INTENSIVE ARCHAEOLOGICAL RESOURCES SURVEY OF THE PROPOSED CANYON RANCH DEVELOPMENT, BEXAR COUNTY, TEXAS

Prepared for

MABE, INC. 2311 Cedar Springs Road, Suite 405 Dallas, Texas 75201

Prepared by

Christian T. Hartnett and Matt Stotts

SWCA ENVIRONMENTAL CONSULTANTS

4407 Monterey Oaks Boulevard Building 1, Suite 110 Austin, Texas 78749 www.swca.com

Principal Investigator

Christian T. Hartnett

SWCA Project Number 16194-053-AUS SWCA Cultural Resources Report No. 10-52

February 2010

ABSTRACT

MABE, Inc. contracted with SWCA Environmental Consultants (SWCA) to conduct an intensive archaeological survey of the 461-acre Canyon Ranch development located just west of Bandera Road and Ranch Parkway in northwestern Bexar County, Texas. MABE, Inc plan to develop the property into a residential housing development which will include the construction of houses, roads, and supporting infrastructure. Work was done to satisfy requirements of the San Antonio Historic Preservation Office (HPO) per the City of San Antonio's Historic Preservation and Design Section of the Unified Development Code (Article 6 35-360 to 35-634). These investigations included a background and archival review and an intensive pedestrian survey with subsurface investigations.

The purpose of the work was to locate and identify all prehistoric and historic archaeological sites in the 461-acre Area of Potential Effects (APE), establish vertical and horizontal site boundaries as appropriate with regard to the APE, and evaluate the significance and eligibility of any site recorded within the APE. SWCA archaeologists conducted the fieldwork on January 27 and February 5 and 9, 2010. The APE totals 461 acres and has an expected depth of impact ranging from 3 to 7 feet.

The results of the background review determined that a portion of the project area has been previously surveyed for cultural resources resulting in the identification or revisit of eleven archaeological sites. Seven of the sites were identified during a previous survey in 1972 which focused on the main Ranch Creek drainage. These sites were generally classified as prehistoric upland lithic procurement sites. Additionally, the review of the Texas Department of Transportation (TxDOT) Historic Overlay Maps depicted no historic-age structures on the property.

The survey focused on revisiting the seven previously recorded sites and those areas within the 461-acre project area slated for development. An additional four new sites were recorded in these areas. A total of 36 shovel tests was excavated across the property, only four were positive for cultural material. Disturbances throughout the property area are light to moderate, resulting from establishment of dirt roads, various utilities, and mechanical clearing of cedar over many decades. In addition the potential for buried, significant archaeological resources within the project was determined to be low, based primarily on the predominance of shallow rocky soils, which serve to confine cultural materials to surface contexts.

All eleven sites visited by the current investigation do not retain sufficient contextual integrity or have very limited data potential. As a result, all eleven sites are unable to contribute to the overall understanding of prehistoric occupation of Bexar County. Based upon the results of current investigation, development within the project area will have no adverse impacts on significant cultural resources. SWCA recommends no further archaeological investigations within the Canyon Ranch Development.

Introduction

MABE Inc. (MABE) contracted with SWCA Environmental Consultants (SWCA) conduct an intensive archaeological survey of the 461-acre Canyon Ranch development just west of Bandera Road and Ranch Parkway in northwestern San Antonio, Texas (Figure 1). Work was done to satisfy requirements of the San Antonio Historic Preservation Office (HPO) per the City of San Antonio's Historic Preservation and Design Section of the Unified Development Code (Article 6 35-360 to 35-634). These investigations included a background and archival review and a pedestrian survey with subsurface investigations.

The 461-acre tract will be subdivided into residential lots with utility and roadway infrastructure. The Area of Potential Effects (APE) the project for area approximately 461 acres and depth of impact is expected to be 3 to 7 feet. The current investigation focused on relocating and reassessing previously recorded sites within the APE and surveying those areas that are slated for development. The purpose of the work was to locate and identify prehistoric and historic archaeological sites within the surveyed portions of the APE, establish vertical and horizontal site boundaries as appropriate with regard to the APE, and evaluate the significance of any site recorded within the APE. SWCA archaeologists Christian Hartnett, Daniel Culotta, Kevin Miller, and Matt Stotts conducted the fieldwork on January 27, February 5 and 9, 2010.

PROJECT AREA DESCRIPTION

The project area is located in northwestern Bexar County, Texas just northwest of the City of Helotes. The project area is composed of a combination of high rocky hilltops and narrow steep lowland valleys that are traversed by minor drainage headwaters and tributaries of Los Reyes Creek. The Texas Parks and Wildlife Department's Government Canyon State Natural Area is located directly adjacent to the property to the west and north.

Vegetation across the property ranges from sparse grass cover with high surface visibility (ca. 65–100 percent) along the upland slopes and hilltops to more dense vegetation along the drainage margins. Several two-track roads cross the property, established for access at various points in the property's history.

Along the eastern boundary of the property is Ranch Creek, a tributary of nearby Los Reyes Creek. The creek runs generally, north-south and is fed by several small draws that run down the canyon walls. The area between creek edge and the toe slopes is generally very narrow, but widens as the creek progresses southward. However, there are no true alluvial terraces along the creek or its drainages. A large overhead powerline with towers and an associated cleared dirt road is present along this tributary. A large area in the center of the project area, consisting of approximately 50 acres, is owned by a separate landowner and contains two houses of recent construction. This 50-acre tract is not within the current 461-acre APE and was not surveyed.

At the southeastern edge of the property is a dam, constructed in the 1970s, with the intention of creating a permanent lake. According to the local landowner, the dam has never held water for more than a few days at a time. The land just northwest of the dam shows significant signs of bulldozing and land clearing intended to create a retention pool behind the dam.

Soils throughout the project area were found to consist predominately of shallow rocky clay

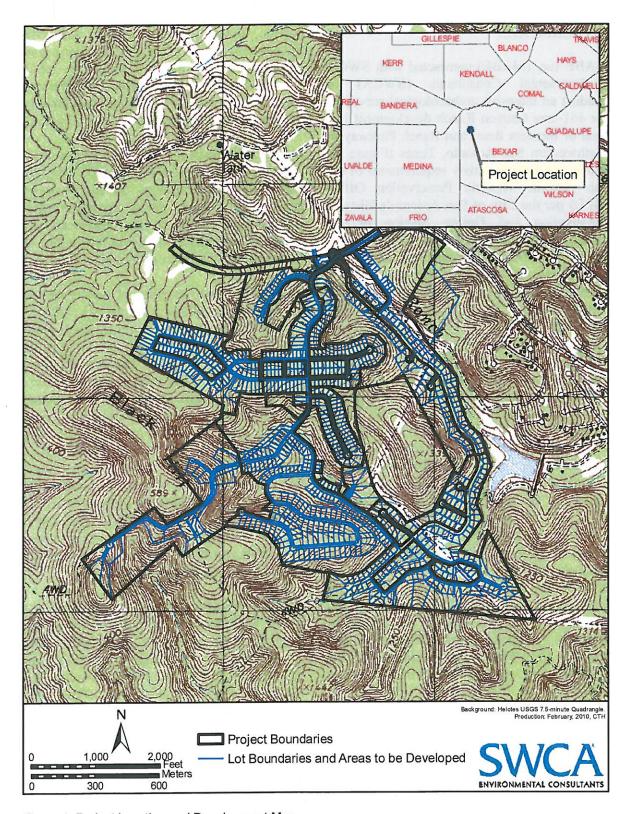


Figure 1. Project Location and Development Map

and clay loams. Slightly deeper deposits were encountered within the lowland valley, however these sediments were typically composed of clay underlain by bedrock and have been somewhat impacted by clearing activities associated with the aforementioned powerline easement. At some point in the past, portions of the project area have been cleared using a Hydro-Ax machine, in preparation for future development and to encourage the return of larger wildlife such as deer.

ENVIRONMENTAL SETTING

GEOLOGY

The project area is mapped as Lower Cretaceous-age Upper part Glenrose Formation (Kgru) and Edwards Limestone (Ked) (Barnes 1983). The Glenrose Formation consists of limestone, dolomite, and marl as alternating resistant and recessive beds forming stairstep topography with inclusions of marine megafossils. Limestone occurs as light gray to yellowish gray and dolomite as yellowish brown with molluscan steinkerns, rudistids, oysters, and echinoids (Barnes 1983). The upper part is relatively thinner bedded, more dolomitic, and less fossiliferous with a thickness of approximately 400 feet The Edwards limestone. (Barnes 1983). younger in age than the Glenrose Limestone, is a fine to coarse grained limestone with abundant chert inclusions medium gray to grayish brown in color. (Barnes 1983).

Soils

Soils within the project area are mapped as Tarrant association, rolling (5 o 15 percent slopes) (TaC), Tarrant association (15 to 30 percent slopes) (Tad), and Krum complex (2 to 5 percent slopes) (Kr) (Figure 2). Based upon the soil descriptions below, all three soil

units have little potential for deeply buried or intact cultural resources.

Tarrant association, rolling (5 to 15 percent slopes) (TaC) is found in the northern third of the county on slopes that are strongly convex or rounded. This unit is often made up of many draws and canyons and is typically more stoney than related Tarrant units (Taylor et al. 1991: 30-31).

Tarrant association (15 to 30 percent slopes) (TaD) occurs as ridgetops and hilly to steep slopes in the northern third of the county. In some small areas outcrops of hard limestone have formed steep escarpments and deep canyons. Included in this unit are areas of small Tarrant association, rolling, Brackett soils, 12 to 30 percent slopes and Krum complex (Taylor et al 1992: 31).

Krum complex (2 to 5 percent slopes) (Kr) is found in narrow valleys in the limestone areas of northern and northwestern parts of Bexar County. The soils occupy the foot slopes below Tarrant and Brackett soils and also include isolated patches of these same soils (Taylor et al 1992: 24).

CULTURAL HISTORY OF CENTRAL TEXAS AND THE SAN ANTONIO REGION

The project area lies at the intersection of two archeological regions, the Central Texas and South Texas regions. These regions are recent analytical constructs but they do contain a measure of distinct, spatial, cultural information (Collins 2004; Prewitt 1981). In this study, the project area is included with the Central Texas region.

Following Collins (2004), the archeological periods in Central and South Texas are, Paleoindian, Archaic, Prehistoric and Historic. Subperiods of the Paleoindian period are early and late. The Archaic subperiods are Early,

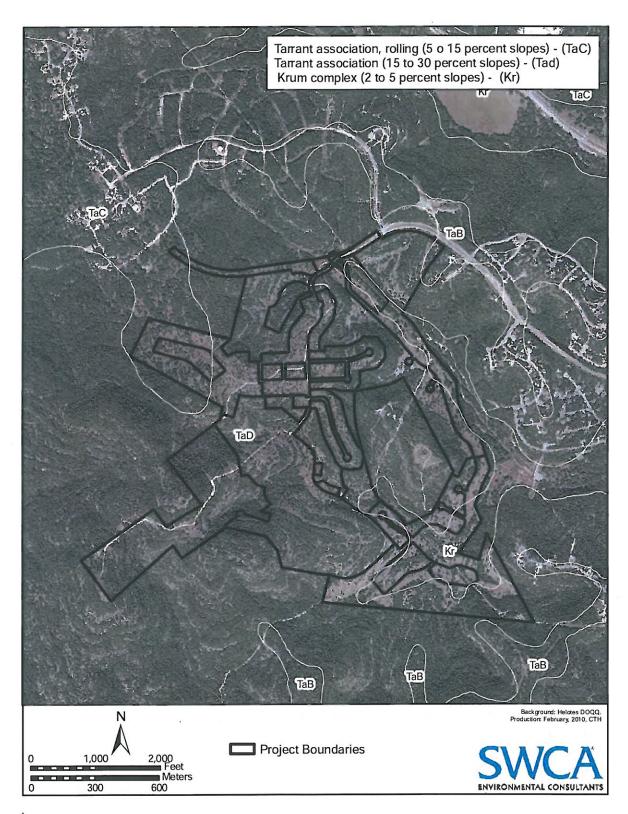


Figure 2. Soils map

Middle, and Late Archaic. The date ranges for archaeological periods uses radiocarbon years B.P., following the convention of Collins (1995).

The archaeological record of the Central Texas region is known from decades of investigations of stratified open air sites and rock shelters throughout the Edwards Plateau, its highly dissected eastern and southern margins, and the adjoining margins of physiographic regions to the east and south (see Collins [2004] for review). Traditionally, the Central Texas region has included the Balcones Canyonlands and Blackland Prairie—that is, areas northwest and southeast of San Antonio (e.g., Prewitt 1981; Suhm 1960). These two areas are on the periphery of the region, and their archaeological records and projectile point style sequences contain elements that suggest influences from, and varying degrees of, contact over time with other areas such as the Lower Pecos and Gulf Coastal Plain (Collins 2004; Johnson and Goode 1994). Archaeological sites in these two areas of Bexar County that have contributed important information include the Richard Beene site at Applewhite Reservoir (McGraw and Hindes 1987; Thoms and Mandel 1992; Thoms et al. 1996), the Cibolo Crossing site at Camp Bullis (Kibler and Scott 2000), the Panther Springs Creek site in Bexar County (Black and McGraw 1985), the Jonas Terrace site in Medina County (Johnson 1995), the Camp Pearl Wheat site in Kerr County (Collins et al. 1990), 41BX1 (Lukowski 1988) and 41BX300 (Katz 1987) in Bexar County, and several sites at Canyon Reservoir (Johnson et al. 1962). For morecomplete bibliographies concerning archaeological work done in the region, see Black (1989), Collins (1995), and Johnson and Goode (1994).

PALEOINDIAN PERIOD

Paleoindian sites occur in a variety of topographic settings and include both surface and deeply buried sites, rockshelter sites, and isolated artifacts spanning over 2,500 years of occupations (ca. 11,500-8800 B.P.) in the Central Texas region (Collins 2004:116). The period is often described as having been characterized by small but highly mobile bands of foragers who were specialized hunters of Pleistocene megafauna. But Paleoindians probably used a much wider array of resources (Meltzer and Bever 1995:59), including small fauna and plant foods. Faunal remains from Kincaid Rockshelter and the Wilson-Leonard site (41WM235) support this view (Bousman 1998, Bousman et al 2004, Collins 1998; Collins et al. 1989).

Collins (1995, 2004) divides the Paleoindian period into early and late subperiods. Two main projectile point styles, Clovis and Folsom, are included in the early subperiod. A third type, Plainview may be contemporary with Folsom. Clovis chipped stone artifact assemblages, including the diagnostic fluted lanceolate Clovis point, were produced by bifacial, flake, and prismatic-blade techniques on high-quality and oftentimes exotic lithic materials (Collins 1990). Along with chipped stone artifacts, Clovis assemblages include engraved stones, bone and ivory points, stone bolas, and ochre (Collins 2004:116; Collins et al. 1992). Clovis points are found evenly distributed along the eastern edge of the Edwards Plateau, where the presence of springs and outcrops of chert-bearing limestone are common (Meltzer and Bever 1995:58). Analyses of Clovis artifacts and site types suggest that Clovis peoples were welladapted, generalized hunter-gatherers with the technology to hunt larger game but not solely rely on it.

In contrast, Folsom tool kits—consisting of fluted Folsom points, thin unfluted (Midland) points, large thin bifaces, and end scrapers—are more indicative of specialized hunting, particularly of bison (Collins 2004:117). Folsom points have been recovered from Kincaid Rockshelter (Collins et al. 1989) and Pavo Real (Collins et al. 2003; Henderson and Goode 1991). Folsom point distributions, both the frequency and spatial patterning, differ from the Clovis patterns, suggesting a shift in adaptation patterns (Bever and Meltzer 2007; Meltzer and Bever 1995:60, 74).

Postdating Clovis and Folsom points in the archaeological record are a series of dart point styles (primarily unfluted lanceolate darts) for which the temporal, technological, or cultural significance is unclear. Often, the Plainview type name is assigned these dart points, but Collins (2004:117) has noted that many of these points typed as Plainview do not parallel Plainview type-site points in thinness and flaking technology. At Wilson-Leonard, the Paleoindian projectile point sequence includes an expanding-stem dart point termed Wilson, which dates to ca. 10,000-9,500 B.P. Postdating the Wilson component is a series of unfluted lanceolate points referred to as Golondrina-Barber, St. Mary's Hall, and Angostura, but their chronological sequence is poorly understood.

By the Late Paleoindian subperiod, aspects of Archaic lifeways became increasingly entrenched, and in many ways, the Late Paleoindian subperiod is a transition between the early Paleoindian and succeeding Archaic periods (Collins 2004:118). During this period there is evidence of a diverse subsistence practice, a variety of lithic tools and ritualized burial practices (Bousman 1998, Bousman et al. 2004).

ARCHAIC PERIOD

The longest period is the Archaic, beginning between 8,800 and 8,000 B.P. and extending until approximately 1,200 B.P. when the widespread use of the bow and arrow occurs. Collins (1995, 2004) and Collins et al. (1989) use 8,800 B.P. as the approximate starting date for the Early Archaic where there is a shift toward hunting and gathering of a wider array of animal and plant resources and a decrease in group mobility (Willey and Phillips 1958:107–108).

In the eastern and southwestern United States and on the Great Plains, development of horticultural-based, semi-sedentary sedentary societies succeeds the Archaic period. In these areas, the Archaic truly represents a developmental stage of adaptation as Willey and Phillips (1958) define it. For central Texas, this manifestation of the Archaic is somewhat problematic. increasing amount of evidence suggests that Archaic-like adaptations were in place before the Archaic (see Collins 2004:118, 1998; Collins et al. 1989) and these practices continued into the succeeding Late Prehistoric period (Collins 1995:385; Prewitt 1981:74).

EARLY ARCHAIC

The use of 8,800 B.P. as a beginning date for the Early Archaic appears to be at the extreme older date range. It is just as probable that the date is closer to 8,000 B.P., which is closer to the beginning date of the Early Archaic for South Texas, according to Hester (2004).

Early Archaic (8,800–6,000 B.P.) lithic assemblages can be diverse, with a greater variety of stone tool types than during the previous Paleoindian period (Weir 1976:115–122), suggesting that populations were highly mobile and population densities were probably low. It has been noted that there is a

concentration of Early Archaic sites along the eastern and southern margins of the Edwards Plateau (Johnson and Goode 1994; McKinney 1981, Story 1985). This distribution may indicate drier and/or more extreme climatic conditions at the time, given that these environments have more reliable water sources and a more diverse resource base than other parts of the region. Early Archaic projectile point styles include Hoxie, Gower, Wells, Martindale, and Uvalde. Clear Fork and Guadalupe bifaces and a variety of other bifacial and unifacial tools are common to Early Archaic assemblages. The increasing regional variation in tool styles also suggests reduced increasing territorialism that exchanges of technology and interaction between distant and possibly local groups (Oksanen 2008).

Construction and use of rock hearths and ovens, which had been limited during late Paleoindian times, became commonplace. Such a practice probably was related to cooking plant foods, particularly roots and bulbs, many of which must be subjected to prolonged periods of cooking to render them consumable and digestible (Black et al. 1997:257; Wandsnider 1997; Wilson 1930).

Significant Early Archaic sites include the Richard Beene site in Bexar County (Thoms and Mandel 2007; Thoms and Mandel 1992), the Gatlin site in Kerr County (Houk et al. 2008), Wilson-Leonard (Collins et al. 1998). the Icehouse site (41HY161) in San Marcos and the Youngsport site in Bell County. The end of the Early Archaic is a poorly documented transition. The convention of 6,000 B.P. intends to mark the appearance of both a changing environment and the appearance of specialized technology associated with bison hunting.

MIDDLE ARCHAIC

During the Middle Archaic period (6,000-4,000 B.P.), the number and distribution of sites, as well as their size, probably increased as population densities grew (Prewitt 1981:73: Weir 1976:124, 135). Macrobands may have formed at least seasonally, or more small groups may have used the same sites for longer periods (Weir 1976:130-131). Development of burned rock middens toward the end of the Middle Archaic suggest a greater reliance on plant foods, although tool kits still imply a considerable dependence on hunting (Prewitt 1985:222-226). Middle Archaic projectile point styles include Bell. Andice, Taylor, Baird, Nolan, and Travis. Bell and Andice points reflect a shift in lithic technology from the preceding Early Archaic Martindale and Uvalde point styles (Collins 2004:119). Johnson and Goode (1994:25) suggest that the Bell and Andice darts are parts of a specialized bison-hunting tool kit. They also believe that an influx of bison and bison-hunting groups from the Eastern Woodland margins during a slightly more mesic period marked the beginning of the Middle Archaic.

Although no bison remains were detected. Bell and Andice points were recovered from the Cibolo Crossing (Kibler and Scott 2000), Panther Springs Creek, and Granberg II (Black and McGraw 1985) sites in Bexar County. Bison were either absent or decreased drastically in number as more-xeric conditions returned during the late part of the Middle Archaic. Later Middle Archaic projectile point styles represent another shift in lithic technology (Collins 2004:120; Johnson and Goode 1994:27). At the same time, a shift to more-xeric conditions saw the burned rock middens develop, probably because intensified use of a specific resource (geophytic or xerophytic plants) or resource patches meant the debris of multiple rock ovens and hearths accumulated as middens on stable to slowly

aggrading surfaces, as Kelley and Campbell (1942) suggested many years ago. Johnson and Goode (1994:26) believe that the dry conditions promoted the spread of yuccas and sotols, and that it was these plants that Middle Archaic peoples collected and cooked in large rock ovens.

LATE ARCHAIC

During the succeeding Late Archaic period (4,000 to 1,300–1,200 B.P.), populations continued to increase (Prewitt 1985:217). Within stratified Archaic sites such as Loeve-Fox, Cibolo Crossing, and Panther Springs Creek, the Late Archaic components contain densest concentrations of cultural materials. Establishment of large cemeteries along drainages suggests certain groups had strong territorial ties (Story 1985:40). A variety of projectile point styles appeared throughout the Late Archaic period. Middle Archaic subsistence technology, including the use of rock and earth ovens, continued into the Late Archaic period. Collins (2004:121) states that, at the beginning of the Late Archaic period, the use of rock ovens and the resultant formation of burned rock middens reached its zenith and that the use of rock and earth ovens declined during the latter half of the Late There is, however, mounting Archaic. chronological data that midden formation culminated much later and that this high level of rock and earth oven use continued into the early Late Prehistoric period (Black et al. 1997:270-284; Kleinbach et al. 1995:795).

The use of rock and earth ovens (and the formation of burned rock middens) for processing and cooking plant foods suggests that this technology was part of a generalized foraging strategy. However, at times during the Late Archaic, this generalized foraging strategy appears to have been marked by shifts to a specialized economy focused on bison hunting (Kibler and Scott 2000:125–137). Castroville, Montell, and Marcos dart points

are elements of tool kits often associated with bison hunting (Collins 1968). Archaeological evidence of this association is seen at Bonfire Shelter in Val Verde County (Dibble and Lorrain 1968), Jonas Terrace (Johnson 1995), Oblate Rockshelter (Johnson et al. 1962:116), John Ischy (Sorrow 1969), and Panther Springs Creek (Black and McGraw 1985).

The Archaic period represents a hunting and gathering way of life that was successful and that remained virtually unchanged for more than 7,500 years. This notion is based in part on fairly consistent artifact and tool assemblages through time and place and on resource patches that were used continually for several millennia, as the formation of burned rock middens shows. This pattern of generalized foraging, though marked by brief shifts to a heavy reliance on bison, continued almost unchanged into the succeeding Late Prehistoric period.

LATE PREHISTORIC PERIOD

Introduction of the bow and arrow and, later, ceramics into Central Texas marked the Late Prehistoric period. Population densities dropped considerably from their Late Archaic peak (Prewitt 1985:217). Subsistence strategies did not differ greatly from the preceding period, although bison again became an important economic resource during the late part of the Late Prehistoric period (Prewitt 1981:74). Use of rock and earth ovens for plant food processing and the subsequent development of burned rock middens continued throughout the Late Prehistoric period (Black et al. 1997; Kleinbach et al. 1995:795). Horticulture came into play very late in the region but was of minor importance to overall subsistence strategies (Collins 2004:122).

In central Texas, the Late Prehistoric period generally is associated with the Austin and

Toyah phases (Jelks 1962; Prewitt 1981:82-84). Austin and Toyah phase horizon markers, Scallorn-Edwards and Perdiz arrow points, respectively, are distributed across most of the state. Violence and conflict often marked introduction of Scallorn and Edwards arrow points into central Texas-many excavated burials contain these point tips in contexts indicating they were the cause of death (Prewitt 1981:83). Subsistence strategies and technologies (other than arrow points) did not change much from the preceding Late Archaic period. Prewitt's (1981) use of the term "Neoarchaic" recognizes this continuity. In fact, Johnson and Goode (1994:39-40) and Collins (2004:122) state that the break between the Austin and Toyah phases could easily and appropriately represent the break between the Late Archaic and the Late Prehistoric.

Around 1,000-750 B.P., slightly more-xeric or drought-prone climatic conditions returned to the region, and bison came back in large numbers (Huebner 1991; Toomey et al. 1993). Using this vast resource, Toyah peoples were equipped with Perdiz point-tipped arrows, end scrapers, four-beveled-edge knives, and plain bone-tempered ceramics. Toyah technology subsistence strategies represent completely different tradition from the preceding Austin phase. Collins (1995:388) states that formation of burned rock middens ceased as bison hunting and group mobility obtained a level of importance not witnessed since Folsom times. Although the importance of bison hunting and high group mobility hardly can be disputed, the argument that burned rock midden development ceased during the Toyah phase is tenuous. Black et al. (1997) claim that burned rock midden formation, although not as prevalent as in earlier periods, was part of the adaptive strategies of Toyah peoples.

HISTORIC PERIOD

The historic period in Texas began in 1528 near Galveston Island with the encounter between the Pánfilo de Narváez expedition and a Karankawa group. After disaster befell the expedition, one of the members, Cabeza de Vaca, spent six years of wandering through Texas in the 1530s. Cabeza de Vaca traversed coastal Texas and parts of the interior and recounted in great ethnographic detail the peoples he encountered. Based in part from his exploits and suggestions of a kingdom of gold, the Coronado expedition was formed to search for a "northern" Cuzco or Teotihuacan, and by 1540 it crossed into New Mexico, and into Texas (Fehrenbach 1985).

The following historic discussion focuses on the San Antonio region and the significance of this region during the historic period and the creation of Texas independence, sovereignty and statehood.

EARLY HISTORIC TO 1718

The Native Americans living in the missions along the San Antonio River were referred to by the Spanish as "Coahuiltecans". The name comes from a southern tribe named after the Spanish province of "Coahuila", which later became a Mexican state. The term "Coahuiltecan" is a generalized term and makes no distinction between language and cultural differences of the tribes living in the area. The abundant berries, nuts and fish made San Pedro Springs an attractive place to camp and/or live (Johnston 1947).

The San Antonio area was first explored in 1691 by the Governor of the Spanish Province of Texas, Domingo Terán de los Ríos, and Father Damián Massenet. The pair traveled to San Pedro Springs where they encountered a hunter-gather tribe named Payaya. In their village named Yanaguana, the Payaya lived in

simple huts made of brushwood and grass. The river and village were renamed after San Antonio de Padua by Terán and Massenet (Johnston 1947).

Further Spanish exploration was conducted in 1709 by Father Antonio de San Buenaventura y Olivares. Father Olivares was the first to express interest in setting up a mission in the San Antonio area (Fehrenbach 2005; Johnston 1947).

SPANISH TEXAS: 1718 TO 1820

San Antonio de Béxar Presidio, located on the east bank of the San Antonio River, was founded in 1718. In the same year, Mission San Antonio de Valero, later known as the Alamo, was transferred from the Rio Grande by Father Olivares. This mission was named after St. Anthony of Padua and the Marquis de Valero, the Viceroy of New Spain. The church was originally constructed of adobe and the huts of wood and thatch (Johnston 1947; Schoelwer 2008).

La Villita, an Indian village about 1,500 feet south of the Alamo, was built around 1722. The Indians from the Mission San Antonio de Valero lived in La Villita in crude huts called "jacales" (Johnston 1947:31). Jacales were typically constructed with an upright line of poles sunk into a footing ditch and then woven horizontally with smaller sticks. The walls were subsequently covered with adobe. Later, La Villita served as a home to the families of soldiers who protected the mission. (Johnston 1947; Magruder 2008).

The villa of San Fernando de Béxar was founded in 1731 by the Canary Islanders. The Canary Islanders were a small group, totaling 56 people, sent by Spain to colonize the province of Texas. Under the leadership of Juan Leal Goraz, the village of San Fernando de Béxar was founded near the Presidio de

Béxar and the first civil government in Texas was formed.

In 1773, San Antonio de Béxar became the capital of Spanish Texas. By 1790, most of the Indians living in San Antonio had either already abandoned the missions or died from diseases like smallpox and the measles brought in by Europeans. Mission San Antonio de Valero was secularized in 1794 and mission land, excluding the church and convent, was divided amongst the few Indians that remained in the area (Johnston 1947).

Spain and Mexican revolutionists fought over San Antonio throughout the early 1800s. The Casas revolt of 1811 ended with the assertion of power by the Spanish regime. Captain Juan Bautista de las Casas went against the Spanish authority and was arrested and sent to Mexico. In Monclova, he was tried and found guilty of treason and shot to death. His head was sent back to San Antonio as a sign of defeat (Caldwell 2008).

Antonio declared for Mexican San independence in 1813 but was recaptured by Royalist forces in the battles of Alazán Creek and Medina. During this period of unrest, conditions in Texas were becoming worse. neglected Inadequate provisions and agricultural fields along with the fear of political and military upheavals forced many Texans to abandon their homes and move elsewhere. (Fehrenbach 2005; Heusinger 1951).

TEXAS REVOLUTION, INDEPENDENCE AND STATEHOOD: 1820 TO 1848

During the Texas Revolution, San Antonio was the site of several battles, including the siege of Bexar and the battle of the Alamo (Fehrenbach 2005).

General Martín Perfecto de Cós, along with 650 men, fortified the plaza of San Antonio de Béxar west of the San Antonio River and the Alamo to the east. Texan volunteers arrived in San Antonio on October 12, 1835 to set up camp. Upon hearing the Mexican army's morale and rations were low a council was held to decide whether to attack. Commanding Officer, Edward Burleson and most of the other officers voted to end the siege. One man spoke up and asked "Who will go with Old Ben Milam into San Antonio?" (House 1949:47). Approximately 300 men joined Milam and the battle finally began on December 5, 1835. General Cós focused his troops at the Alamo but was unsuccessful in holding San Antonio. By the morning of December 9, 1835, Cós surrendered (House 1949).

On February 23, 1836, nearly 150 American volunteers took refuge from the approaching Mexican Army in the Alamo Mission in San Antonio, Texas under orders from Colonel William B. Travis (Hatch 1999). A standoff between the Texas Revolutionary Army and the Mexican Army, lasting 13 days, ended in complete annihilation of the Alamo defenders and a victory for the Mexican General Antonio Lopez de Santa Anna (Huffines 1999).

The Alamo Garrison had been acquired following the defeat of Mexican General Martin Perfecto de Cós' army in the December 1835 Battle of San Antonio. The subsequent formation of the Matamoros Expedition cost the Alamo much needed supplies and men. This expedition was created with the intentions of invading Mexico through the city of Matamoros; however, the plan was never executed due to political turmoil in the Texas government. Some relief came over the next few months with the arrivals of Colonel Jim Bowie, Colonel William B. Travis, and David Crockett; each

bringing 12–30 additional men. Rumors of the approaching Mexican army of nearly 2,000 men soon followed (Hatch 1999).

General Santa Anna arrived in San Antonio with between 1,800 and 2,100 men on February 23, 1836. Upon their arrival Colonel Travis ordered his men to retreat into the Alamo (Hatch 1999). General Santa Anna raised a red flag signifying "no quarter-no mercy" and received a cannon shot from the Texians in defiance (Hatch 1999:20). Another defiant cannon is rumored to have been shot in response to a request for an unconditional surrender. In a letter sent February 24, 1836 addressed to the "People of Texas and all Americans in the World," Colonel Travis pleas for assistance and states "if this call is neglected, I am determined to sustain myself as long as possible & die like a soldier who never forgets what is due his own honor & that of his country. Victory or Death" (Groneman 2001:6).

Over the next few days the Alamo defenders suffered shortages of provisions and water. constant bombardment on the Alamo and psychological warfare through the nights ordered by General Santa Anna. On the third day of the siege, Mexican troops created a diversion at the Alamo's main gate in an attempt to cross the San Antonio River and reach the south wall of the Alamo through La Villita. The Texians repelled both attacks and subsequently burned buildings in close proximity to the Alamo to deny shelter for Santa Anna's men in La Villita (Hatch 1999). General Santa Anna ordered many small attacks in an attempt to breach the Alamo's walls. Many Mexicans lost their lives in the process; however, no Texians were killed in the 12-day siege before the final battle (Hatch 1999; Huffines 1999).

On March 4, 1836 General Santa Anna held a Council of War to decide plans of attack and

the fate of prisoners. The final decision to attack the Alamo with full force was made the following day, March 5, 1836 (Hatch 1999). The Mexican army moved into position just after midnight on March 6, 1836 and waited for the signal to attack. This call came around five o'clock in the morning when a soldier cried out "Viva Santa Anna!" (Huffines 1999:134). With the element of surprise lost, Santa Anna ordered his troops to begin the attack on the Alamo garrison (Huffines 1999).

The vicious battle, lasting only 90 minutes, left every Texian combatant dead. The number of Mexican dead is a matter of debate, with numbers ranging from 100–1,600; uncounted more were wounded. The Texian's bodies were burned on funeral pyres on either side of the Alameda. Santa Anna won the battle at the Alamo but victory and independence was won by the Texans two weeks later in the Battle of San Jacinto (Hatch 1999; Huffines 1999).

After Mexican forces were removed from San Antonio in December of 1836, the Republic of Texas began organizing Bexar County. The next month, San Antonio was chartered as the county seat. Despite these progressions, many conflicts continued to occur in San Antonio including the Council House Fight of 1840 and two Mexican invasions in 1842 (Fehrenbach 2005).

1848 TO 1900

After Texas entered the Union in 1845, San Antonio's already diverse population grew dramatically. The Irish came to Texas in the late 1830s to early 1840s and established "Irish Flat." Germans settled in San Antonio in the 1850s introducing the "Bier Halle" to the area. French immigrants added artists and artisans to the culture of the city. Later immigrants to the area included Polish, Italians, Greeks, Syrians, and in 1910 Chinese,

all of which formed small communities within the City of San Antonio.

Culture and architecture from each immigrant community have seeped into San Antonio and merged together, forming a rich cultural community. This diverse culture is evident as you observe historic missions and Victorian mansions built next to modern offices and homes (Fehrenbach 2005).

On March 2, 1861 Texas seceded from the Union and soon after the Civil War began. San Antonio was a Confederate storage area as well as a location to form military units; however, the city kept its distance from most of the fighting (Fehrenbach 2005).

After the Civil War, industries such as cattle, distribution, ranching, mercantile, gas and oil, and military centers in San Antonio prospered. The arrival of a railway transportation system in San Antonio in 1877 inspired economic growth throughout the city (Fehrenbach 2005; 1949). House Modernization increased dramatically between the 1880s and the 1890s, compared to the rest of the United States. Civic government, utilities, electric lights and street railways, street paving and maintenance, water supply, telephones, hospitals, and a power plant were all established or planned around this time (Fehrenbach 2005).

1900 TO 1950

In 1921, a disastrous flood engulfed Houston and St. Mary's Street with approximately 9 feet of water. The Olmos Dam was built in response to this event to prevent further flooding, as well as the straightening and widening of sections of the San Antonio River. Another recommendation was to construct an underground channel in downtown San Antonio and covering portions of the river with concrete. This last idea upset many people, but eventually the compromise

was reached in creating a Riverwalk with shops and restaurants. Construction of this Riverwalk was completed in 1941 (Long 2008).

As the United States entered into World War II, San Antonio became an important military center and other city activities and construction ceased for nearly five years. Fort Sam Houston, Kelly, Randolph, Brooks and Lackland air force bases are all active military training centers today (Heusinger 1951).

Tourism is one of the San Antonio's most important industries drawing tens of thousands of visitors every year. More recent features include theme parks, zoos, museums, gardens, parks, and sporting attractions. The Riverwalk, also known as the Paseo del Rio, consists of over 2.5 miles of shops and restaurants as well as a boat ride along the channel. This is probably one of San Antonio's most visited attractions.

San Antonio Missions National Historical Park includes The Alamo (1718), Mission Concepción (1731), Mission San José (1720), Mission San Juan Capistrano (1731), and Mission San Francisco de la Espada (1741). San Fernando Cathedral (1758), the Spanish Governor's Palace (1749), the Quadrangle at Fort Sam Houston (1878), and the Bexar County Courthouse (1891) are visited due to their interesting architecture.

METHODS

BACKGROUND REVIEW

SWCA conducted a thorough archaeological background review of the project area. An SWCA archaeologist reviewed the Helotes, Texas USGS 7.5-minute topographic quadrangle maps at the Texas Archeological Research Laboratory and searched the Texas Archeological Sites Atlas (Atlas) online

database and Texas Department Transportation (TxDOT) Historic Overlay Maps for any previously recorded surveys and historic or prehistoric archaeological sites located in or near the project area (Foster et al. 2006). Previous cultural resource investigations listed on the Atlas are limited to projects under purview of the Antiquities Code of Texas or the National Historic Preservation Act of 1966, as amended. Also, projects under these regulations may not be posted on the Atlas due to a delay in the completion of field work and the completion of the report. In addition to identifying recorded archaeological sites, the review included information on the following types of cultural resources: National Register of Historic Places properties, SALs, Official Texas Historical Markers, Registered Texas Historic Landmarks, cemeteries, and local neighborhood surveys. The archaeologist also examined the following sources: the Soil Survey of Bexar County, Texas (Taylor et al. 1991) and the Geologic Atlas of Texas-San Antonio Sheet (Barnes 1983).

ARCHAEOLOGICAL FIELD METHODS

The cultural resources survey included three SWCA archaeologists inspecting portions of the 461-acre project area through both pedestrian and subsurface investigations. The pedestrian survey consisted of walking areas slated for development as well the mapped locations of previously recorded archaeological sites, while simultaneously excavating a series of shovel tests within areas that had the potential to contain buried cultural deposits.

All shovel tests were excavated until bedrock or a substratum believed to predate human occupation was encountered. Excavated soil was screened through ¼-inch mesh to retrieve any cultural materials that might be present. Each shovel test was recorded on a

standardized form to document the excavations and the location of each excavation was plotted using a hand-held GPS receiver.

Archaeological sites that were encountered and recorded were assigned a temporary field site designation of "FS", for field site, and a corresponding number for the sequence in which it was found (ex. FS#1 = 41BX1859). The sites were recorded using a State of Texas Archeological Site Data Form, a pace and compass sketch map, a plot on the topographic map, and photographs, each completed while on the site in the field. The sites had a GPS point recorded at the arbitrary datum point, and these coordinates were recorded on the site forms and submitted to TARL for the final location information. Additional site records such as individual site descriptions, site notes and daily journal forms regarding site specific information were also maintained during this project. Shovel tests were excavated on select sites that exhibited potential to contain significant buried cultural deposits. Typically each site had one or more shovel tests within the site boundaries, and one or more shovel tests immediately outside the site boundaries to aid in determining the extent of horizontal and vertical deposits.

SWCA set out to conduct a non-collection survey. Artifacts were to be tabulated, analyzed, and documented in the field, but not collected. As that no artifacts were collected there are no curation issues.

RESULTS

BACKGROUND REVIEW

Within the project area there are seven previously recorded sites (Figure 3, Table 1). All of these sites were recorded as part of a 1972 survey of Ranch Creek conducted by The Texas Archeological Salvage Project and

are presented in An Initial Archeological Reconnaissance of Areas to be Affected by the San Antonio Ranch New Town, Bexar County, Texas (Dillehay 1972). This survey focused on the canyon bottomlands and alluvial terraces of the associated drainages that may be inundated by dam construction. The survey notes that the intensity of survey was limited and that further survey and testing was needed to properly evaluate all the sites documented. previous work preformed The recommendations from the 1972 survey for these sites are discussed in the results section of this report. In general, all the sites recorded by the survey were prehistoric camp sites located along the main drainage of Ranch Creek and are associated with lithic procurement of nearby chert outcrops.

Based upon descriptions within Dillehay (1972), the methodology utilized by the surveyors can be classified reconnaissance level effort. No subsurface investigation was conducted and only limited surface inspection was completed. The subsequent recommendations by Dillehay (1972) do not reflect current accepted methods for evaluating the potential of archaeological yield data. sites to As a result. recommendations in the report are based solely upon the results of the current investigations.

An additional letter from Elton Prewitt dating March 11, 1977, further discusses the results of the 1972 survey and indicates that it is the intention of the San Antonio Municipal Utility District No. 1, to turn the area along Ranch Creek into a 50-acre park. Prewitt further indicates that additional work or some level of preservation is required before construction of the park could begin. Currently, it appears the area never fully realized its potential as a park for the local communities.

ITEM INTENTIONALLY OMITTED

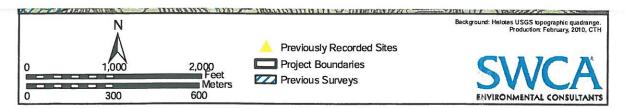


Figure 7. Previously recorded sites and surveys

Table 1. Previously recorded sites within project area

Trinomial	Site Type	Year Recorded	Previous Recommendation	Reference
41BX153	Prehistoric	1972	Further survey	Dillehay (1972)
41BX154	Prehistoric	1972	Further survey and testing	Dillehay (1972)
41BX155	Prehistoric	1972	Further survey and testing	Dillehay (1972)
41BX157	Prehistoric	1972	Further survey	Dillehay (1972)
41BX159	Prehistoric	1972	Further survey	Dillehay (1972)
41BX160	Prehistoric	1972	Further survey and minor testing	Dillehay (1972)
41BX161	Prehistoric	1972	Further survey	Dillehay (1972)

Within a 1-kilometer radius of the project area, there are eighteen additional archaeological sites. The majority (n=15) are west of the APE in Government Canyon and are mostly undefined upland prehistoric sites, with few diagnostic materials.

Additionally, the review of the TxDOT Historic Overlay Maps revealed that no historic-age structures are present on the property. Additionally, information from the current land owner indicates that the property has historically been used only for grazing of goats and cattle. He is not aware of any historic structures ever being located on the property.

RESULTS OF FIELD SURVEY

SWCA conducted an intensive pedestrian and subsurface archaeological survey of the proposed 461-acre Canyon Ranch Development Tract on January 27, February 5 and February 9, 2010. The project area is dominated by hilly topography with steep slopes, ephemeral draws, rocky uplands, and narrow valleys (Figures 4 through 6).

Throughout the project area, exposed limestone bedrock is visible. clearly confirming the presence of shallow stoney soils. Based upon a surface inspection of the targeted portions of the 461-acre project area, it was revealed that much of the canyon has been utilized by prehistoric peoples to exploit natural chert outcrops. Isolated debitage fragments were noted throughout the project area. Areas where cultural material density was sufficient to delineate a site were located along Ranch Creek or the ephemeral draws that feed it.

At higher elevations, areas which were generally level and overlooking draws and the flat tops of the hills and ridgelines were also utilized. Overall, the entire canyon appears to have been primarily utilized for lithic procurement and early biface reduction, with some indication of temporary camp sites.

A total of seven previously recorded sites (41BX153, 41BX154, 41BX155, 41BX157, 41BX159, 41BX160, and 41BX161) were revisited and an additional four new sites were recorded (41BX1859, 41BX1860, 41BX1861, and 41BX1882) (Figure 7).

A total of 36 shovel tests were excavated throughout the project area, the majority of which were terminated at depths ranging from 5–25 centimeters below surface (cmbs) due to the shallow nature of the underlying bedrock (Figure 8, Appendix A).

41BX153

PREVIOUS INVESTIGATIONS

Site 41BX153 was recorded in 1972 as part original survey along Ranch Creek. TARL site forms describe the site as consisting of numerous lithic material scattered along the north side of Ranch Creek, near the property access road off Lago Vista Road. Of particular note was the high percentage of small debitage fragments relative to larger ones seen at other sites in the vicinity, suggesting the site may represent an upland camp site. Other materials recovered during the initial survey included several bifaces, scrapers, and utilized flakes. At the time of survey, the site was recommended for additional survey (Dillehay 1972).

RESULTS

The current investigation identified site 41BX153 on the eastern bank of Ranch Creek, approximately 170 southeast of the property access from Lago Vista Road. The site is situated on a small level area at the base of slope overlooking the creek to the west and



Figure 4. View of canyon walls and valley floor, facing southwest





Figure 6. View of rocky upland and ridgelines facing west

ITEM INTENTIONALLY OMITTED

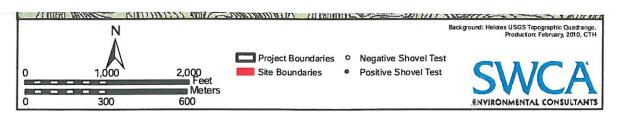


Figure 7. Archaeological sites and shovel test map



Figure 8. Example of exposed bedrock, characteristic of the project area, facing west.

measures approximately 215 meters by 55 meters. Vegetation within the immediate area was moderately dense stands of cedar and mesquite, but surface visibility was generally, 60 to 80 percent. The site is bisected by a north-south two track road.

A total of four shovel tests were excavated within the mapped boundaries of 41BX153 (ST-C6, C7, D9 and D10). Soils encountered within these four shovel tests were a dark brown clay loam over a dark brown to dark reddish brown clay. ST-D10 encountered one debitage fragment at 5 cmbs. All four shovel tests encountered basal clays at approximately 20 to 25 cmbs.

In addition to shovel testing, a 100 percent surface inspection was conducted across 41BX153. Artifacts were found on the surface consisting of a diffuse scatter of debitage fragments, most concentrated along those areas through which the modern two track bisects the site. A single small projectile point, possibly a reworked Perdiz, was recovered from the surface in the middle of the two-track near ST-D9. In additional, no cultural features or additional diagnostic artifacts were noted.

As noted by the previous investigation, the debitage fragments found on the surface, were generally very small (less than 1 cm) retouching and pressure flakes, suggesting 41BX153 may represent a camp site. This is in contrast to the other sites in the immediate area, which were characterized by larger reduction flakes, typical of upland lithic procurement sites.

However, the surficial nature of the artifact assemblage coupled with the overall lack of deposition or cultural features indicates that site 41BX153 does not possess sufficient integrity or data potential to contribute to the understanding or prehistoric occupation of

Bexar County. As a result, no further work is recommended for 41BX153.

41BX154

PREVIOUS INVESTIGATIONS

Site 41BX154, recorded in 1972, is described as a surficial prehistoric site located on the south side of Ranch Creek at the base of a steep hill. At the time of survey, limestone fragments, some of which appeared burned, were noted as intermixed with a surficial scatter of debitage, cores, and bifaces. TARL site forms indicate that the site was recommended for further survey and testing (Dillehay 1972).

RESULTS

Site 41BX154 was relocated just northeast of the convergence of two power line easements, on the western bank of Ranch Creek. The site is situated in a level area at the base of a steep slope, where a minor draw empties into Ranch Creek and has dimensions of approximately 200 meters by 30 meters. Vegetation is characterized by a moderately dense stand of cedar and live oak along the creek edge and open mixed grasses along at the base of the slope. Surface visibility was generally 60 to 100 percent, with much of the surface consisting of exposed bedrock. The site is bisected north-south by a two track that parallels the power line easement.

A total of five shovel tests were excavated within the mapped boundaries of 41BX154 (ST-C4, C5, D6, D7, and D8). Soils within these shovel tests were shallow black clays to clay loams; bedrock was encountered at approximately 20 cmbs. Of these five shovel tests, ST-D7 and ST-D8 were positive for debitage fragments at approximately 10 cmbs.

A 100 percent surface inspection of 41BX153 revealed that the majority of the surface is comprised of exposed or very shallowly buried bedrock. Artifacts encountered were generally a light scatter of debitage. A single dense cluster of surface artifacts was noted near ST-D7, which included one possible biface fragment and more than 20 debitage fragments. Some possible burned rock, as also observed by the previous investigation, was noted on the surface intermixed with the occurring numerous limestone naturally fragments. In addition, erosion has heavily impacted the site; much of the area along the creek edge is being washed away.

The previous 1972 survey recommended that additional survey and possible testing be conducted on 41BX154. However, based upon the overall lack of deposition, diagnostic artifacts, or features encountered by the current investigation, 41BX154 does not possess sufficient integrity or potential data to contribute to the understanding of prehistoric occupation of Bexar County. As a result, no further work is recommended.

41BX155

PREVIOUS INVESTIGATIONS

Site 41BX155, recorded during the 1972 survey is described in TARL site forms as a large site located on the terrace overlooking Ranch Creek and consisting of "much burned rock, a small hearth, and much scattered flint." Materials collected from the site included two bifaces, scrapers, and utilized flakes. Based on these results, the previous survey recommended additional survey and "minor" testing. The letter report notes that there had been extensive looting on the site by pothunters using possible heavy machinery (Dillehay 1972).

RESULTS

Site 41BX155 was relocated approximately 300 meters south of the entrance to the property off Ranch Parkway, at the top of the canyon on the western bank of Ranch Creek. Site dimensions were determined to be approximately 215 meters by 55 meters. The site, like most of the sites revisited during the current investigation, is situated on a level area at the base of a steep slope. Vegetation is typical of all the sites, consisting of a dense stand of cedar and live oak along the creek margin and a mixture of mixed grasses and exposed bedrock along the slope edge. The site is bisected northwest to southeast by a two track road and an overhead powerline.

A total of eight shovel tests (ST-C1 through C3 and D1 through D6) were excavated within the vicinity of 41BX155. Soils within the shovel tests were generally shallow and consisted of dark brown clay over bedrock. Only one shovel test, ST-D2, was positive for cultural material. The shovel test contained approximately nine debitage fragments and one possible bifacial scraper within 25 cm of the surface. However, shovel tests excavated in a radial pattern around ST-D2 were negative for cultural material and encountered shallow bedrock.

A 100 percent surface inspection of 41BX155 was also conducted. Overall, the area comprises exposed bedrock eroding out into the nearby creek. A moderate scatter of debitage was noted across the entire site as well as two additional bifaces. As noted above, the 1972 survey also identified burned rock and a hearth feature during their investigation of the site as well as signs of looting. No significant quantity of burned rock or any features were noted by the current survey nor was any recent looting activity noted on any portion of the site. The site, however, has been heavily impacted by the

construction of a large power line and associated access road.

The original survey report recommended further survey and testing for this site based upon the presence of burned rock and a possible hearth. However, the current investigation only identified a mostly surficial and very shallowly buried site with little potential for contributing to the overall understanding of the prehistoric occupation of Bexar County. As a result, no further work is recommended.

41BX157

PREVIOUS INVESTIGATIONS

Site 41BX157 is a prehistoric site located at the northern end of the project area at the top of the canyon, near a draw that empties into Ranch Creek. The previous 1972 investigation described the site as a small amount of lithic material scattered on the surface, mainly consisting of utilized flakes and cores. Site 41BX157 was recommended for further survey due to limited surface visibility at the time of the initial survey (Dillehay 1972).

RESULTS

Site 41BX157 was identified on the northern boundary of the project area just north an eastwest two track that enters the property from Ranch Road, 240 meters to the east. The area is adjacent to a small draw that empties into Ranch Creek to the southeast Vegetation is typical of the overall canyon, a mix of cedar and grasses with areas of exposed bedrock.

Due to the overall good quality of surface visibility, no shovel tests were excavated within the mapped vicinity of 41BX157. A 100 percent pedestrian survey was conducted. An extensive area of subsurface disturbance was noted in the mapped location of

41BX157, including possible bull dozing activity and a large pile of construction debris. Extensive surface inspection only yielded one biface fragment. No debitage, diagnostic material, burned rock, or other features were noted anywhere within the mapped vicinity of 41BX157.

Based upon the overall lack of cultural material and the disturbances caused by construction and dumping activities, site 41BX157 does not retain sufficient integrity to contribute any information to the overall understanding of the prehistoric occupation of Bexar County. As a result, no further work is recommended.

41BX159

PREVIOUS INVESTIGATIONS

Site 41BX159, defined by the 1972 survey as a prehistoric site, is located in the southern part of the project area atop a small knoll about 25 ft higher than the creek, at the base of a larger hill. The site consists of a few scattered flakes, chips, and other lithic materials over a small area on this knoll. Site 41BX159 was recommended for additional survey by the previous 1972 investigation (Dillehay 1972).

RESULTS

The mapped location of 41BX159 was revisited and consists of a generally open and level area at the base of a slope, overlooking a draw to the east. The location has been heavily cleared and a road was constructed leading up to a house outside the project area.

Four shovel tests were excavated in the mapped vicinity of the site and all were negative for cultural material. Soils were generally a thin layer of dark brown clay less than 15 cm thick sitting atop bedrock. In some

places the action of the Hydro-Ax had left a thin layer of decaying humus over bedrock.

Additionally, a 100 percent pedestrian survey was conducted across the entire mapped location of the site as well as the surrounding area. Surveyors were unable to locate any sign of cultural material.

Given the overall lack of any identifiable cultural materials, site 41BX159 does not retain sufficient integrity to yield any significant information regarding the prehistory of Bexar County. As a result, no further work is recommended.

41BX160

PREVIOUS INVESTIGATIONS

Site 41BX160 is a prehistoric site located in the southern part of the project area atop a small knoll about 25 feet higher than the creek at the base of a larger hill. The site consists of a few scattered flakes, chips, and other lithic materials over a small area on this knoll. Site 41BX159 was recommended for additional survey by the previous 1972 investigation (Dillehay 1972).

RESULTS

Site 41BX160 was relocated just southwest of a power line easement, approximately 590 meters southwest of the dam across Ranch Creek. The site is situated on the northern bank of a draw in an area between the edge of the drainage and the toe slope of the canyon to the north. The creek forms the southern margin of the site and the site measures approximately 560 meters by 55 meters.

A total of eight shovel tests were excavated in the vicinity of 41BX160, all were negative for cultural material. Soils were generally black sticky clay overlaying dark red brown clay. Soils became shallower with depth as the site progressed westward along the creek bank, and areas of exposed bedrock became more prevalent.

A 100 percent pedestrian survey was conducted along the entire mapped site boundary of 41BX160. Debitage and biface fragments were noted scattered across the site. Additional survey further westward yielded more cultural material beyond the current mapped site boundaries. Debitage was noted up to the property boundary where the draw enters the project area. Overall, the material is lightly scattered across the surface with a higher concentration at the northeastern end of the site. No diagnostic material or features were noted. The mapped boundaries of the site were extended along the north bank of the creek to up to the property boundary.

Of particular note, the site appears to be actively looted. Inspection on January 29, 2010, by SWCA archaeologists along with the land owner revealed recently dug looters pits along an exposed cut bank at the northeastern end of the site. Foot prints were still visible in the freshly dug earth, indicating looting within approximately a day of survey. The land owner has indicated that access to the property is restricted and that he has not granted permission to anyone to do dig on the property. However, nothing noted in the minor looting holes suggests that they found anything worthy of pursuing.

The original survey recommended additional survey, however, current efforts defined the site as generally defuse and mostly surficial. Despite the apparent interest in the site by looters, the site lacks sufficient deposits that are able to yield any significant information regarding the prehistory of Bexar County. As a result, no further work is recommended.

41BX161

PREVIOUS INVESTIGATIONS

Site 41BX161 is a prehistoric site located to the east of 41BX160, where a main tributary draw meets Ranch Creek. It was characterized as a scatter of flint flakes, some utilized, along with some burned rock. The site was recommended only for further survey.

RESULTS

The mapped location of site 41BX161, approximately 340 meters southwest of the Ranch Creek dam, was revisited. The area is bisected by a two-track road leading up to a large house in the center of the project area. Vegetation, similar to most of the sites, consists of a mixture of cedar and mixed grasses.

Surface visibility was generally greater than 80 percent and as a result no shovel tests were attempted. A 100 percent pedestrian survey was conducted throughout the mapped location of site 41BX161. Portions of the site appear to have been bulldozed as a result of the construction of the Ranch Creek dam and the associated retention pool. Visual inspection of the area revealed that much of the surface layer of black clay noted at other sites had been stripped away revealing the sterile dark red brown basal Examination of the Helotes USGS Quad places 41BX161 less than 100 meters from the anticipated edge of the dam retention pond.

Based upon the overall lack of cultural material and the extensive disturbance caused by construction and dumping activities, site 41BX161 does not retain sufficient integrity to contribute any information to the overall understanding of the prehistoric occupation of Bexar County. As a result, no further work is recommended.

41BX1859

Site 41BX1859 is a prehistoric upland lithic procurement site, identified on a flat area atop a hill at the southwestern corner of the property. It is located 530 meters southwest of the peak of Black Hill in an area of mostly exposed bedrock intermixed with occasional clusters of grasses. Site size was determined to be 210 meters by 110 meters.

Due to the overall lack of vegetation and soil atop this hill, no shovel tests were attempted. A 100 percent pedestrian survey identified approximately 10 debitage fragments scattered across the hill top in an area measuring 220 meters by 100 meters. Natural outcroppings of chert of varying quality were noted on the surface on this high point suggesting the location was used for procurement of raw lithic material and some primary reduction. Additionally, no burned rock, diagnostic artifacts, or features were noted by the current survey.

Additionally, the sparse site has been impacted by repeated use of the area as a modern campsite as well as vehicle traffic and vegetation clearing. Based upon the overall lack of cultural materials and soil deposition as well as the disturbances, site 41BX1859 does not retain sufficient integrity to contribute any information to the overall understanding of the prehistoric occupation of Bexar County. As a result, no further work is recommended.

41BX1860

Site 41BX1860 is an upland prehistoric lithic procurement campsite located on the surface of a rocky hillside, on the south side of an unnamed Ranch Creek tributary drainage. The intermittent scatter generally follows an outcropping bedrock shelf between the 1,180 and 1,190 foot contour lines on the Helotes

USGS Topographical Map for a distance of approximately 475 meters. The site measures approximately 250 meters by 160 meters. Vegetation within the site consists of sparse short grasses and forbs, affording approximately 70 percent surface visibility.

A total of two shovel tests (ST-M3 and K3) were excavated to assess the potential for buried deposits. ST-M3 was excavated, revealing very shallow dark brown loamy soil over limestone bedrock at a depth of 5 cmbs. ST-K3 revealed approximately 15 cm of brown clay over dense reddish brown clay with occasional gravels. The upper portion of the soil was disturbed due to mechanical brush clearing activity, which also left a layer of mulched cedar across the surface, and the test was terminated at 40 cmbs due to sterile soil.

A 100 percent pedestrian survey was conducted to delineate the site boundaries. The most culturally dense portions within the site occur in the western portion, where the site is nearest the tributary drainage, and at the southeastern site boundary, where the bedrock shelf approaches a small draw on the east side of the landform. In the western portion of the site, approximately 15 fragments of lithic debitage were observed on the surface within a 15-meter diameter area. All of these artifacts exhibit heat spalls. Within this area are small, isolated artifact scatters interspersed with stretches that are devoid of cultural material.

In the southeastern portion of the site, the shelf broadens out as it approaches a small Approximately 10 pieces of lithic draw. debitage were observed on the surface in this area, along with a few pieces of limestone that may have been fractured as a result of heat exposure. In-between these two concentrations. isolated artifacts were observed on the surface.

Site 41BX1860 shows a somewhat low to moderate level of surface disturbance and is generally characterized by a diffuse and deflated scatter of surficial artifacts. As a result, it exhibits little potential for significant deposits or features that could contribute to the overall understanding of prehistoric occupation of Bexar County. Accordingly, no further work is recommended for 41BX1860.

41BX1861

Site 41BX1861 is a very small, surficial prehistoric lithic scatter located on a toeslope overlooking the northwest bank of an unnamed Ranch Creek tributary drainage. Vegetation within the site consists of short grasses and forbs and scattered cedar trees, affording approximately 40 percent surface visibility. The site is bounded on the west by a steep drop into the tributary drainage and dissipation of the flat terrace, and on the east by the absence of cultural material. The overall site area is approximately 100 meters in diameter.

A total of two shovel tests (ST-M4 and M5) were excavated, both were negative for cultural material. Soil on the site consisted of reddish brown clay with occasional gravels. Shovel tests were terminated at depths of 20 and 15 cmbs, respectively, due to sterile soil that is presumed to be pre-Holocene in age.

A 100 percent pedestrian survey was also conducted and yielded approximately five pieces of lithic debitage and a single chert core on the surface near the location of ST-M4. Pedestrian inspection of the remainder of the landform revealed no additional artifacts, and ST-M5 was excavated approximately 20 meters east of ST-M4.

Due to the extremely limited presence of cultural material and a lack of Holocene soil deposition, 41BX1861 exhibits little potential

for significant deposits and features that could contribute to the archaeological understanding of prehistoric occupation of Bexar County. Accordingly, no further work is recommended.

41BX1862

Site 41BX1862 is a prehistoric site located on the eastern bank of an unnamed tributary of Ranch Creek at the base of steep slope. The site is situated in the flat area between the base of the slope and edge of the drainage and is bisected north-south by a two track road. The site is approximately 1.07 kilometers southwest of the entrance to the project area off Ranch Parkway and covers an area of approximately 100 meters by 115 meters. Vegetation within the site consists of short grasses and forbs and scattered cedar trees, affording approximately 60 to 100 percent surface visibility.

A total of three shovel tests (ST-K6, M6, and C4A) were excavated within the site boundaries, all were negative for cultural material. Soils encountered were a layer of black clay over lighter brown clay mixed with the occasional limestone fragments. Shovel tests were terminated due to shallow bedrock.

A 100 percent pedestrian survey was conducted across the vicinity of 41BX1862. A light scatter of debitage fragments was noted especially concentrated in the road cut, where a proximal end of an arrow head preform was noted. The preform likely dates to the Late Prehistoric given the blade manufacture technique. No other diagnostic artifacts or features were noted.

Due to the extremely limited presence of cultural material and a lack of significant deposition, 41BX1862 exhibits little potential for significant cultural deposits and features that could contribute to the archaeological

understanding of prehistoric occupation of Bexar County. Accordingly, no further work is recommended.

SUMMARY AND RECOMMENDATIONS

SWCA conducted a cultural resources investigation of portions of the 461-acre Canyon Ranch Development Tract located in northwestern Bexar County, Texas. Work was done to satisfy requirements of the San Antonio HPO, per the City of San Antonio's Historic Preservation and Design Section of the Unified Development Code (Article 6 35-360 to 35-634).

The results of the background review determined that the eastern portion of the project area has been previously surveyed in 1972 for cultural resources and that seven previously recorded archaeological sites are within the project area (41BX153, 41BX154, 41BX155, 41BX157, 41BX159, 41BX160, and 41BX161). An additional search of historic maps of the project area did not identify any historic-age structures.

The results of the thorough surface inspection of the areas to be developed within the 461acre project area revealed that prehistoric people utilized much of the property. Debitage was noted both along the canyon floor adjacent to Ranch Creek and its tributaries, as well as flat areas along the upland ridgelines. One primary activity practiced by prehistoric peoples within the immediate area appears to have been exploitation of naturally occurring chert outcrops across the tract. But the composition and nature of the sites on the property also indicate a wider range of activities were also practiced from campsites along the upland waterways, including hunting.

Conversely, the concentrations of artifacts throughout the property are overall very light

and typically not in sufficient quantity to clearly define discrete archaeological sites. Nor do the concentrations suggest long-term or intensive use of the property. Current survey efforts identified four new locations with sufficient artifact density to quantify as archaeological sites (41BX1859, 41BX1860, 41BX1861, and 41BX1862) within the project area.

All of the sites, however, are surficial or very shallowly buried above the bedrock. As a result, none of the eleven of sites retain sufficient context or contents to yield any significant information regarding the prehistory of Bexar County. As a result, SWCA recommends no additional work within the Canyon Ranch Development.

REFERENCES

Barnes, V. E.

1983 Geologic Atlas of Texas, San Antonio Sheet. Bureau of Economic Geology, The University of Texas at Austin.

Bever, M. R., and D. J. Meltzer

2007 Exploring Variation in Paleoindian Live Ways: The Third Revised Edition of the Texas Clovis Fluted Point Survey. Bulletin of the Texas Archeological Society 78:65–99.

Black, S. L.

1989 Environmental Setting. In From the Gulf to the Rio Grande: Human Adaptation in Central, South, and Lower Pecos Texas, by Thomas R. Hester, Stephen L. Black, D. Gentry Steele, Ben W. Olive, Anne A. Fox, Karl J. Reinhard, and Leland C. Bement, pp. 5–16. Research Series No. 33. Arkansas Archeological Survey, Fayetteville.

Black, S. L., and A. J. McGraw

1985 The Panther Springs Creek Site:
Cultural Change and Continuity
within the Upper Salado Creek
Watershed, South-Central Texas.
Archeological Survey Report No.
100. Center for Archaeological
Research, The University of Texas at
San Antonio.

Black, S. L., L. W. Ellis, D. G. Creel, and G. T. Goode

1997 Hot Rock Cooking on the Greater Edwards Plateau: Four Burned Rock Midden Sites in West Central Texas, Volumes 1 and 2. Studies in Archeology 22. Texas Archeological Research Laboratory, The University of Texas at Austin. Archeology Studies Program, Report 2. Environmental Affairs Department, Texas Department of Transportation, Austin.

Blair, W. F.

1950 The Biotic Provinces of Texas. *The Texas Journal of Science* 2(1): 93–117.

Bousman, C. B.

1998 Paleoenvironmental Change in Central Texas: The Palynological Evidence. *Plains Anthropologist* 43(164):201–219.

Bousman, C. B., B. W. Baker, and A. C. Kerr 2004 Paleoindian Archeology in Texas. In *The Prehistory of Texas*. Edited by Timothy K. Pertulla, pp. 15–97. Texas A&M University Press, College Station.

Caldwell, L.

2008 Handbook of Texas Online, s.v. "Casas Revolt," http://www.tsha online.org/handbook/online/articles/CC/jcc2.html (accessed June 10, 2009).

Collins, M. B.

1968 A Note on the Broad Corner-Notched Projectile Points Used In Bison Hunting in Western Texas. *The Bull Roarer 3(2) 13-14*. The University of Texas Anthropology Society, Department of Anthropology, The University of Texas at Austin.

- 1990 The Archaeological Sequence at Kincaid Rockshelter, Uvalde County, Texas. Transactions of the Twenty-Fifth Regional Archeological Symposium for Southeastern New Mexico and Western Texas, pp. 25–34.
- 1995 Forty Years of Archeology in Central Texas. *Bulletin of the Texas Archeological Society* 66:361–400.
- 1998 Early Paleoindian Components. In Wilson-Leonard: An 11,000-Year Archeological Record of Hunter-Gatherers in Central Texas, Volume I, edited and assembled by Michael B. Collins, pp. 123-159. Studies in Archeology 31. Texas Archeological Research Laboratory, The University of Texas at Austin. Archeology Studies Program, Report Environmental **Affairs** Division. Texas Department of Transportation.
- 2004 Archaeology in Central Texas. In *The Prehistory of Texas*. Edited by T. Pertulla. Texas A&M Anthropological Series No. 9. College Station, Texas.
- Collins, M. B., B. Ellis, and C. Dodt-Ellis
 1990 Excavations at the Camp Pearl
 Wheat Site (41KR243): An Early
 Archaic Campsite on Town Creek,
 Kerr County, Texas. Studies in
 Archeology 6. Texas Archeological
 Research Laboratory, The University
 of Texas at Austin.
- Collins, M. B., G. L. Evans, T. N. Campbell, M. C. Winans, and C. E. Mear

 1989 Clovis Occupation at Kincaid Rockshelter, Texas. Current

Research in the Pleistocene 6:3-4.

- Collins, M. B., T. R. Hester, and P. J. Hedrick 1992 Engraved Cobbles from the Gault Site, Central Texas. Current Research in the Pleistocene 9:3-4.
- Collins, M. B., D. B. Hudler, and S. L. Black
 2003 Pavo Real (41BX52): A Paleoindian
 and Archaic Camp and Workshop on
 the Balcones Escarpment, SouthCentral Texas. Studies in Archeology
 41, Texas Archeological Research
 Laboratory, The University of Texas
 at Austin and Archeological Studies
 Program, Report 50 Environmental
 Affairs Division, Texas Department
 of Transportation.

Dibble, D. S., and D. Lorrain

1968 Bonfire Shelter: A Stratified Bison Kill Site, Val Verde County, Texas.

Miscellaneous Papers No. 1. Texas Memorial Museum, The University of Texas at Austin.

Dillehay, T.

Reconnaissance of Areas to be Affected by the San Antonio Ranch New Town, Bexar County, Texas.

Texas Archeological Research Laboratory Research Report No. 13.

Texas Archeological Salvage Project. Austin, Texas.

Ellis, L. W.

1997 Hot Rock Technology. In Hot Rock Cooking on the Greater Edwards Plateau: Four Burned Rock Midden Sites in West Central Texas, edit by Stephen L. Black, Linda W. Ellis, Darrel G. Creel, and Glenn T. Goode, pp. 43-81. Studies in Archeology No. 22, Texas Archeological Research Laboratory, The University of Texas, Austin and Archeological Studies Program, Report Texas 2, Department of Transportation, **Affairs** Division, Environmental Austin.

Fehrenbach, T. R.

2005 Handbook of Texas Online, s.v.
"SAN ANTONIO, TX,"

http://www.tsha.utexas.edu/
handbook/online/articles/view/SS/hd
s2.html (accessed January 20, 2005).

Figueroa, A.L. and S. Tomka

2004 Archeological Survey for the Proposed Medina River Park, Bexar County, Texas

Foster, E. R., Ty Summerville, and Thomas Brown

2006 The Texas Historic Overlay: A
Geographic Information System of
Historic Map Images for Planning
Transportation Projects in Texas.
PBS&J, Austin, Texas.

Groneman, B.

2001 Eyewitness to the Alamo. Republic of Texas Press.

Hanselka, J.

1998 An Archaeological Survey along Watson Road for the San Antonio Water System, Bexar County

Hatch, T.

1999 Encyclopedia of the Alamo and the Texas Revolution. McFarland, Jefferson, N.C

Hatcher, M. A.

1932 The Expedition of Don Domingo Teran de los Rios into Texas (1691-1692). Preliminary Studies of the Texas Catholic Historical Society 2(1): 3-67.

Henderson, J., and G. T. Goode

1991 Pavo Real: An Early Paleoindian Site in South-Central Texas. *Current Research in the Pleistocene* 8:26–28.

Hester, T. R.

1989 An Archeological Synthesis. In From the Gulf to the Rio Grande: Human Adaptation in Central, South and Lower Pecos, Texas. Edited by T.R. Hester, S.L. Black, D.G. Steele, B.W. Olive, A.A. Fox, K.J. Reinhard, L.C. Bement, pp, 115-128. Arkansas Archeological Survey Research Series No. 33.

2004 The Prehistory of South Texas. In *The Prehistory of Texas*. Edited by Timothy K. Pertulla, pp. 127–151. Texas A&M University Press, College Station.

Heusinger, E.W.

1951 A Chronology of Events in San Antonio. Standard Printing, San Antonio.

Huebner, J. A.

1991 Late Prehistoric Bison Populations in Central and South Texas. *Plains Anthropologist* 36(137):343–358.

Huffines, A.

1999 Blood of Noble Men: The Siege and Battle of the Alamo. Eakin Press, Texas.

Houk, B., K. Miller, E. Oksanen et al.

2008 The Gatlin Site (41KR621): Investigating Archaic Lifeways on the Southern Edwards Plateau of Central Texas. SWCA Inc., Austin, Texas. House, B.

1949 City of Flaming Adventure: The Chronicle of San Antonio. Naylor Company, San Antonio, Texas.

Jelks, E. B.

1962 The Kyle Site: A Stratified Central Texas Aspect Site in Hill County, Texas. Archaeology Series No. 5. Department of Anthropology, The University of Texas at Austin.

Johnson, L., Jr.

1989 Great Plans Interlopers in the Eastern Woodlands during the Late Paleoindian Times. Office of the State Archeologist Report No. 36. Texas Historical Commission, Austin, Texas.

1995 Past Cultures and Climates at Jonas Terrace: 41ME29 of Medina County, Texas. Report No. 40. Office of the State Archeologist, Texas Historical Commission, Austin.

Johnson, L., Jr., D. A. Suhm, and C. D. Tunnell

1962 Salvage Archeology of Canyon Reservoir: The Wunderlich, Footbridge, and Oblate Sites. Bulletin No. 5. Texas Memorial Museum, The University of Texas at Austin.

Johnson, L, and G. T. Goode

1994 A New Try at Dating and Characterizing Holocene Climates, as well as Archeological Periods, on the Eastern Edwards Plateau. *Bulletin of the Texas Archeological Society* 65:1–51.

Johnston, L. C.

1947 San Antonio St. Anthony's Town. Librarian's Council, San Antonio, Texas. Katz, P. R.

1987 Archaeological Mitigation at 41BX300, Salado Creek Watershed, South-Central Texas. Archaeological Survey Report No. 130. Center for Archaeological Research, The University of Texas at San Antonio.

Kelley, J. C., and T. N. Campbell

1942 What are the Burnt Mounds of Texas? *American Antiquity* 7(3):319–322.

Kibler, K. W., and A. M. Scott

2000 Archaic Hunters and Gatherers of the Balcones Canyonlands: Data Recovery Excavations at the Cibolo Crossing Site (41BX377), Camp Bullis Military Reservation, Bexar County, Texas. Reports of Investigations No. 126. Prewitt and Associates, Inc., Austin.

Kleinbach, K., G. Mehalchick, J. T. Abbott, and J. M. Quigg

1995 Other Analyses. In **NRHP** Significance Testing of 57 Prehistoric Archeological Sites on Fort Hood, Texas, Volume II, edited by James T. Abbott and W. Nicholas Trierweiler. pp. 765-842. Archeological Resource Management Series, Research Report No. 34. United States Army Fort Hood.

Long, C.

2008 Handbook of Texas Online, s.v.
"Paseo del Rio (Riverwalk),"
http://www.tshaonline.org/handbook/
online/articles/PP/hpp1.html
(accessed June 10, 2009).

Lukowski, P. D.

1988 Archaeological Investigations at 41BX1, Bexar County, Texas.
Archaeological Survey Report No. 135. Center for Archaeological Research, The University of Texas at San Antonio.

Magruder, L.

2008 Handbook of Texas Online, s.v. "La Villita," http://www.tshaonline.org/handbook/online/articles/LL/hpl1.html (accessed June 10, 2009).

Mandel, R. D., J. S. Jacob, and L. C. Nordt
2007 Geomorphic investigations. In: A. V.
Thoms and R. D. Mandel (eds.)
Archaeological and Paleoecological
Investigations at the Richard Beene
Site, South-Central Texas, pp. 27–60.
Reports of Investigations No. 8,
Center for Ecological Archaeology,
College Station: Texas A&M
University.

Mandel, R. D., J. W. Saunders, G. D. Hall, and S. McCulloch

2008 Geomorphological and archaeological assessment. In: D. L. Carlson, P. A. Clabaugh and R. D. Mandel (eds.) Prehistoric Archaeological Investigations in the Applewhite Reservoir Project Area, Bexar County, Texas, 2008, pp. 127–166. Reports of Investigations No. 7, Center for Ecological Archaeology, College Station: Texas A&M University.

McGraw, A. J., and K. Hindes

1987 Chipped Stone and Adobe: A
Cultural Resources Assessment of the
Proposed Applewhite Reservoir,
Bexar County, Texas. Center for
Archaeological Research, the
University of Texas at San Antonio.

McGraw, A. J., J. W. Clark, Jr., and E. A. Robbins (editors)

1998 A Texas Legacy: The Old San Antonio Road and the Caminos Reales, A Tricentennial History, 1691-1991. Texas State Department of Highways and Transportation. McKinney, W. W.

1981 Early Holocene Adaptations in Central and Southwestern Texas: The Problem of the Paleoindian-Archaic Transition. *Bulletin of the Texas Archeology Society* 52:91–120.

1999 An Archaeological Survey of the Medio Creek Water Treatment Plant, Bexar County, Texas

Meltzer, D. J., and M. R. Bever

1995 Paleoindians of Texas: An Update on the Texas Clovis Fluted Point Survey. Bulletin of the Texas Archeological Society 66:47–81.

Oksanen, E.

2008 Archaeological investigations at the Icehouse site. 41HY161 of archaic revaluation early technology, subsistence and settlement along the **Balcones** Escarpment and Central Texas. thesis. Master's Texas State University, Department of Anthropology, San Marcos, Texas.

Prewitt, E. R.

1981 Cultural Chronology in Central Texas. Bulletin of the Texas Archeological Society 52:65–89.

1985 From Circleville to Toyah:
Comments on Central Texas
Chronology. Bulletin of the Texas
Archeological Society 54:201–238.

Schoelwer, S. P.

2008 Handbook of Texas Online, s.v. "Mission San Antonio de Valero," http://www.tshaonline.org/handbook/online/articles/SS/uqs8.html (accessed June 10, 2009).

1990 Letter Report: US 281: Bridge Replacement at Medina River, Cultural Resources Assessment, Bexar County Simpson, B. J.

1988 A Field Guide to Texas Trees. Texas Monthly Field Guide Series. Texas Monthly Press, Austin, Texas.

Sorrow, W. M.

1969 Archeological Investigations at the John Ischy Site: A Burned Rock Midden in Williamson County, Texas. Papers of the Texas Archeological Salvage Project No. 18. The University of Texas at Austin.

Suhm, D. A.

1960 A Review of Central Texas Archeology. Bulletin of the Texas Archeological Society 29:63–107.

Story, D. A.

1985 Adaptive Strategies of Archaic Cultures of the West Gulf Coastal Plain. In Prehistoric Food Production in North America, edited R. I. Ford, pp. 19-56. Anthropological Papers 75. Museum of Anthropology, University of Michigan, Ann Arbor.

Taylor, F. B., R. B. Hailey, and D. L. Richmond

1991 Soil Survey of Bexar County, Texas.
United States Department of Agriculture, Washington, D.C.

Thoms, A. V., and R. D. Mandel, editors
1989 The Northern Roots of HunterGatherer Intensifications: Camas and
the Pacific Northwest. Unpublished
Ph.D. dissertation, Department of
Anthropology, Washington State,
Pullman.

Thoms, A. V., D. D. Kuehn, B. W. Olive, J. E. Dockall, P. A. Clabaugh, and R. D. Mandel

1996 Early and Middle Holocene occupations at the Richard Beene site: the 1995 Southern Texas Archaeological Association field school project. La Tierra 32:4:8-36.

Thoms, A. V., and R. D. Mandel, editors

1992 The Richard Beene Site: A Deeply Stratified Paleoindian to Late Prehistoric Occupation Site in South-Central Texas. Current Research in the Pleistocene 9:42-44.

2007 Archaeological and Paleoecological Investigations at the Richard Beene Site, South-Central Texas. Reports of Investigation No. 8, Center for Ecological Archaeology, Texas A&M University, College Station.

Toomey R. S., III, M. D. Blum, and S. Valastro, Jr.

1993 Late Quaternary Climates and Environments of the Edwards Plateau, Texas. *Global and Planetary Change* 7:299–320.

Wandsnider, L.

1997 The Roasted and the Boiled: Food Composition and Heat Treatment with Special Emphasis on Pit-Hearth Cooking. *Journal of Anthropological Archaeology* 16:1–48.

Weir, F. A.

1976 The Central Texas Archaic. Ph.D. dissertation, Department of Anthropology, Washington State University, Pullman.

Weston, J.

2004 The Perez Ranch Project:
Reassessment of Four
Archaeological Sites in SouthCentral Bexar County, Texas. UTSACAR. San Antonio, Texas.

Willey, G. R., and P. Phillips

1958 Method and Theory in American Archaeology. University of Chicago Press,IL.

Wilson, E. W.

1930 Burnt Rock Mounds of Southwest Texas. Bulletin of the Texas Archeological and Paleontological Society 2:59–63.

APPENDIX A SHOVEL TEST TABLE

Table 1. Shovel Test Data

			The state of the s				
Test #	Site	(cmbs)	Munsell	Soil Color	Soil Texture Description	Inclusions	Comments
5	41BX155	0-5	10YR 4/2	Dark Grayish-Brown	Bedrock	None	On west side of creek in stand of trees. Mainly exposed bedrock with a very thin humate layer. Terminated due to bedrock. No cultural material.
22	41BX155	0-10	10YR 4/2	Dark Grayish-Brown	Gravely Loam	Gravels	Located 50 m from ST D1 along the road. Very gravely loam that is difficult to dig. Chert flake located on the surface nearby. Terminated due to compact, gravely soil. No cultural material.
ខ	41BX155	0-5	10YR 4/2	Dark Grayish-Brown	Clay Loam	Gravels	Located 50 m from ST D2 along the road and transmission line. Clay loam with numerous gravels and bedrock fragments. No cultural material.
		10-May	10YR3/2	Very Dark Grayish-Brown	Clay	Gravels	Terminated due to compact soil and degrading bedrock. No cultural material.
2	41BX154	0-15	10YR 4/2	Dark Grayish-Brown	Clay	Gravels	Located south of ST D6. Clay with gravels and fragments of limestone. Shallow bedrock exposed in the vicinity. Terminated due to compact soil and bedrock. No cultural material.
CS	41BX154	0-15	10YR 4/2	Dark Grayish-Brown	Clay	Gravels	Located south of ST D4 and south of the draw. Limestone fragments present that likely washed in from upslope. Terminated due to compact, rocky soil that is likely degrading bedrock. No cultural material.
90	41BX153	0-30	10YR3/2	Very Dark Grayish-Brown	Clay	Few Gravels	Soil consists of dense clay with limestone fragments. Terminated due to compact basal clay. No cultural material.
C7	41BX153	0-30	10YR3/2	Very Dark Grayish-Brown	Clay	Few Gravels	Soil consists of dense clay with limestone fragments. Terminated due to compact basal clay. No cultural material.
5	41BX155	0-25	7.5YR 4/3	Brown	Clay Loam	Gravels	Dense, sticky clay in medium grasses overlooking the drainage. Limestone gravels throughout. Terminated due to degrading bedrock. No cultural material.
D2	41BX155	0-25	10YR 2/1	Black	Clay	Gravels	Located on the terrace above the main drainage and a perpendicular tributary. Dark, dense, sticky clay. Limestone gravels throughout. 9 flakes and one bifacial scraper tool.
		25+	7.5YR 3/4	Dark Brown	Clay	Few Gravels	Dense, compact, sticky basal clay. Sudden color change from the above level. Terminated due to basal clay. No cultural material.
D3	41BX155	0-20	10YR 3/1	Very Dark Gray	Clay	Gravels	Located at the base of an upland slope ~20 m west of ST D2. Rockier soil in similar sticky clay. Terminated due to degrading bedrock. No cultural material.
D4	41BX155	0-25	10YR 3/1	Very Dark Gray	Clay	Gravels	Located at the base of an upland slope ~15 m north of ST D2. Rocky sticky clay. Terminated due to degrading bedrock. No cultural material.
DS	41BX155	0-15	10YR 2/1	Black	Clay	Gravels	Located on the terrace above the main drainage and a perpendicular tributary. Dark, dense, sticky clay, Limestone gravels throughout. No cultural material.
		15+	7.5YR 3/4	Dark Brown	Clay	Few Gravels	Dense, compact, sticky basal clay. Sudden color change from the above level. Terminated due to basal clay. No cultural material.
90	41BX154	0-20	10YR 2/1	Black	Clay	Few Gravels	Located ~10 m west of the steep creek bank edge. Vegetation includes cedars, mixed grasses, and shrubs. Visibility ~20%. Approximately 20 chert flakes on the surface of the area, no subsurface artifacts.
		20+	7.5YR 3/4	Dark Brown	Clay Loam	None	Dense, compact, sticky basal clay. Sudden color change from the above level. Terminated due to basal clay. No cultural material.

Table 1. Shovel Test Data

Shovel		Depth			Soil Texture		
Test#	Site	(embs)	Munsell	Soil Color	Description	Inclusions	Comments
D7	41BX154	0-20	10YR 2/1	Black	Clay	Gravels	Located 15 m north of ST D6. Limestone gravels and cobbles atop degrading bedrock.
B2	41BX154	0-50	7.5YR 3/1	Very Dark Gray	Clay	Gravels	Located at the north end of the site where the draw crosses the road. 1 chert flake 10-15 cmbs. Possibly degrading bedrock. Modern brown bottle glass was encountered 0-5 cmbs. Encountered a large rock at depth. Terminated due to large rock/bedrock.
60	41BX153	0-20	7.5YR 3/2	Dark Brown	Clay Loam	Pebbles	Located west of the creek at the intersection of the 2-track and more improved road. Sticky clay loam soil with very few inclusions. No cultural material.
		20+	5YR 3/3	Dark Reddish-Brown	Clay	None	Dense, sticky, compact clay. Terminated due to basal clay. No cultural material.
5	4400462	0-25	7.5YR 3/2	Dark Brown	Clay Loam	Few Gravels	Located just east of the creek, 35m north of the improved road and dam. Surface flakes were observed in the area. 1 flake 5-10 cmbs. Few other inclusions.
2	4 I DV 133	25+	7.5YR 3/4	Dark Brown	Clay	Gravels and Cobbles	Dense clay similar to other areas within the APE. Limestone gravels and cobbles present in the level possibly represent degrading bedrock. Terminated due to basal clay. No cultural material.
2	41BX168	0-25	10YR 2/1	Black	Clay Loam	Few Gravels	Dark clay loam with clay content that increases with depth. Few limestone gravels. No cultural material.
5	OCI VOILE	25-30	7.5YR 3/4	Dark Brown	Clay		Dense, sticky reddish clay with limestone cobbles and gravels atop bedrock. No cultural material.
D12	41BX160	0-20	7.5YR 3/1	Very Dark Gray	Clay	Gravels	
D13	41BX160	0-20	10YR 2/1	Black	Clay		Dark clay with few organics. Dense and blocky. Very few limestone cobbles. No cultural material.
2	2017	20-30+	5YR 3/4	Dark Reddish-Brown	Clay	13/10/2	Very dense, sticky clay that is probably basal. No inclusions and very compact. Terminated due to basal clay. No cultural material.
D14	41BX159	0-10	10YR 2/1	Black	Clay Loam	Gravels and Cobbles	Area on slope, hydroaxed, rich organic soil with heavy gravels (<5 cm) and cobbles atop shallow bedrock, 25 meters southeast of gate
D15	41BX159	0-10	10YR 3/2	Very Dark Grayish-Brown	Clay Loam	Gravels and Cobbles	Area on slope, hydroaxed, rich organic soil with heavy gravels (<5 cm) and cobbles atop shallow bedrock, above creek
C1A	41BX160	-	10YR 3/2	Very Dark Grayish-Brown	Clay		Clay soils, along treeline overlooking draw
		2	10YR 5/3	Dark Reddish-Brown	Clay		Sticky clay, along treeline overlooking draw
C2A	41BX1862	1	7.5YR 3/2	Dark Brown	Clay		slope overlooking draw
C3A	41BX159	1	7.5YR 3/2	Dark Brown	Clay		on north side of road leading up to main house
C4A	41BX159	1	7.5YR 3/2	Dark Brown	Clay		on north side of road leading up to main house
<u> </u>	41BX160	-	7.5YR 4/3	Brown	Clay		on terrace overlooking creek to the south
		2	10YR 5/3	Dark Reddish-Brown	Clay		

Table 1. Shovel Test Data

	Comments	Sticky highly disturbed/cedar mulch and compressed clavs with rock			Disturbed clays and cedar mulch		Adjacent to terrace			Dense with depth		Just north of drainage		Just north of drainage	Sticky basal clay	Near 20 or so flakes in a 20 meter square area	Near 5 flakes, large chert core, 15 meters west of ST	20 meters east of ST-M4	
	Inclusions	Stick mulch an			Gravels					Cobbles		17		<u></u>		Near 20 or so	Near 5 flakes, lar	20	
Soil Texture	955	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay Loam	Clay	Clay	Clay	Clay	Clay	Clay	
	Soil Color	Very Dark Grayish-Brown	Brown	Dark Reddish-Brown	Brown	Dark Reddish-Brown	Dark Brown	Brown	Black	Black	Brown	Dark Brown	Dark Brown	Black	Reddish-Brown	Black	Dark Brown	Dark Brown	
	Munsell	10YR 3/2	7.5YR 4/3	10YR 5/3	7.5YR 4/3	10YR 5/3	7.5YR 3/2	7.5YR 4/3	10YR 2/1	10YR 2/1	7.5YR 4/3	7.5YR 3/2	7.5YR 3/4	10YR 2/1	5YR 4/4	10YR 2/1	7.5YR 3/4	7.5YR 3/4	
Depth	(cmps)	-	2	3	1	2	1	2	1	1	2	1	2	1	2	1	1	-	
	Site		41BX1860										41BX160		41BX160	41BX1860	41BX1861	41BX1861	
Shovel	Test#	2	100		ζ2	2		4	K5		K6		M1		M2	M3	M4	M5	