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PREHISTORIC PEOPLES OF THE NORTHERN CHIHUAHUAN DESERT

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Abstract—Paleoindian, Archaic, and Jornada Mogollon peoples have left evidence of their lifeways throughout south-central New Mexico. Archaeological sites bear evidence of human use of this region for over 11,500 years. The various groups of prehistoric and historic Native American hunters and gatherers and agriculturalists adapted to changing environmental conditions in the northern region of the Chihuahuan Desert. Our knowledge of the chronology and cultural histories of these groups has been obtained through numerous archaeological surveys and results of a few excavations. The archaeological record contains data that provide information on how these peoples adapted to changing environmental conditions.

INTRODUCTION

The study of human adaptations to the changing environmental conditions over the last 12,000 years is one of the most interesting research topics for archaeologists working in south-central New Mexico. Whether Paleoindian and Archaic hunters and gatherers or Mogollon agriculturalists, these prehistoric peoples were dependent on the natural resources of plants and animals for food, water for drink or for crops, and other natural resources for shelter, medicine, tools, and other necessities of life. These peoples adapted to the long-term changes (e.g., climatic) and short-term changes (e.g., drought) as the climate became increasingly more arid. In this paper, we summarize the history of archaeology in south-central New Mexico and the current knowledge of these various prehistoric cultural groups, and how they adapted to their environment. For more detailed information about the prehistory of southern New Mexico, the reader is referred to Stuart and Gauthier (1981), Lekson (1989), and Kirkpatrick et al. (1992).

HISTORY OF ARCHAEOLOGICAL STUDIES

It was not until the 1920s and 1930s that archaeological research was initiated in south-central New Mexico and west Texas. Until that time, the area had been largely ignored, because of the relative lack of visible prehistoric remains, in contrast to other parts of the Southwest, notably Mesa Verde and Chaco Canyon. Contributing to the absence of interest in the region was the accepted conclusion that prehistoric cultures inhabiting the area east of the Rio Grande were peripheral to southwestern Anasazi and Mimbres cultural centers.

Preliminary work during the 1920s by C. Burton and Harriet Cosgrove and their associates from Harvard University (Cosgrove and Cosgrove, 1925) began to pave the way for further investigations. A nod of acknowledgement must be directed toward one of the earliest researchers—Herbert Yeo—for his documentation of numerous archaeological and rock-art sites throughout the southern part of New Mexico during the 1930s through the 1950s (Duran and Ayer, 1994). Work in the 1940s produced mainly descriptive site reports.

Lehmer (1948) first described the Jornada branch of the Mogollon culture. This first large-scale cultural-historical synthesis based on his excavations at five sites in the area prior to World War II proved to be an accurate landmark study of the south-central New Mexico and western Texas area. Lehmer (1948) established chronological phases and discussed architectural and artifactual complexes.

Little work was done in the area during the period between 1948 and 1970, but the 1970s saw a dramatic increase in archaeological work in south-central New Mexico, mainly as a result of cultural-

resource legislation and federally funded projects, as well as a few field schools conducted by New Mexico State University. Several important studies now have been conducted that have direct implications for our understanding of the cultural resources in the region. Since 1974, extensive survey, excavation, and mitigation projects have added to the database for this part of New Mexico and have substantially increased our understanding of cultural adaptation, culture change, and local variation.

PALEOINDIAN

Paleoindian sites in New Mexico are generally found in the eastern side of the state along the western edge of the Great Plains and in the middle Rio Grande Valley (Judge, 1973; Stuart and Gauthier, 1981; Sebastian and Larralde, 1989). The temporal affiliations include Clovis, Folsom, Midland, Late Paleoindian (e.g., Belen, Portales, and Firstview complexes), and Terminal Paleoindian (e.g., Cody and Eden complexes). The sites, dating between 9500 B.C. and ca. 5500 B.C., reflect a variety of activities associated with long- and short-term occupations (e.g., camps), killing and butchering, and quarrying and tool manufacture. Much of the evidence for Paleoindian cultures is isolated projectile points and tools.

Paleoindian sites, dating from 11,500 to 7500 years before present (ybp), are rare in south-central New Mexico, compared to the more numerous Archaic and Formative sites (Table 1). Our understanding of the Paleoindian culture in south-central New Mexico is based primarily on survey data. These data are primarily the artifacts found on the surface of sites and as isolated projectile points and tools not found in the context of an archaeological site. The recovered tools are usually Clovis or Folsom dart points in complete or fragmentary condition and small, well-made scrapers. What is known of the Paleoindian is based in part on extensive work from other parts of New Mexico, including a survey of the central Rio Grande Valley (Judge, 1973), and limited excavations within the Tularosa Basin (Beckett, 1983; Amick, 1994; Mauldin and O'Leary, 1994) and the northern Jornada del Muerto (Browning, 1994). Survey data on Paleoindian remains around Pleistocene Lake Trinity are confusing because of the overlay of Archaic materials, indicating many of the earlier points may be recycled (Kirkpatrick and Weber, 1996). The questions for archaeologists are, "Is this a Paleoindian site with a later Archaic occupation with Archaic artifacts?" or "Is this an Archaic site whose occupants picked up a Paleoindian point or scraper elsewhere, and then, after use, discarded it along with other Archaic artifacts?"

The earliest Paleoindian hunters subsisted on the now-extinct mammoth as well as smaller fauna. Pleistocene lakes undoubtedly attracted herds of animals. Traces of the Clovis technology practiced by hunters of 9500–9000 B.C. (Irwin-Williams and Haynes, 1970) have been excavated at a few sites in this part of the state.

TABLE 1. Cultural history of the southern Rio Grande region.

Paleoindian (10,000–5500 B.C.)

Post-glaciation hunters who subsisted on bison and mammoth and on limited foraging. Two major divisions in the area:
 Clovis—made large spear points, hunted extinct mammoth
 Folsom—made large spear points with flutes, hunted bison

Chihuahua Archaic (6000 B.C.–A.D. 250)

Local hunters and gatherers who migrated through the local vegetation zones using available resources. They rarely built houses and made no pottery. They used spears with atlatls (spear throwers). Corn was probably introduced between 2000 and 1300 B.C.

Four major divisions in the Archaic:

- Gardner Springs complex (6000–4000 B.C.)
- Keystone phase (4000–2500 B.C.)
- Fresnal phase (2500–900 B.C.)
- Hueco phase (900 B.C.–A.D. 250)

Jornada Mogollon (A.D. 400?–1400 or 1450)

Mesilla (A.D. 400?–1100)-pithouse-dwelling agriculturalists who made brown-ware ceramics; affected by Mimbres peoples to the west

Doña Ana (A.D. 1100–1200) sites exhibit characteristics of both Mesilla and El Paso sites

El Paso (A.D. 1200–1400)-sedentary agriculturalists who lived in aboveground adobe structures of contiguous rooms. Local brown-ware ceramics had red and black paint; many types imported from nearby areas.

Mansos (A.D. 1450–present)

Possibly descendants of the Jornada Mogollon, intermarried with refugees from northern pueblos after Pueblo Revolt in 1680.

Although much of what is known about the Clovis culture comes from kill sites, some sites provide evidence of longer occupation, such as the Mockingbird Gap site in the northern portion of the Jornada del Muerto (Weber and Agogino, 1997). This site, located on a ridge along Chupadera Arroyo, contains evidence of an intermittently occupied camp with a wide range of domestic activities. Clovis hunters lived in small family groups, leaving limited evidence of their camps near water sources on basin floors. Sites are rare, probably because of the small population densities. Extensive erosion has also displaced evidence of these early sites.

Gradual changes in the environment resulted in extinction of the mammoth and other Pleistocene fauna. The early Folsom people (dated to 8800–8300 B.C.) exploited a now-extinct form of bison (*Bison antiquus*), as well as other quarry. Their sites have been identified along the Rio Grande near Albuquerque (Judge, 1973), while isolated Folsom spear points have been found in the Trinity Basin. Upper levels of deposits at the Mockingbird Gap site also contain Folsom artifacts (Weber and Agogino, 1997). Recent surveys in the southern Jornada del Muerto have identified a few Folsom sites, possibly campsites. Occasionally, later Paleoindian tools are also found as isolates in this area.

No Paleoindian sites have been found during survey of the Rio Grande valley in the vicinity of Elephant Butte and Caballo Reservoirs and several tributary drainages (e.g., Palomas, Animas, Percha, and Tierra Blanca) (Lekson, 1989). However, a Paleoindian site on the east side of the valley near Truth or Consequences is documented to have yielded two Milnesand and two Plainview points (Baker and Campbell, 1960). Similarly, Paleoindian sites have been reported by amateurs at other locations within the valley. Recent surveys in the southern Jornada del Muerto have found the remains of Folsom campsites. Multicomponent sites have yielded both earlier Clovis and later Paleoindian projectile points. These points may represent occupations by these peoples or later peoples scavenging nearby Paleoindian sites for stone tools (Human Systems Research, 1996).

ARCHAIC

Archaic sites are more widely distributed across the basins and valleys of southern New Mexico in virtually every environmental and topographic setting. The Archaic adaptation for the Chihuahua Desert was defined by MacNeish and Beckett (1987) and MacNeish (1993), based on excavations in a series of rockshelters containing stratified remains in the Las Cruces area. The Chihuahuan Archaic consists of four phases (Table 1).

During the Gardner Springs complex (6000–4300 B.C.), early grinding tools have been found, although other materials are different enough from local Paleoindian artifacts to suggest that the cultural development did not occur in situ in south-central New Mexico. Tools suggest hunting and skin processing, as well as some plant roasting in pits and grinding.

During the Keystone phase (4300–2500 B.C.), larger family groups may have wintered in riverine environments in houses that consisted of brush domes over shallow pits. Such pit structures have been excavated in the El Paso area (O'Laughlin, 1980). Small camp sites across the terrain probably represent family groups collecting plant resources and hunting small mammals. The frequency of ground-stone tools for plant processing increases during this phase. This can be interpreted as greater use of wild seeds and berries as part of the daily diet.

The Fresnal phase (2500–900 B.C.) may represent an important change. Domesticated corn kernels, probably imported from Mesoamerica, have been found in Fresnal Shelter in the Sacramento Mountains and date to 2945 ± 55 ybp (Tagg, 1996). Coinciding with the beginning of a period of less-arid desert conditions, corn was probably used like any wild food—collected as it ripened during the established seasonal round. The variety and number of spear points suggest continued dependence on large game, and the ground-stone industry continued to increase.

During the Hueco phase (900 B.C. to A.D. 200), new strains of corn were introduced, in addition to beans and perhaps amaranth. Sites were larger, probably with more pithouses, and were probably

occupied longer. These Late Archaic sites occur throughout the Chihuahuan Desert, providing access to more plant-resource zones.

The Chihuahua Archaic suggests a long, stable development from hunter/gatherers to agriculturalists. By A.D. 200, the Jornada Mogollon people had supplemented the natural resources with cultigens to provide a more reliable food source. Pithouse villages were being established in areas suitable for agriculture.

Within the Rio Grande valley, the Hueco phase is represented by Late Archaic point styles on aceramic sites with pithouse depressions (Lekson, 1989). The sites are usually small and have no more than three visible pithouse depressions. Sand dunes on the terraces and bluffs may cover other pithouse sites. Similar pithouse sites on the Gila River are dated between 300 B.C. and A.D. 300. The other common sites are scatters of flakes and debris from making stone tools with scatters of fire-cracked rock. These modified rocks are the result of stone-boiling cooking techniques. These fire-cracked rock scatter sites may have diagnostic Archaic points, although some of these without points are probably also Archaic in age and cultural affiliation.

Within the Jornada del Muerto, sites appear to date from the Middle to Late Archaic period, based on diagnostic projectile point styles (Human Systems Research, 1996). These sites are located in a variety of environmental and topographical areas, but appear to be centered along or near major arroyo systems and playas (Ackerly, 1990, 1992). The same can be said for Archaic sites in the western slopes of the San Andres Mountains, in the vicinity of such west-flowing arroyos as Fleck, Horse Camp, and Cottonwood Draws (Duran, 1982, 1984).

FORMATIVE

The Formative period in south-central New Mexico has been defined as the Jornada Mogollon by Lehmer (1948), encompassing the Mesilla, Doña Ana, and El Paso phases (Table 1). The Formative period is marked by increased reliance on agriculture with fields on valley floors; however, native plant and animal foods continued to be important to the diet.

The Jornada Mogollon culture area of south-central New Mexico includes a variety of environmental settings: river valleys, deserts, grasslands, foothills, mesas, and mountains. The Jornada Mogollon adapted to these environmental areas in slightly different ways. Common threads of ceramics and a pithouse-to-pueblo transition in the architecture tie these areas together, especially between the desert and mountain regions. The peripheral areas share traits of both the Jornada Mogollon and adjacent cultures. These frontiers provide opportunities to study shifting cultural boundaries through time, as well as the exchange of cultural traits and ideas.

The sites in the region share a number of common traits. Plain ceramics occur during the early phases and become increasingly decorated through time, ending with El Paso Polychrome and Elmendorf Black-on-white, for example. Common local and imported decorated wares include Mimbres Black-on-white, Chupadero Black-on-white, Three Rivers Red-on-terracotta, Lincoln Black-on-red, Socorro Black-on-white, Gila Polychrome, St. John's Polychrome, Magdalena Black-on-white, and various Chihuahuan wares. These ceramic wares indicate trade between the various regions of the Jornada Mogollon, as well as exterior trade with Anasazi and Chihuahuan peoples.

Architectural traits include the shift from pithouses to puebloan room blocks through time. In some areas, jacale pithouses and pueblos are the transitional architectural units between pithouses and adobe or masonry surface pueblos. The earlier pueblo sites have isolated rooms or small room blocks that become larger and more linear in shape through time. The later pueblo sites have a

single large, linear room block; several multilineal room blocks; or large room blocks enclosing one or more plazas with kivas or ceremonial rooms (Marshall, 1973). These large pueblos are either constructed of masonry or puddled adobe. Some large pueblos are found in fortified or easily defended locations.

The Rio Grande Valley

Within the Rio Grande Valley north of Hatch, the earliest Formative occupation more closely represents the Mimbres Mogollon occupation of Southwestern New Mexico (Laumbach and Kirkpatrick, 1983). Classified as Mimbres Mogollon, Early Pithouse phase sites are usually located on higher elevations and defensive landforms. The pithouses appear to be shallower, irregular in shape, and smaller in comparison with the Late Pithouse phase structures. The Late Pithouse sites are located in dune fields and on terraces where sediments from various sources have partially filled the pithouse depressions. The most visible features on these sites are storage cists and isolated masonry rooms scattered around the edges of the site. Large depressions occur on many sites, often at the center. Ceramics on these sites represent western Mogollon Brown wares as well as El Paso Brown wares of the Jornada Mogollon.

Mimbres sites typically consist of a small masonry room block in association with a small pit structure. Larger sites are made up of several small room blocks around a large central depression. Plazas are often present. The large sites are commonly located at the confluence of major tributaries to the Rio Grande. Sites with isolated rooms are probably field houses associated with fields in creek bottoms and affiliated with the larger pueblos.

In the Rio Grande valley, sites of the early El Paso phase differ from the Mimbres sites by the presence of adobe architecture and El Paso and Chihuahuan ceramic wares. Lekson (1989) states that pit structures do not exist. Sites typically consist of a small isolated room, one or two small room blocks, or a large compact room block with a plaza. The few large sites have several small room blocks and plazas. These sites are located in similar locations as the large Mimbres sites, overlooking major tributary confluences with the Rio Grande.

At the Hatch Site in northern Doña Ana County, Schaafsma (1990) excavated several structures and recovered charcoal from floor features. The radiocarbon dates from these samples fall within the Doña Ana phase (A.D. 1100–1200), although some researchers prefer to include the transformation from pithouses to surface structures in the Early El Paso phase (A.D. 1200–1300). Lehmer's Doña Ana phase was originally conceived as a short-lived pithouse-to-pueblo transitional period. House forms during this period include pithouse and surface adobe structures (Carmichael, 1986).

Late El Paso habitation sites consist of large adobe pueblos with multiple room blocks and at least two interior plazas. Only a few of these large sites are known, suggesting population aggregation by A.D. 1300. A group of contemporaneous sites is characterized by massive cobble mounds with interior plazas and the presence of a ceramic assemblage resembling Magdalena Black-on-white, an Anasazi-derived white ware. Kivas may be present in the plazas and possibly in the room blocks. Masonry rubble mounds are more massive and higher than the mounds associated with Mimbres masonry room blocks.

The Jornada del Muerto

In the Jornada del Muerto, recent documentation of large-scale Mesilla phase camps and El Paso phase habitation sites (Lekson

and Rorex, 1987; Sale and Laumbach, 1989) along major west-draining arroyos of the San Andres Mountains supports an intensive occupation within the area. Additionally, recent identification of a large and presumably integrated field-house system during the El Paso phase (Browning, 1991) suggests intensive domesticated cultivation and/or resource procurement activities along the western margins of the San Andres Mountains. However, Formative ceramics are also found on nonarchitectural sites with hearths in the Jornada del Muerto; these probably represent resource procurement (Human Systems Research, 1996).

Numerous Mesilla phase sites mirror the extensive land-use pattern documented by Carmichael (1986) in the southern Tularosa Basin and by Clifton et al. (1987) and Human Systems Research (1991) in the central Tularosa Basin and adjoining the San Andres Mountains. The lower number of El Paso phase sites reflects the more restricted and more intensive land-use pattern associated with agricultural pursuits in the most suitable locations.

According to LeBlanc and Whalen (1980, p. 330), Mesilla-phase settlement suggests "a tendency toward random distribution rather than toward aggregation or regular spacing.... There appears to be little change in this basic situation for 1000 years in the Hueco Bolson." Physical features that appear to be especially significant to distributions of pithouse-period villages in the Hueco Bolson are elevated formations and playas (LeBlanc and Whalen, 1980).

However, a pattern has emerged for large pithouse-period villages focused along alluvial ridges west of the San Andres Mountains, with a focus on drainages rather than playas (Browning, 1991). Potentially arable soil within and surrounding the arroyos, as well as other abundant resources, must be significant. Red Lake and Flat Lake playas also occasionally hold large amounts of water. These playas are not saline, yet only one Mesilla-phase village is known to occur there. The consistent occurrence of high percentages of Mimbres Black-on-white and the proximity of Mimbres Classic sites on the Rio Grande north of Hatch (Sudar-Murphy and Laumbach, 1981; Lekson, 1989) suggest that these sites may be residential base camps utilized by a population based on the Rio Grande. These camps were probably associated with seasonal hunting and gathering activities for food and other needed materials.

With the Late El Paso phase, El Paso Polychrome jar rims, which were thickened and flattened during the Early El Paso phase, became extremely everted (Carmichael, 1986). Seaman and Mills (1988) point out that the evolution of rim forms in the El Paso Brown-ware series is most likely the result of changes in the function of the vessels through time (e.g., from transporting and cooking to increased storage). Extensive trade wares from surrounding culture areas indicate increased communication, trade, or other types of interaction (Schaafsma, 1979). Structural remains for this period were limited to coursed-adobe room blocks often, but not always, enclosing plaza areas (Marshall, 1973).

Later El Paso phase habitation sites are located at or near point-specific resources. These include alluvial fans for water for domestic and agricultural use, in the foothills of the San Andres Mountains, and other locations where water can be controlled. These locations are also at boundaries of ecotones, between the bolson (basin) and mountain zones (Duran, 1982, 1984).

CONCLUSIONS

The changes in Late Wisconsin and Holocene climates, plant communities, and associated animal populations affected the Paleoindian and Archaic hunters and gatherers. As the plant communities changed in composition and location on the landscape, these hunters and gatherers had to select new food resources and move to new locations to exploit these resources. With the extinc-

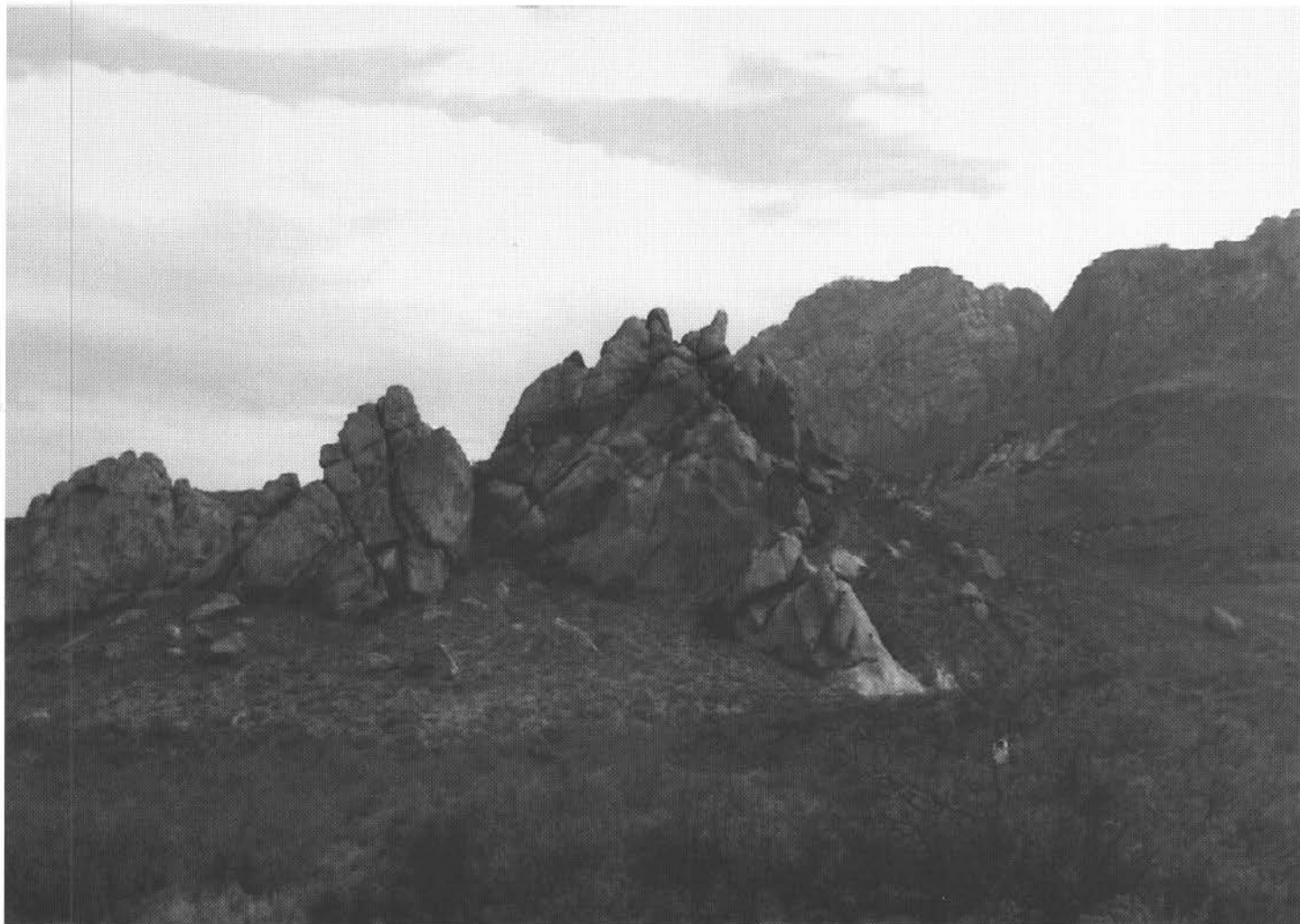
tion of large game mammals, such as bison and horses, small game animals (e.g., deer and rabbits), and plant seeds and berries became part of the diet of the Archaic peoples.

By 2500 B.C., corn and later beans and squash were being grown throughout the Southwest. The Late Archaic hunters and gatherers began the shift to food producers, eventually becoming the agriculturalists that archaeologists call the Mogollon. For over 1000 years, these agriculturalists adapted to the climate and arid soils of the Chihuahuan Desert. However, by the mid-1400s, the Mogollon culture collapsed and disappeared from landscape. No clear cause has been identified for this disappearance. It has been suggested that these peoples adapted by becoming hunters and gatherers and some became the Manso Indians who lived in the region when the Spanish expeditions passed through beginning in 1581 (Beckett and Corbett, 1992).

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Cueva Rock, at Dripping Springs State Park in the Organ Mountains, is composed of the Cueva ash-flow tuff that filled the Organ Caldera. Photograph by Greg Mack.