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# PERMIAN QUARTERLY

Permian Basin Programmatic Agreement Quarterly Newsletter

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This projectile point, from a site in the Carlsbad vicinity, figured prominently in the early 20<sup>th</sup> century discussion of evidence for the first people in North America. Find out more about this projectile point and early archeological excavations in southeastern New Mexico inside this newsletter.

(Image of artifact 31-47-36 courtesy of the Penn Museum)

The *Permian Quarterly* is a newsletter for participants in the Permian Basin Programmatic Agreement (PA) and for other interested persons. Its purpose is to provide information in a timely manner about implementation of the PA and to disseminate that information to a wide audience.

## Introduction to the Permian Basin Programmatic Agreement

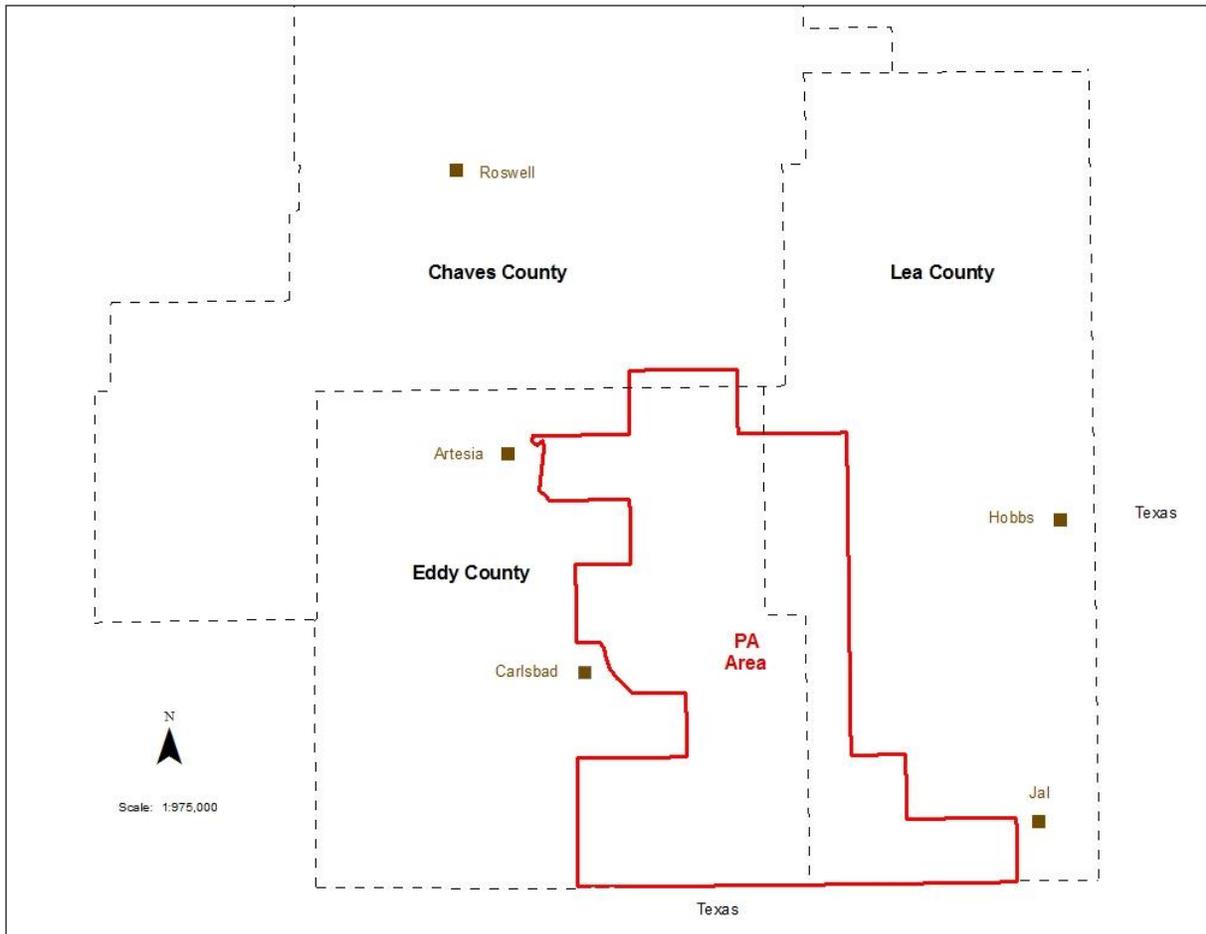


Figure 1. Map showing the Permian Basin PA Area.

The PA is an alternate form of compliance with Section 106 of the National Historic Preservation Act of 1966, as amended, that is offered to the oil and gas industry, potash mining companies, and for other industrial projects located in southeastern New Mexico. The PA can be used for federal projects located on Bureau of Land Management (BLM) land or private property. Originally begun as a Memorandum of Agreement (MOA), it was extended for a period of three years in April 2013 as a Programmatic Agreement (PA) and the PA was further extended for a period of 10 years beginning in May 2016. The PA area is located partially in Chaves, Eddy, and Lea counties. Proponents of projects within the PA area may contribute to a dedicated archeological research fund in lieu of contracting for project specific archeological surveys, provided their proposed projects avoid recorded archeological sites. This dedicated fund is then used to study the archeology and history of southeastern New Mexico.

## Current PA News

### Update on PA Research Contracts

Readers of the *Permian Quarterly* of necessity get information about PA archeological research in bits and pieces and they may have these questions: How do these projects come about? Who decides what projects will be done? Do they all fit together? This update of current research is framed to answer these questions using the status of current contracts as examples.

Research projects must be in compliance with the provisions of the PA, either to address specific requirements in the document or to further a general PA goal. Proposed research projects can come from a variety of sources. For instance projects have been proposed by Carlsbad Field Office (CFO) staff archeologists, the State Historic Preservation Officer (SHPO), the PA Workgroup, and some result from reports that complete research on a particular topic, which then generates a proposal for related work.

Completing a research project is a multi-step process beginning with a presentation by the PA Coordinator to the PA Workgroup of a proposal for a project or projects at its annual meeting. Approved research proposals are then written in a request for proposal (RFP) contracting format by the PA Coordinator. Draft RFPs are reviewed by the SHPO and select BLM archeologists. Reviewed RFPs go through the BLM contracting system and proposals are received from archeological contractors. These proposals are reviewed by a BLM evaluation committee, chaired by the PA Coordinator. The chosen contractor completes the work called for in the contract and submits a draft report or other items called for in the contract for review by the PA Coordinator, the SHPO, and select BLM evaluators. Approved draft products are then completed.

Current PA research consists of three contracts that have been awarded, one that is in the process of being issued by the Contracting Officer in Denver and one proposal that is being reviewed by the SHPO and BLM archeologists. Research contracts currently being written include the *Permian Basin Research Design 2016-2026*, by SWCA Environmental Consultants. This document is required by the PA and it summarizes the progress made in learning about the archeology of the PA that was outlined in the initial research design, incorporates research from regions adjacent to the PA area in Texas, and provides revised research topics and questions.

Another current project, that was suggested by the PA Workgroup, is remediation at the Merchant Site, undertaken by Versar. This circa A.D. 1400 site was dug into in the 1960s by members of the Lea County Archeological Society (LCAS), a group of artifact collectors, and also by a number of unknown looters. The excavations were never backfilled leaving two large, gaping holes on the landscape. A short description of the LCAS work was published, but a more comprehensive report, prepared by LCAS member “Bus” Leslie was known only to a few people. Versar archeologists examined the site and the old excavations in the field and gathered information that puts the site in a new perspective. This report will also include the Leslie manuscript of the LCAS work, thus combining the historical and modern archeological work into a comprehensive whole.

*Plant Utilization in Southeastern New Mexico: Botany, Ethnobotany, and Archaeology* is undergoing review by BLM and the SHPO. This report identifies plant remains found in archeological excavations and provides information on the use of these plants by American Indians, as obtained from ethnographic and historical sources. It includes photographs of the archeologically identified plants, plus other plants commonly used by people or commonly found within the CFO region. This publication will serve multiple purposes by providing a handy field guide for plant identification, a compilation of information

on plant uses for food, medicine, and construction materials and it provides new avenues for interpreting the archeology of the region. This project was proposed by CFO staff archeologists.

An RFP for a comprehensive survey and recording of all rock art sites on BLM surface-managed land within the CFO is awaiting issue with the Contracting Officer in Denver. This project involves documenting rock art at 17 sites and incorporating the results of that survey with previously gathered information about four other sites. Rock art consists of figures or designs painted on bedrock surfaces, or large rocks weathered from it, termed pictographs, or alternatively figures or designs scratched, incised, pecked, or abraded into a rock's surface, termed petroglyphs. Rock art is stationary, so its setting will figure into its interpretation, as opposed to portable rock items, such as fetishes or small statutes that are portable. This project will include crew members from the Mescalero and Hopi Tribes and recorded sites will be visited by members of Isleta Pueblo. These tribes and pueblo have ancestral ties to southeastern New Mexico. This project was suggested by CFO staff archeologists.

A project to examine a 30 percent sample of 139 prehistoric sites located within the SW Slopes physiographic region of the CFO is currently being reviewed by BLM archeologists and the SHPO. This project will examine sites that are currently known only from survey level information. There are multiple goals for this project: to obtain radiocarbon dates for a regional chronology; to create criteria for feature definitions; to define a site typology and settlement pattern for the region; to determine the function and chronological placement of small sites containing five or fewer artifacts and three or fewer fire-cracked rock features; to examine patterns of lithic procurement, reduction, transport, use and discard; to initiate a ground stone tool typology for the CFO; to evaluate the importance of site integrity in the application of National Register of Historic Places (NRHP) Criterion D, for sites... "that have yielded or may be likely to yield information important in history or prehistory."; and to define research questions specific to the study area and data needed to answer the questions that will form the basis for evaluating individual sites or groups of sites for their eligibility to be listed on the NRHP. This project was proposed by BLM staff archeologists.

The projects noted above along with others contemplated or completed will ultimately form a whole that will ideally enable a researcher, or anyone with an interest in the archeology of southeastern New Mexico, to put into context any particular artifact, site, or groups of sites. The sum of the projects completed through the Permian Basin PA will illuminate the prehistory of southeastern New Mexico and facilitate its integration into the prehistory of the Southwest and southern Plains.

## Other News from the Permian Basin

Xcel Energy Project Provides an Outdoor Classroom  
by  
Stephanie Bergman

BLM archaeologists from the Carlsbad Field Office shared archaeological findings and promoted stewardship of cultural resources in the Permian Basin with local Boy Scouts, their families, representatives from Xcel Energy, and the region's review archaeologist from the State Historic Preservation Office (SHPO). The large crowd gathered on a bank overlooking the Pecos River just south of Carlsbad, on a hot and humid morning to learn about an exciting archaeological discovery recently made during a survey for the proposed Hobbs to China Draw 345-kV transmission line. Archaeologists from SWCA Environmental Consultants based in Albuquerque conducted an intensive Class III cultural resources inventory of the proposed project's area of potential effect (APE), which includes a 500-foot-wide corridor spanning 87 miles between the Hobbs Generating Substation in Lea County, to its China

Draw substation in Eddy County. These findings were documented in a series of cultural resources inventory reports (Sisneros et al. 2015a, 2015b, 2015c, 2015d) to aid the BLM in complying with Section 106 of the National Historic Preservation Act (NHPA).



Figure 2. Dr. Bill Whitehead, SWCA Archaeologist leading excavations at a site on the Pecos River being mitigated by Xcel Energy for a proposed transmission line, demonstrates to a troop of local Scouts how bedrock mortars were utilized to process plant-based foods by Native Americans living in the Permian Basin.

SWCA’s investigation of the APE included 178 cultural resources; 160 recorded resources, 10 sites that were not relocated, five sites that were relocated outside the survey corridor, and one site that was subsumed into another. Of the 160 recorded resources, 141 are archaeological sites (68 previously recorded and 73 newly recorded) and 19 are Historic Cultural Property Inventory (HCPI) properties. In total, 24 NHRP eligible resources or resources of undetermined eligibility intersect the proposed project ROW. In the “route refinement” process, the BLM required adjustments to the preliminary route to avoid most eligible cultural resources, except for five locations where avoidance was not feasible.

These sites could not be avoided by re-routing the alignment due to other resource constraints and construction issues. Therefore, a testing and data recovery plan was designed to mitigate impacts to these sites and collect valuable scientific data in the areas that would be adversely affected during the construction of the proposed project. The testing plan included 14 sites and data recovery for five sites (LA 45730, LA 99414, LA 171861, LA 172574, and LA 181926). In the Permian Basin especially, data recovery projects conducted in compliance with Section 106 and the Permian Basin Mitigation Program have greatly expanded our understanding of cultural resources in southeastern New Mexico.

This is certainly the case when archaeologists from SWCA identified the footprint of an ancient pithouse at one of the locations where data recovery was being conducted for the proposed transmission line. The somewhat “accidental” discovery took place during mechanical trenching for geomorphological testing near site LA 45730, where soil sediments were intact. Nothing on the surface indicated the remnants of a buried structure. Once the feature was exposed SWCA immediately halted the mechanical stripping and

careful hand excavation ensued to document the exciting discovery. Compared to most other parts of the Southwest, documented pit structures are not very numerous in the Carlsbad Field Office region—to date only ten other pit structures have been excavated in the area (Railey 2013: 79).

A pithouse is a dwelling that is constructed by excavating a pit into the earth. Usually, all that remains of a pithouse is a dug out hollow in the ground and soil stains where any postholes were used to support the roof. Superstructure remains are not identified archaeologically as they are constructed using organic, earthen-building materials such as tree limbs, which could be covered by animal hides for added warmth. Their roofs, made of brush and grass, rest either on four upright forked posts set in a square or on a single upright post set in the center, with other posts set at the perimeter. A ramped crawlway or a stepped doorway serves as an entrance. Pithouses are the earliest identifiable domestic architecture in many areas of the world, and can provide insights into the origins of communities.

Pithouses previously studied in the region date to the Formative period from circa 200 to 1400 AD. These dwellings are traditionally recognized as belonging to the Mogollon culture; found in high-altitude and desert areas in the mountains and plateaus of what is now central Arizona, west-central and southern New Mexico, western Texas, and northern Sonora and Chihuahua in Mexico. Mogollon settlements tend to be concentrated along rivers. Archaeologists have identified several “branches” of Mogollon culture in different areas. Pithouses located in the Chihuahuan desert and uplands of south-central and southeastern New Mexico are attributed to the Jornada-Mogollon society, who occupied small seasonal settlements (Sebastian and Larralde 1989). The “pithouse era” of Mogollon culture existed from approximately A.D. 200 until sometime between 1400 and 1450.



Figure 3. SWCA Archaeologist Megan Wildey stands in the recently excavated pithouse and describes how the site near Carlsbad was excavated and documented; sharing the artifacts recovered from the important find with an interested crowd.

As part of the tour the Scouts also learned about the diagnostic material evidence of the people who once occupied the settlement, including how much skill is necessary to make the stone tools so commonly found by archaeologists. SWCA archaeologist Calvin Lehman set up a flint knapping demonstration for the audience, explaining how lithic production technologies change through time,

allowing archaeologists to date sites. The Scouts working toward their Merit Badge in Archaeology were impressed watching the age-old art of making arrowheads and other edged stone tools.

Figure 4. Archeologist Calvin Lehman provides a flint knapping demonstration to Boy Scouts working toward their Merit Badge in Archeology.



The tour next walked a quarter-mile west where several dozens of bedrock mortars excavated by SWCA archaeologists dotted the caliche outcroppings overlooking the Pecos River. These anthropogenic circular depressions in a rock outcrop were used by people in the past for grinding grain, acorns, or other food stuffs. The large number of these features along the river suggest site LA 99414 was a bedrock milling station. Excavation into nearby buried cultural deposits yielded even more surprising finds, including a conical rolled tin tinkler. The tinkler is almost certainly of Apache manufacture and origin. These decorative pieces of adornment were made from tin cans, and therefore it possibly dates to post-1850, by which time tin cans were becoming ubiquitous in the American West. The presence of other historic artifacts along with stone projectile points indicates this important site was visited continuously by Native Americans beginning more than 5,000 years ago and continuing into the 19<sup>th</sup> Century.

Finally, the diverse group of archaeologists, Boy Scouts, and Xcel representatives (who made these discoveries possible) all travelled a couple of miles down the road to a site along the route of the proposed project that is currently being excavated. On this early Saturday afternoon the temperature was already nearing triple digits as several members of the SWCA team meticulously excavated thermal features that will provide important radiocarbon dates of when the location was occupied. As SWCA nears completion of the data recovery of the site, all the information will be analyzed and the results will be published in a final report. This report will then be reviewed by Bruce Boeke, the BLM archaeologist who ensures compliance with section 106 of the National Historic Preservation Act before Xcel begins construction of their transmission line. Andrew Zink, archaeologist at the State Historic Preservation Office, will also

review the final results of the archaeology. The artifacts and information recovered by SWCA will be sent to the Museum of Indian Arts and Culture/Laboratory of Anthropology in Santa Fe, where they house, maintain, and protect records of archaeological investigations in the State of New Mexico so that this valuable scientific data will be preserved for future study and/or public interpretation.



Figure 5. Boy Scouts look on as SWCA archeologists excavate a site located within the route of Xcel's proposed transmission line.

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*Editor's note: Stephanie Bergman is an archeologist in the CFO. She is currently on temporary assignment to the Oklahoma Field Office.*

#### Site in Carlsbad Vicinity was Prominent in Early 20<sup>th</sup> Century Research

The early 20<sup>th</sup> Century was an exciting time for archeology in the United States. The 1926 discovery of a projectile point in clear association with an extinct form of bison near Folsom, New Mexico led to the initial acceptance of the notion that people had inhabited the North American continent for thousands of years. It also led to a search for other sites containing the bones of extinct animals and human-made artifacts. One of the searchers was Dr. Edgar B. Howard, associated with the University of Pennsylvania Museum. He recognized that dry caves have superior preservation and that they provide the best locations for credible evidence of early man. Howard noted "...a large part of the prehistory of Europe has been unraveled as the result of archaeological exploration in caves of France and Spain, and Central Europe." (1935:62). He set out to systematically search for Early Man sites in the caves of the Guadalupe Mountains and at other locations in New Mexico and Texas during the period from 1929 to 1935. His greatest success came from two locations in eastern and southeastern New Mexico.

One site that figured prominently in the discussion of evidence for the antiquity of man in North America was Burnet Cave, located in the foothills of the Guadalupe Mountains west of Carlsbad, New Mexico. Howard dug there during three field seasons in the years 1930, 1931, and 1932. The site was named for R.M. Burnet of Carlsbad who assisted him in each of those years. Burnet Cave contained deposits up to nine feet (2.74 m) deep composed primarily of fine soil with a mixture of large and small rocks spalled from the roof and side walls. Within this matrix were also found animal bones (some burned), human burials, and man-made artifacts, including perishable items such as baskets, woven bags, yucca fiber sandals, and wooden dart foreshafts. A number of stone tools, including a drill, a notched projectile point with an expanding stem, four knives, and the lanceolate point pictured on the cover of this newsletter were also discovered. Lenses of charcoal and ash were encountered at different levels within the deposit ranging from one foot, six inches (46 cm) to eight feet and six inches (2.59 m) below the surface. Charcoal from one of the lenses was identified as coming from a Douglas Spruce tree.

Animal bone was also a conspicuous component of the fill. There were identified four genus or species of reptiles; one species of turtle; 18 species of birds, including the California Condor; and 44 genus or species of mammals, including extinct forms, such as the Short-faced Bear, three species of horse, one camel genus, the Mountain Deer, a (four horn) pronghorn, Bison antiquus, and the Shrub-ox. Burnet

Cave is the type locality of *Navahoceros fricki* (Mountain Deer), *Euceratherium collinum morris* (Shrub-ox), and a bovidae, *Preptoceras sinclairi neomexicanus* (Harris 2012).

Howard reported that the cave had no stratification and that there was no dung layer indicating long-term use by any of the animals whose bones were found within it. He noted human presence in the cave

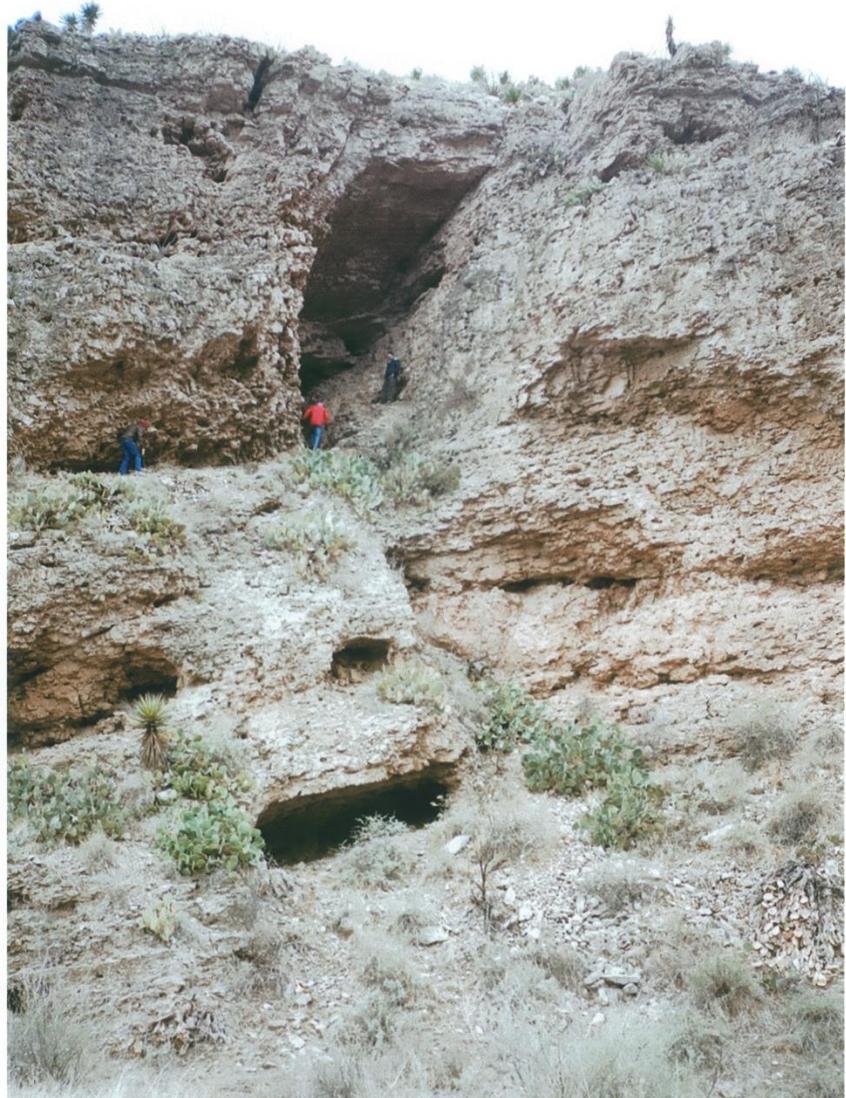


Figure 6. Members of the Trans-Pecos Archeological Society visit Burnet Cave in 2011. (Photo courtesy of Mike Pearce)

produced "...no floor levels packed down by use, indicating long occupancy, but rather temporary occupation at long intervals." (Howard 1935:65). Burnet Cave, however, did have archeological stratigraphy. Human burials and other artifacts from the recent prehistoric past were all located in a zone that extended no deeper than three feet (91 cm), while the lanceolate projectile point and bones of extinct animals were found beneath that zone.

The lanceolate projectile point was of particular interest to Howard. Its form resembled those points that had been discovered only a few years earlier at the Folsom site. Its location within Burnet Cave was also of interest to him. It was found at a depth of five feet and seven inches (1.52 m) below the surface and directly under a large rock that had charcoal and ashes on its underside, "...as though it had fallen directly

from the roof or wall upon the remains of a fire...” (Howard 1935:69). Bones of extinct bison and a Shrub-ox , a type of musk-ox, were also found in association with the point.

It was unfortunate for Howard that the method of radiocarbon dating was not to be discovered until 15 years after his excavations at Burnet Cave. The charcoal concentrations distributed at different levels within the cave fill, which he conveniently called hearths, would have provided a stratigraphic sequence of dates that could have documented use of the cave through time. More importantly, the charcoal on the rock above the Folsom-like point could have provided a date for the period in which the point was made and used. Subsequently radiocarbon dates were obtained from charcoal and bird bone from the site. A date of 7431 $\pm$  300 was run on a charcoal sample that came from the eight to nine foot (2.74 m) level in the cave (Libby 1954:138), however this sample was not in association with the projectile point.\* Harris (2012) also reports dates of 13,100 BP (before present) from a hearth and a date of 12,180  $\pm$  130 BP obtained from a Condor humerus.

Lacking radiocarbon dates Howard made a convincing case for the antiquity of the projectile point and for the extinct Pleistocene animal bones associated with it. He admitted that smaller animals, such as pack rats may have been responsible for dragging in from the outside objects, such as the fragmentary pieces of plant remains like mescal, sotol, and lechugilla found preserved within the fill, and they could displace either upwards or downward bones and other objects by their burrowing. Carnivores might also bring in bones, but they could not be responsible for the burned bones. The point was found beneath a large rock, with no evidence for a pack rat nest. It was also found with a lens of charcoal and ash and these lenses “...scattered throughout the cave at different depths below the burial levels down to eight feet six inches, are hard to explain on any other ground than that they represent the remains of man-made fires.” (Howard 1935:66).

After finishing the excavation of Burnet Cave, Howard next worked in association with Dr. John Cotter, from 1932 to 1936 at the Clovis site, also known as Blackwater Draw, located between Clovis and Portales, New Mexico. This large open site consists of different localities along Blackwater Draw containing concentrations of animal bone, camps, caches, and a hand-dug well. Gravel mining for roadwork exposed the archeological remains in 1932. Howard was the first to excavate there, but additional excavations have taken place through the years, often in response to new discoveries uncovered by the gravel mining. Excavations at Blackwater Draw marked the discovery of a new projectile point form, the Clovis point, found in association with mammoth remains and stratigraphically below Folsom points that occurred with extinct forms of bison. Evidence from Blackwater Draw pushed back by several thousand years, to circa 12,000 B.C., the presence of people in North America. In 1978 a 157 acre portion of the draw containing archeological deposits was acquired for preservation and future research. Termed Blackwater Draw Locality 1, it contains part of an excavation showing animal bone preserved in place and the stratigraphy of the site, as well as the location of a well and other previously excavated areas. Locality 1 is managed by Eastern New Mexico University and it is open for public visitation, as is the Blackwater Draw Museum in nearby Portales, New Mexico (<https://www.enmu.edu/blackwater/>).

Howard’s work at Burnet Cave and at the Clovis site contributed to the acceptance and recognition of the antiquity of the human occupation of North America. He recognized the potential of the caves and rockshelters present in the Guadalupe Mountains of southeastern New Mexico as depositories of significant archeological deposits and he had the energy and fortitude to search them out. He recognized the need for collaboration also stating; “First of all we do not believe that the problem as to when and how America was first peopled can be solved by archaeology alone. Geology, particularly its allied branches of paleontology, physiography, and glacial geology, must be called upon to explain many phases of the subject that involve a wide variety of converging lines of research, presenting many peculiar difficulties.” (Howard 1935:62). His obituary notes that collaboration was one of his strong points, “An outstanding characteristic of Dr. Howard's scientific approach was that he was not satisfied merely to obtain new



Figure 7. Animal bone exposed within an excavation at Blackwater Draw Locality 1. This excavation is part of the exhibit at the site that is open to the public. The contrast between the gray lower soil and brown upper soil marks a stratigraphic break in this portion of the site.

evidence on some moot point and to record it properly. He spent much thought on the problem of making it quickly useful, that is, of having it, along with other increments of factual knowledge, considered and adjudicated by his colleagues. One of his chief aims, which is not very apparent in his publications, was to reduce the area of controversy by frequent conferences and by cooperative planning of field studies". (Mason 1943). At the time of his death in 1943, Edgar Howard was one of the foremost authorities on early man in America.

Although Burnet Cave still exists as a geological feature, all of its deposits were removed in the 1930s excavations. The artifacts are curated at the University of Pennsylvania Museum of Archaeology and Anthropology where they continue to be available for research. Some of them may be viewed online (<http://www.penn.museum/collections/>), however, none of the artifacts associated with any of the burials are pictured. The animal bones from the site are recognized as a paleontological resource and they may contribute information as well. Burnet Cave was an important place for archeological research in the early 20<sup>th</sup> Century and its artifacts and faunal remains provide a legacy for the future.

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\*This radiocarbon date is an uncorrected date reported by W.F. Libby who developed the radiocarbon method. Although the method is straightforward, it measures the decay of carbon-14, an isotope of carbon, in practice there are corrections to be made due to variations of radiocarbon in the atmosphere. A radiocarbon date is reported as BP (before present) that is set at A.D. 1950, before a significant amount of atmospheric atomic and hydrogen bomb testing took place. A radiocarbon calibration curve is used to translate the BP date to a calendar date.

#### Back Issues of the *Permian Quarterly* are Available

Back issues of the *Permian Quarterly* are available at the Bureau of Land Management, New Mexico State Office website at <http://www.blm.gov/nm/st/en.html>. Use the “Quick Links” section then go to Cultural Resources - Research/Partnerships - Permian Basin Partnership.

#### Newsletter Contact Information

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