

Notes from the ...Field



Figure 1. Late Pleistocene flat-headed peccary from the Museum's "Ice Age" mural by John Thomasson.
Photo by Bill Mueller

An Introduction to Peccaries and their Past

John Moretti, Senior Crew Chief and Research Assistant

Lubbock Lake field crews have collected extinct peccary remains from both ends of the Pleistocene in ongoing excavations at Roland Springs Ranch Locality 1 (RSR-1) and Macy Locality 100. Although modern peccaries occur in Texas today, most people have little knowledge of these animals. The discovery of new peccary material from RSR-1 in the summer of 2014 presents an opportunity to provide an introduction to the history of these unique mammals.

Peccaries are even-toed, hoofed mammals that once were widely distributed widely across the America's. Today, they are represented by the Chacoan, collared, and white-lipped peccaries that range from Texas into South America. The collared peccary, or javelina (*Pecari tajacu*), of southern Texas and Arizona, is the only peccary present in the United States.

Modern peccaries can be mistaken easily for wild pigs. The form of their body, their tusks, and round, flat nose makes them very similar to true pigs. Peccaries (family Tayassuidae) are considered to be related to the pigs (family Suidae). This relationship indicates a shared ancestor in their ancient past and accounts for much of their similar appearance. Peccaries also are similar to pigs as a result of their similar habits. Like pigs, peccaries generally are omnivorous and consume a variety of graze, browse, and occasionally animal matter. Unlike pigs, peccaries have spent the majority of their history in the America's, while pigs were confined to the Old World until brought over during European settlement. This geographic division between the two groups allowed peccaries essentially to be the New World equivalent of pigs, existing in similar circumstances and maintaining a similar body form.

Continued on page 4

Inside this Issue.....

An Introduction to Peccaries and their Past	Page 1
Hunting for Features: 12,000 Years of Sedimentation and Occupation	Page 3
The Wildlife of the Landmark	Page 6
Excavation of a Hunter-Gatherer Campsite at Potts Ranch	Page 7
A Year of Learning at the Landmark	Page 8
Investigating an Early 20th Century Homestead on the Edge of the Llano Estacado	Page 9
A New Clovis Paleoindian Site of Discovery at Macy Locality 10	Page 10
An Education Intern's Journal	Page 11
Bison Kill and Campsite Investigations at the Whiskey Flats Site	Page 13
Lubbock Lake Landmark Summer Field Crew 2014	Page 14

Hunting for Features: 12,000 Years of Sedimentation and Occupation

Katherine Ehlers, Research Aide and Senior Crew Chief

The Lubbock Lake Landmark field season continued work within the ancient valley axis of Yellowhouse Draw. During the 1930s, the depths of the draw were exposed through a Works Progress Administration project to rejuvenate the local springs. Instead, workers exposed over 12,000 years worth of environmental and cultural information. Since that time, field work has been carried out at the Landmark to retrieve this information and reconstruct the natural and cultural history of the Southern High Plains.

During the 2014 field season, the Landmark field crew had two objectives: to complete the documentation of the type wall that contains every major stratigraphic unit at the site, and to continue excavations within Area 6. The type wall and Area 6 are less than 100m (less than 109 yards) apart,

and the sediment sequence of both locations shows the topographic transition from the ancient valley axis up into the valley margin. A small crew of two, with the occasional help of an additional Landmark staff member running a skidsteer to haul dirt away, finished clearing away dredge that had fallen in front of the type wall and obscured the lowest strata (Figure 1). Once cleared, the 2-person crew worked to draw the entire wall and sediment sequence to scale. This documentation preserved the information contained in the wall. Along with the drawing, descriptions of each substratum were taken. Photographs documented the wall and enhanced the scaled drawings. The different sediments and soils within the wall, designated stratum 1 (lowest and oldest) through stratum 5 (highest and youngest) continued to provide clues to the environment at the time of sediment deposition. The five known soils identified within the type wall indicated periods of environmental stability. The rest of the crew continued excavation in Area 6 (Figure 2), a designation within the overall site (41LU1). Situated in the valley axis, the locality always had water and plant life, and, therefore, was a draw for wildlife. Resources, then, were abundant for the people of the area, as they could obtain water, plant, and animal resources from the same location.

Area 6 consists of several kill/butchering locales that are associated with different stratigraphic units, that is, events

happened in this same location at different points in time. The oldest features, those dating to the Paleoindian period (ca. 11,500 - 8,500 yrs ago) have been the focus of excavations since 2007.

Four features date within this range, all with a focus on the exploitation of ancient bison. This past summer, the crew may have reached the Plainview bison kill/butchering feature.



Figure 1. Type wall clean-up with the help of the skidsteer.



Figure 2. The field crew excavating in Area 6.

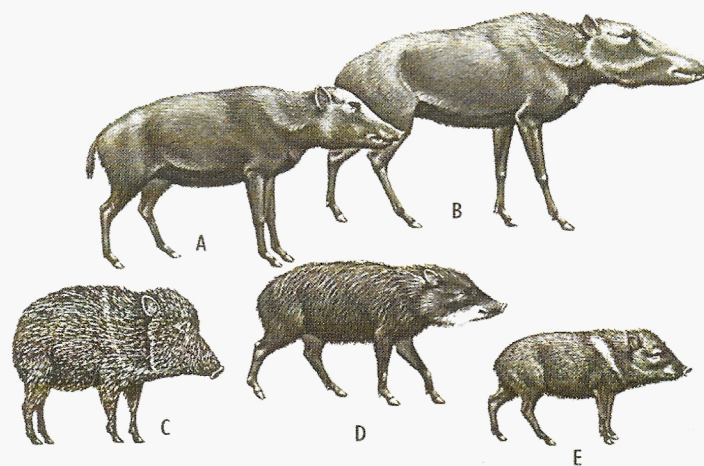
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Peccaries appeared in North America in the Eocene (35-37 million years ago). Peccaries were widespread in North America throughout the Pleistocene and are common in deposits from this period. During the Pleistocene, peccaries were represented by multiple species of the flat-headed (*Platygonus*) and the long-nosed peccaries (*Mylohyus*). Both of these extinct peccaries were much larger than their modern relatives. Traditionally, the flat-headed peccary was considered an open grassland peccary while the long-nosed peccary was likely a woodland or forest edge animal that did more browsing than grazing. The long-nosed peccary was the larger of the two, the height of a white-tail deer, and was long-legged, with an extensive snout (Figure 1). The flat-headed peccary also was large, although more robust and not as tall as the long-nosed species, with a flat nose and wide skull. The flat-headed and long-nosed peccaries became extinct, along with other megafauna such as mammoths, ground sloths, and saber-toothed cats, in the global extinction event that marked the end of the Pleistocene approximately 11,000 years ago.

Peccaries are present in the Southern Plains throughout the Pleistocene. Although the long-nosed peccary is not known from the region, the flat-headed peccary has been found in nearly all of the local early and late Pleistocene localities. Additional extinct peccary specimens collected from ongoing fieldwork at RSR-1 and Macy Locality 100 expand the regional record of these animals. RSR-1 is an earliest Pleistocene (2.0-2.6 million years ago) locality located in Scurry County. The assemblage of animals recovered from RSR-1 includes a wide range of species such as three-toed gazelle horses, American zebras, and giant tortoises. Until recently, peccaries have been represented in the fauna only by a tusk segment. That changed this past summer with the discovery of a segment of a lower jaw and a portion of an ankle bone (calcaneum).

At Macy Locality 100, specimens representing the flat-headed peccary, *Platygonus compressus*, have been found alongside the remains of extinct camels, horses, bison, and mammoths in layers of stream and marsh sediment radiocarbon dated to 11,125 - 12,190 years ago. This late Pleistocene species of the flat-headed peccary also has been found at Lubbock Lake in deposits of comparable age. The presence of the flat-headed peccary (Figure 2) alongside other open land animals provides evidence to support the view that this peccary inhabited a primarily grassland ecosystem during the late Pleistocene.

Peccary remains are not common at RSR-1 or Macy Locality 100. Excavation at both of these localities seeks to recover additional specimens of poorly represented animals such as these, in order to reconstruct better the past plant and animal life of the Southern Plains. More material is especially important at RSR-1 where the identity of that extinct peccary is undetermined. The identity of this peccary is pertinent to questions as to the presence and extent of wooded bottomlands in the area during the earliest Pleistocene. Until the next field season, when the annual opportunity to collect more material arrives, efforts will focus on stabilizing and identifying the jaw and ankle bone segments discovered at RSR-1 in 2014.



Late Pleistocene and Modern peccaries: A) flat-headed peccary (extinct); B) long-nosed peccary (extinct); C) Chacoan peccary; D) white-lipped peccary; E) collared peccary (javelin)

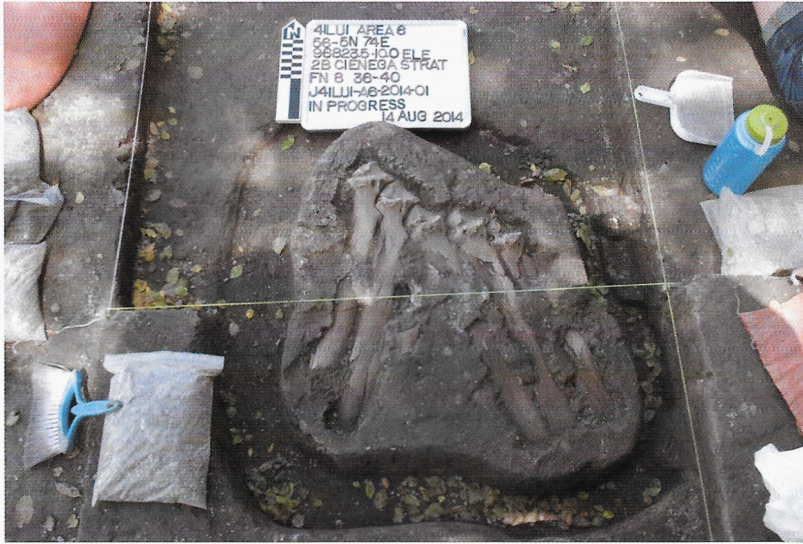


Figure 3. Ancient bison thoracic vertebrae, pedestaled and ready to be padded and encased in plaster.

expected. The arrangement of the bone mirrored that of the northern section - bone elements were found overlapping each other and in a fairly confined space. Thoracic vertebrae were found in a group of five articulated vertebra, with blow marks at the base of the vertebral spine (Figure 3). These blow marks were indicative of butchering. Because of the clayey sediments of the area that generally stayed wet, the bone was in poor condition. Crew members created three large pedestals from the exposed bone that then were padded with tissue and encased in plaster jackets (Figure 4). A mandible with teeth was left mostly buried and will be recovered next field season. The plaster jackets were transported to the Conservation Lab at the Museum where they will be excavated under controlled conditions. Recovered charcoal from sediment processing, no longer suitable for dating because of contamination, will be useful in identifying the types of trees in the area at the time, thus helping to reconstruct the natural environment.

The information recovered during this past field season in the Plainview feature will continue to add to the knowledge of Late Paleoindian groups on the Southern High Plains. The size of the kill/butchering feature likely will continue to grow as more of the excavation block is brought down to the appropriate level, with the exciting possibility of recovering additional stone tools. Few Plainview-aged sites exist on the Southern High Plains, with even fewer in a multi-component setting such as that of the Landmark. The continued work at Area 6 has the potential to clarify and refine the nature of the Plainview occupation, shedding additional light on the populations of the region and their adaptations to a changing environment.

The Plainview culture dates to ca. 10,000 years ago, and is defined by its characteristic Plainview projectile point. The Pleistocene-aged megafauna are extinct by this time, but the ancient bison persists, intensively used by people in the region.

In the 1970s and 1980s, the northern extent of this feature was excavated, and at the time consisted of six bison. The individual bison were a mixture of males and females of varying ages. Bones were found in piles where Plainview peoples had killed and butchered the bison in place. The tools used in the area were a mixture of stone and bone tools. Bone tools were fashioned on site from the bones of the bison being butchered.

In the 2014 field season, the crew appeared to have reached the Plainview feature in the southern excavation block, but at a higher elevation than



Figure 4. Plaster jackets containing additional ancient bison remains.

The Wildlife of the Landmark

Matt McEwen, Historic Landscape Technician

I took a brief morning walk recently down in the old reservoir area to entertain the naturalist in me. The short but sweet walk produced an amazing bounty of birds, including: dark-eyed juncos, northern flickers, red-tail hawks, white-crowned sparrows, white-winged and mourning doves, all flying between the trees; Canada geese and sandhill cranes singing and soaring in formation; and of course, those unknown sparrows and little brown birds that are hard to catch a solid identity.

The walk gave me time for deeper reflection about how fortunate it is to work on this relict native prairie ecosystem, and the amazing experiences that come from spending your vocation on such a preserve. Our tireless efforts as land stewards have restored and maintained this ecosystem as a healthy habitat for the native wildlife. This November also marked my first bobcat sighting, and involved a short chase to confirm that it was not just a feral cat with a bobtail. A week later, I saw the same bobcat cruising the same portion of the trail. Around this same time, staff members had been trying to catch a litter of feral kittens. Instead, they caught an opossum in the trap they left over night. The opossum enjoyed the cat food and was released back into the wild after what was a long cramped night for the marsupial.

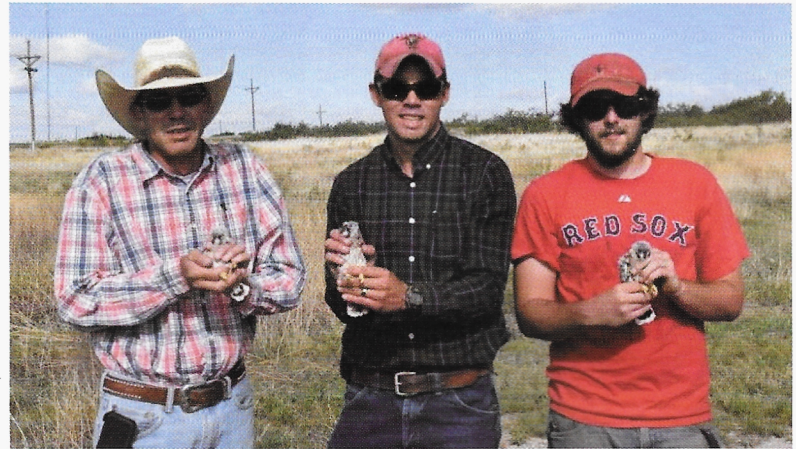


Figure 1. L to R: Scott Trevey, Matt McEwen, Aaron Gibson the Landmark's Historic Maintenance crew carefully hold American Kestrels



Figure 2. *Chelydra serpentina!* A snapping turtle.

The spring gave us a chance to assist a graduate student in the Department of Natural Resource Management at Texas Tech University whose research involved setting up nest boxes for the American kestrel. She had success in two of the boxes. We assisted her in banding the new fledglings before they left the care of their parents. Assisting in this banding was an unprecedented event for the Landmark staff, and something I will never forget (Figure 1).

Every May, Yellowhouse Draw becomes filled with the mating bobwhite calls from quail like an orchestrated prairie symphony. In late summer, I ran up on a couple of quail running down the road. They did not seem to be bothered by the tractor bustling towards them, and the chase lasted a few minutes before they flew off to shelter in the mixed grass prairie. The fall, in turn, was full of covey calls from these upland birds. Quail benefit from the Landmark's management activities. Even during the

drought and the last couple of years, we have a healthy habitat and population of these birds that have experienced decline across much of the state.

As we were not able to conduct a prescribed burn around the Llano Estacado Wildflower trail this year, I was charged with mowing the 4-ft tall invasive kochia stands. As I made pass after pass shredding the weeds, small mammals scurried for cover. While I was finishing up a patch, I was startled by a coyote. The coyote must have seen the tractor as a fellow hunting companion and took advantage of the disturbed rodents. We hunted together for almost a half hour.

Another startling encounter and also a first for me was the sighting of a large snapping turtle that appeared after a flash flood (Figure 2). This turtle was huge compared to the more common ornate box turtles. I immediately asked the herp experts if it had been sighted before here, and part of me thought I had discovered a living dinosaur. Turns out, snapping turtles are common visitors to the Landmark and particularly around water.

My most recent experience with the Landmark's wildlife was one I did not expect to see in such a manner. I was driving to work down Landmark Lane, and two mule deer dart across the road south toward our property adjacent to Loop 289. Again, like the quail experience, the chase lasted a couple of minutes. I was able to follow closely behind them as they ran down the fence line and finally up through the gate at the entrance of the road. This marks my 6th year in my Landmark position, and all through this time, I continue to be amazed at what lies around the next bend. Happy trails.

Excavation of a Hunter-Gatherer campsite at Potts Ranch

Dr. Stance Hurst, Regional Research Manager

The Potts Ranch is situated just east of the Southern High Plains eastern escarpment, near Post, Texas, and was an important place for past hunter-gatherer groups migrating back and forth across the region. The research team has been working on the ranch for only the past two years, yet almost 40 localities have been identified. Many of these sites are campsites — identified by the presence of hearthstones used in campfires and lithic material used to make stone tools.

The field crew has conducted an excavation at one of these campsites referred to as PR Locality 16, where two hearths were spotted eroding out of a creek terrace bank (Figure 1). Hearths are important archaeological features and are used to identify what past people ate, the types of wood used for fuel, and contain charcoal and organic fill sediments that can be radiocarbon dated to provide an age for the site.

Excavation of the hearths revealed both of the hearths were sandstone-lined, indicating time and effort taken in their construction. Sandstone rock was used to line the hearths rather than just digging a hole and starting a fire. Sandstone-lined hearths commonly were used during the Late Archaic (~4,500-2,000 years ago) period, and the research team is awaiting results from charcoal dating to determine if this campsite was occupied during this time frame. Three important advantages are found in lining hearths with sandstone rocks.

First, sandstone rock breaks apart in thin wide sections and its natural shape is conducive to use as lining in hearths.

Second, the sandstone rock absorbs heat and acts more like an oven preserving heat within the hearth, thereby, reducing the amount of wood needed for fueling the fire. Third, if hearths are reused frequently enough, they often are lined with sandstone to make it easier to clean out the charcoal and other matter from the previous fire.

Several units were excavated around the hearth features, but no lithic materials were found. Because hearths are the center of activity, normally people while sitting around the campfire made or used stone tools. This instance may be one of the few hearth excavations that did not uncover surrounding lithic material (more excavation is needed to confirm, and it is unclear what this difference may mean in terms of past activities).

While the rest of the crew completed excavations of the hearths, part of the field crew has focused on excavating a soil profile upstream and collected buried soil samples from an older terrace. Documenting and tracing buried soils — these soils were once the surface of past landscapes — across the ranch provides an overall chronology of past landscape change and a chronology of when past people were visiting. Soils can be radiocarbon dated to provide an age range of when they began forming and when they were buried.

Future work on the ranch will target other hearths for excavation to determine similarities or differences of hearth construction and associated activities. Only through more fieldwork in comparing differences between hearths and their associated artifacts across the ranch can the meaning behind the absence of lithic material associated with the hearths at PR Locality 16 be revealed.



Figure 1. Regional research crew excavating at Potts Ranch Locality 16

A Year of Learning at the Landmark

Andrea Moreno, Mikaela Young, Rebecca Knight,
and Charlotte Lee Stockton, Museum Science and Heritage Management Graduate Assistants

2014 was a busy year for four graduate student assistants in the Education Division at the Landmark. The graduate student assistant is a program facilitator. Tasks include community outreach and interaction, acquire skills, learn flexibility, and to develop and implement programs. Personal growth and professional development came through daily interactions with program participants and visitors.

The Landmark offered youth programs for ages 5-10 that included: *Spring Break Fest: Dig into Nature*, and *Amazing Summer Adventures*. During *Dig into Nature*, area youth learned about the Three Sisters' (corn, beans, and squash) Native American garden and the importance of sustainable gardening (Figure 1). *Amazing Summer Adventures* was six-weeks of summer programs that introduced participants to the cultural and natural heritage of the region through week long thematic lessons and activities. It was the responsibility of the graduate assistants to develop and implement programs about Fire Ecology, Archaeology, Pioneer Life, Art in Nature, Crazy Texas Weather, and Music in Nature (Figure 2).

After summer programming was complete we spent the fall revising traveling trunks. The Landmark's traveling trunk program provides an opportunity for area teachers to incorporate enrichment curriculum in the classroom as it relates to the Landmark and the Southern High Plains.

The trunks are equipped with artifacts, activities, and lesson plans that are in line with the Texas Essential Knowledge and Skills (TEKS), College and Career Ready Skills, and North American Association of Environmental Education learner guidelines. This task has given us experience developing age-appropriate activities, navigating TEKS requirements, and writing clear lesson plans.

We hosted community events at the Landmark that included Archaeology in Action, Migratory Bird Day, Fall Festival, and Bison Day. We also participated in public outreach events such as Blue Ribbon Rally and Ralls Public Library's Summer Reading Program. These events enabled us to gain experience interacting with children, families, local businesses, and schools.



Figure 2. Charlotte Stockton with summer youth and their corn husk action figures.



Figure 1. Spring Break Fest participants plant a Three Sisters Garden

We were given opportunity to participate in two conferences that enabled us to network with other informal educators, present posters, and interact with other professionals in the museum field. Through difficulties, surprises, bad weather, and challenges, we have had a wonderful learning experience under the supervision of Susan Rowe, Education Program Manager and Anna Jolley, Heritage Education Intern. We have developed an understanding of curriculum, instruction, and community engagement as well as grown as museum educators. Thank you for the opportunity to share the Landmark with you.

Investigating an Early 20th Century Homestead on the Edge of the Llano Estacado

Dallas C. Ward, Research Aide



Figure 1. Field crew surveys remaining traces of the homestead.

The research team has been investigating a homestead located in Garza County along the eastern escarpment of the Llano Estacado for the past two field seasons. Interviews with landowners and research at the General Land Office of Texas have revealed it was an early 20th century homestead. Information found in the archives has led to the discovery of the original homesteader's descendants who still live in the area.

Two brothers from Oklahoma took part in the 1903 Borden County Land Rush and claimed two half sections of land in present day Garza County. In 1903, Garza County was still administered by Borden County. To establish ownership of their newly claimed land, the two brothers stayed on the property for the required six months and built a dugout to

provide temporary shelter. At the end of the six months, the brothers rejoined their families and brought them to the new homestead. The family spent a decade at the site, becoming a founding pioneer family of the Graham and Post communities. Survey and excavation was conducted to reveal the remaining traces of the homestead. Metal detectors were used to locate metal artifacts and further illuminate the types of objects used. Survey focused on documenting fencing activities and locating other homesteader activity areas (Figure 1).

The research team excavated trash dumps to garner additional knowledge of the types of objects used by these early settlers. The types of metal objects present at the site were such items as cans, nails, stove parts, plow pieces, toys, and buttons. Surveying the site identified several additional archaeological features. The first was the potential location of the original dugout (Figure 2). A large depression was located with a substantial artifact deposit. Nearby, a potential well site was documented with its substantial artifact deposit that included a sucker rod from a windmill. Two trash dumps and footings for a house were located near a scattering of old stove pieces. The General Land Office archives indicated a small two-room house was added to the property. The homesteaders were permitted to move it to another location after the sale of the land to John B. Slaughter in 1912.

Excavation at one of the trash dumps was conducted in order to understand what other types of nonmetal objects were present. The trash dump also had numerous river cobbles and other rocks of non-local origin that suggested a collecting behavior. A number of domestic objects were recovered such as glass canning jars, bottles, and drinking glasses as well as several ceramic sherds from dishes. An unusual set of three cartridges was recovered from one of the units. Lab analysis of the objects currently is being conducted that will provide information on what life was like for early homesteaders on the Llano Estacado. The site has connected researchers to descendants and interviews with them have informed researchers on greater details of early pioneers and the development of the Graham and Post communities. Documenting the site and including oral history interviews into the investigating process has linked historic and archaeological layers with memory as well as people to their past. Further work at the homestead will be conducted in the upcoming field season in order gain a better knowledge of past life ways present on the Llano Estacado.



Figure 2. Excavation revealed cans, nails, toys, and buttons.

A New Clovis Paleoindian Site Discovery at Macy Locality 10

Dr. Stance Hurst, Regional Research Manager



Figure 1. Clovis projectile point found at Macy Locality 10

Paleoindian sites are rare on the Southern High Plains. This past summer, the research team found a new Paleoindian site (Macy Locality 10) along Spring Creek located ~10 miles southwest of Post, Texas. A Clovis projectile point (~11,500-11,000 years old) was discovered on the surface next to an erosional cut over 2.45m (8 ft) in height with a sequence of organic muds and diatomaceous sediment that formed along the margins of an ancient pond (Figure 1).

Diatomaceous sediment is formed from the deposition of microscopic pond silica enriched algae. Organic muds form at times when the water level is lower to expose the ground surface but the sediment is still saturated with water. Organic mud layers represent former surfaces upon which past people walked. The Clovis point comes from on top of the

uppermost organic mud layer. Radiocarbon samples have been collected from the organic mud layers, and with a competitive research grant from the University, the samples have been sent for dating. The research team is excitedly awaiting the results to know the age of these ancient mud layers (Figure 2).

The first people to enter North America at the end of the last ice age over 11,500 years ago encountered a landscape dramatically different from today. The early inhabitants of North America, known as Clovis, is named after a discovery of projectile points in association with mammoth near Clovis, New Mexico. Large mammals including mammoth, bison, camels, and horses roamed across the Southern High Plains during Clovis times. Clovis sites provide important research opportunities to examine how these early hunter-gatherer groups interacted with a dramatically different landscape.

Clovis projectile points are noteworthy by their distinctive fluting technology. Fluting is the practice of removing a large basal thinning flake near the hafting end of the projectile point in order to thin the projectile point's base to haft the point more securely to the spear. This particular Clovis point is made from Alibates chert, a lithic material source located over 250km (155 miles) to the north near Amarillo, Texas. Projectile points made from high quality chert source located great distances away from their place of last use and deposition are common at Clovis sites. These great distances suggests these ancient hunter-gatherers moved long distances across the landscape likely in pursuit of mammoth and other large mammals present during that time.

The discovery of a Clovis point is exciting and the research team will continue working at Macy Locality 10 next summer in an attempt to unearth more Clovis materials. This find is just the tip of the iceberg (or spear, if you will) and a lot more can be learned about the First Americans.



Figure 2. Organic mud layers represent former surfaces

An Education Intern's Journal

Anna Jolley, Heritage Education Intern and Helen DeVitt Jones Fellow in Heritage Management

Two phrases stand out that I must have said or thought a hundred times each since I began my internship in the Landmark's Education Program. The first is, "I never know quite what I'll be doing when I go to work every day," and the second is, "I think I have learned more from our programs than our participants." This is not to say that my job was directionless, or that our participants did not learn anything from our programs. In fact, I believe quite the opposite is true in both cases. The first idea speaks to the explorative, sometimes unpredictable nature of the internship experience, and the second to the intensive learning process I have undergone as an intern. Expanding on these two persistent thoughts may provide some insight into the world of a Landmark Heritage Education Intern.

Many of my days as an intern have been scheduled with field trips, educational programs, public events, or well-thought out to-do lists for planning and developing those occasions. Some days, however, surprise me with unscheduled activities that leave me with a choice: experience something new, or continue with business as usual (Figure 1). I have been fortunate that I have never had to choose the latter. One morning, two graduate students from the Department of Natural Resources Management asked if Susan and I would like to join in banding the kestrel fledglings, cozily tucked away in their box homes around the Landmark property. Although at the time I was not entirely sure what a kestrel was or what banding them might involve, I happily accepted the opportunity. In doing so, I



Figure 1. One surprise for Anna was to win the Carolyn Garrett Pool Award for Outstanding Museum Studies Student



Figure 2. Anna with a group of summer youth.

had the unforgettable experience of holding and documenting wild young birds of prey, even while their unhappy mother made me nervous overhead.

Another day, after a heavy rain, a handful of plaintive fish were trapped in the draw after their journey from a nearby lake system. The poor creatures drew a crowd of us, all attempting to rescue them from the rapidly evaporating water. Luckily, before long, a few were scooped up and whisked away to a more comfortable environment. While these two experiences stick out in my mind as some of the more thrilling instances at the Landmark, others added variety to days of writing and planning as well. I vividly remember afternoons of impromptu mesquite jelly making or marshmallow roasting stick whittling for an upcoming evening program. All of these occasions presented fun and exciting new experiences, but I have taken away from them more than entertaining stories. I was

able to observe and interact with wildlife and natural resources in situations I never thought I would find myself, but that taught me skills that I will carry with me forever. Often during my internship, I felt that the knowledge and experience I gained by developing and implementing programs was far greater than I was ever able to impart to visitors or participants.

Continued on page 12

Most of the time, I started from a limited knowledge base about the topics we presented and had to research and learn about them enough to teach them effectively. For our summer programs, I did not know much at all about our themes of fire ecology, pioneers, art and recycling, weather, and music in nature, although I learned through assisting in the development of lesson plans and activities. I learned even more by teaching those subjects, doing activities with children, and having discussions with them about the various topics (Figure 2). I hope that those children took away valuable knowledge and skills that will stick with them as they grow, because I know that they will stick with me.

Not only did I gain a greater knowledge base on a wide range of topics through developing programs and teaching, but I learned much more about practical matters of heritage education as well. I discovered how best to interact with different types of visitors and learners, manage large groups of children, facilitate a wide variety of activities, and be adaptable to change. Things that are second nature to me now, like making sure signs or posters are placed at an accessible height for children, are things that would not have crossed my mind before working in heritage education. I also have become so much more confident in my abilities since I began my internship. Speaking to large groups of people no longer is incomprehensible, and I feel comfortable taking unexpected events or changes in stride.

I never imagined that I would grow so much personally and professionally when I began my internship. When I look back, I see a steady trajectory leading me to want to make a career out of heritage education. I think working at the Landmark has given me the skills and strength to be able to accomplish that. I do not know what surprises the coming year holds for me, but I am confident that my work at the Landmark has prepared me for anything (Figure 3).



Figure 3. Mikaela Young, Museum Science Graduate Student Assistant; Anna Jolley, Heritage Education Intern; and Andrea Moreno, Museum Science Graduate Student Assistant, pose in front of a six foot wall of tumbleweed and kochia.

Bison Kill and Campsite Investigations at Whiskey Flats

Dr. Stance Hurst, Regional Research Manager



Figure 1. Crew in the bone bed, documenting modern horse (*Equus caballus*) remains.

Whiskey Flats is located on Mustang Draw near Stanton, Texas. Backhoe trenching within the draw and survey along an adjacent terrace has uncovered a bison kill and possibly an associated campsite over the past two field seasons. Results of the trenching indicate a very large bison kill that extends at least 53m (58 yards).

Results from the 2014 field season's fieldwork is very promising (Figure 1). The research team has completed work in the bone bed within Trench 2. Although no projectile points were uncovered within this trench to provide a date for the bison kill, modern horse (*Equus caballus*) remains in the bone bed indicate a general age from the 1600s to 1800s. At this time, regional Native American occupation are the Apache followed by the Comanche. In additions, a bison petrosal (ear bone) has been recovered. The petrosal is the most dense bone in the body and can provide an accurate radiocarbon age of when the bison died. That bone has been sent off to a radiocarbon lab in New Zealand that specializes in dating petrosals.

With only enough time and people this year to begin excavating three units at the campsite, this work has uncovered evidence of the second more recent hunter-gatherer group in the region. Several horse bones and heavily weathered metal that could not be identified suggests the Comanche most likely occupied the upper level of the camp. The Comanche are the only regional Native American group to have both horses and metal artifacts acquired in trade with the Spanish or Euro-Americans. A focus of the coming 2015 field season is to continue excavation at the campsite to confirm the Comanche identification and to determine the time period and identity of the lower, older hunter-gatherer occupation. It is still unclear which hunter-gatherer group, the more recent Comanche or the older Apache, is responsible for the bison kill. The discovery of diagnostic artifacts such as projectile points and radiocarbon ages will determine the relationship between the bison kill and campsite.

Lubbock Lake Landmark Summer Field Crew 2014



Bottom row left to right: Kathering Ehlers, Elisa Galera, Geraldine Conejo, Amy Chan, James Whittaker, Josh Newman, Meg Reel, Dallas Ward, Jim Gannaway

Middle row left to right: Scott Garrold, Keith SoRelle, Allan Wolfrum, Babbie Suarez, Roham Sabz

Back row left to right: Miho Watabe, Sarah Evans, Matt Paulsen, Lila Jones, Miquel Rovira, Allison Barrett, John Moretti, Dr. Stance Hurst



One of the most widespread and varied adaptations is natural camouflage, an animal's ability to hide itself from predator and prey. Can you spot the Texas horned lizard?



Summer youth prepping strawberries for strawberry jam.



Carson and Penn painting gourds during Amazing Summer Adventures



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Tabor thinks Amazing Summer Adventures are FANTASTIC!

