

Intensive Pedestrian Archaeological Survey of the Helton San Antonio River Nature Park, Wilson County, Texas

by

Cynthia M. Munoz

with a contribution by

Raymond P. Mauldin

Texas Antiquities Committee Permit No. 5716

Prepared for:
San Antonio River Authority
100 E. Guenther Street
San Antonio, Texas 78283-9980



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Archaeological Report, No. 414

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Principal Investigator

Steve A. Tomka



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Abstract:

During August 2010, The Center for Archaeological Research (CAR) of The University of Texas at San Antonio (UTSA) conducted an intensive pedestrian archaeological survey of the proposed Helton San Antonio River Nature Park located near Floresville, Texas in Wilson County to fulfill contract requirements with the San Antonio River Authority (SARA). The survey, conducted under the requirements of the Texas Antiquities Code, was performed under Texas Antiquities Permit No. 5716, with Dr. Steve A. Tomka, CAR Director, serving as Principal Investigator and Cynthia Moore Munoz and Antonia Figueroa serving as the Project Archaeologists. The work was conducted in advance of proposed improvements to the property.

Multiple phased improvements proposed for the park include roads, three parking areas, hike and bike trails, scenic overlooks, picnic areas, campsites, recreational vehicle (RV) campsites, an overnight research cabin, multiple toilets and water stations, a multi-use pavilion, an environmental education center, an amphitheater, river accesses for paddling, a pond, a bridge, a riparian land management demonstration area, and a tree and native plant farm. Four existing structures on the property are planned to be used as the park headquarters building and an operations facility. The principal goal of the pedestrian survey was to identify and document all prehistoric and/or historic archaeological sites that may be impacted by the proposed improvements within the park. This report summarizes the results of the fieldwork and provides recommendations regarding the management of cultural resources located on the project area.

Pedestrian reconnaissance, 100 shovel tests, 3 hand-auger tests, and 9 backhoe trenches were used to search for cultural resources on the 98 acre project area. Two new sites, 41WN120 and 41WN121, were documented within the project area.

41WN120 is a large multi-component site directly adjacent to and located on a previously plowed field on the northeastern quadrant of the project area. One diagnostic prehistoric artifact was recovered from the surface dating to the Archaic Period, several diagnostic historic artifacts dating from the late 1800s to the mid 1900s, and two structures, one constructed in the late 1800s and one in the mid 1900s, were documented on 41WN120. Subsurface cultural material was present in all levels of shovel testing of this site. Burned plant and bone was recovered off of the plowed field near the bluff adjacent to the Calaveras Creek flood plain in Level 5 (40-50 cmbs) suggesting the possibility of a subsurface hearth feature. Shovel tests in the vicinity of this location contained the deepest deposits of cultural material on the site. The results of magnetic soil susceptibility testing of sediments recovered from the site suggest two buried prehistoric surfaces. The depth of buried prehistoric material near the edge of the bluff off of the plowed area, the possibility of a buried hearth, the indications of two buried surfaces from soil susceptibility analysis, the diagnostic dart point, as well as the historic significance of the late 1800s structure suggest that 41WN120 possesses potential for future research. Therefore, the CAR recommends that the site be considered potentially eligible for listing on the National Register of Historic Places. The CAR also recommends further testing of the portion of the site containing deeply buried prehistoric material via test units and additional backhoe trenches. The CAR recommends protection of the late 1800s structure. Because the pier and beam house does not contribute to the potential eligibility of 41WN120, no further work regarding the house is necessary.

41WN121, located on a previously plowed field on the northwestern quadrant of the project area, consists of historic artifacts recovered from shovel tests (0-30 cmbs). The artifacts, including ceramics, glass, metal, and brick, suggest the site was occupied from the late 19th century into the early decades of the 20th century. The location of the artifacts in the upper 30 cm of a plowed field and lack of features indicate that 41WN121 possesses a low potential for future research. The CAR recommends that the site be considered ineligible for listing on the National Register of Historic Places.

Following laboratory processing and analysis, and in consultation with both SARA and the Texas Historical Commission (THC), all burned rock and sediment samples collected on the project were discarded. This discard was in conformance with THC guidelines. All remaining archaeological samples collected by the CAR, along with all associated artifacts, documents, notes, and photographs, were prepared for curation according to THC guidelines and are permanently curated at the Center for Archaeological Research at the University of Texas at San Antonio. The CAR requested and was assigned trinomials (41WN120 and 41WN121) for the sites. The TexSite records are on file at The Texas Archeological Research Laboratory (TARL).

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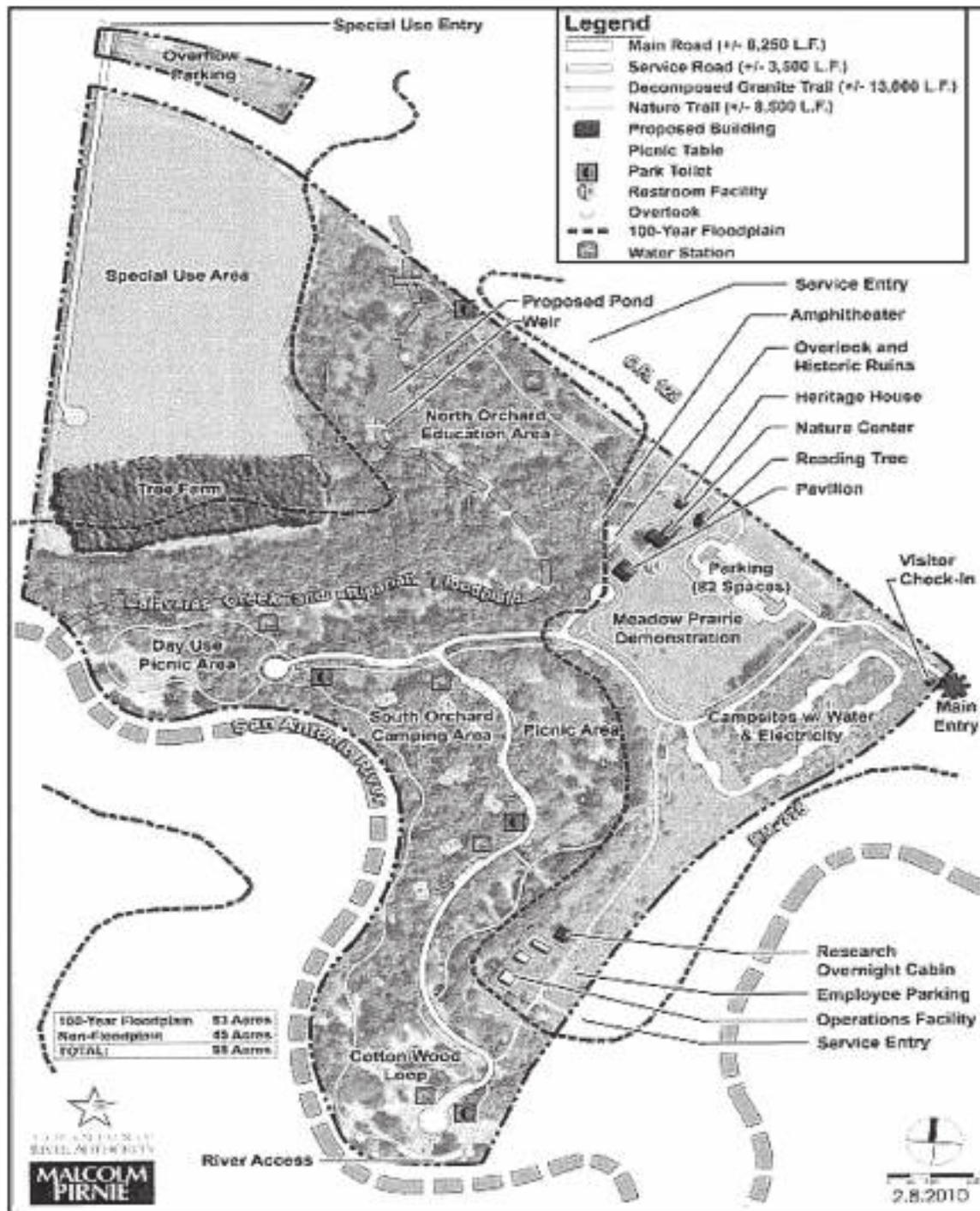


Figure 1-2. Map of the Helton San Antonio River Nature Park showing proposed improvements.

test artifacts were recovered from all levels (0-60 cmbs) and consisted of debitage (n=60), tools (n=1), burned rock (n=63), burned bone and plant material (ST 77, Level 5 and ST 80, Level 4), mussel shell (present in 13 shovel tests), bone (present in 9 shovel tests), historic building debris (present in 13 shovel tests), metal (n=6), historic ceramics (n=6), and glass (n=14). Three specimens of burned rock

were recovered from the same levels as the burned material suggesting the possibility of a subsurface hearth feature(s).

In addition to subsurface cultural material 41WN120 contains a low density surface scatter of lithic debitage, tools, burned rock without associated staining or charcoal, and historic building debris. One backhoe trench was excavated within

the site to attempt to further define the depth of cultural material and to define the plow zone. No artifacts were noted in the trench profile but mussel shell was documented in the backdirt. Because the plow zone was not evident in the trench profile, soil samples (n=24) were collected every 5cm from the trench to determine magnetic soil susceptibility readings. For comparison, three auger tests, two in the plowed field and one on the edge were excavated to 120 cmbs. The results of the soil susceptibility testing suggest two buried surfaces within 41WN120, 40-50 cmbs and 60 cmbs but failed to clarify the plow zone.

One prehistoric diagnostic artifact, a Refugio dart point (Archaic Period; Turner and Hester 1999), was collected from the surface of 41WN120 on a dirt road skirting the plowed field. A cut nail was recovered from a shovel test excavated within the brick ruin. In Central Texas cut nails suggest a pre-1880 manufacture date. Cut nails were almost completely replaced by wire nails after 1900 (Gross and Meissner 1997). Wire nails were also recovered from shovel tests within the structure. Bricks containing maker's marks date the structure to 1887-1897 (Kosub and Kosub 2010). White earthenware (mid 19th-mid 20th century), yellow ware and stoneware (both post late 19th century) also suggest occupation in the late 1800s to the mid 1900s (Greer 1981; Miller 1991; Tennis 1997). Archival research suggests that the brick structure was built with local brick by the José Cassiano family in the late 1800s (see Chapter 2). The wood pier and beam house appears to have been constructed in the mid 1900s. The diagnostic dart point, the depth of buried prehistoric material, the possibility of a buried hearth, the indications of two buried surfaces from soil susceptibility analysis, as well as the historic significance of the association of the brick ruin with Mackey Brick and Tile and with the Cassiano family suggests that 41WN120 may possess high potential for future research and, therefore the CAR recommends that the site be listed as having unknown eligibility with research potential on the National Register of Historic Places until testing can

be initiated to clarify research value. The CAR recommends testing of the portion of the site containing deeply buried prehistoric material via test units and additional backhoe trenches. The CAR also recommends protection of the late 1800s structure. No further work is necessary on the pier and beam structure. Recommendations will be discussed in detail in Chapter 5.

41WN121 located on a previously plowed field on the northwestern quadrant of the project area consists of historic artifacts recovered from shovel tests (0-30 cmbs). Of the 18 shovel tests excavated, 7 were positive. The artifacts include ceramics (n=7), glass (n=6), mussel shell (n=1), faunal bone (n=1), and building material (present in 4 shovel tests). Wire nails (post 1900), refined earthenware and porcelain (both post 1850s), stoneware (c. 1870-1920) and one fragment of lead glazed ceramic identified as Galera ware (1750-1850) suggest the site was occupied from the late 19th century into the early decades of the 20th century (Fox and Ulrich 2008; Greer 1981; Gross and Meissner 1997; Miller 1991; Tennis 1997). The location of the artifacts in the upper 30 cm of a plowed field and lack of features indicates that 41WN121 possesses a low potential for future research and, therefore, the CAR recommends that the site be considered ineligible for listing on the National Register of Historic Places. No further work is needed on site 41WN121.

This document summarizes the results of the fieldwork and provides recommendations regarding the management of cultural resources located on the project area. This report is organized into five chapters. Chapter 2 provides a brief overview of the project area and summarizes the archaeological knowledge about the region. Chapter 3 discusses the fieldwork and laboratory methodology used during the project. The results of the archaeological survey are presented in detail in Chapter 4. Chapter 5 summarizes the work and provides recommendations for the Helton San Antonio River Nature Park project.

Chapter 2: Project Overview

This chapter presents a brief description of the Helton San Antonio River Nature Park project and characterizes the project area environs and culture history. A synopsis of the historic ownership of the property is included. The chapter concludes with a summary of previous archaeological work conducted in the vicinity of the project area.

Project Environs

The project area, consisting of 98 acres, is located at the confluence of Calaveras Creek and the San Antonio River in west-central Wilson County. It contains approximately 900 m of river frontage, the immediately adjacent floodplain, and terrace deposits. The property lies in the westernmost portion of the Inner Gulf Coastal Plain of North America’s Coastal Plain physiographic province with the Edwards Plateau and the Balconies Escarpment division of the Great Plains province roughly 50 km to the northwest (Fenneman 1938). Elevations on the Inner Coastal Plain range from about 91-244 m above mean sea level (amsl; Wermund 1996). In the

immediate project area (113-131 m amsl), the surface geology consists of Holocene Fluvatile terrace deposits (Barnes 1983). Calaveras Creek originates on the Post Oak Savannah region of the southern Plains flowing southeast for 24 km to its confluence with the San Antonio River on the Helton San Antonio River Nature Park project area. The creek, crossing rolling terrain sustaining mesquite and grasses, is a meandering alluvial channel with high sinuosity, a low gradient, and a substantial floodplain (Figure 2-1; Handbook of Texas Online 2010a). The San Antonio River, emerging from a group of springs in central Bexar County, flows to the southeast for 290 km through Wilson, Karnes, and Goliad counties, forms the county line between Victoria and Refugio counties, then, 8 km from the Gulf of Mexico, empties into the Guadalupe River in Calhoun County (Handbook of Texas Online 2010b; Texas Parks and Wildlife GIS Lab 2010).

The San Antonio River meanders through the Tamaulipan Biotic Province (Blair 1950). The Helton San Antonio River Nature Park project area is located near the northernmost

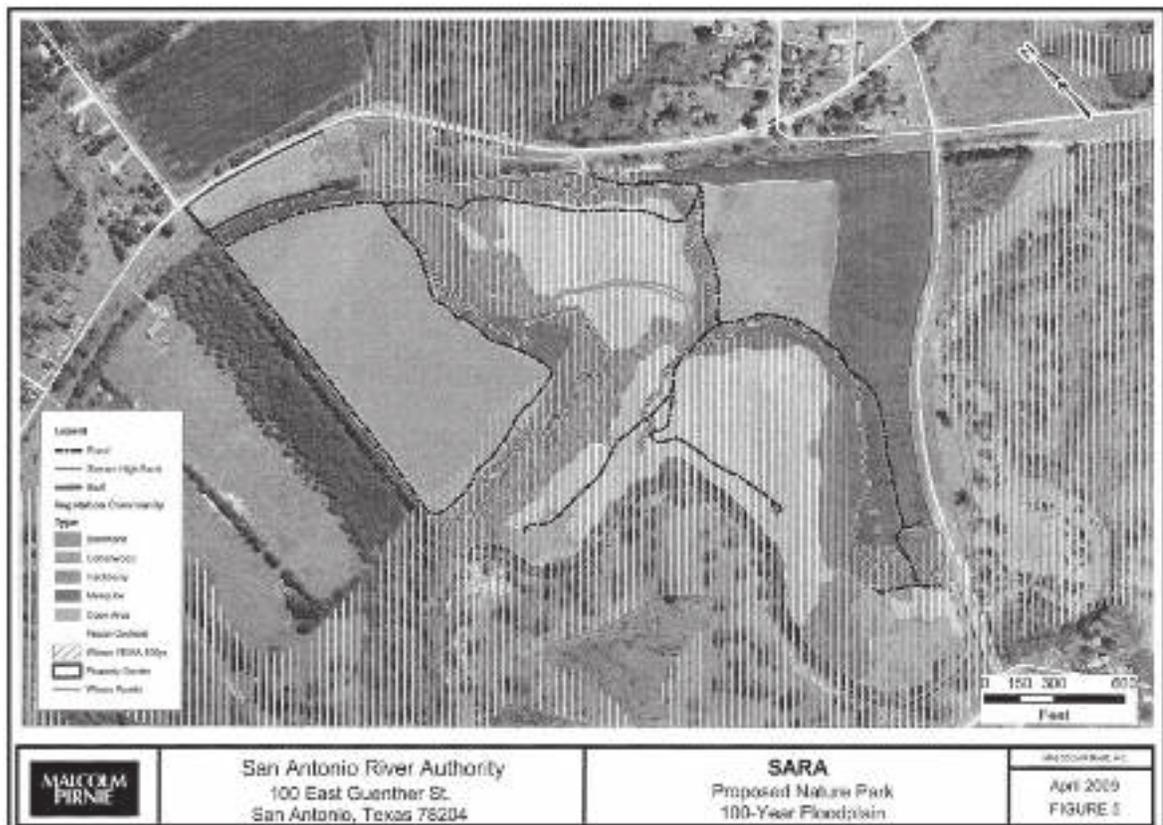


Figure 2-1. Map of the Helton San Antonio River Nature Park showing the 100 year floodplain.

limits of the province. The Tamaulipan Province has a semiarid, megathermal climate that allows year round plant growth and supports a wide range of vertebrate species including grassland, basin desert, and Neotropical species (Blair 1950:103). The project area is located near the intersection of the Post Oak Savannah and the South Texas Plain ecological zones (Frye et al. 1984) that are characterized by a modern vegetation regime of oak-hickory forests, mesquite-chaparral, and bunch and short grass (Arbingast 1976; McMahan et al. 1984). The project area supports a diverse assemblage of flora (Figure 2-2) including Blackjack oak (*Quercus marilandica*), eastern redcedar (*Juniperus virginiana*), mesquite (*Prosopis sp.*), black hickory (*Carya texana*), live oak (*Quercus fusiformis*), sandjack oak (*Quercus incana*), cedar elm (*Ulmus crassifolia*), hackberry (*Celtis sp.*), yaupon (*Ilex vomitoria*), poison oak (*Rhus toxicodendron*), American beautyberry (*Callicarpa americana*), hawthorn (*Crataegus sp.*), supplejack (*Berchemia scandens*), trumpet creeper (*Campsis radicans*), dewberry (*Rubus sp.*), coralberry (*Symphoricarpos orbiculatus*), little bluestem (*Schizachyrium scoparium var. frequens*), silver bluestem

(*Bothriochloa saccharoides*), sand lovegrass (*Eragrostis trichodes*), beaked panicum (*Panicum anceps*), three-awn (*Aristida sp.*), spranglegrass (*Chasmanthium latifolium*), and tickclover (*Desmodium sp.*) (TPWD 2008). Sixty-one species of mammals, fifty-seven reptiles, and twenty-one amphibians have been documented on the Tamaulipan province (Blair 1950).

Climate

Climate in this general area is classified as humid subtropical with hot, humid summers and mild, dry winters. Mean annual precipitation at Floresville, Texas for the period 1971-2000 was 71 cm (28 inches), but there was considerable annual variation in rainfall. Monthly averages ranged from 4.1 cm (1.6 inches) in January to 9.4 cm (3.7 inches) in May (Figure 2-3). The average minimum and maximum temperature for the project area (1971-2000) was 51°F in January and 85°F in July, respectively (Figure 2-4; National Oceanic and Atmospheric Administration 2004). The growing season averages 280 days annually (Handbook of Texas Online



Figure 2-2. Typical vegetation on the project area.

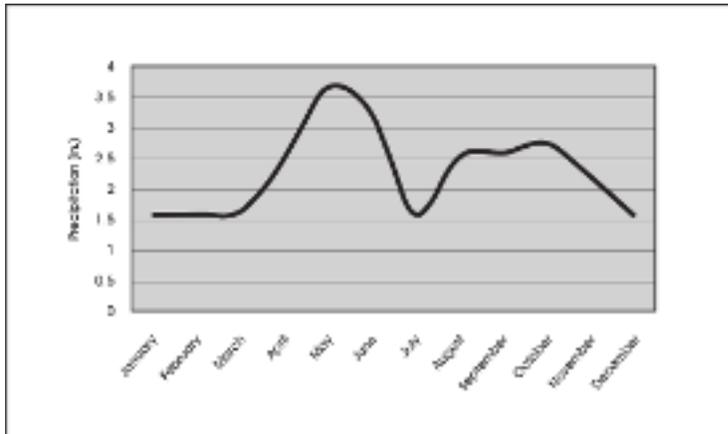


Figure 2-3. Average monthly precipitation at Floresville, Texas.

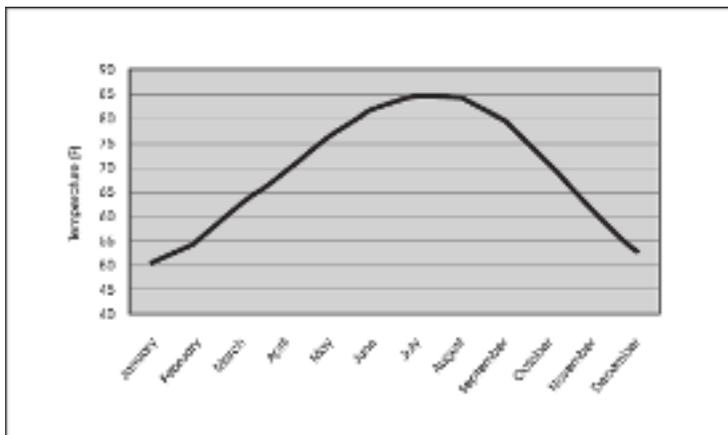


Figure 2-4. Average monthly temperature at Floresville, Texas.

2010c). Because of this region’s proximity to the Gulf of Mexico moisture source and the effects of easterly waves and tropical storms, it is prone to intensive rainfall resulting in severe flooding. Another factor contributing to heavy rain events is the convergence of polar air masses with tropical storms or easterly waves off the Gulf of Mexico (Holliday et al. 2001; Thoms and Mandel 2007). Intensive rainfall in the region has contributed to periodic flooding of the San Antonio River basin. Heavy rainfall in association with flooding of the Calaveras Creek and the San Antonio River will have impacted site formation processes along the waterways and, thus on the Helton San Antonio River Nature Park project area.

Data gathered from the current USGS river gauge in the San Antonio River located downriver near Falls City (1925-2009), 30 km southeast of the project area, and from a gauge formerly located on the San Antonio River adjacent to the project area (1918-1925) demonstrate variation in river flow (cubic meters per second) associated with rain events (Figure 2-5; U.S.

Geological Survey 2010). Although rainfall directly impacts river flow, it should be noted that other factors including dams, irrigation and water supplementation from the Edward’s Aquifer also affect the data. The San Antonio River originates from two major groupings of springs, the San Antonio Springs and the San Pedro Springs. By 1890, the drilling of a large number of artesian wells caused a substantial decrease in spring flows resulting in the rapid decline of the San Antonio River (Eckhardt 2010; Hill and Vaughan 1896). To restore the river, pumps were installed on artesian wells to supplement the flow (Eckhardt 2010; Fisher 1997). To protect downtown San Antonio from flood waters Olmos Dam was completed in 1926, a cutoff channel was built to bypass floodwaters from downtown, and a three mile long river tunnel diverting floodflows underneath the city was completed in 1997. These 20th century improvements have affected the flow of the San Antonio River (Eckhardt 2010).

A comparison of river flow averaged by month from 1971-2000 (Figure 2-6) to mean annual precipitation in the area (see Figure 2-3) suggests that increases in precipitation are followed by increased river flow. The data show that rainfall is bimodal with peaks in May and again in September/October. River flow peaks in June and again in October.

An additional indicator of rainfall events, the Palmer Drought Severity Index (PDSI), relies on tree-ring based measures (summer values) of drought. The PDSI was developed using a point-by-point regression method with 835 tree-ring chronologies spread across North America (Cook and Krusic 2004). Developed in the early 1960s, the PDSI is a relative measure of soil moisture calculated from

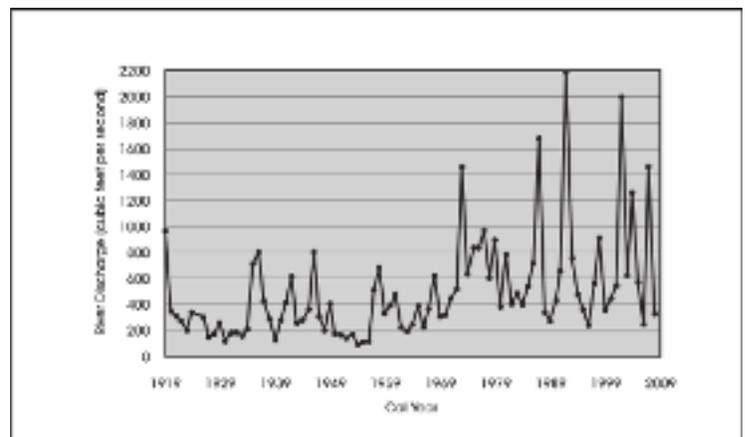


Figure 2-5. Average yearly river flow of the San Antonio River near the project area.

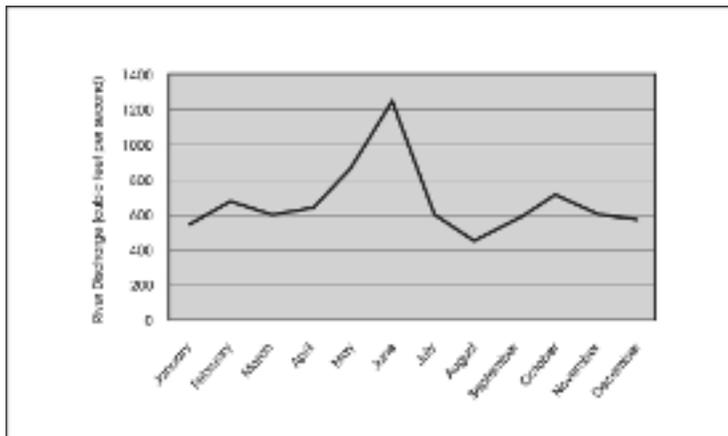


Figure 2-6. River flow of the San Antonio River near the project area averaged by month from 1971-2000.

rainfall, temperature, transpiration, potential evaporation, soil type, and runoff values (Alley 1984; Karl 1986). The index usually ranges from a value of four (severe wet spell) to negative four (severe drought). A value of zero indicates a normal period. Cook and Krusic (2004) established a grid, 2.5 degree latitude by 2.5 degree longitude, consisting of 286 stations in the United States, Mexico, and Canada. The Helton project area is located within four of these grid points: point 166 (100 degree west/ 30 degrees north), point 167 (100 degrees west/ 27.5 degrees north), point 181 (97.5 degrees west/ 30 degrees north), and point 182 (97.5 degrees west/ 267.5 degrees north; Cook and Krusic 2004). Because the project area is located in the middle of the points and a comparison of the data from the four grid points indicate minimal variation, an average value from the four points was calculated for each year. Figures 2-7 and 2-8 present the average values of the four data stations from AD 1800-1900 and AD 1900-2000, respectively. A comparison of the data from 1920-2000 in Figure 2-8 with Figure 2-5 shows similar peaks with extremely wet weather and high river discharge in the mid 1940s, the early 1970s, and in 1987 and 1992, as well as low points with extreme drought and low river flow in the 1950s. PDSI, flow rate, and precipitation values correlate for the most part.

Therefore, although there is no data on the San Antonio River flow rates near the Helton San Antonio River Nature Park project area prior to 1919, the correspondence between river flow and the PDSI shown above points to several flood events from 1800-1900. This periodic flooding of the river basin indicates that cultural material in the vicinity of the San Antonio River and Calaveras Creek should be deeply buried under multiple layers of alluvium.

Soils

The project area consists of four soil units: Buchel clay (Ar), Colibro sandy clay loam (CbB and CbC), and Loire and Divot soils (Lf; Figure 2-9).

The soils abutting the San Antonio River and Calaveras Creek, described as Loire and Divot, make up 33% of the project area. The Loire series consists of very deep, well drained, moderately permeable soils that formed in loamy alluvial sediments. Typically, Loire soils have a surface layer of silty clay loam roughly 41 cm thick over 66 cm of loam resting on 97 cm of fine sandy loam. Divot soils contain very deep, well drained, moderately slowly permeable soils that formed in clayey alluvium. This series is made up of roughly 203 cm of silty clay loam. Both Loire and Divot soils are nearly level and are located on flood plains that are frequently flooded (Soil Survey Staff 2010).

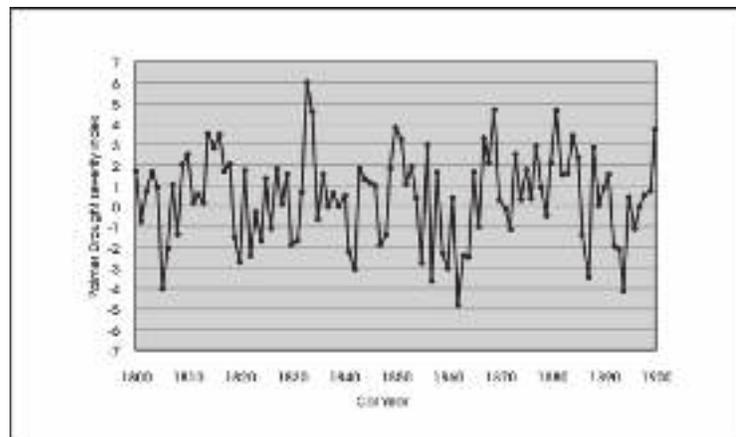


Figure 2-7. PDSI values from AD 1800-1900 based on an average of PDSI grid points 166, 167, 181, and 182.

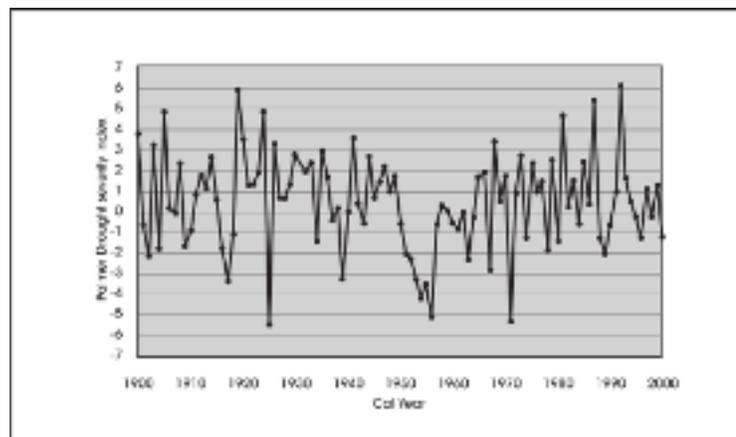


Figure 2-8. PDSI values from AD 1900-2000 based on an average of PDSI grid points 166, 167, 181, and 182.



Figure 2-9. Map showing soil units on the project area.

Colibro sandy clay loam soil types (CbB and CbC), upslope from the Loir and Divot soils, are located on a T2 terrace on the eastern side of the project area. This soil type covers 38% of the project area. This series consists of very deep, well drained soils that formed in erosional calcareous loamy material of Quaternary age. These nearly level to moderately steep soils are on ancient alluvial terraces. CbB soils have a surface layer of sandy clay loam roughly 41 cm thick resting on 81 cm of loam overlying 36 cm of fine sandy loam. CbC consists of 122 cm of sandy clay loam over 36 cm of loam (Soil Survey Staff 2010).

Approximately 26% of the project area, located on a T2 terrace on the western side of the property, contains sediments classified as Buchel clay. They are very deep (0-191 cmbs), moderately well drained soils that formed in clayey,

calcareous alluvial sediments of recent age. These soils exist on nearly level flood plains on slopes ranging from zero to one percent and are occasionally flooded (Soil Survey Staff 2010).

Cultural History

Because archeological sites with long sequences of stratified deposits are sparse in South Texas, the prehistoric sequence developed for Central Texas is often relied on to frame the prehistory of South Texas. The following culture history emphasizes Central Texas although reference is made to trends in South Texas. The discussion is based primarily on the chronologies developed by Black (1989a), Collins (1995), Johnson and Goode (1994), and Prewitt (1981) for Central Texas, with observations from Hester (1995) for South Texas. Four major time periods define South Central Texas: Paleoindian, Archaic, Late Prehistoric, and Historic. These periods are further divided into sub-periods that are based on particular subsistence strategies and material culture. A brief description of each period follows to illustrate the archeological potential of the region.

Paleoindian

The Paleoindian period (11,500-8800 BP) is divided into early and late sub-periods, each characterized by particular projectile point styles and subsistence patterns (Collins 1995). The period begins at the close of the Pleistocene with the earliest evidence of humans in the Central Texas region. Clovis and Folsom point types, and bifacial Clear Fork tools and finely flaked end scrapers characterize the early Paleoindian period (Black 1989a). The first stemmed points (i.e., Wilson), as opposed to lanceolate points (i.e., Angostura and Golondrina), begin to appear during the late Paleoindian period. In the past, Paleoindian populations have generally been characterized as hunter-gatherers ranging over wide areas in pursuit of now extinct megafauna, such as mammoth and bison (*Bison antiquus*). However, research from the Wilson-Leonard site in Central Texas (Collins 1998) and other perspectives on Paleoindian adaptations (Tankersley and Isaac 1990) indicate that the diet of these early inhabitants may have been much broader. Although exploiting Late Pleistocene megafauna may have constituted a part of Paleoindian subsistence, these peoples

are perhaps better characterized as more generalized hunter-gatherers, exploiting a wide variety of plants and animals including large herbivores like deer and bison and small animals such as turtles, alligators, rabbit, and raccoons (Collins 1995; Nickels 2000).

In South-Central Texas, many of the sites containing Paleoindian materials are found on high terraces, valley margins, and upland locations (Black 1989a). This seems to fit with a broader pattern of Paleoindian site distributions where sites are located on landforms providing views of the surrounding landscape, are centered on critical resource zones, or are found in highly productive resource areas (Tankersley and Isaac 1990). Paleoindian artifacts are commonly recovered as isolated finds or from lithic scatters lacking good stratigraphic context including kill, quarry, cache, camp, ritual and burial sites (Collins 1995). No mammoth kill or butchering sites attributable to the Paleoindian period have been found in South Texas (Hester 1995).

Archaic

The Archaic Period, 8800-1200 BP, is marked by intensification of hunting and gathering of local resources, changes in projectile points, and by a broader array of material culture (Collins 1995; Prewitt 1981; Weir 1976). A change in food processing is evident from a widespread increase in hearth, oven and midden features. During this period, large cemeteries were formed indicating an increasing population and the subsequent establishment of territories (Black and McGraw 1985). Collins (1995) and Johnson and Goode (1994) subdivided the Archaic into Early, Middle, and Late sub-periods. These sub-periods are distinguished by variances in climate conditions, resource availability, subsistence practices, and diagnostic projectile point styles (Collins 1995; Hester 1995).

Early Archaic

In Central Texas, the Early Archaic dates from 8800 to 6000 BP (Collins 1995). Changing climate and the extinction of megafauna appear to have initiated a behavioral change by the Prehistoric peoples of Texas. Because of the necessary economic shift away from some level of dependence on big game hunting, local resources in Central Texas, such as deer, fish, and plant bulbs were more intensively exploited. This behavioural change is indicated by greater densities of ground stone artifacts, burned rock cooking features, and more specialized tools such as Guadalupe bifaces and Clear Fork gouges (Turner and Hester 1993). Projectile point styles found in sites from this period include Angostura, Early

Split Stem, and Martindale-Uvalde (Collins 1995). Open campsites, including Loeve, Richard Beene, Wilson-Leonard, Jetta Court, Sleeper, Camp Pearl Wheat, Youngsport, and Landslide, and a cave site, Hall's Cave, contain notable Early Archaic components (Collins 1995).

Weir (1976) concludes that the Early Archaic groups were highly mobile and small. He bases this inference on the fact that Early Archaic sites are sparsely distributed and that projectile points are widely distributed across most of Texas and northern Mexico. The decline in bison numbers on the plains suggested to Hurt (1980) that the inhabitants were forced to broaden their diets to include animals and plants that produce equivalent amounts of calories and protein with the same or slightly more expended effort. Story (1985) concurs with Weir that population densities were low during the Early Archaic. She suggests that groups were made up of small bands of related individuals with "few constraints on their mobility" (Story 1985:39) subsisting on a broad range of resources, such as prickly pear, lechugilla, rodents, rabbits and deer.

Middle Archaic

The Middle Archaic, 6000 to 4000 BP (Collins 1995), appears to have been a period of increasing population, based on the large number of sites documented from this time in South and Central Texas (Story 1985; Weir 1976). Projectile point variation at the Jonas Terrace Site points to a period of "ethnic and cultural variety, as well as group movement and immigration" (Johnson 1995:285). Point styles from this period include Bell, Andice, Calf Creek, Taylor, Nolan and Travis (Collins 1995). Exploitation of broadly scattered, year-round resources such as prickly pear, deer and rabbit continued (Campbell and Campbell 1981) with the addition of seasonal nut harvests from the riverine settings of the Balcones Escarpment (Black 1989a, b). Weir (1976) posits that the expansion of oak on the Edwards Plateau and Balcones Escarpment resulted in intensive plant gathering and acorn processing that may have been the catalyst for the merging of the widely scattered bands prevalent in the Early Archaic into larger groups. These larger groups likely shared the intensive labor involved with the gathering and processing of acorns. Some investigators believe burned rock middens resulted from acorn processing (Creel 1986; Weir 1976) although others (e.g., Black et al. 1997; Goode 1991) question this argument. Black et al. (1997) suggest that the burned rock middens of Central Texas accumulated as a result of the baking of a relatively broad range of resources in rock/earth ovens. These resources potentially included carbohydrate laden nuts, bulbs, roots, and pads as well as various vertebrate and invertebrate animals.

Late Archaic

The final interval of the Archaic in Central Texas dates from 4000 to 1200 BP (Collins 1995). There is not a consensus among researchers as to population size in this sub-period. Prewitt (1985) posits an increase while Black (1989a) believes population remained the same or decreased. There is also disagreement as to the continuing use of burned rock middens. Prewitt (1981) suggests the near cessation of the midden construction, whereas excavations at a number of sites document large cooking features up to 15 meters in diameters (Black and Creek 1997; Houk and Lohse 1993; Johnson 1995; Mauldin et al. 2003). Bison reemerge during this sub-period in Central Texas (Mauldin and Kemp 2005) after evidence of a definitive decrease during the Middle Archaic (Dillehay 1974). Points from the Late Archaic sub-period are generally smaller than those of the Middle Archaic and include Bulverde, Pedernales, Kinney, Lange, Marshall, Marcos, Montell, Castroville, Ensor, Frio and Darl types (Collins 1995; Turner and Hester 1993). During this period, large cemeteries were formed indicating an increasing population and the subsequent establishment of territories (Black and McGraw 1985). The earliest occurrences are at Loma Sandia (Taylor and Highley 1995), Ernest Witte (Hall 1981), Hitzfelder Cave (Givens 1968), and Olmos Dam (Lukowski 1988).

Late Prehistoric

The Late Prehistoric Period (1200-350 BP) in Central Texas marks a distinctive shift from the use of the atlatl and dart to the use of the bow and arrow (Black 1989a; Collins 1995; Hester 1995; Story 1985). The Late Prehistoric is subdivided into early and late sub-periods termed Austin and Toyah Phases, respectively. Temporal diagnostics including Scallorn and Edwards arrow points define the Austin Phase (1200-650 BP; Prewitt 1981). It appears that the use of burned rock middens may have reached its peak during this phase (Black and Creel 1997). The subsequent Toyah Phase spans 650-350 BP and includes the first occurrence of pottery in South Texas (Black 1989a). Characteristic artifacts of this phase include Perdiz and Clifton arrow points (Black 1986). Material culture associated with the Late Prehistoric period points to increasing complexity in subsistence patterns and to large prehistoric populations (Black 1989a; Collins 1995).

Historic

The Historic Period in Texas begins with the arrival of Europeans. Although the Historic period theoretically begins in Texas with the shipwreck of the Narvaez expedition along the Texas coast in 1528, the majority of the inhabitants of Texas were Native Americans until the late eighteenth

century. From AD 1550 to the late 1600s, European forays into South and Central Texas were infrequent. René Robert Cavelier, Sieur de La Salle, established a French settlement, Fort St. Louis, along Matagorda Bay on the Texas coast in 1685. Hunger, disease, and escalating hostilities between the French and the Karankawas, subsequently destroyed the colony. In 1690, as a result of the discovery of the remains of the LaSalle colony, the Spanish began securing the northern border of New Spain, expanding their interests in East Texas to counter any French expansion across the Mississippi River (Foster 1998). The first Europeans settled in the region in early AD 1700 (Taylor 1996). The southward incursion of the Comanche and Apache and the northward expansion of Spanish influence led to the displacement of many of the area's indigenous groups. Decimated by disease brought by Europeans, many of the remaining groups sought refuge in the numerous Spanish missions established early in the eighteenth century. The move to the missions significantly impacted the hunter-gatherer way of life and the material culture. Artifacts from the Historic period reflect European influences and include metal, glass, and ceramics along with pre-Hispanic Goliad wares and lithic arrow points, tools, and gunflints (Taylor 1996; Wade 2003).

Historic Ownership of the Project Area

This section provides a brief overview of the general history of the area encompassing the Helton San Antonio River Nature Park project area and discusses the ownership of the property from the mid-1700s to the present. The 1840 Wilson County plat map from the Texas General Land Office shows that the project area is located on portions of two land tracts, one granted to José de la Garza and the other to the heirs of Simon and Juan de Arocha (Figure 2-10). Simon and Juan Arocha were part of the original group of 15 families from the Canary Islands that settled in the villa of San Fernando de Bexar (San Antonio) in 1731. Under the leadership of Juan Leal Goraz, appointed the first mayor (*Alcalde*) of the settlement, the islanders joined the military community that had originated the settlement in 1718 (Handbook of Texas Online 2010d).

Simon and Juan Arocha, 2 of 15 children born to founders Don Francisco Joseph and Juana Ramires Curbelo de Arocha, were born in San Fernando de Bexar in 1731 and 1734, respectively (Inclan 2010a). In 1782, as part of the original founders of the villa, the brothers were granted a land grant of eight leagues (35,427 acres or 14,337 ha), north of the present city of Floresville. They established a *rancho*, *San Rafael de Pataguilla*, near the San Antonio River roughly 5.2 km downriver from the Helton project area (Figure 2-11). Simon de Arocha married Maria Ignacio de Urrutia in 1752 and eventually produced nine children, four living to adulthood

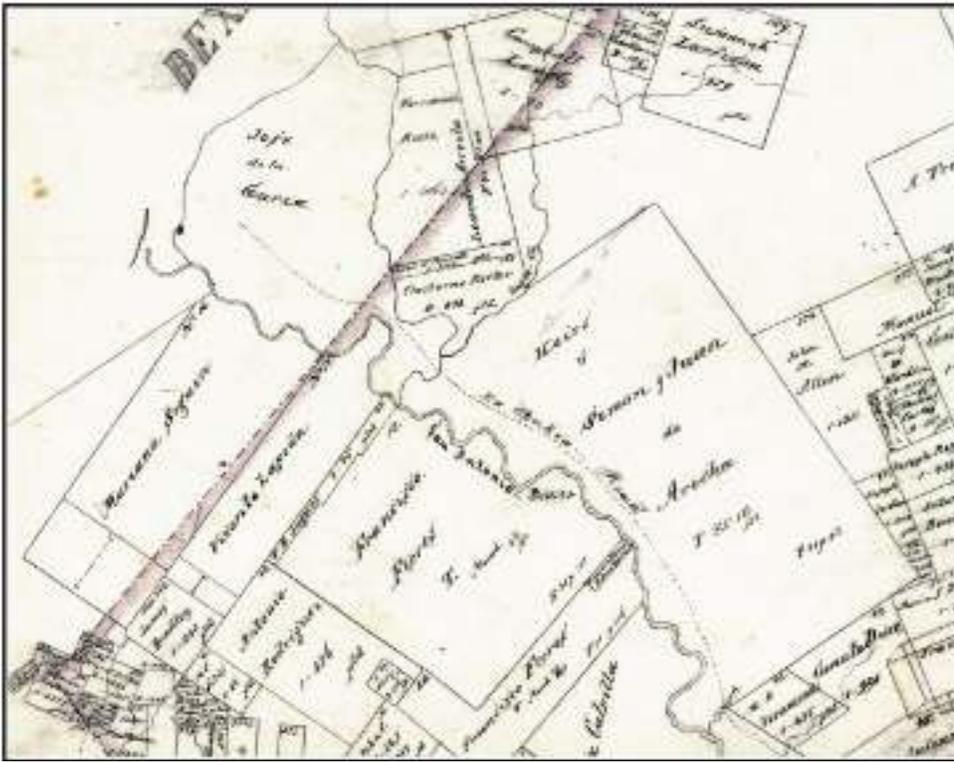


Figure 2-10. 1840 Wilson County plat map showing the two land grants, José de la Garza and Simon and Juan Arocha, on the project area - Texas General Land Office.



Figure 2-11. 1866 Wilson County plat map showing the two land grants, José de la Garza and Simon and Juan Arocha, and ranchos on the project area - Texas General Land Office.

(Handbook of Texas Online 2010e; Inclan 2010a; Texas General Land Office 2010). In 1770, their daughter, Anna Maria Gertrudis de Arocha, married José Joaquin Leal Delgado, the grandson of the original *Alcalde* of San Antonio, Juan Leal Goraz. José Joaquin was born in 1746 in the Villa de San Fernando to Bernardo Leal and Lenore Delgado. As original Canary Island founders, the Leal Delgados established a *rancho*, *Santa Rita de las Islitas*, on land granted to them south of the villa along the San Antonio River adjacent to the Arocha land grant. Calaveras Creek formed the natural boundary separating the two families' land grants. The marriage of Anna Maria and José Joaquin joined the two land grants subsequently increasing José Joaquin's social status and political influence in south-central Texas (Handbook of Texas Online 2010f).

In April 1813 an invasion force led by José Bernardo Gutierrez de Lara and Augustus William Magee successfully removed the Spanish military from Coahuila and Texas. The rebels with the cooperation of the San Fernando military occupied the San Antonio de Valero Mission resulting in the first Republic of Texas. Sensing an end to Spanish rule and a need to ensure their safety and retain their social standing and property, a large segment of the population of San Fernando de Bexar, including the Arocha and Leal families, supported the invasion force. In August the Spanish royalist army, commanded by general Joaquin de Arredondo, defeated the Texas Republicans twenty miles south of San Antonio along the Medina River in one of the bloodiest battles fought in Texas, the Battle of Medina (Handbook of Texas

Online 2010e, f, and g). Marked as traitors to the crown, many of the Republicans left San Fernando de Bexar and fled toward the Sabine River to enter Louisiana, but before reaching freedom many of the families were apprehended by Royalist troops. The Arocha and Leon families were bound and led on a forced march to Fort Trinidad where the men were condemned to instant death without burial. All property belonging to the Arocha and Leal families was confiscated and the widows including Anna Maria Gertrudis, her daughters, Maria de la Consolacion Leal Arocha de Garza and Juana Isidora Leal Arocha de Terin were imprisoned (Handbook of Texas Online 2010e and f).

The Arocha land grant was restored to the Arocha family in 1832 by José Ignacio, a grandson of Simon de Arocha (Texas General Land Office 2010). The 1840 Wilson County plat map (see Figure 2-10) indicates that the former Leal grant was turned over to José de la Garza. Although Joaquin Leal's daughter Maria de la Consolacion married José Leonardo de la Garza, it could not be ascertained if there was any relationship between the two (Inclan 2010a).

An 1845 map of the project area (Figure 2-12) indicates that the Cantu family occupied the José de la Garza grant, the portion of the Helton San Antonio River Nature Park project

area west of Calaveras Creek and the Cassiano family occupied the Arocha grant, the portion east of the creek. The map also suggests that the *La Bahia* road ran through the project area crossing Calaveras Creek. This road was part of the *Camino Real*, meaning “Royal Highway” in Spanish or Kings Highway. The *Camino Real* was the oldest road network in Texas originating as a series of Indian trails. The Spanish expanded and improved the roads linking missions and settlements from Mexico to Louisiana. The *Camino Real* connected Monclova, Mexico to Robline, Louisiana (Handbook of Texas Online 2010h). The La Bahia road ran between the La Bahia Presidio and Mission and San Fernando de Bexar. Over time the presidio expanded into a civic settlement. This village, eventually renamed Goliad, and La Bahia road were commercially important as areas of Spanish settlement (Handbook of Texas Online 2010i). The Helton San Antonio River Nature Park property appears to contain the location of the Calaveras Crossing of the La Bahia road. Berlandier (1980:372) writes that the Calaveras crossing in 1829 was known as a place of potential Indian ambush. He also notes that the area surrounding the crossing becomes swampy during wet periods and that the banks are heavily vegetated with many large majestic trees covered with Spanish moss. Berlandier writes that no dwellings were seen from Bexar to Goliad along the road.

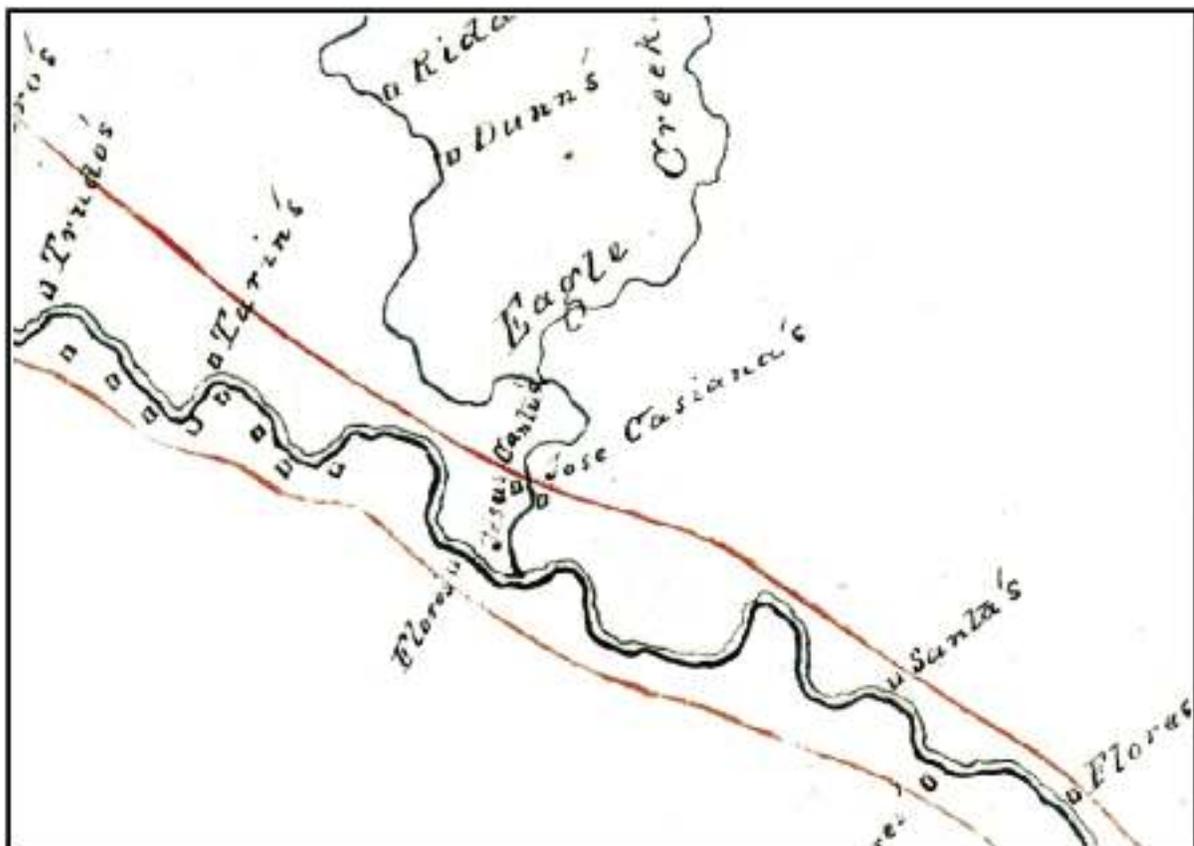


Figure 2-12. 1845 map of La Bahia Road at the Calaveras crossing in Wilson County.

Deed research places Maria de los Santo Gortari Charle y Cantu and José Pedro de Jesus Cantu on the project area prior to 1858 (WCDR Vol. A:438-443). José Pedro (1787-1858) was the son of Nicolas Cantu and Maria Isabel Gonzalez de la Garza. Maria de los Santo was the great-granddaughter of Vincent Alvarez Travieso (1700-1779) and Maria Ana Curbelo Umpierre (1712-1795), Canary Islanders and founders of San Fernando de Bexar. Of interest Maria Ana Curbelo was the sister of founder Francisco de Arocha's wife Juana Ramires Curbelo Umpierre (Inclan 2010 b and c). The deed states that the property, 147 acres situated at the junction of the San Antonio River and Calaveras Creek, was part of the Juaquin Leal tract. An item in the Galveston News dated May 5, 1855 describes a settlement at the junction of the San Antonio River and Calaveras Creek. "At the crossing of the Calaveras, there is a large cotton plantation, owned by a Mexican, called Cantu, who works several hands, and is extensively engaged in stock raising (Kosub and Kosub 2010)". Upon the death in 1858 of the Cantus the land east of Calaveras Creek passed to their son José Miguel Felipe Cantu Gortari (1821-1864), then in 1864, upon José Miguel's death, the land went to his wife Maria Gertrudes Navarro Cervantes (b. 1813; Inclan 2010c; WCDR Vol. A:438-443).

The 147 acre Cantu property was sold to J. H. Gholson and his wife Charlotta in 1871 for eight hundred dollars in coin (WCDR Vol. A:438-443). The Gholsons sold the acreage to Mrs. Sarah A. McLeary for three hundred silver dollars in 1876 (WCDR Vol. D:430). Due to the absence of McLeary from the state of Texas the property was sold with public notice by the sheriff of Wilson County to the highest bidder, Maria Kawp, for three hundred dollars in 1899 (WCDR Vol 36:244-246). Kawp held the land for two years selling it to B. Ballard in 1901 who immediately sold it to Alfred Giles for fourteen hundred dollars (WCDR Vol. 44:155-156).

Alfred Giles (1853-1920) was a renowned architect responsible for houses, mansions, country courthouses, and institutional and commercial structures all over Texas. Giles designed residences for Edward Steves (1877) and Carl Wilhelm August Groos (1880) in the King William Historic District of San Antonio, the motherhouse of the Sisters of Charity of the Incarnate Word (1900) also in San Antonio, the old Gillespie County Courthouse (1881) in Fredericksburg, the old Bandera County Jail (1881) in Bandera, the Wilson County Courthouse (1884) in Floresville, the Webb County Courthouse (1909) in Laredo, as well as multiple commercial structures in Monterrey Mexico (1901-1910; Handbook of Texas Online 2010j). In 1912 Giles petitioned for the water rights on the property for irrigation, milling, and stock raising. Giles proposed the construction of a dam on Calaveras Creek roughly 50 feet from the junction of the creek with the San Antonio River and a dam across the San Antonio

River approximately 50 feet upriver from the junction in order to start a pump plant (WCDR Vol. 73:489-492). Upon the death of Alfred Giles in 1920 the property passed to his daughter, Milby Giles Beckmann, and her husband, Adolph G. Beckman. In 1928, the Beckmanns sold 35 acres of the Alfred Giles 147 acre tract to Walter H. Krueger and Corinne Krueger for thirty-two hundred and fifty dollars. The transaction included all the land on the Helton project area west of Calaveras Creek, with the exception of nine-tenths of an acre conveyed by Alfred Giles to the S.A. & A.P. RR. Company (WCDR Vol. 150:46-48).

As previously noted, the 1845 map of Wilson County indicates that the Cassiano family occupied the Arocha grant, the portion of the Helton San Antonio River Nature Park project area east of Calaveras Creek (see Figure 2-12). José Cassiano (1791-1862), previously known as Guisepppe Cassini, was born in San Remo Italy. He moved from Italy to New Orleans in 1812 then to San Antonio in the 1820s. Cassiano served as a scout for and made significant financial contributions to the Texas revolution and served three terms as an alderman in San Antonio. Of his four successive wives, the second, Maria Gertrudis Pérez de Cordero (1790-1832), was the daughter of Juan Ignacio Pérez and Clemencia Hernandez, owners of the extensive Pérez Ranch and the San Antonio Governor's Palace. Juan and Clemencia, Canary Islanders, were original founders of San Fernando de Bexar (Charles Phillips Smith Family Papers 2010). José Cassiano had extensive holdings in San Antonio as well as a ranch, named the Calaveras, along the San Antonio River and Calaveras Creek consisting of subdivision eight of the Arocha tract. He is reported to have welcomed newly arriving Americans in the early days of the Republic of Texas at his Calaveras ranch (Handbook of Texas Online 2010k).

In 1838, José and Maria Gertrudis' son, José Ignacio Cassiano (1827-1882), inherited one-third of the Calaveras ranch (WCDR Vol. 104:39-40). José Ignacio's inheritance contains the eastern portion of the Helton San Antonio River Nature Park project area. In 1876 José Ignacio passed the property with improvements to his wife, Margarita Rodriguez (WCDR Vol. D:479). Upon her death in 1877, José Ignacio passed the property to his sons, José G., Ygnacio, and José de Jesus Cassiano (WCDR Vol. F:126). José de Jesus and Ygnacio sold their portions of the property for one-thousand dollars to José G. Cassiano in 1886 (WCDR Vol. P:503-504). José G. Cassiano, upon his death in 1914, left the Calaveras Creek property to his sons, Frank and José Cassiano, who immediately passed the property to their mother, Pauline Hainer, the widow of José G. Cassiano (WCDR Vol. 81:519). Pauline sold the land in two portions to Lorenzo Gonzales in October, 1918 (WCDR Vol. 101:502) and to S. V. Houston in December, 1918 (WCDR Vol. 104:5).

The 1845 map (see Figure 2-12) indicates that a structure was located on the Cassiano property near the bend of Calaveras Creek. A structure, consisting of two complete brick walls, one with a door opening, and one partial wall with a fallen chimney, is currently standing on this part of the property. For the most part the brick consists of a light whitish/yellowish color, some of which contains the maker's mark 'NM.' This mark belonged to Nelson Mackey (1825-1898; Figure 2-13). Mackey arrived in San Antonio in the late 1870s and quickly became involved in the politics and business of San Antonio. He invested in land, built commercial buildings, created a baseball team (the San Antonio Mackeys), and served three terms as a San Antonio alderman. In 1887 Mackey purchased 2,700 acres of land in Wilson County near the town of Calaveras on the banks of the San Antonio River. The land is located immediately to the east of the Helton Park project area (Figure 2-14). N. Mackey and Company commenced producing brick in 1887 using the extensive resources of clay along the San Antonio River basin. In 1889 the company recapitalized the operation

and changed the name to Mackey Brick and Tile Company (Figure 2-15 factory). Numerous structures were built of Mackey's Calaveras brick including San Antonio residential mansions, commercial structures such as the Joske's block and the Menger Hotel in San Antonio, and the Southwest Texas State Lunatic Asylum. In addition to brick Mackey produced tiles and sewer pipe. The collapse of the brick market due to over production forced Mackey Brick and Tile to shut down in 1897 (Kosub and Kosub 2010). Today the remains of kilns and large scatters of brick are all that remain of the factory (Figure 2-16). The manufacture dates of Mackey brick (1887-1897) suggest that the brick ruin on the eastern portion of the project area was built by the Cassiano family.

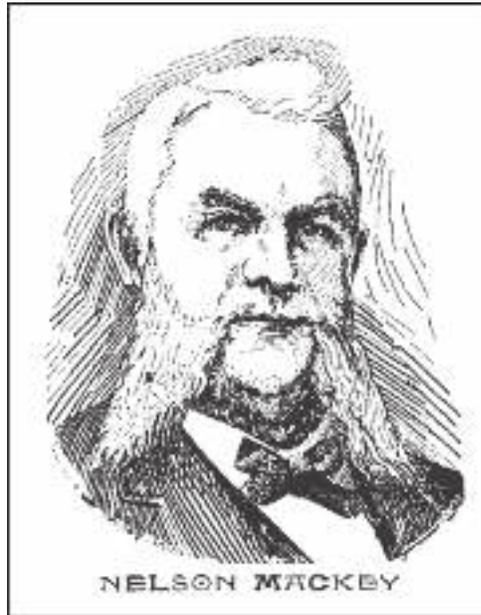


Figure 2-13. Woodcut of Nelson Mackey (reproduced courtesy of Regina and Allen Kosub).

The eastern portion of the Helton San Antonio River Nature Park property was acquired by W. P. Moore subsequent to the 1918 transactions between Pauline Cassiano and Gonzales and Houston. In 1923 W. P. Moore sold the property to George W. Bell (WCDR Vol. 120:366). The property was transferred from Bell to Walter H. Krueger and Corinne



Figure 2-14. Map of Calaveras Texas and the site of Mackey Brick and Tile (map reproduced courtesy of Regina and Allen Kosub).

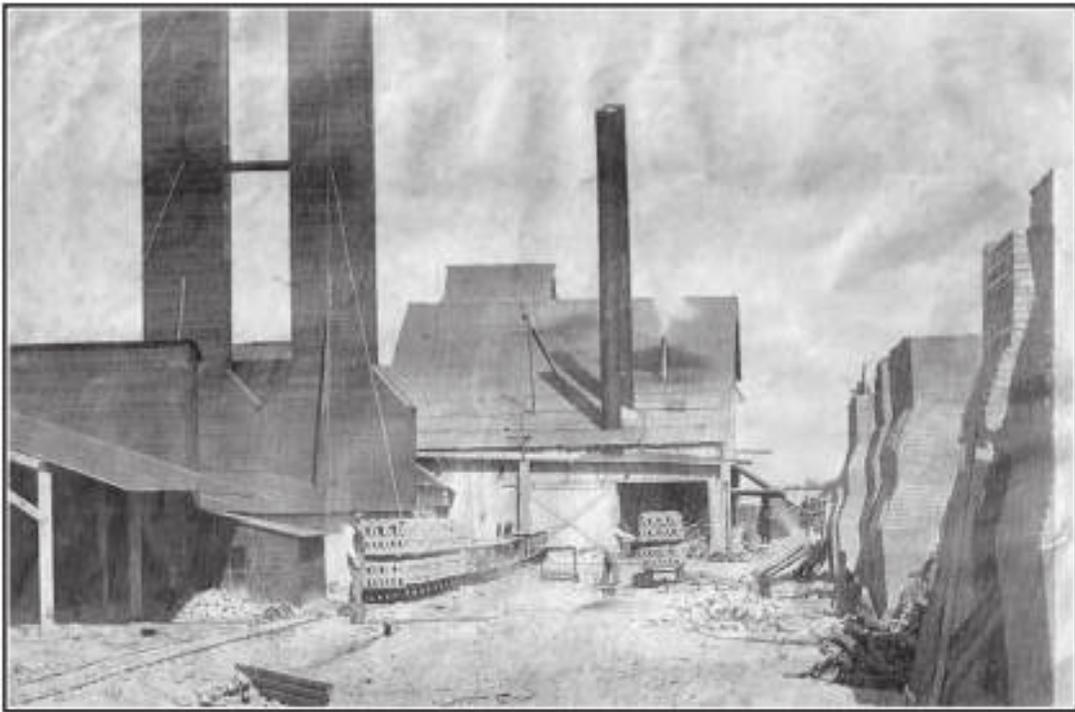


Figure 2-15. Mackey Brick and Tile Company (ca. 1887-1897; reproduced courtesy of Regina and Allen Kosub).



Figure 2-16. The remains of a kiln and a scatter of bricks on the site of the historical Mackey Brick and Tile Company (reproduced courtesy of Regina and Allen Kosub).

Krueger at some point from 1923 to 1937. Deeds of the transaction could not be located. With the purchase of the western side of the property area in 1928, discussed previously, Krueger and his wife owned all but 21.6 acres of the Helton Park property. The 21.6 acres consist of a strip of land on the far eastern side of the property. Krueger sold the property, both sides, to A. C. Williams in 1937 (WCDR Vol. 192:163). G. W. Hardy owned the land and sold it to G. L. McCoy and Ethel McCoy in 1945 (WCDR Vol. 228:587). Deed records of the transaction between Williams and Hardy could not be located. The McCoy's sold the land to Giles N. Hoover in 1946. At this point the property consisted of roughly 73.5 acres of land (WCDR Vol. 531:620-622). In 1979 Hoover sold the acreage to John William Helton, Jr. A survey of the property at this time resulted in an increase in size to 81.6 acres (WCDR Vol. 558:299-303). The San Antonio River Authority purchased the property from Mr. Helton in 2008 (WCDR Vol. 1488:907-915).

The remaining 21.6 acres of the project area consists of a strip of land located on the far eastern edge of the property. At some point between 1886 and 1906 the Cassiano family, likely José G. Cassiano, sold the acreage outside the family. Deed research shows that Isaac Long sold the 21.6 acres to Tom F. and Anna Black in 1906 (WCDR Vol. 68:146). The same parcel of property was sold by C. O. and Pearl E. Edwards to Jack and Liese Lotte Singleton in 1966 (WCDR Vol. 392:46). Robert L. and Eunimae Leutbecher sold the acreage to Matthew J. and Virginia M. Zillman in 1975 (WCDR Vol. 480:278). The Zillmans transferred the land to Francisco C. and Maria A. Castillo in 1987 (WCDR Vol. 685:157-160) who, in 2009, sold it to SARA (WCDR Vol. 1492:800-805).

Previous Archaeological Investigations

A background literature review revealed over 100 archaeological sites in Wilson County including 92 prehistoric, 10 historic, and 13 sites with both components (Texas Historical Commission 2010). Although no previously recorded sites are located on the project area, three sites are located within a 1.6 km radius of the project area. Two of the sites, 41WN61 and 41WN74, contain remnants of historic features. The third, 41WN73, is documented as a sporadically occupied prehistoric site dating from the Early Archaic to the Late Prehistoric periods.

Sites 41WN73 and 41WN74, documented in 1984 by the State Department of Highways and Public Transportation (SDHPT) during a survey of FM 775, are located approximately 1,100 m south and 340 m east of the project area, respectively. Site 41WN74 was recorded as an historic house located in the town of Calaveras, Texas, approximately 340 m north of the San Antonio River. The house, made of local brick with a plaster façade, is thought to date to the 1890s. No further work was recommended (Texas Historical Commission 2010). 41WN73, lying roughly 540 m south of the San Antonio River, was recorded as a small lithic scatter. Although no subsurface testing was documented, surface artifacts, including lithic debitage and burned rock were noted on the surface (Texas Historical Commission 2010). Three additional phases of archaeological field investigations were conducted on 41WN73, also known as the Shrew Site, from May to June 1985 by the SDHPT and from July to August 1985 and October to November 1985 by the Center for Archaeological Research of the University of Texas at San Antonio. Phase I testing uncovered two prehistoric human burials. Per local informants, five burials were previously removed by local residents. Phase II investigations resulted in the excavation of four additional human burials. Although no additional burials were uncovered in Phase III excavations, two separate zones of occupation were identified. The upper zone, 15-35 cmbs, contained cultural materials diagnostic of the Late Prehistoric, the Transitional Archaic, and the Early Archaic periods. The lower zone included artifacts dated to the Late Prehistoric, the Middle Archaic, and the Early Archaic periods. Recovered artifacts suggest that occupations at the Shrew Site ranged over a minimum of 5,000 years, however, the commingling of temporally diagnostic artifacts within both zones limits comparisons between zones (Labadie et al. 1988).

Located approximately 1,100 m to the northwest of the Helton San Antonio River Nature Park, 41WN61 was documented in 1972 by Georgeanna Greer of the Texas Archeological Research Laboratory (TARL) as the Calaveras Pottery Kiln site (Texas Historical Commission 2010). The site contained a surface scatter of stoneware sherds, wide-parring tile, and bricks stamped "Calaveras Fire Brick San Antonio, Tx." No subsurface testing was documented (Texas Historical Commission 2010).

Chapter 3: Field and Laboratory Methods

As part of the archaeological services provided to the San Antonio River Authority, and in accordance with the THC guidelines, the CAR was contracted to conduct the following fieldwork: 1) complete an intensive pedestrian survey of 100 percent of the 98 acre property accompanied by shovel testing; 2) augment the survey with mechanically excavated backhoe trenches to investigate any deposits on the Calaveras Creek/San Antonio River 100 year floodplain that could not be effectively explored using shovel testing; 3) document any newly discovered archaeological sites; 4) process and analyze all artifacts recovered during the project; 5) curate artifacts recovered and documentation generated during the project at the CAR facility; 6) make recommendations regarding the NRHP and State Archeological Landmark (SAL) eligibility of newly documented sites; and 7) prepare a technical report summarizing the results of the investigations. This chapter presents the field and laboratory methods used during the archaeological investigations of the Helton San Antonio River Nature Park project designed to achieve these goals.

Field Methods

The project area consists of approximately 98 acres (41.7 ha) of largely undeveloped property. The property contains a wood pier and beam house of approximately 104 m², a couple of wood storage sheds of approximately 139 m² and 102 m², a modern construction trailer, and the ruins of a brick structure roughly 60 m². The area includes active channel, floodplain, and terraces adjacent to the San Antonio River and Calaveras Creek. A preliminary assessment of the project area indicated that roughly 48 percent (47 acres) of the property is located on high ground (terraces) overlooking the San Antonio River and Calaveras Creek drainage. These terraces are outside of the 100-year floodplain of the San Antonio River. Such settings are more likely to contain surface-exposed or only shallowly buried cultural deposits due to their higher elevation and lower frequency of flooding. It is likely that archaeological sites found in these upland terraces will be identified during surface inspection and shovel testing. The remaining 52% (51 acres) of the property is found in low-lying floodplain settings and within the 100-year floodplain prone to rapid and substantial burial of cultural deposits. Such settings are more likely to contain deeply buried cultural deposits due to their lower elevation and higher frequency of repeated flooding. Therefore, it is likely that archaeological sites found in these low-lying settings will be identified only through backhoe trenching rather than shovel testing. A combination of methods was used during the survey including pedestrian surface reconnaissance, shovel testing, backhoe trenching, and hand augering.

Pedestrian Survey and Shovel Testing

The archaeological investigation of the project area consisted of an intensive pedestrian survey accompanied by shovel testing. Forty-nine shovel tests were distributed across the upland terraces exceeding the THC minimum survey standards for non-linear properties of 11 to 100 acres (1 shovel test per 2 acres). UTM coordinates for these 49 locations were determined and uploaded into Trimble Geo XT GPS units prior to the CAR's initiation of fieldwork. Shovel tests were located in the field using the GPS map feature. No shovel tests were excavated in areas exceeding 20 percent slopes due to the likely secondary depositional context of such materials. If a predetermined location fell on a slope, the project archaeologist determined a new location for the shovel test. The location of every shovel test was recorded with Trimble Geo XT GPS units.

Shovel tests were 30 cm in diameter and when possible extended to a depth of 60 cm below surface (cmbs). They were excavated in 10 cm increments and all soil from each level was screened through ¼-inch hardware cloth. All encountered artifacts were recovered with appropriate provenience for laboratory processing, analysis, and curation. A shovel test form was completed for every excavated shovel test. Data collected from each shovel test included the final excavation depth, a tally of all materials recovered from each 10 cm level, and a brief soil description (texture, consistency, and inclusions). Any additional observations considered pertinent were included as comments on the standard shovel test excavation form.

The archaeological survey of the project area revealed two isolated positive shovel tests (STs 32 and 35), two surface scatters of lithic artifacts on the eastern terrace, and two concentrations of buried artifacts, one each on the eastern and western terraces. Fifty-one additional shovel tests were excavated to determine the depth of the artifacts and to delineate the boundary of the cultural material concentrations on the eastern and western terraces, sixteen on the western and thirty-five on the eastern terrace. Three hand auger tests were excavated to gather additional data on soils from the eastern terrace near the artifact concentration. The additional shovel tests resulted in the documentation of two archaeological sites, 41WN120 and 41WN121. The sites will be discussed in Chapter 4. Overall, the pedestrian survey of the project area resulted in the hand excavation of 100 shovel tests and 3 auger tests (Figure 3-1).

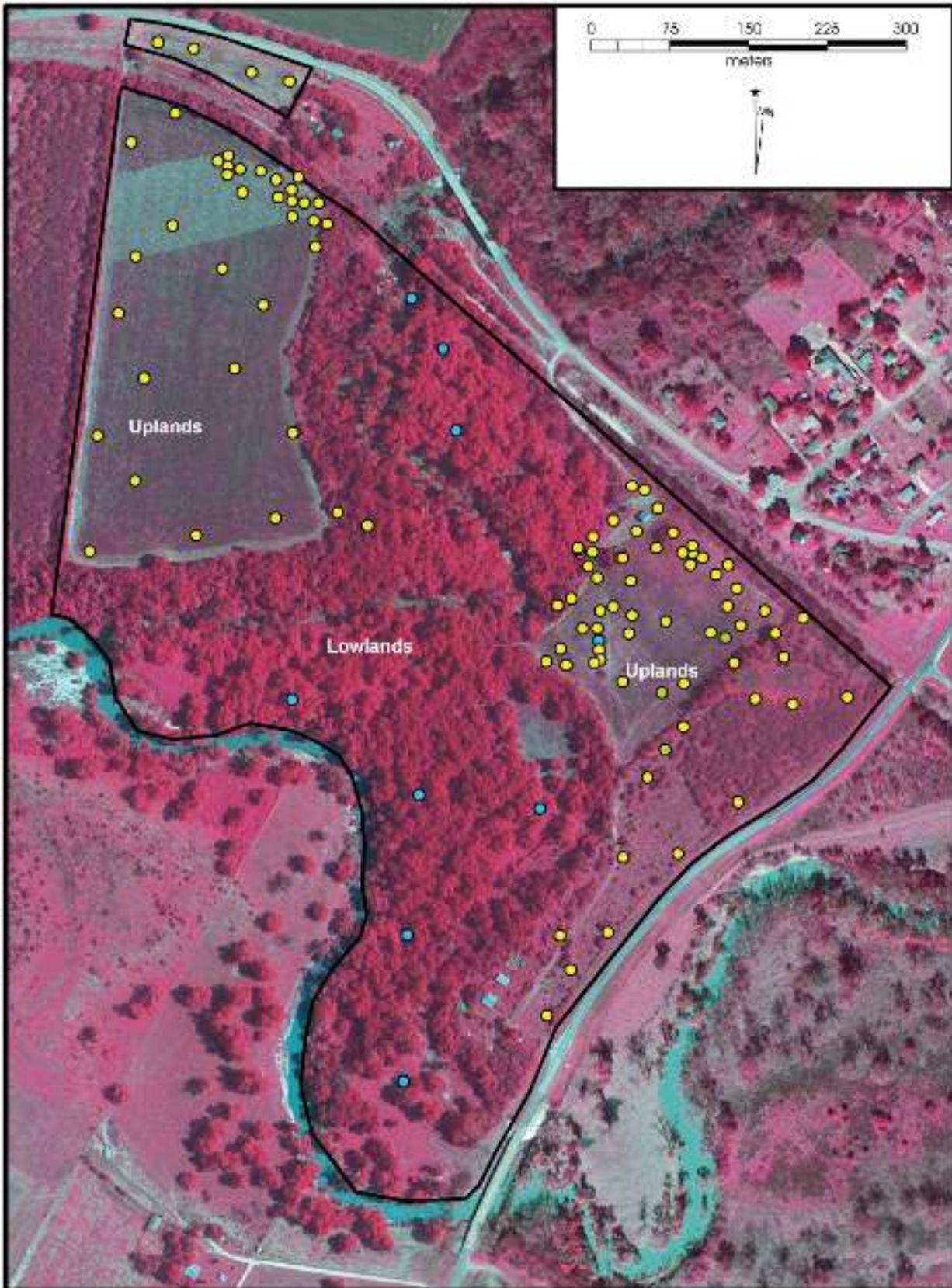


Figure 3-1. The location of shovel tests (yellow), auger tests (green), and backhoe trenches (blue) on the project area.

In addition to the shovel testing, the survey consisted of a 100 percent pedestrian intensive survey of the 98 acres of the property area. The CAR field crew traversed the project area along north-south transects, spaced 30 meters apart, using aerial photographs and hand-held compasses. Surface features and artifacts were noted and recorded with Trimble Geo XT GPS units. No surface artifacts or features were noted on the floodplain. A wood pier and beam house and the ruin of a historical brick structure were recorded on the eastern terrace. Surface artifacts were documented on the eastern and western terraces. All were associated with 41WN120 and 41WN121 and will be discussed in Chapter 4.

Backhoe Trenching

Because of the high potential for deeply buried intact paleosols and cultural material in terraces adjacent to waterways, the archaeological investigation was accompanied by the mechanical excavation of eight backhoe trenches on the flood plain near Calaveras Creek and the San Antonio River and one on the eastern terrace (see Figure 3-1). The backhoe trenches were excavated to expose stratigraphic profiles and potential features. To comply with the Minimum Survey Standards as defined by the THC, the backhoe trenches were approximately one meter wide, three to five meters in length and did not exceed 1.5 meters deep. After the excavation of each backhoe trench, the project archaeologist entered the trench to examine the stratigraphy and artifact density associated with the trench walls. The backhoe trenches were excavated in full compliance with Occupational Safety and Health Administration (OSHA) standards for protection of employees in excavations (29CFR1926.652). No matrix removed via mechanical means was screened, but sediments were inspected for artifacts upon excavation.

Site Recording and Identification

For the purposes of this survey, newly encountered archaeological sites were defined as locations containing a certain number of cultural materials or features that are at least 50 years old within a given area. The definition of a

site used for this project was as follows: (1) Five or more surface artifacts within a 15 meter radius (ca. 706.9 m²), or (2) a single cultural feature, such as a hearth, observed on surface or exposed in shovel testing or backhoe trenching, or (3) a positive shovel test or backhoe trench containing at least three artifacts, or (4) two positive shovel tests or backhoe trenches located within 30 meters of each other.

If cultural materials meeting the minimum criteria for an archaeological site were encountered in a shovel test or on the surface, a minimum of six shovel tests were excavated at close intervals to define the extent of the distribution. The site boundaries were then plotted on aerial photographs and a topographic quadrangle map and location data was collected with a GPS unit. The location of any cultural features, surface artifact densities, and any temporally diagnostic artifacts were plotted with the GPS. Digital photographs were taken of each site and Texas Site Forms were prepared for all new sites. Diagnostic artifacts documented on the surface or uncovered in shovel tests or in backhoe trenches were collected.

Archaeological Laboratory Methods

Cultural materials and records obtained and/or generated during the project were prepared in accordance with federal regulation 36 CFR part 79, and THC requirements for State Held-in-Trust collections. Additionally, the materials were curated in accordance with current guidelines of TARK. Digital photographs were printed on acid-free paper and labeled with archivally appropriate materials and placed in archival-quality sleeves. All field forms were completed with pencil. Field notes, forms, photographs, and drawings were printed on acid-free paper and placed in archival folders. A copy of this survey report and all computer disks pertaining to the investigations were stored in an archival box and curated with the field notes and documents. Following laboratory processing and analysis, and in consultation with both the SARA and the THC, all sediment samples and burned rock were discarded. This discard was in conformance with THC guidelines. Upon completion of the project, all remaining materials and records will be permanently curated at the CAR facility.

Chapter 4: Survey Results

This chapter discusses the results of the pedestrian survey of the Helton San Antonio River Nature Park project area. The fieldwork consisted of an intensive pedestrian survey accompanied by shovel testing (n=100) of the 98 acre project area, a 100 percent pedestrian intensive survey, mechanically excavated backhoe trenches to investigate any deposits that could not be effectively explored using shovel testing (n=9), and hand-auger testing (n=3). Fieldwork was initiated and completed in August 2010.

The pedestrian survey, shovel testing, auger testing, and backhoe trenching of the project area revealed two historic structures, two scatters of surface artifacts, and two areas with subsurface historic and prehistoric cultural material. The structures, scatters, and one of the areas of buried material was documented and designated as archaeological site 41WN120 and the second area of buried material as site 41WN121. Isolated finds, consisting of one piece of burned rock, one clear glass fragment, and one stoneware fragment, were noted on the project area. The isolated finds were recovered from STs 32 and 35 in Levels 1 and 3, respectively (Figure 4-1).

Pedestrian Intensive Survey and Shovel Tests

One-hundred shovel tests were excavated during the survey of the Helton San Antonio River Nature Park project (Table 4-1). Ninety-three of these shovel tests (93%) were excavated to 60 cmbs. The remaining seven shovel tests were terminated at depths ranging from 30 to 50 cmbs due to extremely hard, compact soils. Thirty-four of the 100 shovel tests were positive. Cultural material consisting of debitage (n=60), one biface fragment, burned rock (n=64), glass fragments (n=27), ceramic sherds (n=14), tile (n=2), nails (1 cut and 11 wire), metal, brick, mussel shell, and faunal bone were recovered from shovel tests. Two shovel tests, STs 77 and 80, contained burned material in Levels 5 (40-50 cmbs) and 4 (30-40 cmbs), respectively (Table 4-2). Cultural material was encountered from 0-60 cmbs. Of the 34 positive tests, 32 were documented in conjunction with shovel testing of two archaeological sites recorded during pedestrian intensive survey of the project area. These sites are discussed subsequently. Two of the positive tests, STs 32 and 35, were recorded as isolated finds.

Table 4-1. Results and Termination Depths of Shovel Tests on the Helton San Antonio River Nature Park Project Area

Shovel Test	Termination Level	Depth (cmbs)	Reason for Termination	Results	Shovel Test	Termination Level	Depth (cmbs)	Reason for Termination	Results
1	6	60	Complete	Negative	26	6	60	Complete	Positive
2	6	60	Complete	Positive	27	6	60	Complete	Positive
3	6	60	Complete	Positive	28	5	50	Compact	Negative
4	6	60	Complete	Negative	29	6	60	Complete	Positive
5	6	60	Complete	Positive	30	3	30	Compact	Negative
6	6	60	Complete	Negative	31	6	60	Complete	Negative
7	6	60	Complete	Negative	32	6	60	Complete	Positive
8	6	60	Complete	Negative	33	6	60	Complete	Negative
9	6	60	Complete	Negative	34	6	60	Complete	Negative
10	6	60	Complete	Negative	35	6	60	Complete	Positive
11	6	60	Complete	Negative	36	6	60	Complete	Positive
12	6	60	Complete	Negative	37	6	60	Complete	Positive
13	6	60	Complete	Negative	38	6	60	Complete	Negative
14	6	60	Complete	Negative	39	6	60	Complete	Negative
15	6	60	Complete	Positive	40	6	60	Complete	Negative
16	6	60	Complete	Positive	41	6	60	Complete	Negative
17	6	60	Complete	Negative	42	6	60	Complete	Negative
18	6	60	Complete	Negative	43	6	60	Complete	Negative
19	6	60	Complete	Negative	44	6	60	Complete	Negative
20	6	60	Complete	Negative	45	6	60	Complete	Negative
21	6	60	Complete	Negative	46	6	60	Complete	Negative
22	6	60	Complete	Negative	47	6	60	Complete	Negative
23	6	60	Complete	Negative	48	6	60	Complete	Negative
24	6	60	Complete	Negative	49	6	60	Complete	Negative
25	6	60	Complete	Negative	50	6	60	Complete	Negative

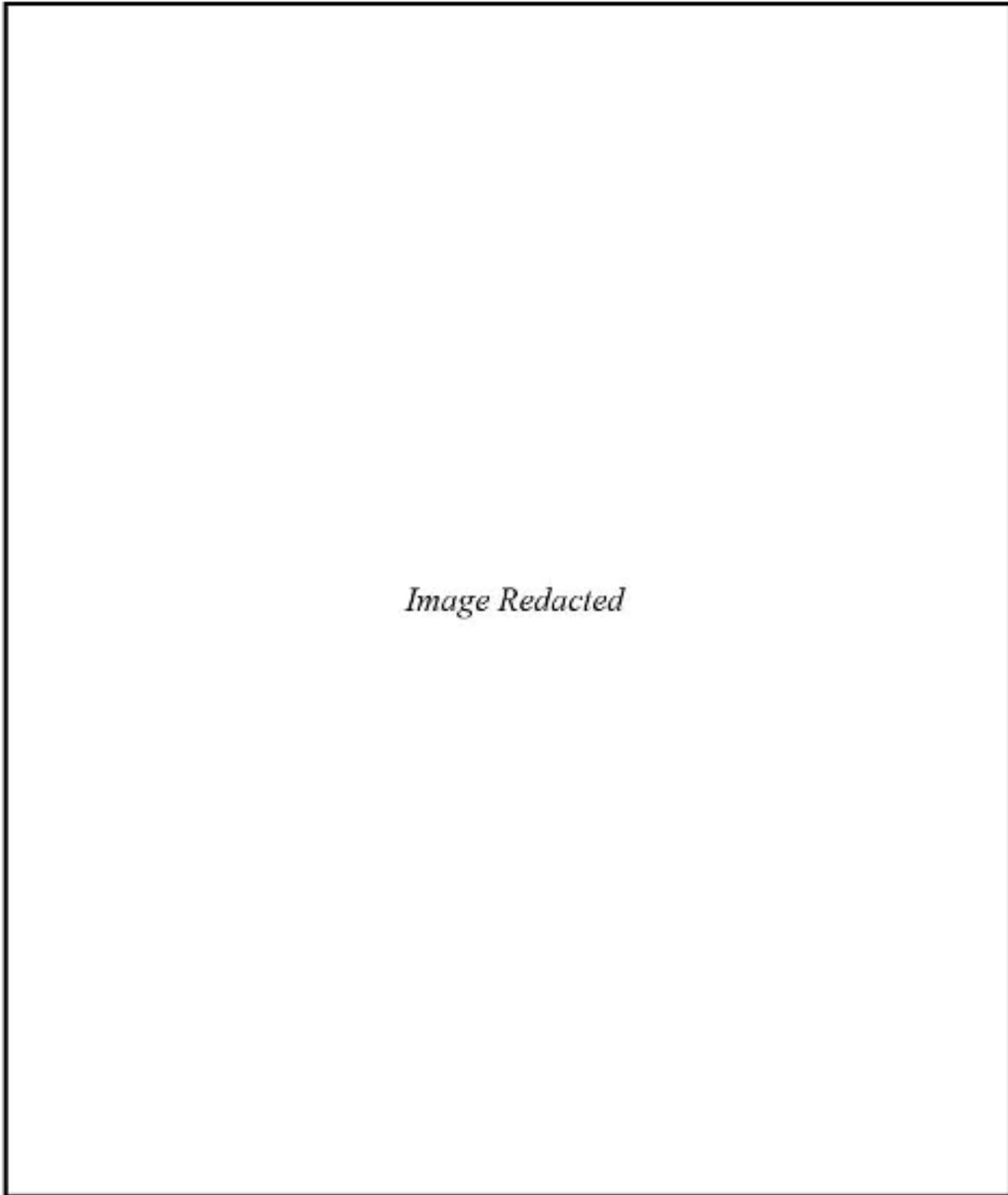


Figure 4-1. Map of the Helton San Antonio River Nature Park project area showing 41WN120, 41WN121, and isolated finds.

Table 4-1. Continued...

Shovel Test	Termination Level	Depth (cmbs)	Reason for Termination	Results	Shovel Test	Termination Level	Depth (cmbs)	Reason for Termination	Results
51	6	60	Complete	Negative	76	6	60	Complete	Positive
52	6	60	Complete	Negative	77	6	60	Complete	Positive
53	6	60	Complete	Negative	78	6	60	Complete	Negative
54	6	60	Complete	Negative	79	6	60	Complete	Negative
55	6	60	Complete	Positive	80	6	60	Complete	Positive
56	6	60	Complete	Negative	81	6	60	Complete	Negative
57	6	60	Complete	Positive	82	4	40	Compact	Positive
58	6	60	Complete	Negative	83	6	60	Complete	Negative
59	6	60	Complete	Negative	84	5	46	Compact	Positive
60	6	60	Complete	Negative	85	6	60	Complete	Positive
61	6	60	Complete	Negative	86	6	60	Complete	Positive
62	6	60	Complete	Negative	87	6	60	Complete	Negative
63	6	60	Complete	Negative	88	6	60	Complete	Positive
64	6	60	Complete	Positive	89	6	60	Complete	Negative
65	6	60	Complete	Positive	90	6	60	Complete	Negative
66	6	60	Complete	Positive	91	6	60	Complete	Negative
67	6	60	Complete	Positive	92	6	60	Complete	Positive
68	6	60	Complete	Positive	93	5	50	Compact	Negative
69	6	60	Complete	Positive	94	6	60	Complete	Positive
70	6	60	Complete	Positive	95	6	60	Complete	Positive
71	6	60	Complete	Positive	96	6	60	Complete	Negative
72	6	60	Complete	Negative	97	6	60	Complete	Negative
73	6	60	Complete	Positive	98	6	60	Complete	Negative
74	5	46	Compact	Negative	99	6	60	Complete	Negative
75	5	50	Compact	Negative	100	6	60	Complete	Negative

Table 4-2. Helton San Antonio River Nature Park Shovel Test Results

Shovel Test	Level	presence					count									Totals
		Metal	Burned plant/ bone	Brick	Mussel Shell	Bone	Burned Rock	Debitage	Tool	Glass	Cut nail	Wire nail	Ceramic	Tile		
2	2						1									1
3	2							2								2
5	2						1									1
15	1						2	1								3
15	2						6	3								9
15	3				x		4	1								5
15	4				x			1								1
15	5				x		1	1								2
15	6				x		3	3								6
16	1						1									1
16	2						2									2
26	2						1									1
26	3						1									1
27	1							1								1
27	3				x		10	5								15
27	4				x	x	2	3	1							6
27	6						2	4								6
29	3						1									1
29	4							1								1
32	3						1									1
34	1										1					1
34	2												1			1
34	3										1					1

Table 4-2. Continued...

Shovel Test	Level	presence					count							Totals	
		Metal	Burned plant/ bone	Brick	Mussel Shell	Bone	Burned Rock	Debitage	Tool	Glass	Cut nail	Wire nail	Ceramic		Tile
35	1									1			1		2
36	2												1		1
37	2												2		2
37	3								2						2
55	1			x									1		1
55	2				x				1				1		2
57	3												1		1
64	1			x											0
64	2			x					2				1		3
64	3			x					1						1
64	4			x									2		2
64	5			x											0
64	6			x					1						1
65	1								5		3			1	9
65	2									1					1
65	3								1						1
66	1	x										1			1
66	2	x		x		x						4			4
66	3			x		x									0
66	4	x									1			1	2
67	2								2						2
67	6				x										0
68	2					x			2						2
68	3	x													0
69	2								1						1
69	3			x											0
69	4					x									0
69	5								1						1
70	1	x													0
70	2							1							1
70	3				x										0
70	6				x			3							3
71	1												1		1
71	5												1		1
73	3							2							2
76	1					x	2		1						3
76	3								1						1
76	5				x		5	1							6
76	6						1								1
77	2	x					1	3							4
77	3					x	1	4							5
77	4				x	x	2	3							5
77	5		x		x	x	2	5							7
77	6				x		4	5							9
80	4		x				1								1
82	2							2							2
82	3							1							1
84	4							1							1
85	3										1				1
86	2								2						2
86	3	x							1						1
86	4					x									0
88	2										1	1			2

Table 4-2. Continued...

Shovel Test	Level	presence					count								Totals		
		Metal	Burned plant/ bone	Brick	Mussel Shell	Bone	Burned Rock	Debitage	Tool	Glass	Cut nail	Wire nail	Ceramic	Tile			
92	4						1										1
92	5						1										1
94	1							1									1
94	2						1										1
94	3							1									1
94	5							1									1
94	6						2										2
95	4						1										1
Totals							64	60	1	27	1	11	14	2			180

The soil color and depth from the shovel tests corresponded for the most part to the terrain on the project area. Soils on the T2 terrace on the western side of the property, Buchel clay (Soil Survey Staff 2010), tended to be a dark gray (7.5YR4/1), gray (7.5YR5/1), or brown (7.5YR4/2, 7.5YR5.2) silty, sandy clay free of inclusions. The terrace on the eastern side of the property consisted of grayish brown, silty, sandy clay soils, free of inclusions. Three hand auger tests were excavated to 120 cmbs on this terrace (see Figure 3-1). Two were placed on the plowed field, one on the northeastern (AU 1) and other on the southeastern portion (AU 2), and the third (AU 3) off the plowed field roughly 50 m south of AU 2. This Colibro sandy clay loam (Soil Survey Staff 2010) ranged from gray (0-30 cmbs; 10YR5/1) to dark gray (30-70 cmbs; 10YR4/1) to very dark gray (70-120 cmbs; 10YR3/1) in AU 1, from gray (0-30 cmbs; 10YR5/1) to grayish brown (30-120 cmbs; 10YR5/2) in AU 2, and from grayish brown (0-30 cmbs; 10YR5/2) to brown (30-120 cmbs; 10YR5/3) in AU 3. The final soil type on the project area, Loire and Divot, is located on the San Antonio River, Calaveras Creek floodplains. Soils from this portion of the project area, tested with backhoe trenches, are discussed in the following section.

An historic house belonging to the Cantu family and recorded on an 1845 map of Wilson County, (see Figure 2-12) was plotted within the curve of Calaveras Creek on the project area. The CAR crew found no evidence of this structure but did note a large trash scatter in the area (Figure 4-3). The scatter appeared to contain modern debris. In addition to the structure, the 1845 map (see Figure 2-12) indicates that the Calaveras Creek crossing on the La Bahia Road traverses the project area. No evidence of this crossing was noted during the pedestrian reconnaissance. Historic accounts of the crossing mention concentrations of trees containing Spanish moss in the vicinity of the crossing (Berlandier 1980). An area meeting this description was documented in the bend of Calaveras Creek near the expected location of the crossing (Figure 4-4).

In addition to the shovel testing and trenching, the survey consisted of a 100 percent pedestrian reconnaissance of the 98 acre project area. The CAR field crew traversed the project area along transects evenly spaced at 30 meters. During the reconnaissance, two lithic scatters, a biface, and a graduated glass bottle were documented on the surface (Figure 4-2). Both scatters and the biface were located in the area of positive shovel tests designated as 41WN120. The glass bottle was on the surface within 41WN121. The archaeological sites are discussed later in this chapter.



Figure 4-2. Lithic scatter located on the surface of 41WN120.



Figure 4-3. Large trash scatter in the bend of Calaveras Creek.



Figure 4-4. Trees containing Spanish moss in the area of the historic La Bahia Road crossing of Calaveras Creek.

Backhoe Trenching

To address the high potential for deeply buried intact paleosols and cultural material in the terraces adjacent to the San Antonio River and Calaveras Creek, eight backhoe trenches were mechanically excavated on the floodplains near the waterways (Figure 4-5).

Five backhoe trenches (BHT) were excavated between the San Antonio River and Calaveras Creek on the southern portion of Helton San Antonio River Nature Park. Backhoe Trench 1 consisted of a brown sandy, silty sediment (7.5YR5/2) from 0 to approximately 55 cmbs. A dark gray sandy, silty deposit containing some clay (7.5YR4/1) was evident from 55 cmbs to roughly 115 cmbs overlying a brown sandy sediment (7.5YR4/2) to the base of the trench (150 cmbs). Backhoe Trench 2 was similar to BHT 1 with dark gray sandy silt (7.5YR4/1) from the surface to 80 cmbs and brown sandy material (7.5YR4/2) from 80 to 137 cmbs. Backhoe Trench 3 was almost identical to BHT 1 with a brown sandy, silty deposit (7.5YR5/2) in the top 40 cm, a dark gray sandy, silty sediment with some clay (7.5YR4/1) to roughly 100 cmbs, followed by a brown sandy, silt to the termination of the trench (150 cmbs). Unlike BHT 1, BHT 3 contained some clay in the lower deposits. Backhoe Trench 4 consisted of brown sandy, silty sediment (7.5YR5/2) from 0 to roughly 65 cmbs (Figure 4-6). A dark gray sandy, silt with some clay was evident from 65 cmbs to the base of the trench (148 cmbs). Brown sandy silt (7.5YR5/2) was evident from the surface to approximately 70 cmbs and again from 130 cmbs to the base of the trench (150 cmbs) in BHT 5. A brown silty deposit (7.5YR4/2) was documented in between these layers from 70 to 130 cmbs. No features or artifacts were identified in the walls of BHTs 1 to 5. The walls in the trenches were devoid of any inclusions. No cultural material was observed in the backdirt associated with the trenches.

Three backhoe trenches were excavated on the northern portion of the project area immediately northeast of Calaveras Creek (see Figure 4-5). Backhoe Trench 7 consisted of a brown silty clay sediment (7.5YR4/2) from the surface to roughly 30 cmbs. A very dark gray silty clay deposit (7.5YR3/1) was evident from 30 cmbs to approximately 100 cmbs. This dark gray layer was crosscut with a thin (4 cm) brown, very fine sandy sediment (7.5YR5/3; Figure 4-7). Below the dark gray deposit at roughly 100 cmbs, this very fine sandy sediment picks back up to roughly 115 cmbs. A brown clay layer (7.5YR4/2) followed to the termination of the trench (125 cmbs). Backhoe Trench 8 contained a brown clay (7.5YR4/2) from 0 to approximately 35 cmbs on top of a brown sandy, silty, clay mixture (7.5YR4/2) ending at 60 cmbs. A brown, very loose, very fine sand (7.5YR5/3) was evident from 60 to approximately 100 cmbs overlying a brown sandy clay deposit (7.5YR5/3) to roughly 140 cmbs. The trench

terminated with loose, very fine brown sand (7.5YR4/2) at 145 cmbs. Backhoe Trench 9 was excavated approximately 20 m east of Calaveras Creek (see Figure 4-5). Because water began to seep into the trench, eventually covering the lower 40 cm of the trench floor, the trench was not entered (Figure 4-8). An inspection of the walls from the surface suggests that the sediments consisted of a brown silty clay (7.5YR5/2). This silty clay was crosscut at approximately 47 cmbs by a 5 cm wide ribbon of reddish yellow clay (7YR6/6). The walls of BHTs 7, 8 and 9 were devoid of any inclusions. No features or artifacts were identified in the walls nor was cultural material observed in the backdirt associated with the trenches.

An additional backhoe trench (BHT 6) was excavated on the northeastern terrace of the project area on the plowed field (see Figure 4-5). This trench was placed within the boundaries of site 41WN120 to further document the stratigraphy of the terrace, to attempt to determine the plow zone, and to delineate the depth of cultural deposits. Backhoe Trench 6 is discussed in detail in the following section.

Archaeological Sites 41WN120 and 41WN121

In the process of conducting the Helton San Antonio River Nature Park survey, two new archaeological sites, 41WN120 and 41WN121, were identified. Site 41WN120 is a large multicomponent site consisting of low density surface scatters of lithic material and historic building debris (see Figure 4-2); buried prehistoric and historic cultural material (from 0-60 cmbs in shovel tests, up to 130 cmbs in backhoe trench, and from 0 to 80 cmbs in a cutbank); a wood pier and beam house; and the brick ruins of an historic structure. The site is located on and directly adjacent to a previously plowed field on the northeastern quadrant of the project area. Based on the results of shovel testing, the site covers 18,972 m². There is no surface visibility on the field due to heavy vegetation coverage. The surface scatters were evident on a road skirting the plowed field. The portion of 41WN120 off the field runs to the edge of a bluff overlooking the Calaveras Creek floodplain.

Forty-five shovel tests were excavated on 41WN120, 10 as part of the project area survey and 35 to determine the depth of the site and to delineate the site's boundary. Of the 45 tests, 25 were positive (Figure 4-9). Shovel test artifacts were recovered from all levels (0-60 cmbs) and consisted of debitage (n=60), tools (n=1), burned rock (n=63), burned bone and plant material (ST 77, Level 5 and ST 80, Level 4), mussel shell (present in 13 shovel tests), faunal bone (present in 9 shovel tests), historic building debris (present in 13 shovel tests), metal (n=6), historic ceramics (n=6), and glass (n=14). Three specimens of burned rock were recovered from

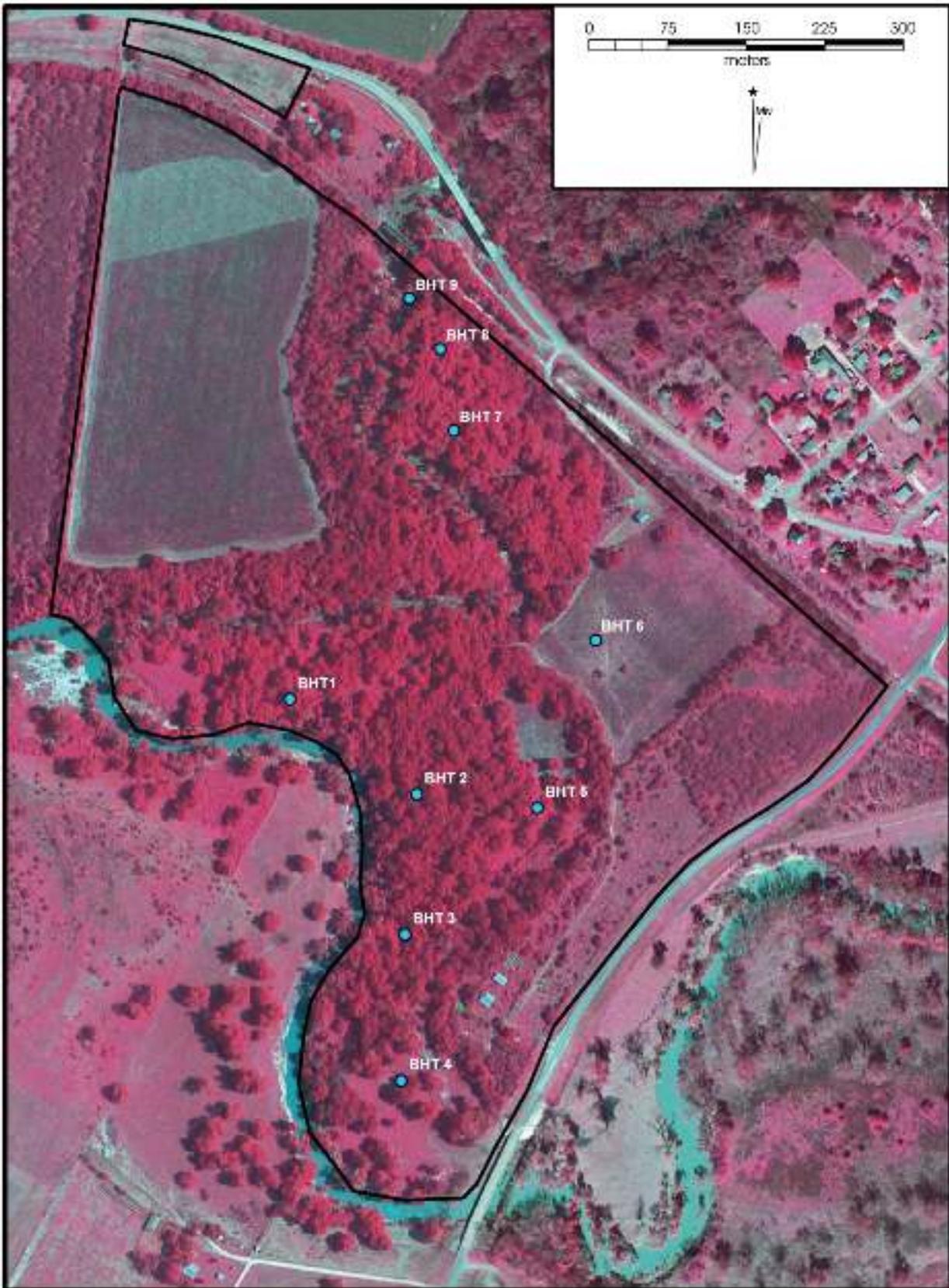


Figure 4-5. Aerial map of the project area noting backhoe trench locations.



Figure 4-6. Backhoe Trench 4 located approximately 130 m north of the San Antonio River.

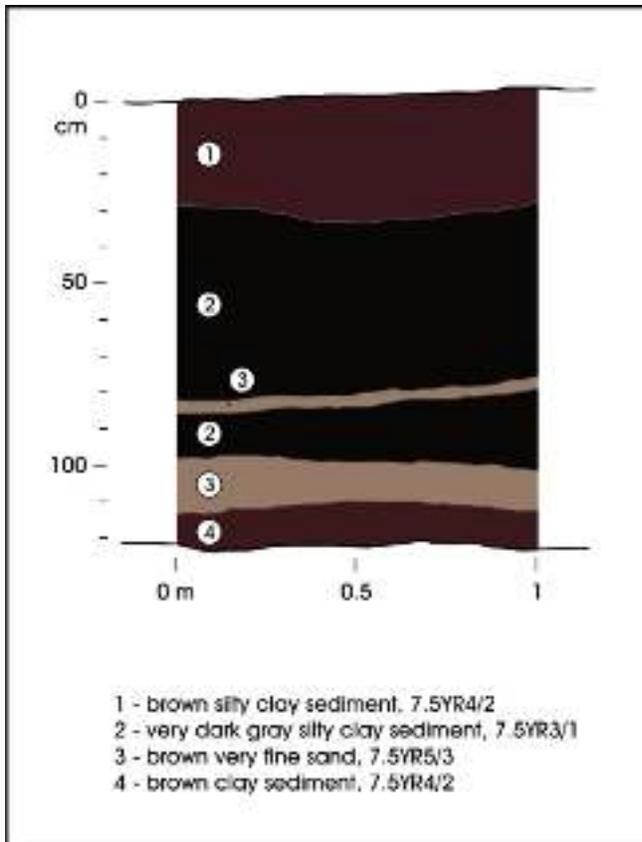


Figure 4-7. Southwest wall profile sketch of Backhoe Trench 7.



Figure 4-8. High water table in Backhoe Trench 9.

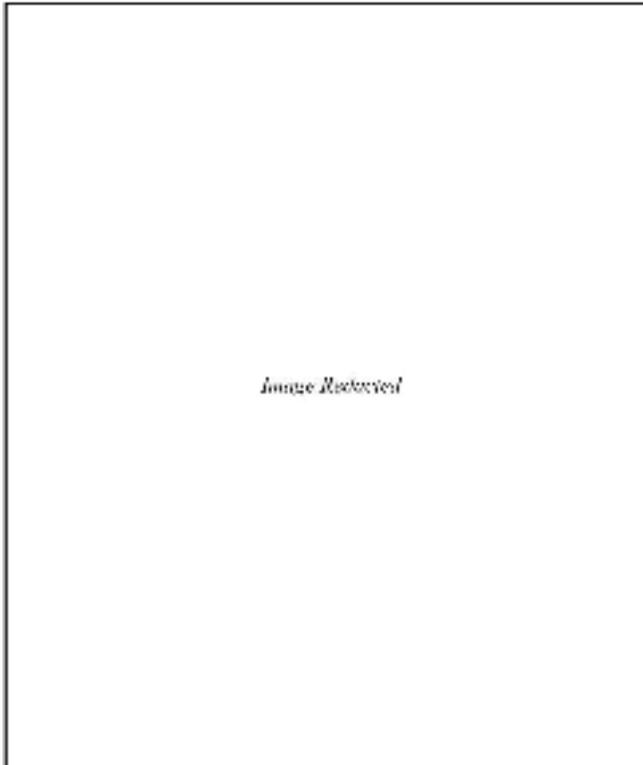


Figure 4-9. Aerial map of 41WN120 showing the property boundary (black), positive shovel tests (green), and negative shovel tests (yellow).

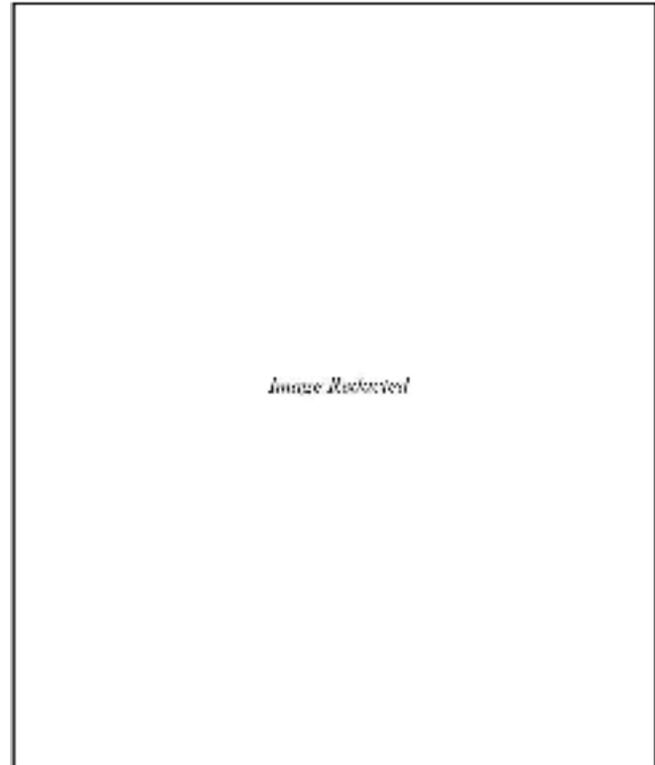


Figure 4-10. Aerial map of 41WN120 showing the area on the site with the deepest occurrence of artifacts (40-60 cmbs).

the same level as the burned material suggesting the possibility of a subsurface hearth feature(s).

Six shovel tests (STs 15, 27, 67, 70, 76, and 77) had the deepest occurrence of artifacts (40-60 cmbs) and were located in the same area of the site. Three of these, STs 67, 70, and 77 were excavated off of the plowed field adjacent to the edge of the bluff overlooking the Calaveras Creek floodplain (Figure 4-10). One specimen of bone, mussel shell, 18 pieces of burned rock, and 22 specimens of debitage were recovered from Levels 5 and 6 (40-60 cmbs) of these 6 tests. Artifacts were evident in the cutbank of the bluff adjacent to ST 70 from 0 to 80 cmbs (Figure 4-11).



Figure 4-11. Biface eroding out of the bluff near ST 70.

To further define the depth of cultural material and to attempt to define the plow

zone, one backhoe trench (BHT 6) was excavated within the site near the deep artifact concentration (see Figure 4-10). No artifacts were noted in the trench profile but mussel shell was documented in the backdirt. Because the plow zone was not evident in the trench profile, soil samples (n=24) were collected every 5cm from the trench to determine soil magnetic susceptibility readings (Figure 4-12). For comparison, three auger tests off of 41WN120, two in the plowed field and one off the edge of the field were excavated to 120 cmbs. Soil samples were collected from each 10 cm level.

In archaeological research, magnetic soil susceptibility has primarily been used to help identify buried soils that may be associated with occupation (e.g., Takac and Gose 1998) and as an aid in identifying sediment (Bellomo 1983; Dalan and Banerjee 1998) or rock associated with hearths (Mauldin and Figueroa 2006). The magnetic susceptibility of a given sample can be thought of as a measure of how easily that sample can be magnetized (Dearing 1999). While the measure of susceptibility is initially dependent on the mineralogy of a particular sample, that is the concentration and grain size of ferro- and ferrimagnetic minerals, a number of processes can result in an increase in MSS values in a sediment sample. These processes include an increase in the organic constituents and changes in the mineralogy of sediments in a given sample (see Collins et al. 1994; McClean and Kean 1993; Singer and Fine 1989). Sediments with higher organic content tend to have higher magnetic susceptibility values, probably as a result of the production of maghemite, an iron oxide, during organic decay (Reynolds and King 1995). Pedogenic processes, such as soil formation and weathering, can result in the concentration of organic material, as well as alterations in the mineralogy of a given zone. These processes can significantly increase susceptibility readings. Cultural processes, such as the concentration of ash, charcoal, and organic refuse, would also produce higher MSS readings (see Mauldin 2003).

In the current study, CAR personnel collected 24 samples for magnetic susceptibility analysis from BHT 6 within site 41WN120 and 12 samples each from AUs 1, 2, and 3 outside of 41WN120. Samples from BHT 6 were obtained from the surface down to 125 cmbs at 5 cm intervals. Auger samples were extracted from the surface to 120 cmbs at 10 cm intervals. Collected in plastic vials and bags, the samples



Figure 4-12. Collection of sediment samples from BHT 6 for magnetic susceptibility testing.

were transported to the CAR laboratory where they were air dried and then crushed using a ceramic mortar and pestle. The sediment was then screened through a 2 mm plastic sieve, with material passing the sieve packed into plastic pots (10 cm³). The mass of the sample was determined by subtracting the weight of the pots. Low frequency volume susceptibility (κ , κ) was measured on a Bartington MS2 meter with an MS2b sensor, and the mass corrected magnetic susceptibility (χ , χ) values were calculated using the sample mass (see Dearing 1999). The values obtained from BHT 6 and AUs 1, 2, and 3 are reported in Table 4-3 in SI units (10⁻⁶m³kg⁻¹).

Figure 4-13 plots the MSS values relative to depth. Note that while there were minor variations in the color of the sediment, no evidence of a buried soil was seen either in the field or in the laboratory review of the samples. The plot, however, shows three peaks that may be associated with surfaces. High values in the initial two samples are the result of charcoal and ash, clearly visible in the samples. These are associated with a modern surface burn of brush located to the northeast of Trench 6. A second peak is present in samples at 42.5 and 47.5 cmbs. Given the depth, this peak may be associated with the bottom of the plow zone, though it may also represent a buried surface with either historic or prehistoric associations. A third and slightly smaller peak in MSS values is present at 62.5 cmbs. This may also reflect a buried surface. No artifacts or other evidence of associated prehistoric activity was seen in the trench at this depth, and this depth is below the bottom of the shovel tests. The lack of peaks in AUs 1

Table 4-3. MSS Values of Sediments from BHT 6 on 41WN120 and from Auger Tests off the Site

Location	Mid-point depth	Sample wt.	K Reading	MSS Value	Location	Mid-point depth	Sample wt.	K Reading	MSS Value
BHT 6	2.5	7.2	123.2	1.711	AU 1	65	10.8	29.6	0.274
BHT 6	7.5	7.5	100	1.333	AU 1	75	10.7	28.6	0.267
BHT 6	12.5	12.6	66.9	0.531	AU 1	85	10.5	26.6	0.253
BHT 6	17.5	11.5	56.4	0.490	AU 1	95	10.3	21.5	0.209
BHT 6	22.5	11	54.9	0.499	AU 1	105	9.8	18.3	0.187
BHT 6	27.5	10.5	61.4	0.585	AU 1	115	9.2	15.4	0.167
BHT 6	32.5	10.8	96.8	0.896	AU 2	5	10.1	17.6	0.174
BHT 6	37.5	8.4	81.9	0.975	AU 2	15	10.6	18.8	0.177
BHT 6	42.5	9.8	102.4	1.045	AU 2	25	10.6	16.8	0.158
BHT 6	47.5	10.2	106.4	1.043	AU 2	35	10.1	11.5	0.114
BHT 6	52.5	11.2	88.9	0.794	AU 2	45	10.8	9.3	0.086
BHT 6	57.5	10.5	92.7	0.883	AU 2	55	9.6	8.5	0.089
BHT 6	62.5	8.2	76.4	0.932	AU 2	65	10.4	9.6	0.092
BHT 6	67.5	10.2	81	0.794	AU 2	75	10.2	10.3	0.101
BHT 6	72.5	9.8	70.3	0.717	AU 2	85	10.2	10	0.098
BHT 6	77.5	8.9	59.6	0.670	AU 2	95	11	10.9	0.099
BHT 6	82.5	9.1	64.7	0.711	AU 2	105	10.1	9.4	0.093
BHT 6	87.5	9.7	66.2	0.682	AU 2	115	9.6	9.7	0.101
BHT 6	92.5	9.8	63.1	0.644	AU 3	5	11	16.3	0.148
BHT 6	97.5	10	58.6	0.586	AU 3	15	11.6	16.7	0.144
BHT 6	102.5	9.9	61.4	0.620	AU 3	25	11.2	15.2	0.136
BHT 6	112.5	9.6	58	0.604	AU 3	35	11.7	15	0.128
BHT 6	117.5	9.6	49.6	0.517	AU 3	45	10	17.1	0.171
BHT 6	122.5	9.3	56.8	0.611	AU 3	55	10.9	20.3	0.186
AU 1	5	14.4	19.1	0.133	AU 3	65	9.7	16.7	0.172
AU 1	15	13.4	16.1	0.120	AU 3	75	9.7	16.6	0.171
AU 1	25	13.1	17	0.130	AU 3	85	10.8	19.8	0.183
AU 1	35	13.3	28.3	0.213	AU 3	95	10.6	18.4	0.174
AU 1	45	12.6	30.5	0.242	AU 3	105	11.3	20	0.177
AU 1	55	12.1	32.1	0.265	AU 3	115	10.6	19.2	0.181

and 2 excavated off of 41WN120 but on the plowed field (see Figure 4-13) suggests that the second peak in the samples from BHT 6 is not evidence of the bottom of the plow zone.

In addition to subsurface cultural material 41WN120 contains a low density surface scatter of lithic debitage, tools, burned rock without associated staining or charcoal, and historic building debris. One prehistoric diagnostic artifact, a Refugio dart point (Archaic Period; Turner and Hester 1999), was collected from the surface of the site on the dirt road surrounding the plowed field (Figure 4-14).

Two historic structures, a wood pier and beam house (104 m²) on the northwestern corner of the plowed field and the partial remains of a brick building (approximately 60 m²) located off the plowed field on the edge of the bluff at the western edge of the site, were documented on 41WN120 (Figure 4-15). Additionally, building remains consisting of wood, clear

glass, and brick were located roughly 30 m south of the brick structure (Figures 4-16 and 4-17). The brick, with a maker's mark of "A. P. Green Empire S.M.," was first produced in the town of Mexico, Missouri in 1910 (Moore et al. 2010). The second brick, with a maker's mark of "Laclede King" was originally produced by the Laclede Firebrick Manufacturing Company in St. Louis Missouri in 1869 (Corbett 1904).

The one-story wood frame house has a rectangular porch on its north side and appears to have been constructed in the mid 1900s (Figures 4-18 and 4-19). Sewer pipes leading from the south side of the house indicate a septic tank is buried in the vicinity. No information pertaining to the wood house was uncovered during deed research (see Chapter 2). Albert Gamez, County Commissioner of Wilson County Pct 1, remembers that Giles Hoover, owner of the property from 1946 to 1979, stayed in the house when he visited the Floresville area (Gamez personal communication, September 2010). The house is currently in use as a storage facility for the project area. It is proposed as the future park headquarters.

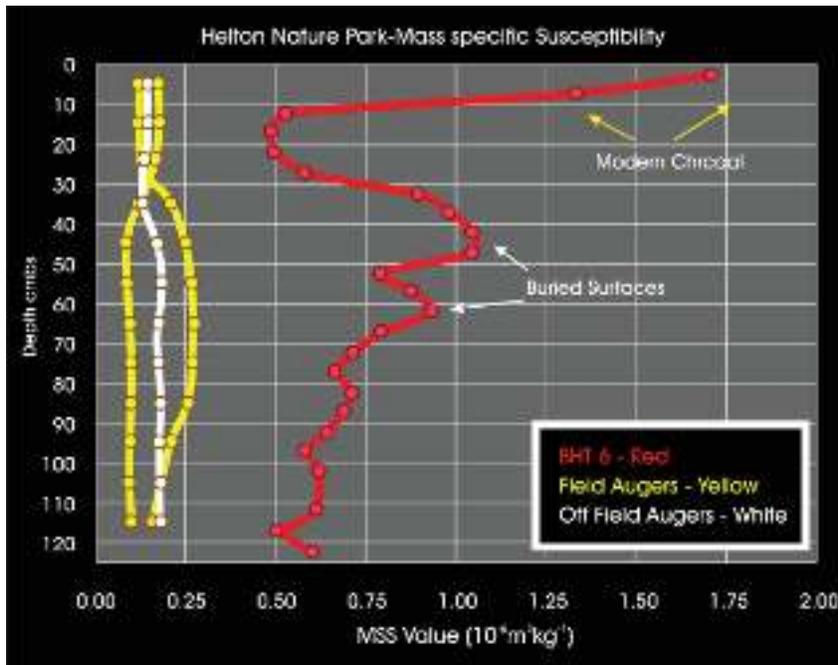


Figure 4-13. A plot of magnetic susceptibility values from sediments in BHT 6 on 41WN120 and from auger tests off the site.

at the outside base of the south wall may have been part of a shed structure once against the brick structure. Sewer pipe is stacked up against the north wall next to the remains of the fireplace (Figure 4-22). Of interest, sewer pipe was constructed in the 1890s by Mackey Brick and Tile of Calaveras, Texas, immediately east of the project area, and by the San Antonio Sewer Pipe and Manufacturing Company (SASPAMCO) located approximately 915 m northwest of the brick structure. The remains of a chicken coop are located at the edge of the bluff next to the structure (Figure 4-23). Plaster remaining on the outside of the south wall is inscribed with graffiti. Two dates, 1913 and 1926, are evident along with multiple names (Figures 4-24).

Six shovel tests, all positive, were excavated within and adjacent to the brick ruin. Artifacts, including metal scrap, one square



Figure 4-14. Dart point located on the road skirting the plowed field on the western side of 41WN120.



Figure 4-15. Aerial map of 41WN120 showing two historic structures, a wood pier and beam house and a brick structure.

The four-sided brick structure, once covered with plaster, consists of the partial remains of three walls, the remains of a fireplace, and a door opening (Figures 4-20 and 4-21). The south wall was constructed with a peak to accommodate a ridged roof. The upper portion of the north wall has fallen. The west wall is mostly complete and contains the opening for a door. The east wall no longer stands. Although no floor remains, evidence of one can be seen along the lower edges of the remaining walls. Small wood posts, located

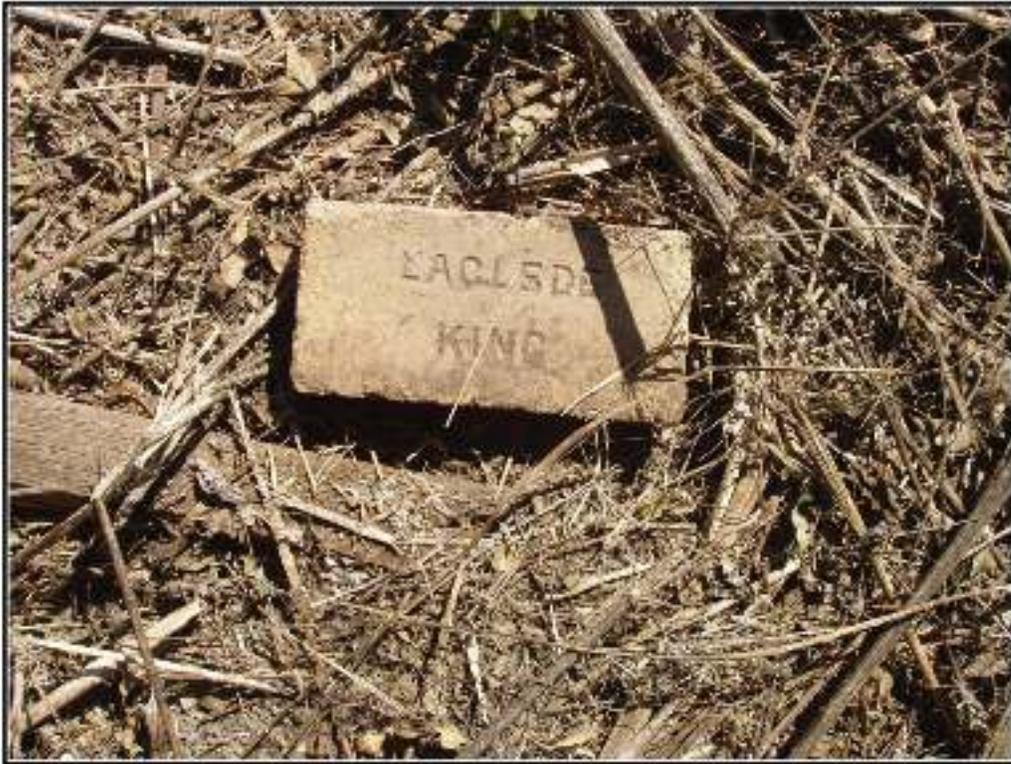


Figure 4-16. Brick with the maker's mark "Laclede King" found roughly 30 m south of the historical brick structure on 41WN120.



Figure 4-17. Brick with the maker's mark "A. P. Green Empire S. M." found roughly 30 m south of the historical brick structure on 41WN120.



Figure 4-18. *Front view of wood pier and beam house on 41WN120.*



Figure 4-19. *Rear view of wood pier and beam house on 41WN120.*



Figure 4-20. Brick structure located adjacent to the bluff on 41WN120.



Figure 4-21. Brick structure located adjacent to the bluff on 41WN120 (note the peaked wall, door opening and chimney brick fall).



Figure 4-22. Chimney fall on brick structure's north wall (note the stacked sewer pipe behind and to the right of the brick fall).



Figure 4-23. The remains of a chicken coop immediately adjacent to the west side of the brick structure on the edge of the bluff.

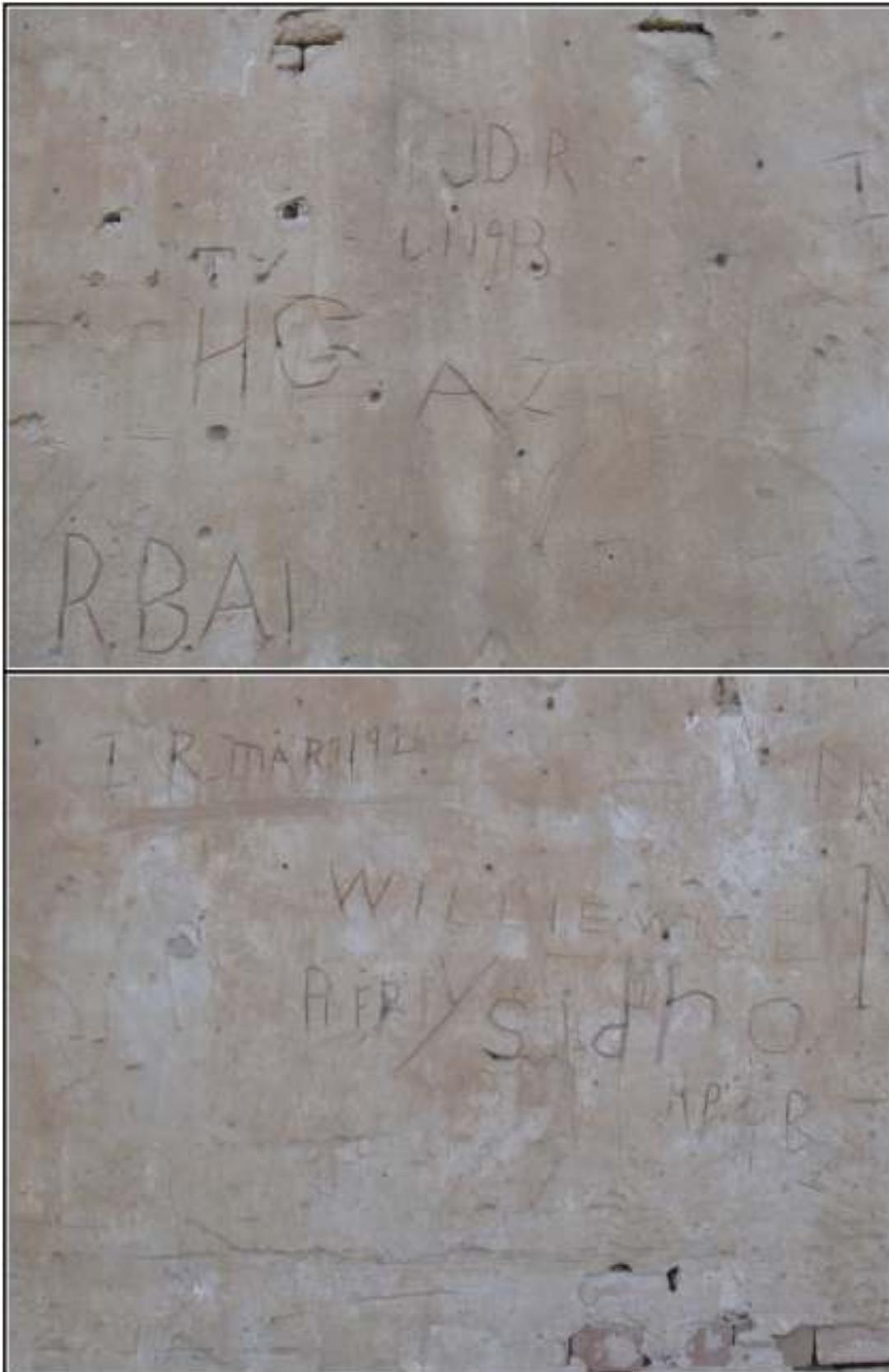


Figure 4-24. Graffiti with dates of 1913 and 1926 located on the outside of the south wall on the brick structure.

nail, wire nails (n=9), brick, faunal bone, tile (n=2), ceramic sherds (n=3), and glass fragments (n=16), were recovered from Levels 1-6 (0-60 cmbs). The cut nail was recovered from a shovel test excavated within the brick ruin. In Central Texas cut nails suggest a pre-1880 manufacture date. Cut nails were almost completely replaced by wire nails after 1900 (Gross and Meissner 1997). Bricks containing maker's marks date the structure from 1887 to 1897. The brick is marked with "N M", the Mackey Bricks logo (Figure 4-25). Mackey Brick and Tile was in operation from 1887 to 1897 and was located approximately 1,150 m southeast of the brick structure (Kosub and Kosub 2010). White earthenware (mid 19th-mid 20th century), yellowware and stoneware (both post late 19th century) also suggest occupation of the brick structure from the late 1800s to the mid 1900s (Greer 1981; Miller 1991; Tennis 1997). Archival research (see Chapter 2) indicates that the brick structure was present in the late 1800s and was built by the José Cassiano family.

The depth of buried prehistoric material near the edge of the bluff off of the plowed area, the possibility of a buried hearth, the indications of two buried surfaces from soil susceptibility analysis, the diagnostic dart point, as well as the historic significance of the association of the brick ruin with the Mackey Brick and Tile and the Cassiano family suggests that archaeological site 41WN120 possesses the potential for future research. As discussed in Chapter 5, the CAR recommends that the site be listed as having unknown eligibility with research potential on the National Register of Historic Places until testing to determine eligibility status can be completed. The CAR recommends further testing of the portion of the site containing deeply buried prehistoric material (see Figure 4-10) via test units and additional backhoe trenches (see Chapter 5). The CAR also recommends protection of the 1880s structure. No further work is needed regarding the pier and beam house as it does not contribute to the possible significance of 41WN120.

The second archaeological site recorded on the Helton San Antonio River Nature Park project area, 41WN121, consists of historic artifacts recovered from shovel tests (0-30 cmbs). The site, located on a previously plowed field on the northwestern quadrant of the project area, is situated on level terrain consisting of heavy regrowth vegetation



Figure 4-25. Brick found within the brick ruin on 41WN120 with the maker's mark for the Mackey Brick and Tile Company.

(Figure 4-26). Ground visibility is roughly 10%. Eighteen shovel tests were excavated to delineate the boundary of 41WN121 and to determine the depth of cultural material (Figure 4-27). Seven of the eighteen shovel tests contained cultural material. The artifacts include ceramics (n=7), glass (n=6), mussel shell (n=1), faunal bone (n=1), and building material (present in 4 shovel tests). Wire nails (post 1900), refined earthenware and porcelain (both post 1850s), stoneware (c. 1870-1920), and one fragment of lead glazed ceramic identified as Galera ware (1750-1850) suggest the site was occupied from the late 19th century into the early decades of the 20th century (Fox and Ulrich 2008; Greer 1981; Gross and Meissner 1997; Miller 1991; Tennis 1997). No features were noted.

41WN121 covers an area of 3,949 m². The location of the artifacts in the upper 30 cm of a plowed field and lack of features indicates that 41WN121 possesses a low potential for future research value. Experimental studies have demonstrated that plowing will laterally and vertically displace artifact distribution (Dunnell and Simek 1995; Navazo and Diez 2008). Dunnell and Simek (1995) demonstrated that while horizontal displacement is highly variable vertical displacement occurs in an overall downward movement within the soil. They further posit that this displacement results in expansions of site boundaries. Therefore, the CAR recommends that the site be considered ineligible for listing on the National Register of Historic Places.

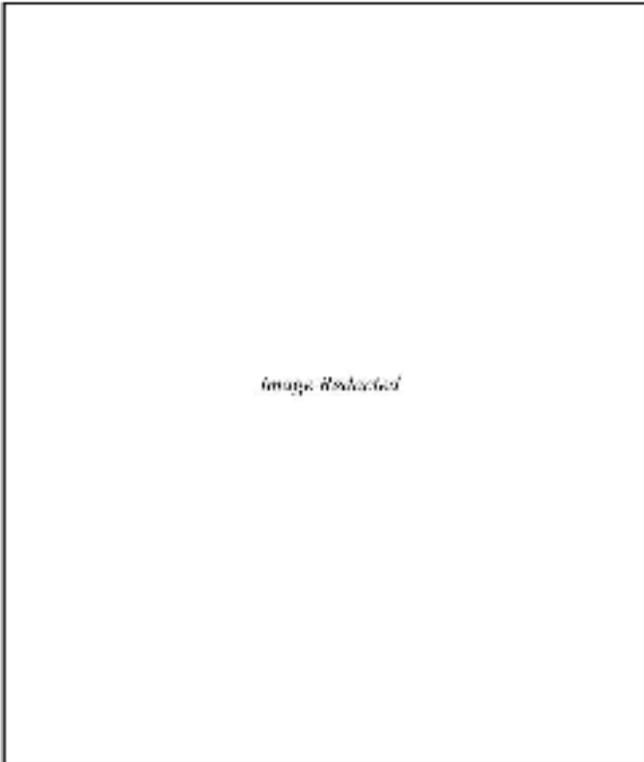


Summary of the Archaeological Survey

The survey of the Helton San Antonio River Nature Park project area used an intensive pedestrian survey accompanied by shovel testing, auger testing, and backhoe trenching to investigate 98 acres proposed for improvements. One-hundred shovel tests were excavated resulting in the removal of approximately 4.2 cubic meters of sediment. Subsurface materials, consisting of prehistoric and historic artifacts, were recovered from Levels 1 to 6 (0-60 cmbs) of the shovel tests. Three isolated subsurface finds from two shovel tests consisting of a piece of burned rock, a shard of glass, and a fragment of ceramic, were recorded on the proposed park. Two new archaeological sites, 41WN120 and 41WN121, composed of surface scatters of lithic debitage, tools, and burned rock

Figure 4-26. Location of site 41WN121 on a previously plowed field on the northwestern quadrant of the project area.

with no associated staining or charcoal; subsurface artifacts; and two historic structures were documented.



One diagnostic prehistoric artifact was recovered from the surface dating to the Archaic Period, several diagnostic historic artifacts dating from the late 1800s to the mid 1900s, and two structures, one constructed in the late 1800s and one in the mid 1900s, were documented on 41WN120. Subsurface cultural material was present in all levels of shovel testing of this site with an area of approximately 2,992 m² near the western edge of the site containing the deepest deposits. One shovel test in this area contained burned plant and bone in Level 5 (40-50 cmbs) suggesting the possibility of a subsurface hearth. The results of magnetic soil susceptibility testing of sediments recovered from the site suggest two buried surfaces. The depth of buried prehistoric material near the edge of the bluff off of the plowed area, the possibility of a buried hearth, the indications of two buried surfaces from soil susceptibility analysis, the diagnostic dart point, as well as the historic significance of the late 1800s structure suggest that 41WN120 possesses high potential for future research.

Figure 4-27. Aerial map of 41WN121 showing the property boundary (black), positive shovel tests (red), and negative shovel tests (yellow).

Historic artifacts dating from the late 1800s to the mid 1900s were recovered from the upper 30 cm of 41WN121. No features were noted. The location of the artifacts in the upper sediments of a plowed field and lack of features indicates that 41WN121 possesses a low potential for future research.

Because the Hilton Nature Park property contains flood plains adjacent to the San Antonio River and Calaveras Creek, eight backhoe trenches were excavated on the T1 terraces to address the high potential for deeply buried intact paleosols and cultural material. All of the

trenches revealed approximately 1.5 m of silty sandy sediments, some with clay, that was free of inclusions. No cultural material was noted in the trench walls or in the backfill dirt.

Chapter 5: Summary and Recommendations

Summary

The Center for Archaeological Research of the University of Texas at San Antonio conducted an intensive pedestrian archaeological survey of the Helton San Antonio River Nature Park project area located in Wilson County for the San Antonio River Authority. The 98 acre project area, located approximately 8.8 miles (14.2 km) northwest of Floresville, Texas, is bounded by the San Antonio River to the south and surface roads to the north and east. The west boundary consists of a fence line delineating private rural property. The park will consist of phased in improvements including roads, parking areas, hike and bike trails, scenic overlooks, picnic areas, campsites, recreational vehicle (RV) campsites, an overnight research cabin, multiple toilets and water stations, a multi-use pavilion, an environmental education center, an amphitheater, river accesses for paddling, a pond, a bridge, a riparian land management demonstration area, and a tree and native plant farm. The principal goal of the pedestrian survey was to identify and document all prehistoric and/or historic archaeological sites that may be impacted by the proposed improvements within the park. This report discussed the survey of this property conducted in August 2010.

The archaeological survey consisted of a one hundred percent pedestrian intensive survey of the 98 acre property with shovel testing accompanied by backhoe trenching along the 100-year floodplain of Calaveras Creek and the San Antonio River. The survey included the hand excavation of 100 shovel tests resulting in the removal of approximately 4.2 cubic meters of sediment, the hand excavation of 3 auger tests, and the mechanical excavation of 9 backhoe trenches. Three isolated subsurface finds were recorded including a single piece of burned rock and two historic artifacts. Because the property contains flood plains of the San Antonio River and Calaveras Creek, eight backhoe trenches were excavated to address the high potential for deeply buried intact paleosols and cultural material. The trenches revealed 1.5-m of sandy silty deposits, some containing clay. The sediments were all free of inclusions. No cultural material was noted in the trench walls or in the backfill dirt.

In the process of conducting the Helton San Antonio River Nature Park survey, two new sites, 41WN120 and 41WN121, were identified. 41WN120 is a large multi-component site directly adjacent to and located on a previously plowed field on the northeastern quadrant of the project area. One

diagnostic prehistoric artifact was recovered from the surface dating to the Archaic Period, several diagnostic historic artifacts dating from the late 1800s to the mid 1900s, and two structures, one constructed in the late 1800s and one in the mid 1900s, were documented on 41WN120. Subsurface cultural material was present in all levels of shovel testing of this site. Burned plant and bone was recovered off of the plowed field near the bluff adjacent to the Calaveras Creek flood plain in Level 5 (40-50 cmbs) suggesting the possibility of a subsurface hearth feature. Shovel tests in the vicinity of this location contained the deepest deposits of cultural material on the site. The results of magnetic soil susceptibility testing of sediments recovered from the site suggest two buried prehistoric surfaces. The depth of buried prehistoric material near the edge of the bluff off of the plowed area, the possibility of a buried hearth, the indications of two buried surfaces from soil susceptibility analysis, the diagnostic dart point, as well as the historic significance of the late 1800s structure suggest that 41WN120 possesses high potential for future research.

A second archaeological site, 41WN121, was documented on a plowed field on the northwestern quadrant of the property area. Historic artifacts dating from the late 1800s to the mid 1900s were recovered from the upper 30 cm of sediments. No features were noted. The location of the artifacts in the upper deposits of a plowed field and lack of features indicates that 41WN121 possesses a low potential for future research.

Recommendations

The intensive pedestrian survey of the Helton San Antonio River Nature Park project area was completed in accordance with State Historic Preservation laws and the mandates of the Antiquities Code of Texas. Two new sites, 41WN120 and 41WN121, were documented during the pedestrian survey.

The depth of buried prehistoric material, the possibility of a buried hearth, the indications of two buried surfaces from soil susceptibility analysis, the diagnostic dart point, as well as the historic significance of the association of the brick ruin with Mackey Brick and Tile and the Cassiano family suggests that 41WN120 possesses high potential for future research and, therefore the CAR recommends that the site be listed as having unknown eligibility with research potential on the National Register of Historic Places until testing to determine eligibility status can be completed. The CAR recommends

further testing of the deepest deposits of prehistoric material located on the western portion of the site near the bluff edge focused on determining NRHP/SAL eligibility. The CAR suggests the excavation of test units and additional backhoe trenches. Additionally, the CAR recommends protection of the brick ruin. The proposed plans for the Helton San Antonio River Nature Park indicates that the ruins will be a part of a park overlook (see Figure 1-2). Because the wood post and beam house is not associated with anyone or anything of historical significance and is a common example of a mid 1900 construction style, the CAR recommends that the structure does not contribute to the possible significance of 41WN120

and does not need further work. It is proposed by SARA to use this building as park headquarters (see Figure 1-2).

The lack of material depth, the lack of features, and the location of the artifacts in the upper 30 cm of a plowed field suggests that 41WN121 possesses a low potential for future research value and, therefore, the CAR recommends that the site be considered ineligible for listing on the National Register of Historic Places. No further work is suggested on 41WN121. The CAR recommends that the proposed improvements on the western portion of the Helton San Antonio River Nature Park project area proceed as proposed.

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