sacred Blue Lake and have preserved it for this purpose [14]. For Native groups, their geological places are alive, have agency, and speak when they decide to share their stories with those needing and requesting their wisdom. The character and purpose of places for the Apache, Southern Paiute, and Taos Pueblo people was defined for themselves and their traditional places at Creation, and this understanding is a foundation of the Living Universe concept, which is an ultimate sacred postulate [15].

The idea of the Living Universe is a cultural stipulation for many Native people in North America, but it is not a part of Euro-American epistemology; therefore, controversies over toponyms can be embedded in major epistemological divides. This environmental communication problem can be summarized in the following short question: “How do you talk about a toponym being alive when that is impossible in one culture and normal in another?” [16]. Talking with the environment involves it speaking back, resulting in a social situation whereby both parties learn and change because of the conversation; in our previous work, we have referred to this as a double hermeneutic [2]. The world is never the same after multicultural communication, and places remember both the conversations and what they have learned through these about humans.

By “Euro-American epistemology,” we do not refer to a single, unified worldview, but to a historically dominant set of scientific–administrative knowledge practices associated with Enlightenment naturalism, Cartesian dualism, and modern state governance [17–19]. These traditions tend to treat landscapes as inert objects, separable from social relations, and legible through cartography, geology, and property regimes. We recognize that both Indigenous and Western epistemologies are internally diverse and contested, and that rigid dichotomies risk reproducing primitivist narratives. Our use of the term “epistemological divide” is therefore heuristic rather than absolute, referring to recurring tensions in heritage governance where Indigenous relational ontologies encounter institutionalized scientific–naturalist frameworks.

If toponyms are so significant, then why are they often silenced? Haitian anthropologist Michel-Rolph Trouillot’s *Silencing the Past* [20] offers a framework for understanding why Indigenous toponyms and epistemologies are so often excluded or marginalized in heritage debates. Trouillot argues that “silences” enter the production of history at multiple moments: the creation of facts, their assembly into archives, their retrieval, and their assignment of retrospective significance. Each of these moments is shaped by power, determining which voices and names come to stand for “history” and which are rendered invisible. In the context of toponyms, silences emerge when Native names are left off maps, when oral traditions are excluded from heritage registers, or when interpretive signage reduces multivocal landscapes to a single colonial label. Just as Trouillot shows that Haiti’s role in world history was silenced because it was “unthinkable” within Western frameworks, Indigenous ontologies of a living universe are frequently treated as inconceivable or “non-events” within Euro-American heritage debates.

Seen this way, toponym disputes are not merely struggles over nomenclature but over the very conditions of historical production. Whose names are archived, and whose are erased? Which stories are deemed credible, and which are relegated to folklore? By applying Trouillot’s insights, we recognize that the contest over Indigenous place

names are inseparable from broader structures of archival and epistemic power. This perspective highlights that resolving disputes through multivocality is not only a matter of intercultural communication, but also of actively countering the silences produced by colonial historiography and state mapping practices.

1.2. *Toponymic Identification and Preservation*

Native place names and their meanings have become more formally defined and celebrated, with their definitions now shaped by the United Nations' Toponymic Guidelines, negotiated through a series of formal committees [21]. Simultaneously, the debates over these names have also intensified. The content of Toponymic Guidelines has been developed since 1979. It now includes information about official, national and minority languages, names authorities, source material for toponyms, glossaries, abbreviations used on official maps, differentiating text from toponyms on national maps, and administrative regions. At the Ninth Conference [22], it was acknowledged that the format should not be too restrictive; it was also expressed as important to have guidelines in more than one language and to cooperate with neighboring countries.

The scholarly literature on topographically important places is rapidly expanding. This effort acknowledges such places as a part of the science of geology, ecology, and humans. These places are well represented in new areas of heritage identification, interpretation, and preservation. A new analysis of this geoheritage and geosite literature involves hundreds of published papers [23]. In Figure 1, there are some bibliographic review findings that derive from a statical co-occurrence of keywords from a cluster analysis. The analysis provides 28 bulleted findings that are tied to key articles. One summary point is especially important for the present toponym analysis. Interpretation of geosites provides their history and preservation [24] and assessing them allows for their classification depending on scientific, educational, tourism, and degradation criteria [25]. The rich geodiversity and cultural heritage of topographically spectacular landscapes provide a fundamental basis for geotourism and development [26].



Figure 1. Clustered Topics From Co-occurrence Analysis of Keywords [23].

A toponymic landscape involves the functional interconnections of geosites and geotrails to form a geoscape. The (re) naming of new places during colonial expansion is well-documented. For example, in Australia, studies analyze the effects of British settler colonialism on the toponymic landscape of lands traditionally cared for by Indigenous Australian peoples [27]. This Australian research documents contemporary national efforts to rectify these past colonial changes. Detailed toponymic research has focused on lands where Germans were the first settler colonialists to alienate land in portions of southern Australia, thus dispossessing the Nunga as traditional owners. The encroaching German settlers created a toponymic landscape that reflected their culture and history and the geological characteristics of the new lands where they settled. The German toponymic landscape of settled places was derived mainly from religious sources, or a person's name, or from the name of their home communities in German.

The Australian literature is not introduced here as a comparative case, but rather to underscore that disputes over place names, heritage authority, and cultural recognition are not unique to the North American contexts examined in this paper. While specific historical trajectories and institutional arrangements differ, studies from Australia similarly note that, even where state recognition of Indigenous toponyms has expanded, tensions often persist between Indigenous communities, heritage authorities, and tourism markets—particularly around the selective visibility and commodification of Indigenous knowledge for public audiences [27,28]. These broader observations help situate the North American cases within a wider settler colonial pattern, without implying direct equivalence or systematic comparison.

2. The Case Studies

This analysis is grounded in field-based research findings of six ethnographic studies that involved Native Americans, federal agencies, and the authors of this analysis. Each case illustrates a contemporary toponym dispute regarding names, uses, and management of geological places that involve Native people and colonial settlers in North America. The case summaries are organized by toponym themes that include (1) Sunset Crater, the space for multivocality at a national park centered on a volcanic geosite, (2) Mateo Tepe, epistemological divides on the meaning of a geosite, (3) Old Spanish Trail and lingering animosity along a geotrail between Native and settler colonial peoples, (4) multivocality and many place names on the Bears Ears Mountain, (5) trust and name complexity on an Alaskan lake, and (6) layered surface and underground lava toponymic landscape in New Mexico. The ethnographic research studies of the authors over the past three decades documents that these are appropriate illustrations of common themes in the USA.

2.1. Case Study Methods

All of the research studies used in this analysis were guided by professionally trained cultural anthropologists and conducted with a trained ethnographic team with the permission of the involved Native people(s). Funding was governed by federal and state regulations designed to protect human subjects. All data collection events between tribal representatives and ethnographers were voluntary. Text from the research was reviewed and approved by the involved Native governments before being made public. The research studies were designed to provide publicly available information so that traditional places and resources could be better managed in a culturally appropriate manner. Details of methods are provided in the technical reports for each study.

Native American heritage interpretations form the foundation of this heritage analysis. The authors of this analysis directed these studies. The studies involved ethnographic interviews and ethnohistorical documents, and they acknowledged the value of local his-

tories from an insider perspective; that is, information provided by the people under study. Dozens of additional scholars made significant contributions to the studies and are recognized in the study reports. Ethnographic understandings of geosites, geotrails, and geoscapes further derive from more than a dozen additional ethnographic studies involving these Native cultural groups, conducted by the authors.

Tribes and Pueblos were invited to participate in these ethnographic studies, and each appointed representatives to provide cultural interpretations and recommendations to the sponsoring federal agencies. The recommendations were reviewed, edited, and approved by the participating tribes and Pueblos. Ethnographic observations and recommendations were intended to be publicly available, thereby producing actionable cultural data for visitor interpretation and culturally appropriate agency management. In-depth details about our ethnographic field methods have been described and published elsewhere [29,30]. Together these ethnographic studies involved dozens of ethnographic field collection events which provide both the structure and content for the foundation of this analysis.

Indigenous peoples were not merely consulted but participated as knowledge authorities throughout the research process. Tribal governments reviewed research designs, approved interview protocols, and vetted all materials prior to public release. While final management decisions remain with federal agencies, the studies were designed to co-produce actionable heritage knowledge rather than extract cultural information. As is typical in research conducted under Indigenous governance protocols, the scope and form of data collection were shaped by culturally specific rules regarding what knowledge may be shared publicly, by whom, and under what conditions. Consequently, the material presented here reflects negotiated and relational research outcomes rather than exhaustive cultural inventories. These boundaries should be understood not as methodological limitations, but as expressions of Indigenous sovereignty and ethical research practice.

2.1.1. Geoscape One Sunset Crater (Theme: Space for Multivocality)

Sunset Crater, our first case study, is a volcano in Arizona that illustrates multivocality and epistemological divides, which are key in toponymic disputes in this geologically and culturally complex environment. Ethnographic studies identified Native groups who are culturally affiliated with this volcanic landscape, which is managed by the National Park Service as the Sunset Crater National Monument [31,32]. These and subsequent studies inquired into the cultural significance to Native groups and documented Native names for places in the park. These toponyms are now recognized in park trail signs and visitor center displays. Today, authentic traditional toponyms that reflect these ancient Native connections with this volcano occur in park interpretations and brochures (Figure 2).

Surrounding the monument are volcanic lands that ethnographic studies identified as being culturally connected with the park and its meanings for Native people (Figure 2). A geosite like Sunset Crater is best understood as situated in its surrounding topography or geoscape, which is also termed geomorphological landscapes [33]. A monument trail sign provides a map of eight Native toponyms (Figure 3). Only one mountain toponym is allocated to each tribe or Pueblo, although all peaks have their own Native names and stories. Note that the Native toponyms map is embedded in a larger colonial toponym interpretation, where the peaks are named after one Spanish and three English colonial explorers, and the area is called by the Spanish colonial name, the San Francisco Mountains. This example (Figure 3) illustrates the complexity of modern toponym renaming and the resulting multivocality.

The monument continues to be referred to by its colonial name *Sunset Crater*, and the surrounding lands are called the Flagstaff Volcanic Landscape. Disputes over the management of the mountains are argued in terms of their traditional names and their role as a center of spiritual power and ceremony. Glowacka, Washburn, and Richland [34] have an analysis of this debate entitled *Nwaatukya'ovi*, San Francisco Peaks, Balancing Western Economies with Native American Spiritualities. In many ways, this detailed analysis of how Native names and stories were used in public and legal debates over the management of a major Native mountain provides a perfect introduction to this toponym analysis.

2.1.2. Geoscape Two—Mateo Tepe or Devils Tower, Wyoming (Theme: Epistemological Divide)

Mateo Tepe (Figure 4) is a Native American name for a tall and geologically unique geosite. This stone tower rises 1200 feet above a flat grassland that is bisected by the Belle Fourche River. The tower is in an area that has been occupied since time immemorial and has become a sacred site for 23 contemporary Native American tribes. Toponymic debates have occurred since the site was placed on official USA maps regarding whether it should be recognized by a Native name such as Mateo Tepe and which translates into Stairs to Heaven. Alternatively, settler colonial peoples preferred to call it Devils Tower and see it as representing steps into the Earth to Hell itself [35]. The struggle over place name began soon after it was mapped in 1875 by a USA military exploring expedition and continues unabated today.



Figure 4. Postcard by Local Photo Shop, 1930, Using a Native Place Name.

Although the toponymic dispute began in 1875, it has been addressed in various ways by both the public and land managers, including the occasional use of the Native name *Mateo Tepe*. This is seen on a tourism postcard printed in 1930 (Figure 4).

The U.S. Geological Survey party, who made a reconnaissance of the Black Hills in 1875, called attention to the uniqueness of “The Tower.” Col. Richard I. Dodge, commander of the military escort, described it in the following year as “one of the most remarkable peaks in this or any country.” Henry Newt, geological assistant to the expedition, wrote: “*The Tower’s remarkable in structure and symmetry, and its prominence makes an unfailing object of wonder. It is a great remarkable obelisk of trachyte, with a columnar structure, giving it a vertically striated appearance, and it rises 625 feet almost perpendicular (sic)*” [36].

Linea Sundstrom wrote an analysis of the multiple dimensions of the Native concept that argues Mateo Tepe (Figure 5) is a portion of a Mirror of Heaven reflecting and duplicating the Black Hills—now South Dakota [37]. Sundstrom drew a simple map (Figure 6) to represent the findings of her ethnographically based two-dimensional mirror analysis. Native people stipulate that the heavenly (a Western term) portion of the mirror is exactly like the physical earth toponymic landscape. Spiritual and human activities occur on both dimensions.



Figure 5. Mateo Tepe Stairs to Heaven or Devils Tower Steps to Hell?

One of the many stories about Mateo Tepe’s sacred purpose is when the Spiritual Being known as White Buffalo Calf Woman (*Ptecincala Ska Wakan* in the Sioux Language) walked down the stairs and then traveled to the pipestone quarries. There, she met with Native spiritual leaders [38] and taught them how to properly quarry the red stone and how to make a sacred pipe. From that time on, a pipe made from this red stone was used in ceremonies throughout North America. The smoke from the red pipe rises to heaven and carries prayers to the Creator. After she gave the Sacred Pipe to Native people, White Buffalo Calf Woman returned to the upper dimension and her minor image, the White Buffalo Calf, remained in this dimension. The region surrounding Pipestone has been documented by archaeology as up to 9000 YBP [39]. For at least the past 3000 years, Native people used the Pipestone quarries as a sacred gathering place and the red stone pipes in prayers for the elements of the Earth, including people [39]. The Pipestone Quarry is currently managed as a National Monument by the USA NPS [40].

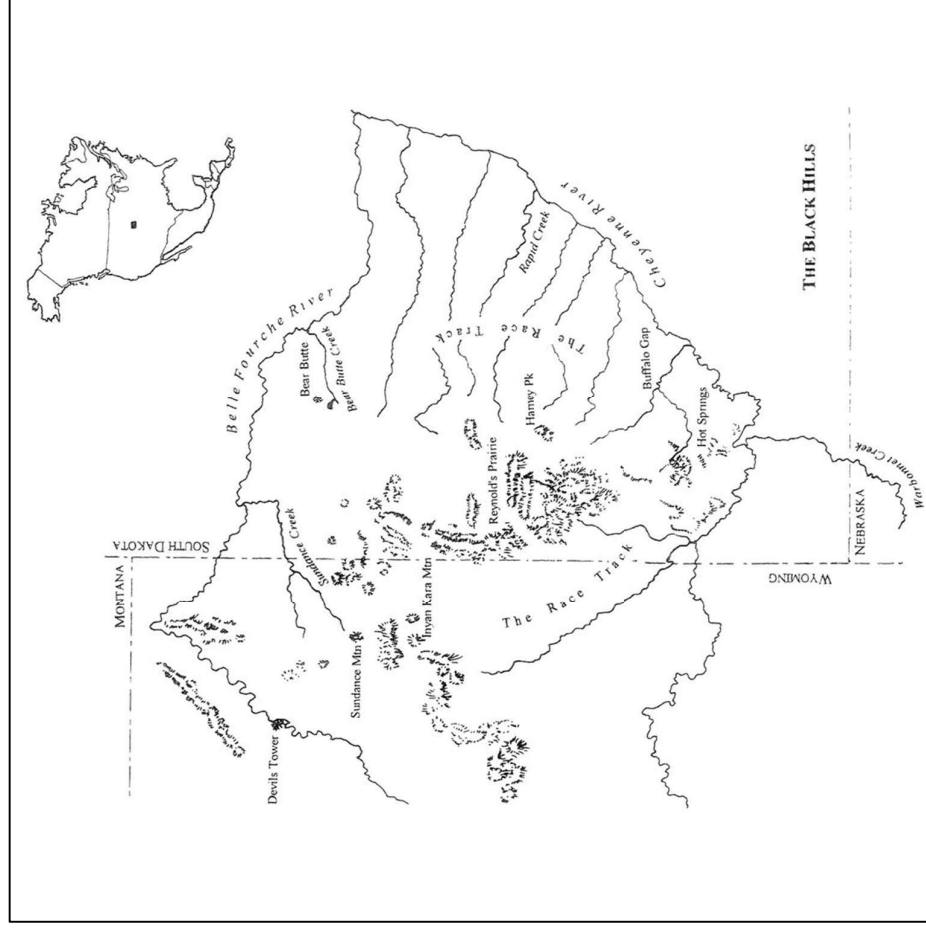


Figure 6. Sundstrom's Map Represents Her Research Findings [37].

Devils Tower was declared the first USA National Monument because of its geological value, but it is also now recognized for its Native American value. Mateo Tepe was nominated to and subsequently placed on the Second 100 IUGS Geological Heritage Sites. International Union of Geological Sciences officially defined it as one of the most important geosites in the world [41]. Mateo Tepe, also known as Devils Tower, was jointly named in the IUGS report (as Heritage Site #148 on page 134) and was nominated as both a geologically significant place and a cultural place of importance to Native American tribes [41]. Using both toponyms, this geosite was almost uniquely awarded a position as Site #444 on the official lists of significant world sites by the International Commission on Geological Heritage Sites [41].

2.1.3. Geoscape Three—Old Spanish Trail: Theme: Lingering Animosity Between Native and Settler Colonial Peoples

The Old Spanish Trail (OST) has been designated as a National Historic Trail by the National Park Service and is managed as such by the National Trails System in Santa Fe, New Mexico. The OST existed as a designated USA historic trail for most of a generation before its inherent toponym controversies threatened its continuation.

The Old Spanish Trail became the fifteenth National Historic Trail after Congress adopted Senate Bill No. 1946 and President George W. Bush signed the legislation in December 2002. The three alternatives of the trail occupy 2700 miles of traditional Native lands. The Bureau of Land Management and the National Park Service administer the trail together to foster trail preservation and public use. These agencies work in close

partnership with the Old Spanish Trail Association, American Indian tribes, state, county, and municipal governmental agencies, private landowners, nonprofit heritage conservation groups, and many other organizations.

The Intermountain Regional Office of the National Park Service funded two OST ethnographic studies [42,43]. The first study involved Native nations that traditionally lived along the trail, and the second involved Hispanic communities that were developed along the trail. Both Native and Hispanic communities were perceived to have been impacted by the caravans of thousands of animals and people who traveled along the OST from New Mexico to California. Once the connection of Native trails was understood after 1849, it became a part of USA national territory, and many kinds of travelers used the trail for various purposes.

Our studies conclude that the USA National Historic Trail called the Old Spanish Trail (OST) has been incorrectly named and wrongly located by small communities, states, and the U.S. Federal Government. The current toponym OST refers to three distinct trails that span about 1200 miles, and involve 40,000 years of use to connect settlements in northern New Mexico and Southern California. Traditional Native trails were used by them to travel for ceremony and resource exchange throughout the southwestern and western North America. Some combination of these traditional foot paths was used since time immemorial for both nearby and geographically extensive journeys.

Native people who were aboriginally residing in California and New Mexico mutually interacted using geographically diverse and ancient footpaths to share ideas, participate in joint ceremonies, and exchange natural and cultural resources. Some of the footpaths these Native people used are understood as components of the network of trails related to the OST and thus constitute a heritage geotrail system (Figure 7), which is related to various historic events as well as having ancient Native ties. Hopi, Paiute, and Zuni oral history, officially shared during ethnographic studies, describes regular travel from New Mexico and Arizona to California (Figure 8). One primary destination point for the New Mexico travelers was Chumash aboriginal communities along the coast of the Pacific Ocean. During these visits ceremony exchanges were made involving red paint and turquoise from the Colorado River and Grand Canyon and special kinds of obsidian from various Great Basin and Colorado Plateau locations. Ceremonies were jointly conducted to share abalone and other shells. Ocean water was splashed by water, provided by Pueblo pilgrims, towards their eastern agricultural communities to cause rain to fall back home, and ocean water was collected in pitch-pine-covered woven water bottles to be carried home for ceremonies.

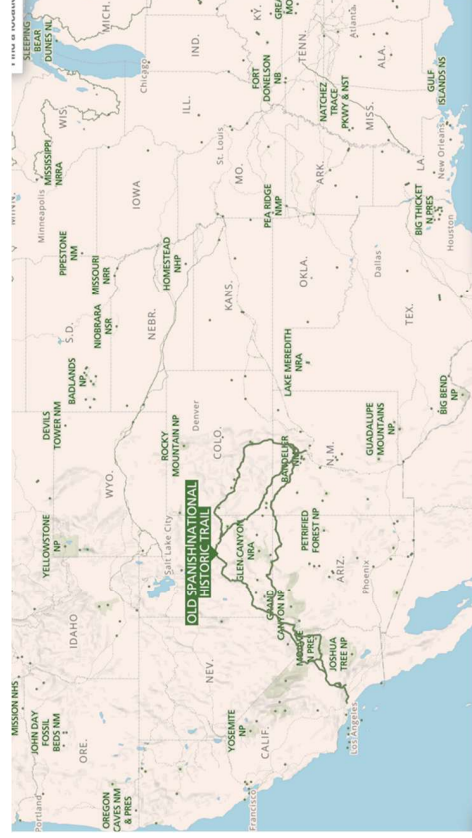


Figure 7. Map of Old Spanish Trail National Historic Trail [44].

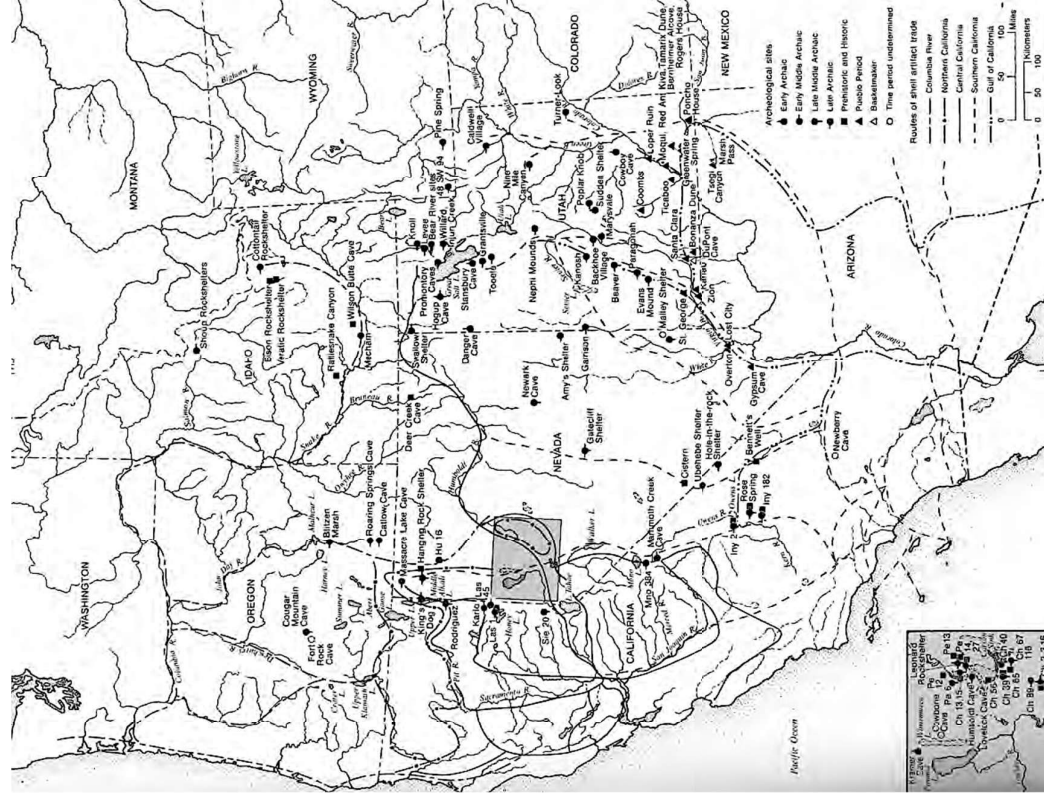


Figure 8. Map of Shell Artifact Distribution, Major Sites, and Exchange Routes throughout the Great Basin [45].

One geosite along these travel areas is called today by a translation of the Native name Ocean Woman who is a Creator Being for Paiutes [46,47]. It can be assumed that some of the joint ceremonies focused on her and some of these involved thanks for Creation and hopes for cultural and natural balance [48–51] and special cultural connection between the Old Woman Mountains (also known as *Mamapukaib*) (Figure 9).

This geosite exists as a central cultural feature within the Chemehuevi Paiute geography community [52]. Ocean Woman the Spiritual Being created *Mamapukaib* and infused this place with spiritual power during Origin Times [47]. Many ancient trails to this geosite were used by pilgrims to conduct ceremonies which was a Creation purpose for Mamapukib (Old Woman Mountains), which became a destination for such journeys.

Since about 1680, the Native footpath trail networks that involve the OST has changed in use, location, and condition. It has been influenced by the Native horses especially after the Pueblo Revolt of 1680, annual Mexican government-sponsored caravans from 1824 to 1848 involving thousands of animals, and hundreds of unregulated wagon trains stimulated by the discovery of gold in the new west coast lands now called California. This analysis is based on more than a hundred OST ethnographic interviews conducted

with members of contemporary Native and Hispanic communities located on one or more versions of the evolving trail system.



Figure 9. Ocean Woman atop Old Womans Mountain, California [47].

2.1.4. Cultural Meaning of Native Foot Trails

For more than 40,000 YBP, Indigenous people made foot trails that traversed wherever they lived. Their ancestors maintain these trails were designed with a purpose other than simple movement and connected places needing since Creation to be visited and celebrated. Consequently, their ancestors maintain that traditional trails are themselves alive, contain places necessary for ceremony, and remember songs and events that have occurred along their length. Travelers engage the trails, places for ceremony, and each other to create a cultural bond [16]. The living land can be talked with just as appropriately as interacting with a person [53]. The land traversed and the trails across it and other dimensions of space and time that are linked to it are *sacred living beings* [10,37,54,55].

Scholars of indigenous trails and the people who made them largely conclude that there is a relationship between journey and identity [56]. Travelers engage with each other, nature, and the supernatural [57]. Travelers learn landscape knowledge and the inscription of knowledge through symbols and stories [15]. Behavior and memory contribute to the formation of identities by generating “place-worlds” that people come to identify as their own. Basso [12] maintains that place-making is a way of constructing the past; that is, the place-worlds we imagine.

Indigenous trails are often for movement from home to spiritual places and people doing this are often called pilgrims [58]. These link geosites made at Creation to define both the path and the purpose of the journey [55]. Understanding the relationships between people and their environment is fundamental to understanding the cultural logic involved in ritual performances like pilgrimage [35]. Turner [59] is credited with the concept of *communitas*, wherein pilgrims during a liminal state bond together with other travelers and with destination places [58]. Pilgrimages are important to a society’s cultural connections to the local environment, and the incorporation of pilgrimage into ritual sequences affirms the collective valuation of particular places and the social memories inscribed in the landscape [60]. When pilgrims developed *communitas* relationships with people and places, both are socially reconceptualized in ways fitting the liminal experience. Simply put, a new social construct will be formed that redefines people and places who have been together in a pilgrimage.

2.1.5. Contemporary Native Trail Networks

Native foot trails today. Some footpaths remain albeit without Native use, cleaning, and prayers such as they received by traditional Native Americans before Euromericans arrived with their animals and new destinations. Figure 10 is a photo of a traditional foot path today in the Mojave Desert as it was being mapped by two archaeologists.



Figure 10. Two Archaeologists Map a Traditional Trail in the Mojave Desert [61].

The archaeology study was focused on possible trails connected with the Salt Song and Bird Song funeral paths. The 1981 photo is towards the east looking at Mopah Spring in the Turtle Mountains where the trail winds down the mountain toward the Colorado River. Native epistemology maintains that this and other ancient foot trails were established by various beings [62,63].

2.1.6. Trail Network over Time Periods

There is no evidence that Spanish settlers in either California or New Mexico regularly traveled or even were aware of these OST trails in the Mojave Desert. The ancient network of trails in the Mojave Desert was generally obliterated by Mexican caravans between 1824 and 1848. After this time, the rapid movement of massive wagon-trains of gold seekers called the 49-ers moved from many places in the eastern United States to California. Their travel established new trails and further obliterating remnants of both the Native trails and the subsequently established Mexican caravan trails.

This analysis argues that the Native footpaths or trails used initially by the Spanish to arrive from New Mexico to California were either irreparably demolished by subsequent animal hooves or the route was shifted from its original Native trail footprint to other areas. Displacement through violence and disease of the local Native populations who made and maintained the Native trails for thousands of years precluding their restoration damaged portions of the foot trails which were initially used by the Spanish.

The following are some key times when the Native foot trails were either used, demolished, or no longer a part of Spanish, Mexican, or U.S. citizen travels between New Mexico and California. Some Native use of some portions of these foot trails were reestablished when non-Native travelers shifted elsewhere.

Post-40,000 YBP Native Period

Originally for thousands of years an integrated series of foot trails used for ceremony, pilgrimages, and trade by Native peoples. It was maintained as a sacred trail and celebrated as a living spiritual identity.

Post-1600 Spanish Colonial Period

After early AD1600, the trails came under the colonial ownership of Spain. The Native revolt against Spanish settlers in 1680 resulted in most of their domestic animals being released and incorporated into Native communities. After this time, some Native tribes such as the Utes became predominately horse travelers and traders causing the trails to be widened but they largely remaining in their traditional place.

Post-1780 Depopulation

After diseases reduced the numbers and power of the Ute people largely after 1780 AD, others began using the trails. During this period, however, these were foot and horse trails.

Post-1822–1848 Mexican National Period

After the Mexican revolution against Spain, from 1811 to 1822 AD, Spanish colonial power ended along with their trail use agreement with Natives. After this time, the Mexican government officially permitted national trade to encroach on the trails by massive mule and horse caravans which transported New Mexico woolen goods to California and returned with thousands of mules and horses. Massive damage to the trails traveled occurred; however, many traditional trail segments were no longer used by the fast-moving caravans, so they made their own paths.

Wild horses were observed in large herds near the OST by Fremont in 1844. Such herds could move anywhere but certainly traveled along common paths to and from water and shelter. As foot trail travelers, these herds would have damaged the traditional trails.

U.S. Settler Colonial Expansion Period (1849–early 20th century)

The Treaty of Guadalupe Hildalgo ended the Mexican–American war and 55% of the Republic of Mexican National territory was ceded to the USA, including the trails. This treaty corresponded with the discovery of gold in newly renamed Mexican State (1824 AD) of Alto California. The massive rush of treasure seekers largely moving where they wished organized into large wagon trains involving hundreds of support animals. Little of the location or structure of the trails survived the movement of thousands of what would be called in American History the Forty-Niners Wagon Trains.

During the NPS-funded OST studies, all participating tribes and Pueblos disputed the USA-designated name Old Spanish Trail for a celebrated national trail that they maintained was a series of traditional Native trails that were linked together for Spanish and then Mexican trade caravans. The government of the Taos Pueblo in New Mexico was so incensed by the USA toponym that they refused to participate in the NPS study, even though the activities and events occurring along the OST were key in Taos Pueblo history. They maintained it was always a network of Native trails.

Controversy about the toponym also occurred because the primary use of the OST from New Mexico to California occurred between 1821 and 1849. This was after the Mexican Revolution, which occurred from 1811 to 1821. The OST was not established as a major trade trail during the Mexican National period. After 1849, it became a portion of the USA national territory primarily used for travel by USA colonial settlers seeking gold in California and not Mexican caravans moving woolen products from New Mexico and large mule herds back from California.

Neither the Spanish Colonial government nor the Mexican National government made the OST trail system, which was rapidly modified in size and location after 1849 by the USA gold-seeking settler pack trains and wagons. The toponym OST was simply historically and culturally incorrect. Subsequently, the toponyms for places along the OST were defined in terms of both people and events from these different periods, including Native toponyms.

So, even the toponym name Old Spanish Trails carries controversy. As a result, the OST has now been officially surrounded by other larger U.S. National trails which clearly are a part of USA colonial expansion history [64]. These more recently established national trails diminish both attention to controversy and thus mask OST public debates. The California National Historic Trail is now celebrated as the route of the 1849 gold rush travelers, when in fact it initially occurred along or near the OST. So, the history of USA settler colonialism has been geographically and temporally shifted.

2.1.7. Geoscape Four: Bears Ears, Utah Theme: Multivocality and Many Place Names

The goal of this case is to document multiple cultural connections to two buttes referred to as Bears Ears (Figure 11). Located in the state of Utah, in the United States, Bears Ears is two buttes that sit on the northern portion of Cedar Mesa just south of Elk Ridge and to the west of the Abajo Mountains and a southern portion called Cedar Mesa. The rain and snow water flow from the buttes into the surrounding Colorado River and the San Juan River.

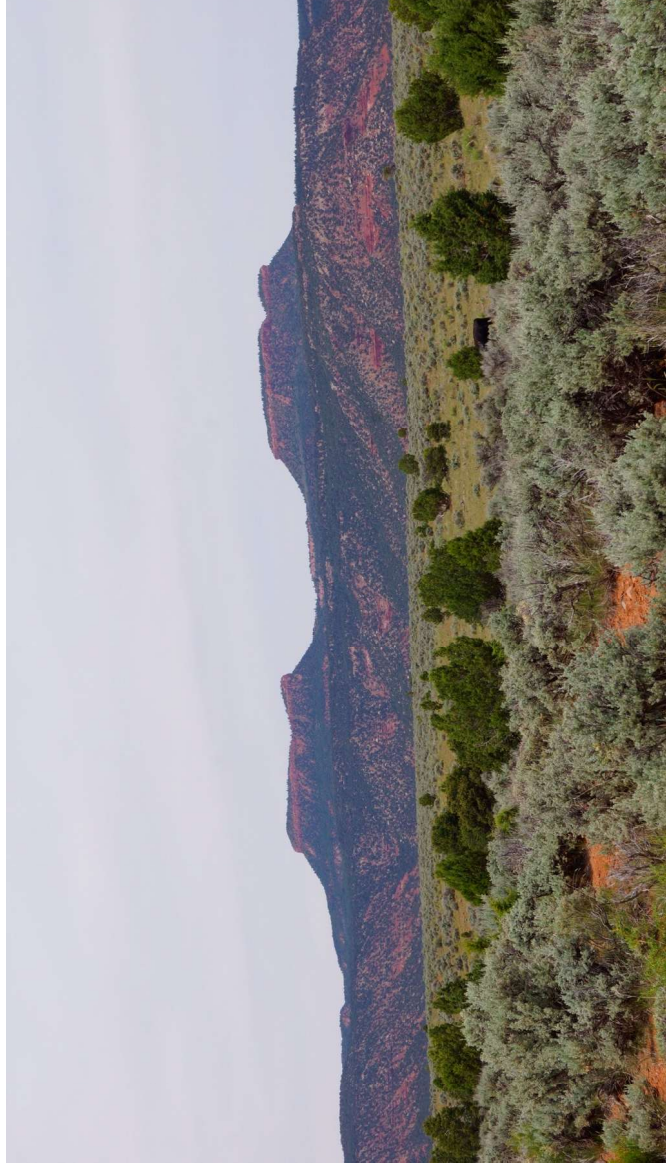


Figure 11. The Bears Ears Buttes.

The Bears Ears Geoscape extends well beyond the boundaries of BLM and USFS jurisdiction. This landscape has physical geological boundaries that correspond with the region's major hydrological and key geological features. This geoscape is bounded by the Colorado River to the west, the San Juan River in the south, Indian Creek in the north, and Montezuma and Coalbeds Creek in the east [65,66]. These hydrological systems are fed by water flow from the surrounding sky islands like the Abajo Mountains and Elk Ridge and mesas such as Cedar Mesa. Importantly, water flows from the Bears Ears Buttes to feed the streams that flow into the Colorado and San Juan Rivers.

Culturally, the Bears Ears Geoscape is composed of well over 1000 known archaeological sites and it can be argued that it is the western reaches of the Mesa Verde World. This lifeway was developed during an 800-year period (AD 500 to AD 1300) to describe the rise of peak agriculture in what is now the Four Corners region of the United States. This lifeway was built on a horticultural economy that over time improved dryland and

irrigated farming techniques, increased population growth, and evolved social complexity. During this time, there were large ceremonial centers with groups of kivas and community dancing grounds, would concentrate under the guidance of religious leaders to perform ceremonial activities such as rain-making ceremonies. These ceremonial centers include places like Monarch and Coalbeds. Places like Bears Ears and the neighboring present day Natural Bridges National Monument have always been places associated with pilgrimage, ceremony, and Creation.

While the 32 contemporary tribes have different and layered connections to this geoscape, they recognize that each tribe has a cultural right to speak on their connections and traditional uses. Aside from the two BLM-funded tribal studies, there is the legally mandated Bears Ears Commission which consists of five tribes, Hopi, Navajo, the Ute Indian Tribe, Ute Mountain Ute Tribe, and Zuni. This commission was founded when President Obama signed his proclamation on 26 December 2016. According to the proclamation, the Bears Ears Commission is hereby established to provide guidance and recommendations on the development and implementation of management plans and on management of the monument.” Prior to the formation of the Commission, these five tribes formed the Bears Ears Inter-Tribal Coalition. This group has appointed delegates to represent the tribes’ inherent rights to self-determination, and the coalition works to serve as extensions of each tribe’s sovereign authority as they advocate the protection and preservation of the Bears Ears cultural landscape.

Although a number of colonial toponyms are used today to refer to these three portions of the Bears Ears, from a Native perspective, its geology, hydrology, biotic ecosystem, cultural history, and spiritual places are all functionally integrated into an ancient sacred landscape. While this geoscape is known by its colonial name, Bears Ears, the 32 tribes have their own name for this landscape in their own language. For example, the Hopi refer to it as *Hoon’Naqvut*, the Navajo call it *Shash Jaa’*, the Utes named it *Kwiyagatu Nukavachi*, and for Zuni it is *Ansh An Lashokdiwe*. Recently, researchers from Northern Arizona University and Heritage Lands Collective conducted an ethnographic study with nine of the culturally affiliated tribes in which tribal representatives shared their deep time attachments to this region.

Native people stipulate that they live in and are culturally integrated with Bears Ears since time immemorial, which archaeologically has been documented to be about 40,000 YBP. Ethnographic studies document how Native groups have utilized the range of natural and ethnographic resources that occur within this complex landscape.

All portions of Bears Ears Geoscape (Figure 12) contain Native toponyms; however, the ones occurring in the southern area have become most famous for their diversity and use. These include the stone bridges in the Natural Bridges National Monument and large traditional communities which are characteristic of the Western Mesa Verde World. The following are two examples of the geosites located with the larger geoscape and that were also visited during the current Native American ethnographic study.

Coalbeds Geosite

The Coal Beds geosite was visited during the ethnographic study due its high density of archaeological resources such as rock peckings and paintings, potsherds, lithics, and evidence of a number of stone structures. Coalbeds is located at the junction of two hydrological systems, Montezuma Creek and Coalbeds Creek. The geosite is largely comprised of two sections. One is a flat area with erected stone pillars and the remains of a stone structure. The stone pillars stand in a linear alignment (Figures 13 and 14) and face angled structure remains that are on the edge of the elevated area. This alignment was interrupted to be associated with time keeping and ceremony associated with agriculture.

ricegrass, globemallow, Indian Tea, and snakeweed. During the ethnographic study, tribal representatives saw Monarch as a place of ceremony, medicine, and clan migration.

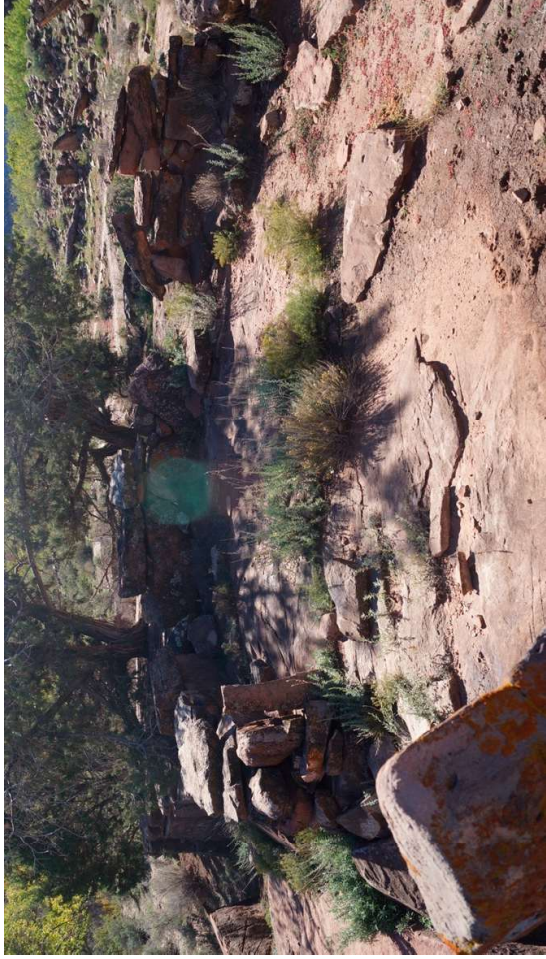


Figure 14. Remains of a Stone Structure Near the Erected Stone Pillars.

The Monarch Geosite is centered around a large alcove with a stone structure, a spring, and a wide array of cultural and natural resources such as petroglyphs and grinding area and traditional use plants. The closest archaeological resources visible as one enters the alcove area after climbing the slickrock slope are petroglyphs. On the wall of the alcove are peckings of anthropomorphic figures and geometric lines which includes pecked images of transformed shamans (Figure 15). These images show how religious specialists have used Monarch as a portal to travel to inversed dimensions of the universe to acquire knowledge, songs, and power [67].



Figure 15. Pecked Images at Monarch including Transformed Shamans found within the Circle.

The stone masonry structure remains is one of the most noticeable features available in this geosite and is found in the innermost part of the alcove (Figure 16). The remains are largely comprised of two units. One unit is a detached, rectangular remain with straight

walls. The other surrounds a larger space with straight walls and the remains of round towers that have intermittent squared holes on their curved walls.

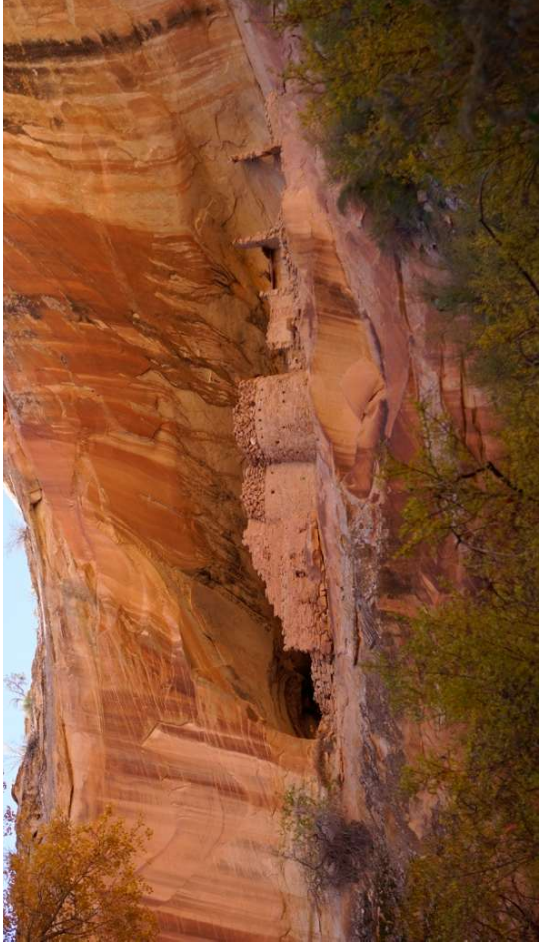


Figure 16. Large Masonry Structure at Monarch.

2.1.8. Geoscape Five Iliamna Lake (Nanvarpak, Nila Vena) Native and Local Place Names, Alaska (Theme: Trust and Name Complexity)

This toponym analysis is based on an extended ethnographic and linguistic study by Yoko Kugo, an ethnographer at the University of Alaska. It is focused on Native toponyms associated with a very large lake (Figure 17) (a geosite) and the numerous associated geosites that constitute its massive integrated surrounding geoscape [68–73]. Iliamna Lake, which is the largest freshwater lake in Alaska, lies 362 km (225 mi) southwest of Anchorage, in southwest Alaska. Today, five communities lie on the shores of the lake: (1) Pedro Bay, Iliamna, (2) Newhalen, (3) Kokhanok, and (4) Igiugig. The people of Levelock, a community on the Kvichak River, have close ties to the Iliamna Lake communities. Some residents of these communities have moved around seasonally for commercial fishing, hunting, and through marriage. Because of such travel and migration, these communities now include descendants of five cultural groups: (1) Dena'ina, (2) Central Yupit, (3) Sugpiaq (Alutit), (4) Russians, and (5) northern Europeans. The toponyms surrounding the lake reflect these cultural groups but are dominated by the English-language settlers who dominate the production and modification of place names.

Two Native names, *Nanvarpak* (“big lake” in Yup'ik) and *Nila Vena* (“islands lake” in Dena'ina) refer to the body of water widely known as Iliamna Lake. Locals recalled the present name “Iliamna” Lake having originated from Russians who modified and recorded the Dena'ina name *Nila Vena* to Ilyamna (as a Russian place name).

According to Kugo [69], place names and associated stories about these places illustrate community histories, lifeways, and cultural ethics and practices that are grounded in people's intimate relationships with their homeland. During her ethnographic research which took place between 2016 and 2019, Dr. Kugo worked with community elders to document traditional place names and stories. This occurred while travelling to these places with community members and participating in harvesting berries and fish. The Elders' memories about the land and places awaken old connections to the landmarks, streams, lakes, and mountains that have given them life, food, and shelter. Sharing the place names in these stories and injecting their own experiences into the stories expands the narratives, making them more personal and applicable to the Elders' own contemporary settlements.



Figure 17. Iliamna Lake, Biggest Lake in Alaska.

Kugo illustrates how difficult it is to both explain the purpose of research conducted by a cultural and social outsider and still meet the culturally appropriate confidential protocols needed for the study to be successful. The researcher, Dr. Kugo, emphasizes that the Iliamna Lake area is unique because (1) it consists of 2+ Native language groups, (2) it previously had a Russian influence, and (3) it is now in USA territory. Place names will not completely tell the stories and histories of a cultural people, but as ethnographic researchers, we learn by hearing the stories behind the names. Native local people have passed down their histories and experiences through telling stories about places.

Kugo concludes that Indigenous peoples become aware of sense of place in part by passing down place names with the cultural ethics related to these places, and by living according to these ethics. Telling and retelling stories affirms those people's confidence and competence in their vernacular knowledge, which allows them to thrive on their homeland. Their cultural landscapes exemplify their traditional ways of life, ecology, and culturally based interactions with the land.

Yup'ik people maintain reciprocal relationships between humans and animals, as well as between the spiritual and natural worlds. Yup'ik people often relate their practices and ways of harvesting plants, fish, and animals at places when talking about their travel routes and landmarks, thereby ensuring that this traditional knowledge spreads. Yup'ik people believe that their practices help the spirits return to the living world, so that the people can hunt the animals again in the future. Hunters leave food offerings to show appreciation to the land and animals [69], and people discard animal bones in the water after a meal or bury them where people will not step, as a sign of respect.

The joint place name study has documented more than 219 Iliamna Lake Yup'ik place names [73]. The location of the Yup'ik place name is primarily referenced using English place names on official maps. The complexity of using Yup'ik place names to indicate geosites derives from how they talk about these places. Often there is no single term of reference but instead the place is known by special events and location relative to other places.

A further place name study [74] extensively involved committees composed of Elders whose desire was to expand recorded knowledge of toponyms for future generations. These two yearlong studies resulted in more than 200 places being better recorded and further studied. For each place, Elders provided (1) a Yup'ik name, (2) a literal translation, (3) related Yup'ik words that further define the place, (4) location information using other

Yup'ik toponyms, (5) an English name, (6) a second Yup'ik name for the area, (7) literal translation of the second name, (8) more Yup'ik words about the place, (9) another Yup'ik name for place, (10) related Yup'ik words about the place, (11) key topographic features of the place, (12) more location information, (13) English name of nearby location, and (14) descriptions of toponyms from Elder oral interviews. The latter often includes stories about the place and related locations. In this expanded report of findings, the typical toponym requires two pages of text to be culturally understood. This text constitutes its minimum name in Yup'ik. Thus, the study explains the difficulty of rendering a Yup'ik toponym as a single place name for a flat map. The Yup'ik people and other Native groups are working with ethnographers and cartographers to produce electronic maps that can contain pages of cultural information about hundreds of toponyms. Such living maps are intended to be used in schools and community centers as well as heritage data bases.

2.1.9. Geoscape Six: El Malpais National Monument, New Mexico (Theme: Layered Toponymic Landscapes)

El Malpais National Monument, New Mexico (ELMA) is an ancient area consisting of multiple unique geoscapes; that is, lava flows and volcanoes occurring on top of each other forming layers of volcanic fields (Figures 18 and 19) and underground lava tubes. Today, the lava flows are managed as a USA national monument by the U.S. NPS using the area's original colonial toponym applied during the Spanish colonial period and continued during the USA colonial period [74]. El Malpais is a Spanish term for a bad place or bad lands, but the tribes and Pueblos who participated in the NPS-funded ethnographic study of this lava flow define it using their own linguistic terms and specify its traditional uses and cultural importance, including its spiritual places [75]. Larsson writes that the name “El Malpais” (“the badlands”) is a colonial one, showing that the Spanish explorers saw these jagged lava fields as cursed and impassable [75]. However, the Pueblo peoples and Navajo saw them as a meaningful part of their homeland.



Figure 18. Volcanic Lava Fields of ELMA.

The five unique lava flows of the park occurred over a period of thousands of years deriving from the foot of a massive sacred mountain, with the colonial name Mount Taylor. This shared sacred massif has dozens of other Native names and has been the subject of extensive Native heritage research [76]. All the volcanic landforms in the area were not formed because of a single, catastrophic eruption of Mt. Taylor. The current landscape is a product of a succession of volcanic events extending over a long period of time.

Mt. Taylor and its lava fields are active Native ceremonial areas and are generally considered living geological places involved in the rebirth of the Earth. Archaeologists have recorded native people for 40,000 YBP, potentially meaning that native American people have been observing many of the historical volcanic events. Further, these events might have been remembered into the present through oral history. During the Mt. Taylor Traditional Cultural Property (TCP) studies, 16 tribes were consulted. Between October 2007

and February 2008, formal consultation meetings were held with eight Native governments, including the Pueblos of Acoma, Laguna, Zuni, Jemez, Isleta, the Hopi Tribe, the Jicarilla Apache Nation, and the Navajo Nation. These Native tribes and Pueblos provided the heritage information needed to nominate most of the Mt. Taylor massif to the National Register of Historic Places.

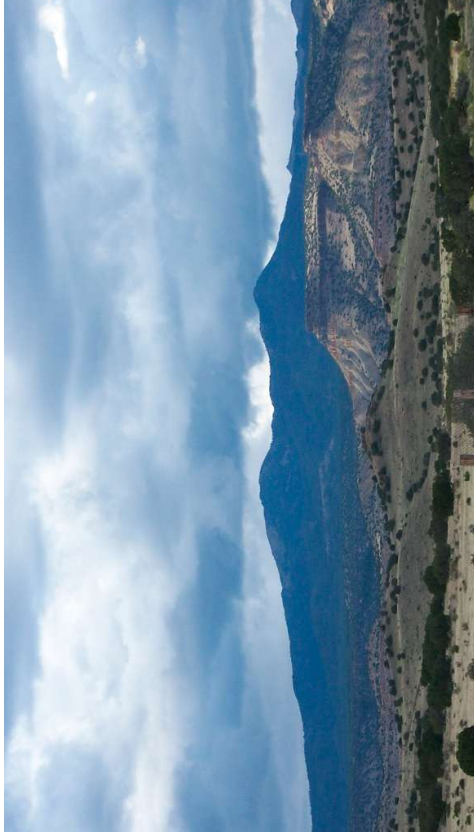


Figure 19. Mount Taylor, New Mexico.

A shared heritage interpretation is that landscapes are more than the physical environment, or a pictorial representation of natural scenery [77–79]. In the view of most American Indians, the concept of landscape is not limited to the physical realm of topographic features, stone, trees, and water, but also includes the spiritual world [80]. *Their cultural practices and beliefs reflect a sense of place* (emphasis added). Gulliford [81] states that “sacred sites remain integral to tribal histories, religions, and identities” and stresses the importance of “understanding landscapes in the context of traditional Native American religion and the powerful, enduring presence of sacred geography”. Vine Deloria writes that sacred places “are places of overwhelming holiness where the Higher Powers, on their own initiative, have revealed themselves to human beings [...]. This tradition tells us that there are places of unquestionable, inherent sacredness on this earth, sites that are holy in and of themselves” [81].

From the surface of the lava flows and emerging volcanos, the ELMA lands are sacred and have always been. For example, Kipukas were formed during the flows of lava. During their movement, they picked up preexisting earth and carried it along with the flowing lava. When the flowing lava came to a stop, islands of preexisting earth occurred throughout the lava landscape. These dirt islands are now called by the Hawaiian name Kipuka. The islands at ELMA became culturally special and the focus of ceremonial activities. They were connected by laboriously constructed trails from the edges of the lava flow.

Park archaeologists have mapped a system of trails across the most recent of the lava flows and identified that some of these connect the Kipukas with places elsewhere in the lava field and along its edge (Figures 20 and 21). In Figure 21, the trails are marked in yellow and the structures on the Kipukas are indicated by red squares.

Below the surface of the lava flows are tubes (Figure 22) that define this as a volcanic layered landscape. Lava tube formation and layers: tubes are built up by layers of successive lava flows. There are examples in the monument of stacked lava tubes. A succession of flow events has caused the tubes to be stacked on top of each other. There are several in the Bandera flow and the tube at the base of McCarty’s Crater.



Figure 20. Kipukas and Natural Vegetation on one of the Lava Flows.

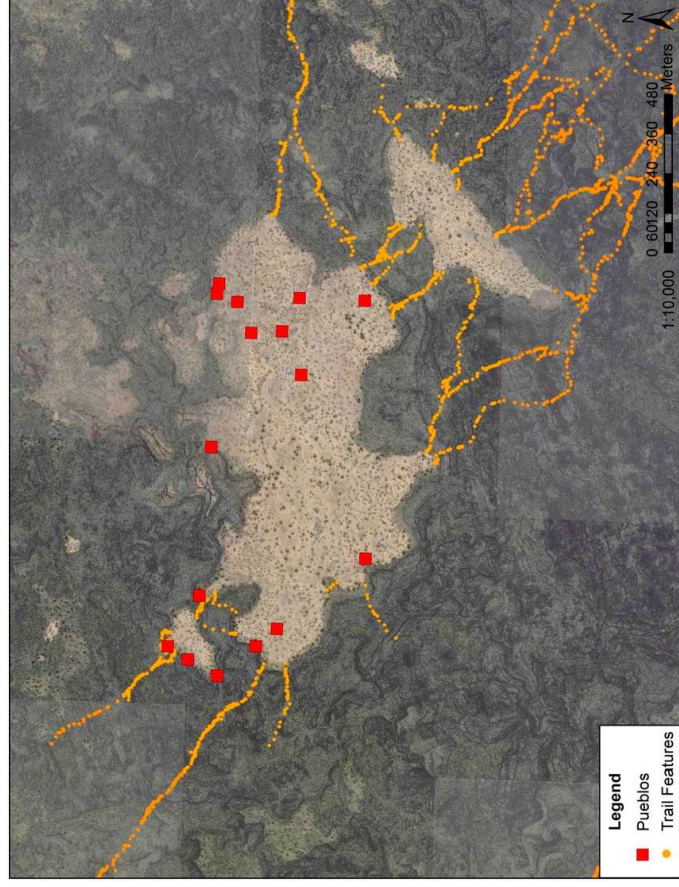


Figure 21. Archaeology Mapping of Trails and Structure on Kipuka at ELMA.

One lava tube, called Sheep Trap, is open at two ends, creating a very short dark zone. One end has a ramp (naturally occurring but humanly enhanced), and the other end is a barricade built by people. Bighorn bones have been found around the barricade [82]. At one end, there is a bighorn sheep bone, a wall of breakdown from the tube roof, and tree logs designed to trap the animals.

Many species of invertebrates live in the lava tubes. Moss gardens have the highest diversity. Bats roost and raise young in the tubes during the summer, and several species (perhaps 10 to 12) overwinter in the tubes through hibernation. Other animals enter the lava tubes probably for water in the late spring to early summer, when surface water is lowest and seasonal ice melts. Ringtail cats often frequent lava tubes hunting bats—this is a good reason to roost on the ceiling.

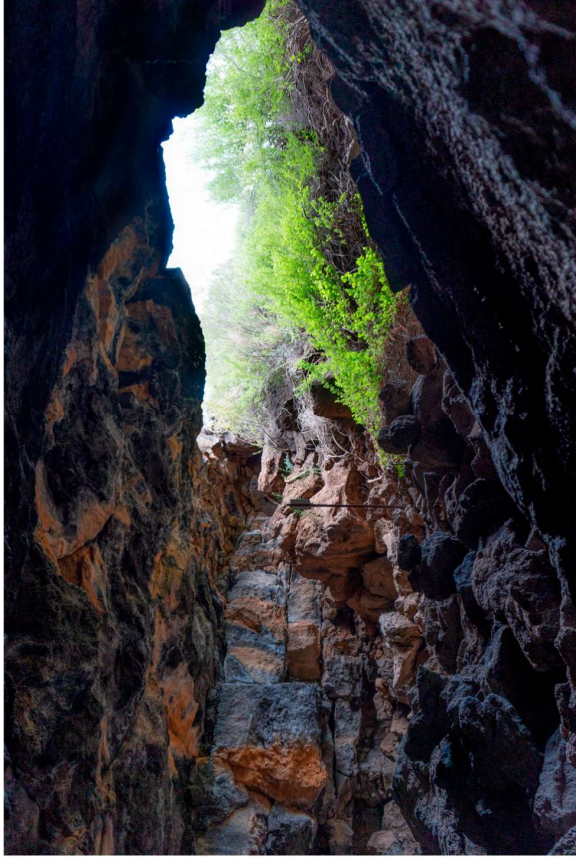


Figure 22. One of Many Lava Tunnels in the ELMA.

The remains of other animals such as deer, elk, bighorn, bobcat, and wolf have been found in the lava tubes. These remains were likely brought into the lava tubes by people. There are many examples of this kind of activity in several of the lava tubes throughout the monument. Usually, the remains are partial skeletons. There are a few examples of complete skeletons, one example being a bighorn in Braided Cave. Another is an elk and a bobcat in Pantheon Cave (Figure 23). It is conceivable that the bighorn walked into Braided Cave and died. The remains in Pantheon are harder to explain and are quite old—ca. 2700 BP. They are far at the back of the cave in a dark zone. The only access to the cave is a 40-foot drop at the entry. So far, samples have not identified cut marks or indications of predation on the bone. The presence of faunal remains deep in the caves is a puzzle. A few examples of bone could be explained, but there are many examples of hundreds of bones such that it logically suggests human activity and use.



Figure 23. Elk Bone found at the back of a Cave.

ELMA offers a telling example of how toponyms can encapsulate competing epistemologies of places. For the Acoma, Zuni, Laguna, and Navajo peoples, the volcanic flows, cinder cones, and ice caves that characterize the area are integral components of a sacred geography, animated through origin narratives, ceremonial practices, and kin-based relationships with the land [75]. In these Indigenous epistemologies, El Malpais is not an inert “landform” but a living participant in a network of spiritual, historical, and ecological relations that sustain community identity and cosmological order.

The Spanish colonial name *El Malpais*—literally “the badlands”—embodies an external, utilitarian gaze that interprets the jagged lava fields as barren, dangerous, and without value for cultivation or settlement. This linguistic imposition not only erases Indigenous place names but also encodes a worldview in which landscapes are assessed in terms of economic productivity rather than spiritual significance. The juxtaposition of these naming systems highlights the role of toponyms as sites of epistemological contestation, where colonial descriptors overwrite Indigenous narratives, yet Indigenous place-based knowledge continues to assert alternative ontologies grounded in long-standing reciprocal relationships with the land.

3. Case Discussions

This analysis highlights field-based ethnographic findings on geological toponyms, particularly as they are involved in disputes in cross-cultural environmental communication over the identification, interpretation, and management of places.

Agency in toponymic disputes is unevenly distributed. While Indigenous peoples possess epistemic authority grounded in long-term relationships with place, settler institutions retain juridical and representational power through mapping, signage, and policy. Multivocality initiatives therefore operate within asymmetrical structures, where inclusion does not automatically translate into control or decision-making authority.

Some of these issues are listed below with highlighted key themes and selected references.

1. Debates over *geological toponyms* are intensely argued because these places represent important aspects of past and contemporary heritage for different peoples [83].
2. Resolution of toponym debates is difficult, but a middle ground resolution often can be achieved through multivocality [84].
3. Multivocal presentations use limited communication space, which reduces the ability of the debating cultural groups and land management agencies to convey toponym interpretations [85]. Reduction in space and increased complexity of message can result in the further essentialization of places. You can only get so much information into an interpretative sign, ranger talk for tourists, or brochure [86].
4. Epistemological divides are dimensions of geological toponyms that can cause debates to be unresolvable. People hold beliefs called ultimate sacred postulates about the world that are not logically possible in other cultures [15].
5. Geological places often are understood by culturally affiliated Native peoples as being alive, either as living beings themselves or composed of living beings. The living universe is a stipulated belief for most Native peoples [2].
6. A key finding from our five ethnographic studies is that places are culturally layered with different meanings, each of which are specific to the peoples who have interrelated with the geosite for long periods. For Native people of the southwestern USA, this relational period is about 40,000 YBP. Deep time and multicultural connections make for complex understandings of places. This complexity becomes a key issue when Native people participate in land management meetings where their desire to maintain or reapply traditional toponyms face resistance from supporters of colonial toponym meanings.

7. Some Native cultures maintain that sacred toponyms should not even be approached until they understand your purpose and approve your requests [16].

4. Toponyms

The naming, (re)naming, and not naming of places is purposeful because when people live in an environment, they incorporate it into the sense of personal, family, community, and ethnic identity. Native people talk about places that count [87] in terms of what wisdom [12] they hold and can share to bring balance into the world and to center people in their history. Many Native places involve stories about what the place was intended to be at Creation and what it can become for further generations. Most Native people use their own terms of reference for places knowing that other cultural groups will have their own ways of talking about and to these places. The energy and spirituality of places are shared broadly among Native peoples. Places can be very site-specific locations; however, most are known through the broader areas where they are located. For Native Americans and many other indigenous peoples, the cultural meanings of places are primarily defined at Creation, although some can be understood by events that have occurred there.

Colonial toponym actions often began as a symbolic planting of the home country flag and declaring the land owned by the royals of that nation. Thus, in colonial culture, some and perhaps all toponyms involve ownership of place whereas the opposite was traditionally true of Native places. In general, the more important a place and its associated physical and spiritual resources, the more likely it will be peacefully shared by different cultural groups. A few examples of multiethnic sharing are the Zuni Salt Lake, in New Mexico, the Pipestone Quarries, in Minnesota, Mateo Tepe, in Wyoming, and Effigy Mounds, on the junction of the Mississippi and Wisconsin Rivers in Ohio.

USA presidents have engaged in political disputes by using toponyms. These actions are value-based and politically motivated [88]. For example, the tallest mountain in North America, which is located in Alaska, has been the subject of repeated name changes by presidents of the USA. Initially, the mountain was called in 1917 Mount McKinley to honor a USA president (Figure 24).

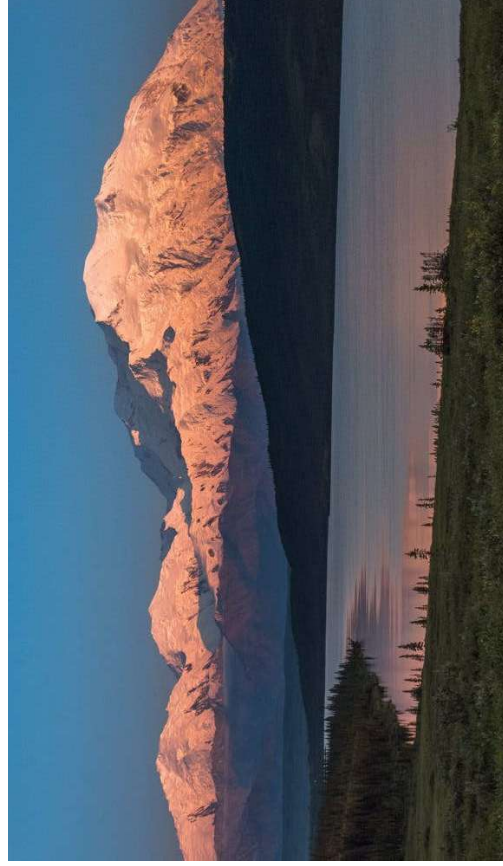


Figure 24. Mt Mckinley vs. Denali, Photo Courtesy of Denali National Park.

President Obama changed the name in 2015 in a Native language as Denali, which is only one of the Native terms of place reference for the mountain. Then, in 2025, Trump renamed it again as Mount McKinley. President Trump changed the historic toponym referencing the massive Gulf of Mexico to the Gulf of America (Figure 25), saying at the

signing to reporters that he got teary-eyed when he signed the Executive Order changing the name. This is a political process that Bolton [89] concluded is a planned social distraction produced by the jingoistic renaming of seas, mountains, and other landmarks, creating an exclusionary national language.



Figure 25. Trump Executive Order Changing the Gulf of Mexico to Gulf of America, Photo Courtesy of the Office of the President of the United States.

During a meeting between President Trump and President Putin of Russia, he expressed the importance of Russian heritage in Alaska that was derived from their colonial occupation of these lands. Putin confirmed the continuation of this heritage connection by saying his scholars have identified 700 place names of Russian origin.

Recent U.S. administrations have also demonstrated how toponymy functions as a symbolic political tool. Executive actions reversing or reasserting colonial place names illustrate how heritage-naming becomes entangled in broader culture-war dynamics, where Indigenous recognition is framed as either restorative justice or ideological excess. Emerging scholarship has begun to analyze these processes as forms of performative nationalism rather than heritage management [90]. While our case studies predate some of these developments, they help explain why such naming conflicts resonate so strongly in contemporary political discourse.

Many geosite toponym disputes in North America are between Native people whose lands are involved in encroachment by members of one or more conquering colonial society(s). Native struggles are focused on returning traditional names to these places and re-establishing aboriginal styles of land management. A key modern assumption regarding (re)naming is “if it has a Native name then Native people have a claim to interpret it and share in its management.”

Native people today, however, also experience conflicts with each other regarding appropriate place terms and even the question of whether to publicly share the traditional reference to cultural places. Conflicts exist among people of a common culture who have difference experiences, producing what Cearnns terms a heterotopia struggle [91]. Both types of debates primarily derive from the western views of property rights to land and the ownership of places, including the right to name the place. Imbedded in these debates is the western notion that a single name can accurately essentialize a place, whereas from a Native perspective places are ancestors who are politely approached and talked with before we use their names.

Native peoples throughout the world have interacted with what they define as significant natural places. Knowing or learning about the Native cultural heritage of places is more than simply interacting with its tangible representations according to the analysis

of Liljelblad and Verschuuren [9]. The cultural heritage of a place is tied to values, beliefs, ideas, practices, politics, and sociocultural meanings. We can only ‘know’ the place when we accept that there can be no separation of the spiritual and the physical. Knowing is entangled through rituals, narratives, and stories.

Returning traditional names to places serves as a symbolic way of replacing colonial rule, but it is also a way to reestablish cultural identity. Loss of traditional identity has resulted in individual and community problems. Reasserting traditional Native names and the return of ceremonies at that location are proven steps towards cultural revitalization. Some essential ceremonies can only be conducted at specific places. A Navajo tribal member and a MA student at the University found that many youths were not initiated because the places where such ceremonies traditionally occurred were modified in name and access [92]. This resulted according to his firsthand consulting in the Navajo nation that a lack of ceremonial participation is the cultural reason why Navajo youth become involved in harmful behaviors including drugs and suicide. His thesis is that the separation of Navajo people from each other, their lands, and control over their lives diminished the ability of adults to function in positive ways, whether they are living more traditional or acculturated lifestyles. When adults are less than fully functional youth, families, and communities are diminished. The government of the Navajo nation agrees and supports his efforts to reestablish control over special places for both youth and adults who have not gone through traditional ceremonies. His findings were supported by in many ways by research published in Community Psychology.

5. Multivocality: A Way Forward

The world community of nations and peoples who strive for peaceful cooperation is needed to remove and perhaps heal decades of colonial expansion and the exclusiveness of nationalism. The sharing and appreciation of different cultural understandings is understood as multiculturalism [93]. It is a path for sharing space in order to celebrate complex alternative cultural understandings. Toponymic multiculturalism often best occurs at natural places where people come to learn about the environment and its various human partners.

Even when the social conditions exist and resources are allocated for multiculturalism, real limitations exist. In the United States, national and state parks educate the public about nature and human relationships more than any other entity. The parks, however, educate within economic, spatial, and physical constraints. In the USA, educational displays typically are only changed over a period of decades. Funds to conduct studies like ethnographic overviews and assessments are limited, and so decisions are made to incorporate fewer cultural groups than those who convey an affiliation with the natural resources of a park. Transforming new cultural understandings into active management plans and visitor interpretive materials is expensive, time consuming, and always depends on the cross-cultural understandings of agency personnel.

Sunset Crater National Monument could serve as a model for Bears Ears National Monument and the Monticello Field Office as a way forward. Sunset Crater National Monument conducted ethnographic studies and independent consultations involving culturally affiliated tribes and Pueblos, resulting in a rather extensive list of suggestions for ways forward to a more multicultural situation.

The space limits in the visitor center and number of interpretative signs possible resulted in only a fraction of the culturally affiliated tribes and Pueblos being represented. Even when toponyms from some of these tribes and Pueblos were included in interpretative displays, only a few words were used for a few locations. In the park, a trail sign recognizes eight culturally affiliated tribes and Pueblos: (1) Hopi, (2) Zuni, (3) Yavapai, (4) Havasupai,

(5) Hualapai, (6) Navajo, (7) Western Apache, and (8) Southern Paiute (Figure 26). The sign shares a composite Native statement, specific cultural statements from three of the eight tribes, two Hopi painters' renderings of the volcanic eruption, and a photo of Sunset Crater. This is a major interpretative step for the park but leaves much left to be said.



Figure 26. Trail Sign at Sunset Crater National Monument.

Additionally, inside the visitor center are other displays that include snippets of other tribal histories. Nowhere within the monument is signage displaying a holistic cultural landscape for each of the eight tribes displaying multiple toponyms in their native language. We reference again the Zuni request from the Mount Taylor TCP study for their cultural resources not to be broken into pieces but instead presented as a whole, functionally integrated sacred landscape [80].

According to an analysis of heritage issues at geosites [23], volcanoes are widely visited globally and are considered potential geosites due their attractiveness [94]. Therefore, signage in different languages and the presence of specially trained tour guides are necessary [95]. Our work at Sunset Crater builds on this by suggesting that interpretive guides be versed in Native American perspectives on volcanos and defining Sunset Crater as a geocultural site. We define this concept as where “the geological features interact with cultural elements (historical or archaeological vestiges, cultural or religious monuments, etc.), and the geoheritage value joins the cultural value” [96].

Moving forward, multivocality should be understood not as a static solution but as an ongoing practice requiring institutional humility, sustained relationships, and technological creativity. While physical signage will always be constrained by space and resources, digital tools—such as QR codes, mobile platforms, and community-controlled media—offer possibilities for layered storytelling that preserve Indigenous authority over content while expanding public understanding. Importantly, such approaches must be governed by Indigenous protocols regarding what may be shared, with whom, and under what conditions. Toponymic justice, therefore, is not achieved simply by renaming places, but by restructuring the communicative infrastructures through which places are known, governed, and respected.

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