Archaeology and Politics of the Bears Ears National Monument in Utah

Bill Lipe, Prof. Emeritus, Washington State University
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In Dec., 2016, Pres. Obama used the 1906 Antiquities Act to designate a Bears Ears National Monument

Monument size:
1,352,000 acres, or 2112 sq. mi.

State of Delaware:
1,267,800 acres, or 1981 sq. mi.

B.E. Monument year around resident population: Zero

San Juan County, UT:
7,933 sq. mi.

State of New Jersey:
8723 sq. mi.

S.J. County population:
15,356 (7,314 are Native American)

Rough estimates indicate at least 100,000 archaeological sites in the Monument
What are the Bears Ears?

The Bears Ears buttes, viewed from an archaeological site on Cedar Mesa, 2009. Bill Lipe stands next to a wall dating to the early AD 1200s. The tops of the Bears Ears are at about 8700 ft. elevation. They can be seen for up to 100 miles from many places in the Four Corners area.
The Bears Ears Intertribal Coalition played the leading role in convincing President Obama to establish the Bears Ears National Monument in late 2016. The Coalition includes five tribes: Navajo, Ute Mountain Ute, Uintah Ute, and the Pueblos of Hopi and Zuni. The last two represent 21 Pueblo tribes in Arizona and New Mexico. Environmental and historical organizations followed the Coalition’s lead. Obama’s proclamation assigned a major advisory role in BENM management to a tribal commission.

The new monument will be part of the National Landscape Conservation System, which is designed "to conserve, protect, and restore nationally significant landscapes that have outstanding cultural, ecological, and scientific values for the benefit of current and future generations." Each of the cultures that lived in the BENM area over 13,000 years created different cultural landscapes by their patterns of land use, commemoration of their culture and history, and community organization. The area designated by the Obama proclamation is large enough and has a low enough level of recent economic development to permit visitors to visualize aspects of the cultural landscapes of the past. Access for traditional religious and economic activities would also enables tribes to keep alive cultural heritages shaped by tribal histories in the area.
We are a spiritual people. However, our holy practices happen right here on earth, not in a church, but in special places like Bears Ears. We sometimes talk to the plants, others sing to the mountains, and we seek out our ancestors, who still roam this land, and we ask them for guidance in a language they can understand. In times long past, the ancient ones sanctified the land and its special places, and the blessings remain in force today. (From “Bears Ears: A Native Perspective”)
On Dec. 4, 2017, Pres. Trump used the Antiquities Act to reduce the size of the Monument to two much smaller units, arguing that the Obama Monument was larger than needed to protect the “objects” it focused on and that in any case the area deleted was still protected by federal laws. This reduction is being challenged in federal court by the tribal coalition and by environmental, historical, and scientific groups, as well as outdoor recreation businesses such as Patagonia.
Pres. Trump’s action to reduce the size of the B.E. Monument seems to have been motivated by 1) supporting Utah politicians’ strong opposition to any further expansion of federal control over public lands in Utah; 2) desire to undo one of President Obama’s signal accomplishments; and 3) to maintain opportunities for oil and gas drilling and uranium mining in most of the Monument. The draft management plan for the two small units doesn’t address preservation of cultural and natural landscapes as does the Obama monument, and substantially limits tribal input on management of the units.

The current challenge in federal court may end up before the Supreme Court.
The Bears Ears area has classic canyon country topography, where deep canyons have carved up the mesas.
In the higher parts of the area (above 5600 ft.), the mesas are covered with deep, windblown soil, which supports dense forests of old-growth pinyon and juniper. Between 100 BC and 1300 AD, these soils also supported corn farming by Ancestral Puebloans.

What is a National Monument? This designation was established by the 1906 Antiquities Act

The Antiquities Act addressed two major problems. One was the widespread looting of archaeological sites taking place on public lands in the west, and the other was effects of economic development on a variety of special places on public lands. One section of the Act required a federal permit to excavate any site on public land and mandated fines for violators. In 1979, this provision was superseded by the more effective Archaeological Resource Protection Act (ARPA)

The surviving section states that “the President of the United States is hereby authorized, in his discretion, to declare by public proclamation historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest that are situated upon the lands owned or controlled by the Government of the United States to be national monuments, and may reserve as a part thereof parcels of land, the limits of which in all cases shall be confined to the smallest area compatible with proper care and management of the objects to be protected.”
Since 1906, over 150 National Monuments have been proclaimed by 15 presidents. Congress has made many into National Parks. Four of the five most famous Utah National Parks—Zion, Bryce, Capitol Reef, and Arches, were initially National Monuments.

The 1906 Act enabled the President to represent the national public interest by preserving outstanding tracts of federal land so economic developments such as mining would not permanently change their character. President Clinton’s 1996 designation of the Grand Staircase-Escalante Monument in Utah forestalled a major coal mining project—this helped (and still helps) fuel the “sagebrush rebellion” in western states.

By and large, Presidents have used the vagueness of the Antiquities Act’s language to designate “special places” on the public lands that have awe-inspiring qualities as well as specific scientific, historic, cultural, or archaeological values. That’s certainly true of the Bears Ears. The “smallest area compatible” part of the 1906 act was the basis for early court challenges and is an argument used in Trump’s reduction in 2017.
As early as January, 1908, Theodore Roosevelt designated 800,000 acres in Arizona as the Grand Canyon National Monument. The size was later challenged, but the Supreme Court ruled unanimously in the President’s favor.
Bears Ears Archaeology

There are an estimated 100,000 archaeological sites in the Bears Ears area, most of them small, inconspicuous, and unsheltered on the mesa tops. Only a small percent of the area has been systematically surveyed for sites.

The many canyons have preserved thousands of sites under ledges and in dry natural shelters. Rock art images (above) and cliff dwellings (right) attract hikers and backpackers from around the world. The next slides give a brief review of the area’s culture history.
In 1893, Richard Wetherill and party observed a stratigraphic sequence of Basketmaker to “Cliff-dweller” materials at their “Cave 7”. There was much digging in the dry caves of the Bears Ears area in the 1890s.
The first 13,000 years of human history in the B.E.

Above: 13,000 year old Clovis point, Lime Ridge site.
Below: possible mammoth and bison depiction.

Above: “Burning Mammoth” celebration, Bluff, Utah, solstice 2012
The **Archaic Period** followed the end of mammoth hunting. Small mobile groups of hunter-gatherers occasionally ranged through the Bears Ears area. Sites are rare and hard to detect, but distinctive projectile points are sometimes found, as are Archaic rock art panels.

Above: Examples of Archaic period points, used to tip small spears thrown with an atlatl
Late Archaic or Early Agricultural Period petroglyphs.
Large pictograph panel in Grand Gulch, mostly Basketmaker II (Late BC/Early AD)  D. Rommes photos
Some distinctive cultural characteristics of Classic BM II in SE Utah

Left: Life-size figures, Grand Gulch
Below: Petroglyph panel, San Juan River

San Juan Anthropomorphich style rock art
Baskemaker Artifacts

Left: bag, atlatl darts, hair ornament, and unfinished sandal. About 2000 years old, Basketmaker II period. (Photos by Laurie Webster from museum collections)

Below: Narrow-leaf yucca: source of fiber for cordage used in various manufactures

Left: top and bottom of nearly finished sandal.
More Basketmaker II Rock Art

Right: Faded white figures have been reimagined and repainted.

Left: The “Wolfman” or “Wolftrack” panel in Butler Wash. Some damage from use for rifle practice....

Photos by Don Rommes
The Procession Panel

This 15 ft. long work of art is thought to date to the early Pueblo period, between about AD 700 and 800. Nearly 200 figures are shown, converging on a circular area, perhaps a great kiva or dance circle. It’s at a crossing point on Comb Ridge.
Chacoan Influence!

About 1100 AD, several small “Chaco-style” great houses were built in the B.E. area, reflecting strong influence from the Chaco Canyon center, over 125 miles away in New Mexico.
Above: a road trace, probably dating around AD 1100, in the SE part of the Bears Ears area. Adriel Heisey photo

Ceremonial sash, with Mexican Macaw feathers, dated AD 1050-1150. Found just north of the B.E. Monument. Possibly brought from Chaco Canyon?
The AD 1200s—Time of the Cliff Dwellings

Views of Citadel Ruin

A. Heisey photos

The Access

D. Rommes
Spot the Cliff Dwelling
It’s the “Wall Ruin”

D. Rommes photo

Contemporaneous Pottery Jar

D. Rommes
In the AD 1200s, thousands of people left the Mesa Verde region and joined existing Pueblo communities—or established new ones—in the Northern Rio Grande, and at Zuni, Hopi, and other areas to the south and southeast.
Sometime after the withdrawal of the Puebloans, ancestors of the Ute and Paiute people moved into the northern Southwest, initially as hunter-gatherers—but with horses.

Above, the shield, mounted figure, and depiction of deer or elk with antlers are characteristic of Ute art. Some of the motifs here may be earlier Pueblo.

Below: fighting with bows and arrows
Photo taken in the mid-1920s of a Ute or Paiute homestead in the Bears Ears area.
Examples of Navajo Rock Art—late 19th early 20th century.

In the image on the left, the more recently done “bright” Navajo images are superimposed on much earlier Ancestral Pueblo motifs.
The date that ancestral Navajo entered the northern Southwest is still disputed, but Navajo sites dating to the early 1500s have been identified in northwestern New Mexico. "Forked Stick" hogans are characteristic of early Navajo sites. See example at right.

Small numbers of Navajo families, probably with livestock, had settled in SE Utah by the early 1800s. The prominent leader Manuelito was born near the Bears Ears in 1818. He helped lead resistance to the removal of the Navajos to Eastern New Mexico in the 1860s.
In the winter of 1879-80, a party of 230 men, women, and children founded the town of Bluff after an arduous six-month trek from south-central Utah across the rugged canyon country. They crossed the Colorado River after lowering their wagons nearly 1000 ft. down a narrow fissure in the canyon walls that they called The “Hole-in-the-Rock” (see photo at left). Their trail crossed what’s now the whole southern part of the B.E. Monument.
My introduction to the archaeology of the Monument was in the summer of 1961, my fourth season with the Glen Canyon Archaeological Project. The next slides show some of the research I’ve been involved with in the Cedar Mesa part of the monument.

Above: Bernheimer shelter. Inset shows Basketmaker II figures at the site.

Left: Glen Canyon Project field camp in Moqui Canyon, 1961 All photos curated at Nat. Hist. Museum of Utah
In 1969-70, I directed surveys and excavations focused on Basketmaker II sites on Cedar Mesa, dating from about 200 BC to 500 AD.
BM II houses were shallow pit structures with pole and mud superstructures. Storage pits or slab-outlined storage cists were located north or northwest of the house and trash was scattered to the south or southeast.

BM II habitation sites of the Grand Gulch phase (AD 200-400) had distinctive surface signatures, and a few were excavated (above). Habitations were located on the mesa top in areas of good soil for dry-farming. Earlier farming (AD 1-200) focused on floodwater farming in the canyons.
In 1971, I recruited recent PhD. R.G. Matson to help design the Cedar Mesa Project.

We used a probabilistic sampling design to infer settlement patterns for a ca. 1000 km² study area and also recorded sites in the canyons.
A limited testing program included a single 1972 test pit in the midden at the Turkey Pen site in Grand Gulch. Human coprolites indicated heavy reliance on maize, as did macro-botanical analysis of the midden deposit (dated to 1-200 AD).
In addition to the evidence from Turkey Pen, our surveys showed that the BM II habitations were located in the same good dry-farming areas, as the Later Pueblo period sites. Contrary to most previous interpretations, this evidence from the Bears Ears indicates that BM II groups were 70-80% dependent on maize by late BC-early AD times.

In the late 1980s, isotopic analyses of human remains by Matson and Brian Chisholm also indicated heavy dependence on maize. Work since 2000 by Joan Coltrain has abundantly confirmed this.

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Recent Studies: Basketmaker II Stone-boiling

Maize is deficient in some amino acids, but after BM II, Pueblo groups compensated by growing beans. Pottery was also lacking in BM II. For her MA, Emily Ellwood did an experimental study to see if stone-boiling with limestone would increase the nutritional value of maize.

Paul Scott, (Iowa State U) analyzed the amino acids in Ellwood’s samples cooked with and without limestone.

Elwood and four co-authors published the results of this study in 2013 in the *Journal of Archaeological Science*.

Fragments of sandstone and limestone on the surface of a BM II midden. Pencil for scale.
Nixtamalization Happens!

Ellwood found:
1. Experimental limestone began to calcine at 700-800 C, temps achievable in juniper-fueled fires.
2. When the heated stones were dropped into water, maize kernels cooked in 15-20 minutes.
3. Archaeological limestone showed fragmentation and density changes consistent with repeated heating.

Scott found:
The alkaline environment produced by cooking with limestone resulted in small but statistically significant increases in availability of methionine, lysine, and tryptophan in several traditional maize varieties (see right)
The role of corn fungus in Basketmaker II diet: A paleonutrition perspective on early corn farming adaptations.

Jenna Battillo analyzed human coprolites from the Turkey Pen BM II midden for her dissertation at SMU. She found that spores of corn smut, a fungal infection of maize, were present in such large quantities that it indicated a conscious preference for ingesting the smut. This fungus is a delicacy in Mesoamerica, where it is called *huitlocoche*, and it is eaten by some Pueblo people today. Importantly, it is an important source of lysine and some other amino acids in which maize is deficient.

This is a major article based on genomic analysis of maize from the Turkey Pen BM II midden (see right). It shows strong evidence that the TP maize had undergone selection for adaptation to the short growing seasons of the Colorado Plateau, and that this adaptation was important in allowing maize to subsequently spread through the temperate zone.

“We see incredible genetic variation in maize, but it took a long time to accumulate enough of the early flowering variants in the same plant to adapt to short growing seasons. A trait like flowering time is so complex that it involves changes to hundreds of genes,” says Kelly Swarts from Cornell University and now at the Max Planck Institute for Developmental Biology. The samples reveal that the first maize successfully adapted to grow in a temperate climate was short, bushy and was likely a pop-type corn compared to modern varieties, or landraces. The authors find that it helped lead to all temperate US and European maize grown today. (from *Max-Planck-Gesellschaft*, August 3, 2017)
In 2010, BM II turkey coprolites from the Turkey Pen site contributed to a larger genetic study of SW archaeological turkeys.
Surprise! 85% of the archaeological samples were not closely related to Merriams’ or the Mexican turkey. Also, restricted genetic variation indicates a small ancestral cohort, and the difference from local wild Merriam’s populations indicates BM II and later Puebloans were controlling breeding—one definition of domestication.
Why were domestic turkeys important to the BM II people and later Puebloans? We think it was initially to ensure an ample supply of feathers for ritual purposes and for making feather blankets. These began to replace the older style of rabbit fur blankets in late Basketmaker II times, and were ubiquitous in the subsequent Pueblo periods. Turkeys didn’t become an important source of meat until deer herds were depleted in the AD 1100s and 1200s.

Right: a Mohave man wearing a rabbit-fur robe, early 20th century (Yoder et al. JCGBA 2015)
Shannon Tushingham and I, along with several other colleagues, are attempting to estimate how many usable body feathers an adult turkey will yield (we think 1500-2000). The two blankets here are from the AD 1200s and are curated at the Edge of the Cedars Museum in Blanding, Utah. Evidence suggests that most individuals had a feather blanket and that the blankets were quite durable.
Edge of the blanket framework shown in the previous slide. The insects left the spines of the feathers, seen here still wrapped around the cords. We estimate that it took 12,000 to 14,000 body feathers measuring 5 to ca. 17 cm. long to make this approx. 1 m square blanket, as well as over 100 m of cordage. Mature body feathers could be collected from live birds without traumatizing them.
Concluding Comments on the Bears Ears Monument Alternatives

In either monument scenario, management will be by the BLM and Forest Service—both have “multiple-use” missions. Protection of cultural resources and prevention of looting will be prioritized in both, but in much smaller areas in the Trump plan.

Grazing would continue in both scenarios.

Because of its much larger area, and its restrictions on new mineral leases and mining entries over that area, the Obama plan is more suited to the preservation and interpretation of cultural landscapes.

The Obama plan provides much more opportunity for tribal activities designed to maintain living cultural heritages and for tribal input to management decisions.

The Obama plan envisions development of a plan restricting off-road vehicle use, while the Trump plan proposes that existing ORV routes be maintained.

Under current market conditions, it is not clear that economic activity would increase in the monument area excluded by the Trump plan.

Overall, it appears to me that the Obama monument plan conforms better to the intent and History of the Antiquities Act, which most presidents have used to protect awe-inspiring “special places” on the public lands.
Acknowledgments

I showed a few of my own slides, but I’m a terrible photographer, and many of my slides are old enough to have turned purple. Thanks the following people and organizations for permission to use photos they’ve taken:

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