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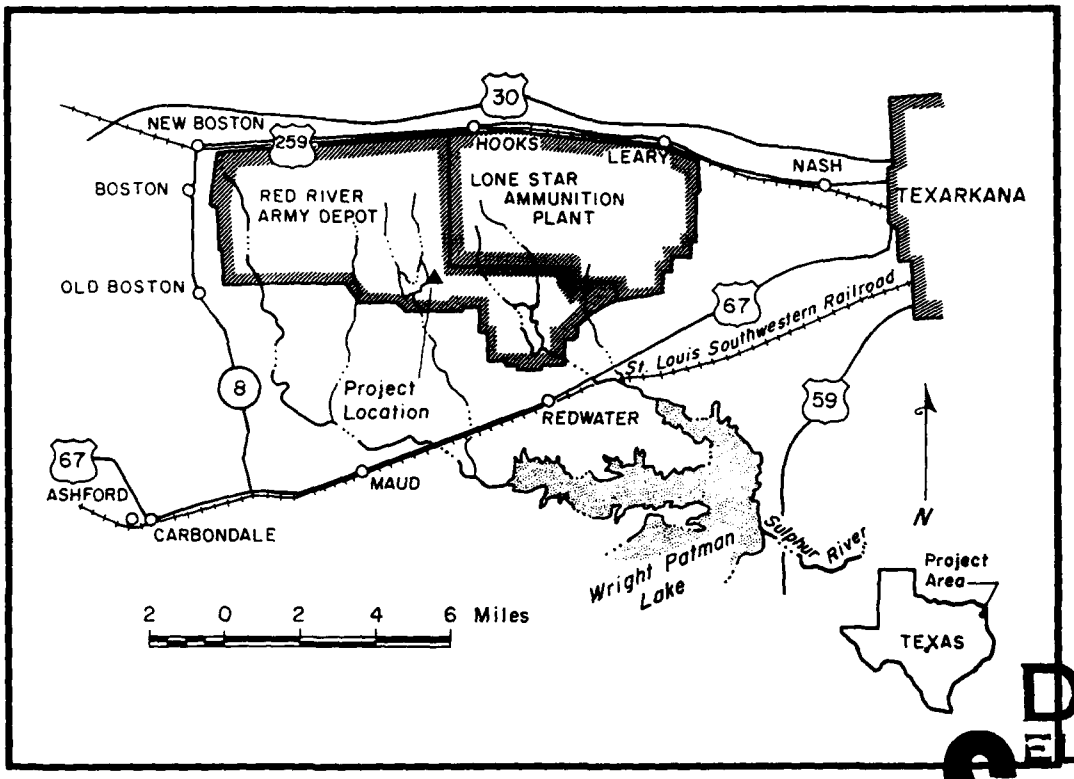
TEST EXCAVATIONS AT SITES 41BW182 AND 41BW183, RED RIVER ARMY DEPOT, BOWIE COUNTY, TEXAS



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Contributions by

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William A. Martin

US Army Corps of Engineers
Fort Worth District

GEO-MARINE

RRAD/LSAAP ARCHEOLOGICAL TECHNICAL SERIES
REPORT OF INVESTIGATIONS, NUMBER 1

TEST EXCAVATIONS AT SITES 41BW182 AND 41BW183, RED RIVER ARMY DEPOT, BOWIE COUNTY, TEXAS

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RRAD/LSAAP ARCHEOLOGICAL TECHNICAL SERIES

REPORT OF INVESTIGATIONS,

Number 1

Prepared for:
Fort Worth District
U.S. Army Corps of Engineers
Fort Worth, Texas

Contract No. DACA63-88-D-0077

by

Geo-Marine, Inc.
1316 Fourteenth Street
Plano, Texas 75074

December 1988

CONTRACT DATA

The preparation of this document was accomplished under Contract No. DACA63-88-D-0077, Work Order No. 0001, with the U.S. Army Corps of Engineers, Fort Worth District, P.O. Box 17300, Fort Worth, Texas 76102.

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ABSTRACT

This report concerns the archeological investigation of two sites, 41BW182 and 41BW183, within a borrow area at the Red River Army Depot, Bowie County, Texas. Test excavations were conducted to assess the eligibility of the sites for nomination to the National Register of Historic Places. These investigations were conducted by personnel of Geo-Marine, Inc. during the first week of August 1988. Seventeen person-days of effort were expended at site 41BW182 and nine person-days were devoted to site 41BW183.

Site 41BW182 is a multicomponent prehistoric and historic site with evidence of occupation from the Paleo-Indian period until the middle of this century. Associated artifact densities are low and stratigraphic contextual integrity is lacking. The historic artifacts and archival research suggest a post-A.D. 1900 occupation during the historic period. The historic component of the site has been severely disturbed by logging and clearing activities.

Site 41BW183 is a small, low density prehistoric site with an Ellis point as the only temporal indicator. The limited potential for the preservation of features associated with the extremely low densities of artifacts suggests that the site would not contribute significant information important to the understanding of Northeast Texas prehistory.

Based upon the lack of contextual integrity at site 41BW182 and the limited research potential of 41BW183, neither site is considered eligible for nomination to the National Register of Historic Places. Given the lack of knowledge of upland site contexts, however, it is recommended that site 41BW182 be preserved through avoidance. If avoidance is not feasible, it is recommended that the removal of site 41BW182 be monitored in order to document the presence or absence of features. No further work is recommended for site 41BW183.

ACKNOWLEDGEMENTS

We would like to express our appreciation to the many individuals and organizations who contributed to the successful completion of this project. The personnel of the Red River Army Depot (RRAD) were particularly supportive of our efforts and aided us significantly in our work. Mr. Doyle Lewis and Ms. Virginia Onyett were particularly helpful. We also wish to thank personnel of the U.S. Army Corps of Engineers for their administrative efforts and guidance. At the RRAD, we must acknowledge the cooperation of Mr. Jerry Johnson, Project Construction Engineer, and Mr. Jack Baker, Construction Inspector. In Fort Worth, we especially wish to thank Mr. Daniel McGregor for his constructive direction and useful suggestions.

Various persons proved to be very helpful in the archival investigations of site 41BW182. The authors are grateful for their participation. They include Ms. Melba King of the Texarkana Historical Museum, and Ms. Jenny Young Morgan, in the Legal Department and Mr. Glyn Yates, in the Personnel Department at the RRAD.

In the field, the diligence of the able crew members, consisting of Mr. William Martin, Ms. Brenda Smith, Ms. Mary Kendrick, and Mr. Curtis McKinney, was essential to the successful completion of the fieldwork. Drafting was done by Ms. Pamella Carmichael of the University of North Texas, Denton, while artifact illustrations were done Ms. Linda Verrett of Geo-Marine, Inc. Finally, Ms. Patricia Knowles, Geo-Marine, Inc. Office Manager, and Ms. Yolanda Murray, typist, were equally instrumental in the production of this report.

CHAPTER 1

INTRODUCTION

This report presents the results of test excavations conducted by Geo-Marine, Inc. of Plano, Texas and its subcontractor, the University of North Texas at two archeological sites within a borrow area at the Red River Army Depot, Bowie County, Texas (RRAD). These two sites, 41BW182 and 41BW183, had previously been recorded by personnel of the U.S. Army Corps of Engineers, Fort Worth District (Newman 1988) and were tested in order to determine their eligibility for inclusion on the National Register of Historic Places. This work was performed under contract for the Fort Worth District Corps of Engineers (Delivery Order No. 1, Contract DACA63-88-D-0077) in partial fulfillment of the Army's obligation under the National Historic Preservation Act of 1966 (PL 89-665), as amended; the Archaeological and Historical Preservation Act of 1974 (PL 93-291), as amended; Executive Order No. 11593, "Protection and Enhancement of the Cultural Environment;" and Army Regulation 420-40, "Historic Preservation."

The Red River Army Depot is a tract of approximately 17,881 acres situated in Northeast Texas, west of Texarkana, in Bowie County, Texas (Figure 1). Red River Army Depot is a government operated facility under the jurisdiction of the Depot Systems Command (DESCOM). Planning by the Red River Army Depot for the excavation of a borrow area in the uplands immediately east of Caney Creek Reservoir (Figure 2) prompted the need for an assessment of the cultural resources within the proposed project area. Survey efforts by personnel of the U.S. Army Corps of Engineers, Fort Worth District (Newman 1988) resulted in the recording of three sites and two localities. The three sites (41BW182, 41BW183, and 41BW184) were recognized as being potentially eligible for nomination to the National Register of Historic Places. Since two of these sites (41BW182 and 41BW183) were to be directly impacted by the borrow pit, test excavations were initiated in order to adequately assess the significance of the sites.

Personnel of Geo-Marine, Inc., directed by Dr. Maynard Cliff, Project Archeologist, and Mr. Duane Peter, Co-Principal Investigator, conducted the test excavations of sites 41BW182 and 41BW183 during the week of 1 August 1988. Testing operations at site 41BW182 included sixteen 30x30 cm shovel tests, nineteen 50x50 cm units, four 1x1 m units, and six 20x20 cm auger holes, with a total of seventeen person-days of effort devoted to the site. The second site, 41BW183, was tested with twenty 30x30 cm shovel tests, fourteen 50x50 cm units, and two 1x1 m units, with a total of nine person-days of effort being devoted to the work.

Test excavations revealed that site 41BW182 was a multiple component prehistoric and historic site with evidence of occupation from the Paleo-Indian period until the middle of this century. Prehistoric diagnostics recovered included a Plainview point of the late Paleo-Indian period, a

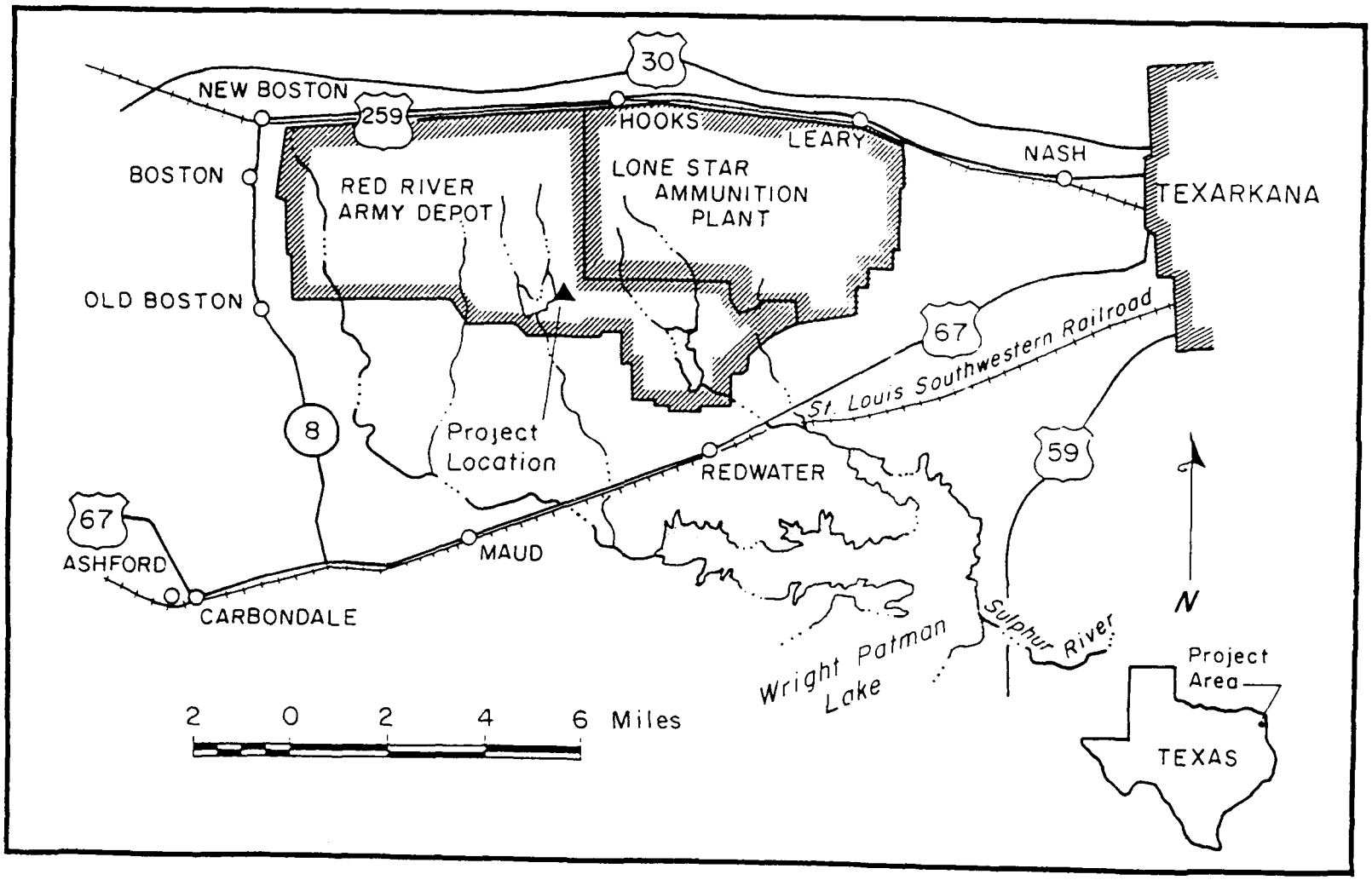


Figure 1. Red River Army Depot location map, showing location of sites 41BW182 and 41BW183 (after Newman 1988: Figure 1).

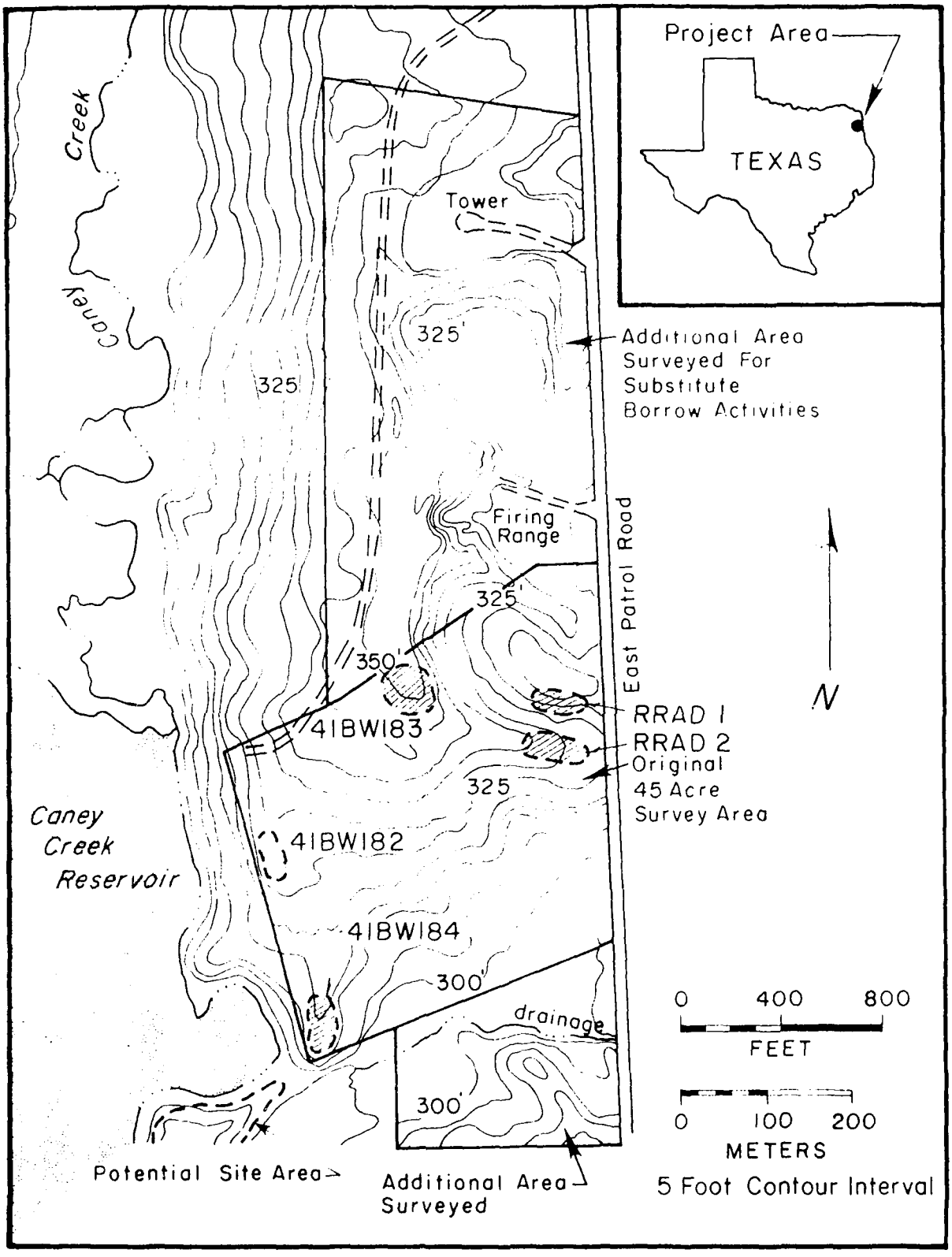


Figure 2. Red River Army Depot CDC Borrow Area, showing locations of sites 41BW182 and 41BW183.

Gary point preform (ca. 200 B.C.-A.D. 800), and a small Homan point and plain potsherd (ca. A.D. 800-1200). The historic artifacts recovered from the site and the archival data strongly suggested a post-1900 occupation. Unfortunately, these several components were not separated either vertically or horizontally within the site matrix. Processes of bioturbation and pedoturbation contributed to the mixing of historic and prehistoric artifacts to a depth of 70 centimeters. The recovery of diagnostics of several prehistoric periods from various portions of the site indicated that the prehistoric use of the site was multiple and probably mixed as well.

The majority of the site area also showed evidence of a great deal of disturbance by heavy machinery as revealed by deep ruts, mounding and berms of earth, and pushed over trees. This disturbance was possibly the result of bulldozing or skid loading in connection with lumbering activities, as well as the more recent bulldozing in connection with coring prior to commencement of construction on the borrow pit.

The lack of contextual integrity of the site deposits, the low artifact densities for both the prehistoric and historic material, and the failure to recover evidence of features or structures contributed to the recommendation that site 41BW182 does not meet the minimum eligibility criteria for nomination to the National Register of Historic Places. However, the lack of knowledge concerning such low density prehistoric occupations in the uplands of Northeast Texas, together with the perceived inadequacy of the testing procedure to locate features, led to the additional recommendation that either the removal of the A horizon of site 41BW182 be monitored by a professional archeologist or that the site be avoided until we have a better understanding of the research potential of such upland sites.

Test excavations at site 41BW183 revealed even lower artifact densities than those for site 41BW182. A single diagnostic tool, an Ellis point, was recovered from the surface during the initial recording of the site. The site deposits were shallow with few artifacts other than lithic debitage, and had been partially impacted by bulldozing and probably lumbering. The extremely low artifact densities, lack of features, and probable disturbance limits the research potential of the site. Therefore, site 41BW183 is considered ineligible for inclusion on the National Register of Historic Places, and no further work is recommended.

This report contains seven chapters. Chapters 2 and 3 provide information concerning the natural and cultural setting of the project area. Research goals and methods for this study are presented in Chapter 4. Chapters 5 and 6 present discussions of the excavation efforts and results for sites 41BW182 and 41BW183, respectively. Recommendations concerning the eligibility of the sites for inclusion on the National Register and the need for additional work are presented in Chapter 7. The appendices which follow present the analytical framework for the prehistoric artifact analysis and tabular summaries of the prehistoric and historic artifacts recovered.

CHAPTER 2

NATURAL SETTING

Geology and Geomorphology

Bowie County lies within the Gulf Coastal Plains physiographic province, a segment of the Mesozoic-Cenozoic coastal geosyncline (Murray 1960). This geosyncline forms a gradually sloping basin which dips toward the Gulf of Mexico and contains formations of limestone and sandstone deposited along the margins of the ancient receding coastline. The geologic strata forming Bowie County were deposited during the Upper Cretaceous, Eocene, Pleistocene, and Holocene periods (Fox 1980:70). However, within the boundaries of the Red River Army Depot, most exposed sediments are of Eocene age (Heartfield and Dieste 1984:2-1). The Pleistocene age deposits are terraces of the Red River which are located north of the Red River Army Depot. Recent alluvium is present along the floodplain of the Red River and its tributaries, and to a lesser extent, along the narrower floodplains of Caney Creek, Big Creek, and Rock Creek within the Red River Army Depot boundaries.

Two geologic formations are present within the Red River Army Depot facility: (1) the Midway Group covering the northern section, and (2) the Wilcox Group covering the southern and southeastern sections (Heartfield and Dieste 1984:2-1). The Midway Group is composed of gray to yellowish gray silty clays, whereas the Wilcox Group is comprised of buff to gray carbonaceous sands, silts, and clays which contain concretions, petrified wood, and lignite.

Lithic materials suitable for the production of stone tools are present in both formations, but the Wilcox Group contains a greater variety of materials. Both formations contain sandstone concretions which may be suitable for use as small manos, nutting stones, or anvil stones. Within the Wilcox Group, large pieces of petrified wood and chert gravels are present (Fisher 1965:197). North of the Red River Army Depot, lithic materials in the form of chert gravels are abundant within the Pleistocene terraces. Thus, the prehistoric inhabitants of the local area would have had relatively easy access to supplies of workable stone.

The landscape within and surrounding the Red River Army Depot consists of dissected uplands and is characterized by gently rolling ridges and marshy bottomlands along streams. The highest elevations occur in the extreme northwestern portion of the facility, and the lowest elevations occur in the southeastern portion of the Lonestar Army Ammunition Plant along Elliott Creek (Heartfield and Dieste 1984:2-2). Natural mounds, often referred to as pimple mounds or prairie mounds, also occur within the boundaries of the facility. Most of these mounds range in height from 60 to 90 cm, although some are higher, and are generally circular or elliptical. These mounds are widespread in southwestern Arkansas, eastern

Texas, southeastern Oklahoma, and northwestern Louisiana. Their origins have been debated among geologists and geomorphologists, but no consensus has been reached (Aten and Bollich 1981; Bousman et al. 1988). Occasionally, artifacts are found on these natural mounds as a result of short term prehistoric occupation. This is one reason why avocational archeologists often mistake natural mounds for aboriginal ones.

Soils

Soils in the northern half of the Red River Army Depot are comprised of the Annona-Alusa complex which is characterized by somewhat poorly drained and very slowly permeable loamy soils with slopes of 0-3 percent (Fox 1980:9). The southern half of the facility, including the borrow area where archeological testing was conducted, is made up of the Sawyer-Eylau-Woodtell complex. This complex is comprised of moderately well drained, moderately slowly permeable to very slowly permeable loamy soils with slopes between 0 and 12 percent (Fox 1980:5). The bottomlands in the facility are generally comprised of brown Sardis silt and dark brown Thensas fine sandy loam. The specific soil type mapped for the area encompassed by the borrow pit is Darden loamy fine sand, 8-12 percent slopes.

Darden loamy fine sand is described as having a dark yellowish brown surface layer of strongly acid loamy fine sand, about 13 cm (5 inches) thick, underlain by a yellowish brown, very strongly acid loamy fine sand to a depth of almost 64 cm (25 inches). Below this, to over 200 cm (about 80 inches), is a strong brown layer of very strongly acid loamy fine sand (Fox 1980:19). The implications of these soils for the preservation of archeological sites are that the potential for bone preservation is extremely poor due to the high acidity of the soil, and the potential for mixture of the deposit is very high due to the action of roots and burrowing animals which prefer sandy soils. Although sites 41BW182 and 41BW183 fall within the area mapped as Darden loamy fine sand, 8-12 percent slopes, the soil colors noted during fieldwork were of considerably lighter hues (mostly pale brown to very pale brown) than those reported in the soil survey (Figure 3).

Climate

The climate of Bowie County is marked by long, hot summers and cool, short winters with cold waves that usually last one or two days. The average winter temperature is 7 degrees Celsius (45 degrees Fahrenheit), and the average minimum temperature is 1 degree Celsius (34 degrees Fahrenheit). The average summer temperature is 27 degrees Celsius (80 degrees Fahrenheit), and the average daily maximum temperature is 33 degrees Celsius (92 degrees Fahrenheit) (Fox 1980:2).

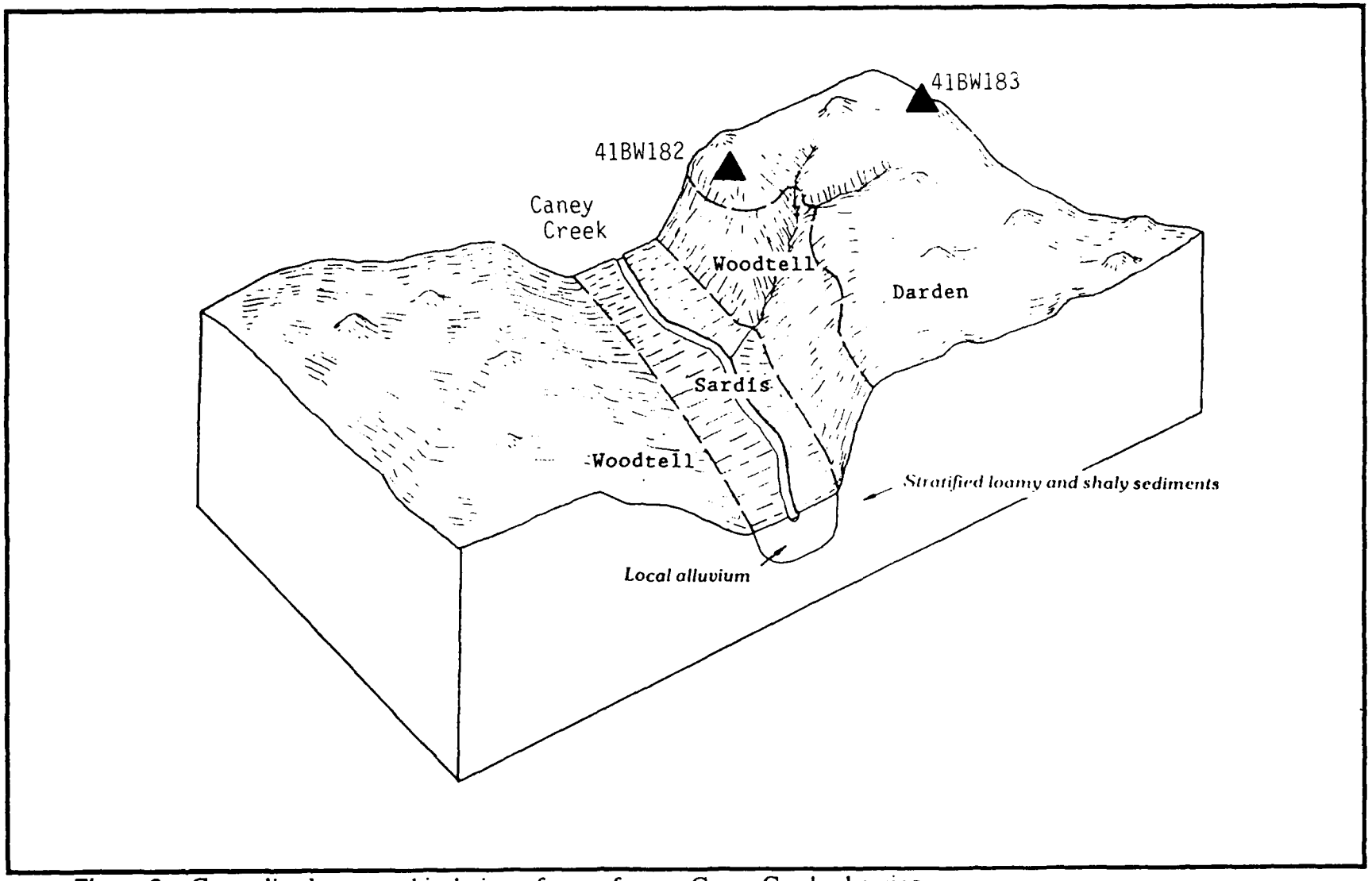


Figure 3. Generalized topographical view of area of upper Caney Creek showing relationship of sites 41BW182 and 41BW183 to soil units and Caney Creek.

Precipitation is fairly heavy throughout the year; prolonged droughts are rare and the frequent afternoon thunderstorms in summer are adequate to maintain crops. Such afternoon thunderstorms occur about 50 days of the year. Severe storms, including tornadoes, strike the area occasionally, and every few years in the summer or fall, a tropical depression moves inland causing extremely heavy rains for 1-3 days. Mean annual precipitation is about 112 cm (44 inches), with 52 percent of this falling between April and September (Fox 1980:2).

Hydrology

The RRAD is drained by two basins: the Red River to the north, and the Sulphur River to the south (Heartfield and Dieste 1984:2-3). Panther Creek flows north to the Red River, whereas Big Creek, Rock Creek, Caney Creek, Elliot Creek, and East Fork Creek flow south into the Sulphur River (now Lake Wright Patman). Caney Creek Reservoir and Elliot Creek Reservoir are encompassed by the facility. Sites 41BW182 and 41BW183 are located immediately east of Caney Creek Reservoir, and are therefore within the Sulphur River drainage basin.

Floral and Faunal Resources

A mixed pine and oak forest is the dominant vegetation within the Red River Army Depot (Gould 1975). Pines are dominant on the higher elevations, whereas oaks are dominant in the bottomlands. Principal tree species include: loblolly pine, short leaf pine, slash pine, black willow, blackjack oak, post oak, water oak, white oak, willow oak, shagbark hickory, mockernut hickory, pecan, and sweetgum. Understory vegetation includes hawthorne, sumac, honeysuckle, and a variety of berries. Grasses include bermuda grass, dallisgrass, broomsedge, purpletop, and little bluestem (Heartfield and Dieste 1984:2-5).

The faunal resources found within the facility include a broad variety of invertebrates, fish, amphibians, reptiles, birds, and mammals. Mussels and gastropods are present in streams, along with at least 50 species of fish, including catfish, crappie, gar, bass, shad, carp, and sunfish. At least 25 species of amphibians and 50 species of reptiles are also present, including bullfrog, leopard frog, turtles, snakes, lizards, and reportedly, alligators. The facility is located on the migration route of at least 100 species of migratory birds, including small perching birds, raptors, and migratory waterfowl, such as ducks, geese, and herons. In addition, wild turkeys were once abundant in the area. At least 50 species of mammals occur within and around the facility, including whitetail deer, rabbit, squirrel, raccoon, beaver, and opossum (Heartfield and Dieste 1984:2-7).

The upland mixed forest environment and the riverine environment would have provided a variety of plant foods prized by humans and by the animals

that they hunted. Acorns and nuts are high in fats and provided a substantial portion of the diet for some Southeast U.S. aboriginal groups (Hilliard 1980). During the fall, deer and turkey would have aggregated in areas where mast is concentrated, thereby increasing the likelihood of hunter/prey contact as aboriginal groups collected acorns and nuts. Seasonally available fruits, such as blackberries, dewberries, wild strawberries, wild grapes, persimmons, and plums would have provided vitamins and carbohydrates to both prehistoric and historic populations. In addition, certain edible tubers available in the forest would have been collected for food and for medicinal use (Heartfield and Dieste 1984:2-5).

Whitetail deer, rabbit, turkey, waterfowl, turtle, and to a lesser degree, raccoon, opossum, and other small mammals would have provided the principal sources of protein and fats in the diets of the prehistoric inhabitants. Deer, rabbit, and turtle bones are among the most numerous bones recovered from many sites in Northeast Texas (cf., Bruseth and Perttula 1981), and deer, because of its size, actually provided the bulk of protein in the diet. Reptiles other than turtle, and small rodent bones, have also been recovered from archeological contexts at many sites in Texas, but it is difficult to discern whether they contributed to the diet or were intrusive into the deposit (Martin et al. 1987).

Of course, the availability of these resources may have been different in the past as a result of climatic shifts documented in the regional pollen and geomorphological records. Even so, faunal studies at Rogers Rockshelter in southwestern Missouri have shown that as climate changed during the past 9,000-10,000 years, different habitats comprising the mosaic of the total environment responded by becoming smaller or larger. However, the climatic shift was never enough to precipitate a complete shift in species composition (Purdue 1983). If this pattern is true in Northeast Texas, then the modern species distribution is probably much the same as that in the past, but the relative abundance of each species is undoubtedly different.

CHAPTER 3

CULTURAL SETTING

This chapter consists of two sections. The first section describes previous archeological research carried out in the general project area. The second section describes the nature of the prehistoric and historic aboriginal archeological records in broad terms, as well as considering the history of Anglo-American and Afro-American settlement in the project area.

Previous Archeological Research

Prehistoric and Historic Aboriginal Archeological Research

The history of archeological research in the general vicinity of the Red River Army Depot (RRAD) began in the early 1900s with the Philadelphia Academy of Natural Sciences expedition in 1911. This expedition, directed by Clarence B. Moore (1912), recorded and excavated a number of mound sites on the Red and Sulphur Rivers in the Great Bend Area (see Miller 1986; Schambach 1983), and then continued upriver into Texas from Fulton, Arkansas. Three major Caddoan mound sites were recorded but not excavated in Bowie County, Texas (Figure 4) -- the Summerhill or Tilson site (41BW14), E.H. Moore (41BW2), and Sanders or Hatchel (41BW3).

During the late 1910s and 1920s, J.E. Pearce of the University of Texas made several trips to the Red River and Sulphur Basins to explore sites under the auspices of the Bureau of American Ethnology (Barnard 1939). Intensive archeological research in northeastern Texas began, however, in 1931 as part of the Rockefeller-funded University of Texas reconnaissance and excavations at Caddoan sites throughout Northeast Texas (Pearce 1932). A number of important sites were investigated in the Sulphur and Red River drainages, including E.H. Moore, Sanders (41LR2), W.D. Ford (41TT2), Culpepper (41HP1), and Clements (41CSW25; see Scurlock 1962; Jackson 1932; Krieger 1946; Dickinson 1941; Goldschmidt 1935; Lewis 1987). The nearest to the RRAD, E.H. Moore, was excavated by A.T. Jackson in 1932. Several burials and house patterns were recorded in a low mound at the site in archeological deposits dating to the Late Caddoan and Early Historic periods (see Schambach 1983:9).

Works Progress Administration (WPA) archeological projects were conducted from 1938-1941 at several sites in Northeast Texas. Probably the most significant excavation in the Red River area was carried out at the Hatchel and Mitchell Farms (41BW4) sites in 1938-1939 by William Beatty, Jr. of the University of Texas (Davis 1970; Creel 1982). These Late Caddoan mound cemeteries and village sites are about 15 km northeast of the RRAD. The Hatchel site mound contained ten stratified moundfill zones

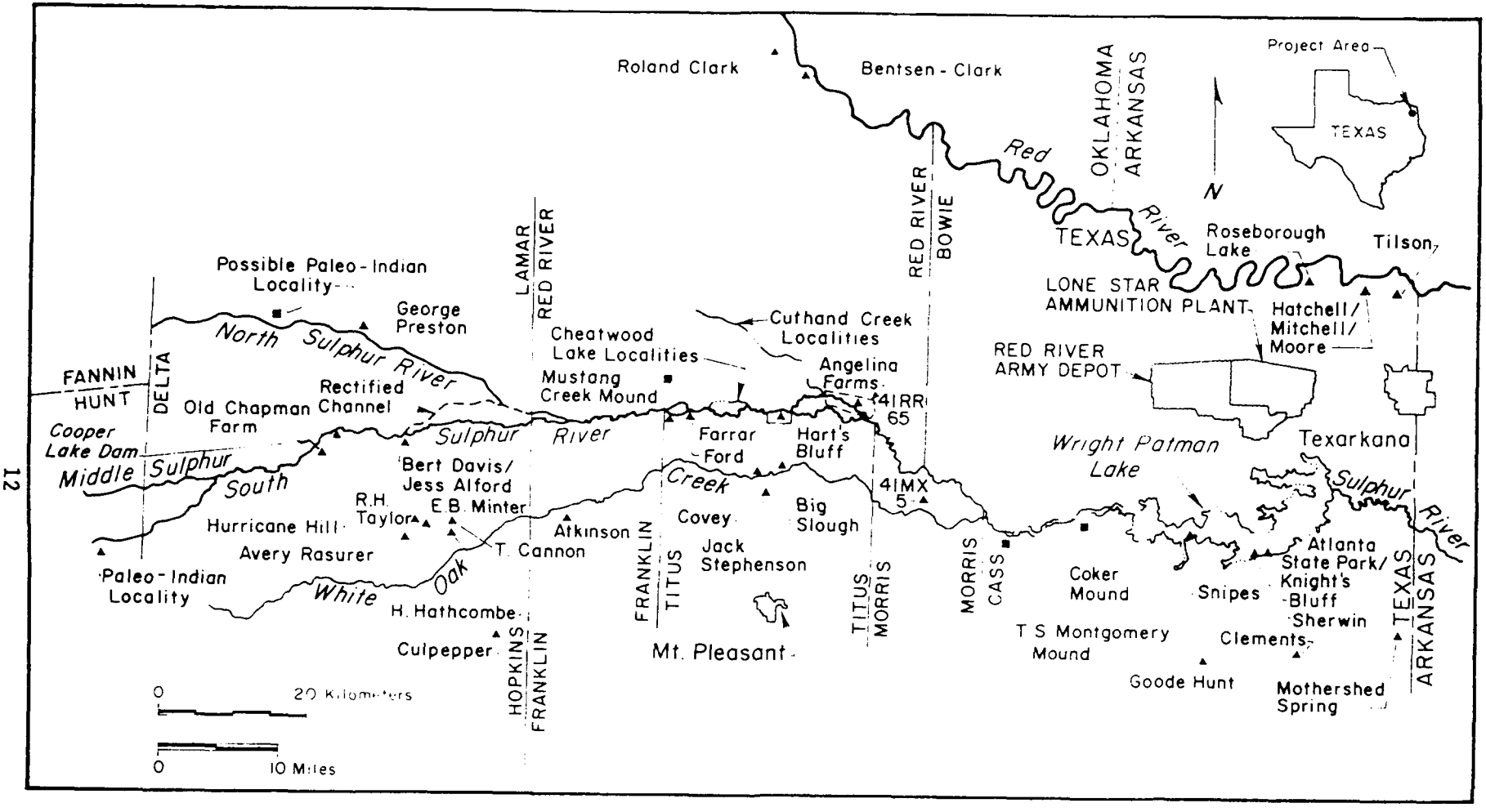


Figure 4. Important prehistoric and historic sites in Northeast Texas.

or floors with circular structures which appear to have spanned the period between ca. A.D. 1300-1700 (see Schambach 1983; Hamilton 1972).

Beginning in the 1930s avocational archeologists from Dallas and Texarkana were also excavating Caddoan sites in the Red and Sulphur River Basins, principally those with mounds and/or cemeteries (Miroir n.d.; Harris 1953). Pete Miroir's work in Bowie County, and at Wright Patman Lake, as well as R.King Harris' work at Roseborough Lake (41BW5), Sam Kaufman (41RR16), and Atlanta State Park (41CS35) have provided useful mortuary and habitational records on the Late Caddoan and Early Historic period archeology of Northeast Texas. Several Paleo-Indian and Archaic sites in the immediately proximity of the RRAD were also recorded by Miroir, and notes and/or collections from these sites are on file at the Texarkana Historical Museum and the University of Arkansas Museum.

The next phase of archeological research began in the late 1940s and 1950s at Texarkana Reservoir (now Wright Patman Lake) on the lower Sulphur River (Stephenson 1950) and at Cooper Lake on the upper Sulphur River (Moorman and Jelks 1952). Stephenson (1950) located 50 sites in the 1948 survey at Texarkana Reservoir and three sites -- Knight's Bluff (41CS14), Sherwin (41CS26) and Snipes (41CS8) -- were excavated in 1952 by the Austin office of the River Basin Surveys of the Smithsonian Institution (Jelks 1961).

At Knight's Bluff (Jelks 1961:15-21) the excavations uncovered portions of a circular Texarkana phase house structure and two household cemeteries, as well as a Late Archaic/Early Ceramic period scatter. A small Early or Middle Caddoan period settlement was probably also present based on the occurrence of Haley Engraved, Crockett Curvilinear Incised, and Red River long-stemmed pipes (Jelks 1961:Table 1). The Sherwin site investigations encountered a compact midden deposit which appears to have represented house floor refuse from a Texarkana phase occupation. A cemetery area with eight extended burials was excavated at the northern end of the site, about 0.8 km south of the Sulphur River (Jelks 1961:Table 8). A relatively discrete and single component Early Ceramic period assemblage was found at the Snipes site, probably dating between A.D. 700-800, based on the presence of Alba-type arrowpoints and Coles Creek Incised ceramic wares in burial and habitational contexts (Jelks 1961:41-55).

Cooper Lake investigations in the 1950s recorded 26 prehistoric sites (see Duffield 1959), one of which, the Manton Miller site (41DT2), was tested by the Texas Archaeological Salvage Project (TASP) in 1959 (Johnson 1962). Members of the Dallas Archaeological Society were active in the Cooper Lake area in the 1950s and early 1960s, and excavated burials and tested midden deposits at a number of sites along the South Sulphur River (see Perttula 1988c:36-37).

In the late 1960s several Caddoan sites along the Red River in Bowie and Red River Counties were investigated after cutbank erosion of the Red River exposed or threatened to expose archeological deposits. The Texarkana Historical Museum recorded two sites north of New Boston in 1968, and excavated a Caddoan burial from 41BW121 (Brickey n.d.). A large

Middle Caddoan shaft burial was excavated at the Bentsen-Clark site (41RR41) in 1968-1969, and several Late Caddoan McCurtain phase homesteads were located on an adjacent terrace (Banks and Winter 1975). Southern Methodist University investigated two mounds at the Sam Kaufman Site (41RR16) and excavated several Early or Middle Caddoan houses and burials as well as a Late Caddoan McCurtain phase shaft burial in the East Mound (Skinner et al. 1969).

In anticipation of water level changes, portions of Texarkana Reservoir were resurveyed in 1970 by the Texas Historical Survey Committee (Briggs and Malone 1970). Over 140 sites, many of them of Caddoan affiliation, were recorded during the survey. Cooper Lake was the focus of archeological investigations by Southern Methodist University from 1970-1976. One hundred and ten sites were found during the survey and excavations were conducted at 33 prehistoric sites during those years (Hyatt and Skinner 1971; Hyatt et al. 1974; Hyatt and Doehner 1975; Doehner and Larson 1978; Doehner et al. 1978). Bousman et al. (1988:13-36) discuss in detail the results and conclusions of this research for understanding prehistoric adaptations in the Sulphur River Basin.

Related archeological survey work in the Sulphur River Basin was conducted by East Texas State University in 1971 in portions of Franklin, Morris, Red River, and Titus Counties (East Texas State University 1971:50-84). Bell (n.d.) recorded over 50 prehistoric sites in the White Oak Creek drainage of the Sulphur River Basin during the early 1970s, many dating to the Late Prehistoric (post-A.D. 800) period (see Perttula 1988c:Figure 2-4).

On the Red River in Texas recent archeological investigations include survey and test excavations at Big Pine Lake, Red River and Lamar Counties (Mallouf 1976), and extensive excavations at the Bob Williams (part of the Sam Kaufman site previously mentioned), Holdeman, and Roland Clark (41RR77) sites by the Museum of Red River (see Perino 1983). North Texas State University (now the University of North Texas) conducted excavations in several areas of the Roseborough Lake site in 1976, recovering important information on the Early Historic period aboriginal and French occupations of the site (Gilmore 1986). Within the last 10 years or so pothunting and graverobbing of Caddoan cemeteries on the Red River has become a severe problem, particulary in the vicinity of major sites such as Hatchel, Sam Kaufman, and Tilson. In 1979 the Texas Historical Commission mapped and recorded mounds and other cultural features at the Tilson site as part of a preservation program (see Creel and Fields 1979) which culminated in the Tilson site being purchased by the Archaeological Conservancy and portions of the Hatchel site being bought by the General Land Office of the State of Texas.

The Red River Archaeological Project was conducted by North Texas State University between 1979-1980. Over 130 prehistoric and historic sites in Bowie, Red River, and Lamar Counties were relocated or newly recorded as part of a research effort to understand and model site locational patterns in the Red River Basin (Gilmore and McCormick 1980,1982). Several of the prehistoric sites recorded during the project are within 1-2 miles of the

northern boundary of the RRAD along the headwaters of Barkman Creek (see Gilmore and McCormick 1982:Table 4).

In the Sulphur River Basin there was very little significant archeological activity between 1976-1986 with the exception of two cultural resources surveys in Red River and Titus Counties by Heartfield, Price and Greene, Inc. (1982a,b). Several Caddoan sites were tested along the Sulphur bottom in the Harts Bluff and Angelina Farms surveys, including Bear Ridge (41TT5), Post Oak Mound (41TT40), and 41RR65. Limited transect surveys in the vicinity of the RRAD by Espey, Huston & Associates, Inc. (1980) and Guendling (1985) recovered very little data on the density and character of prehistoric sites in this part of the Sulphur River Basin.

Since 1986, however, archeological activities in the Sulphur River Basin have increased with the renewed funding of the Cooper Lake project by the U.S. Army Corps of Engineers, Fort Worth District. Geoarcheological research, intensive survey, testing, and mitigative excavations at 11 prehistoric and historic sites, have been completed at Cooper Lake since June of 1986 (see Bousman et al. 1988; Perttula 1988b,c,d,e; Moir and McGregor 1988). The geoarcheological research showed that Holocene alluvial deposits with buried cultural materials in good context were present throughout the project area (Bousman et al. 1988). Other deeply buried sites have been recorded downstream along the Sulphur River (e.g., 41RR18, 41RR194), but this was the first effort to systematically assess the geoarcheological potential of the Basin.

A large number of new sites were found in the Cooper Lake area, and 62 prehistoric and historic sites have been tested (Moir and McGregor 1988; Perttula 1988b). Prehistoric sites which have been excavated include Hurricane Hill (41HP106), Lawson (41HP78), Thomas (41DT80), Doctors Creek (41DT124), and 41HP137 (see McGregor 1988; Perttula 1988c). Significant new data on Early Ceramic - Late Caddoan period settlement, subsistence, material culture and mortuary patterns have been recovered from these sites which should permit a more critical appraisal of the nature of Late Prehistoric adaptive strategies in the Upper Sulphur Basin.

Outside of the Cooper Lake area recent archeological activities are still rather limited. In 1987 the Texas State Highway Department excavated a small Texarkana phase hamlet and cemetery at 41MX5 in the White Oak Creek drainage (Wormser 1988). Survey and testing work is in progress on Little Mustang Creek and Cuthand Creek in Red River County (Perttula et al. 1988), and a number of Early Ceramic and Caddoan period sites have been studied. These research efforts have focused on site 41RR181, a large midden mound on Little Mustang Creek. Finally, in January and March 1988, Newman (1988) surveyed several proposed facilities at the RRAD, recording seven prehistoric or historic sites, including the two which are the focus of the present study.

Historic 19th-20th Century Archeological Research

Archeological research on historic Anglo- and Afro-American sites in the general vicinity of the RRAD is a relatively recent phenomenon of the late 1970s. Before that time historic archeological sites or standing structures were not usually considered of research significance in Northeast Texas. The first substantial historic archeological investigation was at the Roseborough Lake site in 1976. In Unit 1 of that site, a chimney fall was excavated which dated from the early 1800s, and was probably associated with the 1820s Collin McKinney occupation of the site (Gilmore 1986:22). Many 19th-20th century sites were recorded along the Red River during the Red River Archaeological Project (Gilmore and McCormick 1980, 1982).

At Cooper Lake, four late 19th-early 20th century sites were tested along the embankment right-of-way in 1986 (Perttula 1988c). The James Franks site (41DT97), an 1850s farmstead along the Doctors Creek Valley, was also excavated at Cooper Lake by the University of North Texas (Perttula 1988d). More intensive testing and excavation at a number of historic period farmsteads at Cooper Lake was conducted by Southern Methodist University during the 1987 field season (Jurney 1988). Two historic cemeteries -- Tucker (41DT104) and Sinclair (41DT105) -- were also investigated as part of the relocation of cemeteries at Cooper Lake by archeologists and physical anthropologists at the University of North Texas and the University of Arkansas (Lebo 1988).

Culture History

Prehistoric Archeological Record

The presentation of the prehistoric archeological record in the RRAD area of Northeast Texas is derived from Perttula (1988c:45-53), Moir and McGregor (1988), Story (1981, 1985), and Thurmond (1985, 1988). Chronological divisions are based on Thurmond (1985, 1988) and Story (1985, 1988):

Early Paleo-Indian	10,000 - 8000 B.C.
Late Paleo-Indian	8000 - 6000 B.C.
Early Archaic	6000 - 4000 B.C.
Middle Archaic	4000 - 2000 B.C.
Late Archaic	2000 - 200 B.C.
Early Ceramic	200 B.C. - A.D. 800
Late Prehistoric	A.D. 800 - A.D. 1600-1650
Initial Caddoan	A.D. 800 - 1000
Early Caddoan	A.D. 1000 - 1200
Middle Caddoan	A.D. 1200 - 1400
Late Caddoan	A.D. 1400 - 1600-1650

Thurmond (1988) presents a detailed test of the temporal diagnostics assumed to be associated with each of the listed periods. However, the lack of absolute dates and the absence of good, stratified archeological deposits, has prohibited the development of a firm, substantial chronology for the prehistory of Northeast Texas.

Paleo-Indian occupations in Northeast Texas are primarily represented by isolated finds of diagnostic projectile points (see Carley n.d.). The Forrest Murphey site (41MR64) at Lake O'The Pines, however, may represent a horizontally stratified Early Paleo-Indian encampment (Johnson n.d.), but other sites with possible components in stratigraphic context are poorly known (see Preston 1972, 1974). While variations in settlement mobility and intensity of residence also remain poorly known, the distribution of Paleo-Indian artifacts and the types of raw materials being utilized (primarily nonlocal cherts) suggest that these groups were very mobile, ranging over large areas in their foraging seasonal round (see Meltzer and Smith 1986; Shafer 1977). The presence of large herbivores in Northeast Texas and the Red River Valley between 11,000 - 9,000 B.P. (Hemmings 1983; Slaughter and Hoover 1963) may indicate that big game hunting was a part of the subsistence strategy. Possible Paleo-Indian materials in the vicinity have been recorded from several sites on alluvial terraces paralleling the Sulphur River at Lake Wright Patman (Briggs and Malone 1970), from a site at Lone Star Army Ammunition Plant (LSAAP) (see Newman 1988), and from the Keelan site (41BW12) on Barkman Creek recorded by Pete Miroir.

Our understanding of the long Archaic period has been hindered by the lack of stratigraphic or chronological data from stratified and/or single component occupations. Story (1985) suggests that Early Archaic settlements were small, group mobility was high, and generalized subsistence strategies of hunting-gathering continued (see Meltzer and Smith 1986). Through time, there is evidence that settlement systems became more complex -- sedentary settlements can be identified in certain cases and there appears to have been an increase in population (Story 1985:52). Distinct group territories may have been developed about this time as well. No evidence has been found that starchy or oil-producing seeds were cultivated during the Archaic in Northeast Texas, as was the case in the Ozark Highlands and the Eastern United States by 2000 B.C. (see Watson 1988). In the Sulphur River Basin the majority of the Early, Middle, and Late Archaic remains are from mixed, multicomponent sites on terraces and upland landforms. Archaic materials in buried contexts, however, have been recently reported from alluvial deposits on the Sulphur River near Talco, Texas (Cheatwood 1988) and from the Cooper Lake area (Bousman et al. 1988). The latter materials are assumed to have eroded from a soil deposit dated 6790 B.P.

Middle and/or Late Archaic components have been identified at almost all of the prehistoric sites excavated to date at Cooper Lake, although they are not the primary components (Bousman et al. 1988:30). Miroir recorded a number of Archaic localities to the immediate north and west of the RRAD which document multiple periods of settlement during the Middle and Late

Archaic. A similar record was noted on the Sulphur River and its tributaries by Briggs and Malone (1970).

A major presence of Early Ceramic period occupations apparently occurs in the Sulphur River Basin, although the recognition, and formal definition, of this period is still not well developed (Story 1981; Jelks 1961). Components have been recognized at the Snipes, Tick, Thomas, Hurricane Hill, Lawson and other midden sites on the Sulphur and South Sulphur Rivers, primarily on the basis of relatively thick grog-tempered and bone-tempered wares (Williams Plain), projectile point associations, and several radiocarbon dates from selected sites at Cooper Lake (Doehner and Larson 1978). Southern Methodist University's recent excavations at Cooper Lake seem to indicate, however, that the ceramic materials from Early Ceramic components such as 41HP137 and Lawson are not necessarily characterized by the thick Williams Plain wares which are common in an Early Ceramic or Fourche Maline context along the Red River and into southeastern Oklahoma (Brown 1971; McGregor 1988).

Important paleobotanical remains found in Early Ceramic components at Cooper Lake include hickory, acorn, tubers (probably the Prairie turnip, Psoralea sp.), and cultivated squash. The squash was recovered from a feature at 41HP137 which dates to 126 $\pm$ 51 B.C. (McGregor 1988:10-13).

Early Ceramic or Fourche Maline settlements are apparently represented by villages and hamlets in the floodplains or terraces of larger streams, and by smaller components in the uplands (Schambach 1982; Jelks 1961). Early Ceramic period sites in the Red River drainage of Northeast Texas include small hamlets and campsites, and similar settlements are probably present along tributaries to the Red and Sulphur Rivers (see Gilmore and McCormick 1982).

The presence of Early Ceramic period burial mounds along the Middle Sabine, Angelina, Neches, and Red Rivers in East Texas, Louisiana, and Arkansas suggests that regional social hierarchies were being developed at that time (see McClurkan et al. 1980; Schambach 1982). They also reflect the existence of specialized controls in the procurement and dispersal of nonlocal raw materials and artifacts, such as cherts, copper, and ceramic vessels that were included as grave goods in the burial mounds. Currently, there is no evidence that Early Ceramic populations in the Sulphur River Basin were involved in these social developments or participated in the interregional Hopewellian or Marksville-related exchange systems operative in these other areas.

The Initial, Early, and Middle Caddoan periods in northeastern Texas are characterized by a number of cultural innovations that contributed to an expansion in population and the increased complexity of sociopolitical organization. The bow and arrow led to the development of more efficient hunting strategies, while the evolution of more productive varieties of maize and other tropical cultigens ensured that these horticultural resources were an important, if not essential, part of the economy. Sedentary communities, farmsteads, and logistical camps (see Binford 1980) reflect a maximum dispersion of the population within most forested

habitats in northeastern Texas, including the Sulphur River Basin. The presence of Early Caddoan mound centers on the Sulphur River at the T.M. Coles site (Jackson 1931), several mounds at Wright Patman Lake (Stephenson 1950), and many mounds on the Red River (Banks 1983; Taylor 1949) is evidence that social and settlement hierarchical differentiation existed during the late prehistory of the region (see also Miller 1986). Whether all of these innovations characterize the late prehistoric archeological record throughout the Sulphur and Red Rivers is still a matter of some debate, however. The recent excavations at the Thomas, Lawson, and Doctors Creek sites recovered primarily wild plant remains (hickory, acorn, tuber [*Psoralea* sp.?]), with only a limited amount of maize and squash from components dated from ca. A.D. 900-1200. Thus, it is possible that tropical cultigens did not play a major role in local subsistence economies at that time (see McGregor 1988:10-1), and it is presently unclear whether there was an increase in the use of cultigens during later periods.

A common site type for these periods in the Sulphur River Basin is a dense midden deposit resembling midden mounds (see Heartfield, Price and Greene, Inc. 1982a,b; Doehner and Larson 1978; Perttula 1988c; McGregor 1988). These middens appear to represent the long-term use of particular settings, such as floodplain remnant knolls or upland edges, by a series of sedentary groups that singly might represent small habitation areas of fairly brief occupational span. Significant excavations of Early Caddoan period midden mound/habitation sites in the general area include work at the E.B. Minter, Arnold, Hurricane Hill, Spike, L.O. Ray, Lawson, Doctors Creek, Thomas, and Manton Miller sites (Bousman et al. 1988; Perttula 1988c; McGregor 1988; Gilmore and Hoffrichter 1964; Johnson 1962). The frequency, character, and nature of the midden deposits at Cooper Lake are very similar to those recently excavated at a number of sites along the prairie margin in the Trinity River Basin (McGregor and Bruseth 1987), although there the occupations are not attributable to Caddoan populations.

Other than the mound centers and midden mounds, Caddoan occupations of Initial, Early, and Middle Caddoan period sites include hamlets, villages, and single farmsteads. These sites are apparently most common on the floodplain and T-1 of the Red and Sulphur Rivers, but many are also known from stream valleys in the uplands.

In the Sulphur River Basin, Late Caddoan archeological sites have been excavated that have been included within the Titus and Texarkana phases (Thurmond 1985; Schambach 1983). Texarkana phase sites such as Knight's Bluff on the lower Sulphur River relate closely to Caddoan entities on the Great Bend of the Red River as exemplified by large, permanent settlements at the Hatchel, Tilson, and Mitchell sites in Bowie County, Texas, 15 km north of the RRAD. Late Caddoan sites in the upper Sulphur Basin have not been fully incorporated into the recently defined Cypress Cluster of the Titus phase (Thurmond 1985:193), although sites such as Culpepper and W.A. Ford in Hopkins and Titus Counties have been included with the Three Basins subcluster. Thurmond (1985:193) noted that the SMU investigations at Cooper Lake (see Doehner et al. 1978) failed to identify a single Titus

phase component, but a reconsideration of the occupational history there implies that there is indeed a transitory Late Caddoan exploitation of floodplain habitats at Cooper Lake (Bousman et al. 1988:30) by Titus and/or Texarkana phase populations.

In northeastern Texas, the basic types of sites present in the Late Caddoan period Titus phase are small settlements of one to several homesteads/farmsteads. Cemeteries occur in direct association with these small settlements and probably represent family burial plots. Regional changes in the intensity of settlement after ca. A.D. 1400 suggest that permanent, sedentary settlements are uncommon in the South Sulphur River Basin. The settlement system represented instead consists of more mobile and functionally specific occupations probably relating to seasonal hunting activities. It is likely that this later aboriginal utilization of the South Sulphur River included forays by hunting parties from the Red River, the lower Sulphur River, and the Cypress Creek drainages.

In the Texarkana phase area, recorded or reported sites are typically large, permanent settlements with mounds, while the small, subsidiary hamlets and farmsteads are poorly known with the exception of the 1950s excavations at Wright Patman (Jelks 1961), 1987 work at 41MX5 (Wormser 1988), and Miroir's work in household-associated Texarkana phase cemeteries.

Historic Aboriginal Record

The historic Caddoan V occupation of the general RRAD area is not well known, even though documented 18th century villages and sites are located in the Red and Sulphur River Valleys (see Miroir et al. 1983; Gilmore 1986; Harris et al. 1980; Dickinson 1941; Lewis 1987). It is possible that the mound at the Hatchel site was used after A.D. 1680 (Wedel 1978). The Teran de las Rios map of 1692 shows a Caddoan community on the Red River composed of a number of farmsteads and at the western end of the community was a platform mound with a structure on top. This Upper Nasoni community has been identified in documentary studies by Mildred Mott Wedel as located in the Great Bend region northwest of Texarkana, and she suggests that the mound was in all likelihood the Hatchel mound.

Historical documents from the 1542 DeSoto-Moscoso entrada into East Texas from the Mississippi Valley suggest that the Nissohone of the chronicles are probably the Nasoni of the eighteenth century (see Hudson 1986; Swanton 1939) who were living on the lower Sulphur River, possibly in Northeast Texas. It appears that the Nissohone lived in the same areas of the Sulphur River in 1542 as did population remnants approximately 150-200 years later. Other Nasoni moved south into the Neches-Angelina drainage after initial contact and were eventually introduced to the Catholic faith when Spanish colonial religious and political policy dictated that Caddoan populations be missionized. The Mission San Jose de Nazones (1716-1719, 1721-1730) was built for these Nasoni at the same

time other Spanish missions were built for the Neche, Tejas, Nacogdoches, Ais, and Adaes Caddoan groups (Swanton 1942).

Benard de la Harpe in 1719 used the Nasoni portage on the Sulphur River to bypass the Great Raft on the Red River and then built a trading post among the Nasoni at the Roseborough Lake site (Gilmore 1986). This post was used until the 1760s by the French out of Louisiana. The upper Nasoni community extended for some 5-10 km along the Red River, but the hinterlands south to the Nasoni portage were clearly part of their territory (see Wedel 1978). The Hunt and Clements sites, located on the divide between the Cypress and Sulphur River Basins, ca. 40 km south of the RRAD, appear to have also been occupied by Nasoni Caddo ca. 1680-1740 (Lewis 1987; Perttula 1988a).

The introduction of European diseases severely reduced the population sizes of Caddoan groups, perhaps reducing populations as much as 95 percent between initial exposure and the time of sustained European observations (see Dobyns 1983; Thornton 1987). If Caddoan populations lived throughout the Sulphur River Basin at the time of initial contact, it is likely that drastic population losses following the introduction of European diseases would have resulted in: (1) the abandonment or emptying of the Sulphur River area, and/or (2) the retention of settlements as enclaves along major trails and portages (such as the Nasoni portage), rather than a continuous distribution throughout the region.

Long after the Spanish mission system had failed in East Texas, Caddoan groups still remained in their native territories. However, in the 1790s changes in Spanish policy regarding the colonization of Spanish Texas led to the movement into Caddo territory of Indians who had lived originally east of the Mississippi (such as Choctaw, Delaware, Cherokee, and Alabama) and Anglo-Americans. Competition for land and resources, and the limited access to European trade goods, caused continual enmity between Caddoan groups (primarily living on the Red River) and these intrusive groups. Several of these groups moved into the Sulphur River Valley in the early 1800s, including the Delaware, Quapaw, and Shawnee (Bollaert 1850; Ewers 1969). The Shawnee, for instance, numbered 300 families in 1830 (Ewers 1969:142), while the Delaware and Quapaw were estimated to number 150 families apiece in their Northeast Texas settlements.

It is likely that the choice of the Sulphur River (known then as the Sulphur Fork of the Red River) as the area to settle was based on two related factors. The first was proximity to Anglo-American settlements and trading establishments on the Red River at Jonesborough and Pecan Point (Steely 1986; Strickland 1937). Second was the historic trace that ran from the Red River (in Louisiana) across the Sulphur River towards the Taovayas-Wichita villages on the Upper Red River (Flores 1985:4). This trace was used by Anglo-American and Spanish traders in the 1790s to hunt deer and bison for their hides and to procure wild horses for sale in Natchitoches and New Orleans. The trace crossed the Sulphur River in the vicinity of Mustang Creek (Flores 1985:38,113).

Anglo-American Historical Background

The initial exploration of the Red River Valley in Northeast Texas began in 1806 with the Freeman-Custis expedition (Flores 1984). Sent by President Jefferson to explore the Red River following the Louisiana Purchase in 1803, Freeman and Custis were turned back near Spanish Bluff (in present-day Bowie County) in Spanish territory by a force from Nacogdoches. However, exploration of the Red River changed quickly to permanent settlement as Anglo-Americans from the Upper and Lower South moved onto the frontier. As early as ca. 1814-1815 settlements had been established on the Red River at Jonesborough and Pecan Point, in present Red River County, as well as at other scattered farmsteads on both sides of the Red River (Steely 1986; Jordan 1981; Strickland 1937). In Bowie County, early Red River settlers included such prominent men as Charles Burkham, Francis M. Hopkins, Richard Ellis, and Collin McKinney (Jennings and Varner 1976).

Until the mid-1820s, Anglo-American settlement was largely restricted to the Red River, but within a few years settlers pushed south into the prairies between the Red and Sulphur Rivers (Strickland 1937:99) following tributaries and overland trails such as Trammel's Trace. Throughout the 1820s and 1830s Anglo-American settlers continued to homestead along the lower reaches of the Sulphur Fork. These homesteads were under Mexican jurisdiction but as Strickland (1937) and Steely (1986) have noted, the local administration was actually directed by the civil government of the Arkansas Territory and the State of Arkansas. After the establishment of the Republic of Texas in 1836, settlers living on the Red River and the lower Sulphur Fork came under the jurisdiction of Red River County (Strickland 1937:289).

The general RRAD area was not heavily populated during the pre-statehood period. In 1827 the population of the Sevier township of Miller County, Arkansas Territory, which encompassed the eastern half of present-day Bowie County, had only 88 individuals and no slaves (Steely 1986:130; Strickland 1937:105). Wavell's colony introduced a number of families to the area in the period between 1826-1831, although many of the families on the register were already residents of Miller County (Strickland 1937:185-198). Quite a few of the families were small slaveholders (1-5 slaves), with the largest slaveholders (15-35 slaves) being William P. Hickman and Collin McKinney, planters with homesteads on Hickman's Prairie between McKinney Bayou and the Red River (see Jennings and Varner 1976:17-21). No titles to land were actually issued by Wavell's colony because of boundary disputes between Mexico and the United States. In 1835 Miller County as a whole had only 1375 people (Strickland 1937:237) and most of these families lived above Pecan Point and Jonesborough.

The 1830s and 1840s were a period of steady growth in the Bowie County area. The juxtaposition of two major overland immigrant routes (Trammel's Trace and the California Road) into Northeast Texas adjacent to the RRAD led to a rapid growth in settlement and economic activity following the establishment of the Republic of Texas in 1836. Bowie County was

established in 1840 with the present boundaries set in 1846. The county seat was placed in Boston, just west of the RRAD.

The initial settlers to the area were primarily yeoman farmers and small slaveholders from the Upper South who had a generalized grain and livestock economy (see Lowe and Campbell 1987). With the introduction of commercial cotton production by the 1830s came an early influx of white planters and large slaveholders from the Lower South (Jordan 1986). As the cotton trade increased in the 1840s, development of landings and communities along the Red River and right-hand tributaries encouraged the immigration of a more diverse population from the Lower South. These families developed large plantations adjacent to the Red River and running south to Dayton's Road, which followed the same route as present-day U.S. Highway 82, the northern boundary of the RRAD (Strickland 1937).

In 1842 Bowie County had 2,553 people, of which approximately 36 percent were black slaves. The proportion of slaves was considerably higher in Bowie County than for East Texas as a whole, and indicates the early influx of white planters (Jordan 1986). The population rose to 2,912 in 1850, and it was 5,052 in 1860. Slaves made up between 53 and 56 percent of the population in the 1850 and 1860 censuses (Lathrop 1949). In the RRAD vicinity land grant patents show peaks in land acquisition and settlement between 1844 and 1855. Particular population concentrations were noted in Bowie County along the Red River and on Trammel's Trace south to the Sulphur River (Strickland 1937:361). The Trace apparently cut across the southern boundary of the RRAD (GLO 1944).

The position of Bowie County on major overland routes and access to river transportation on both the Sulphur and Red Rivers, although in part a seasonal operation due to low water levels and the Great Raft (McCall 1988), contributed greatly to the development of the local plantation economy. One of the larger plantations was established by Benjamin Hooks in 1839; it covered 5,000 ares in what is now the combined RRAD/LSAAP area. The community of Hooks was established ca. 1848 as a supply center for the population (Jennings and Varner 1976).

Significant changes in the Texas agricultural economy and antebellum sociocultural system took place after the Civil War with the demise of the plantation and slavery system and the development and spread of the share tenant and sharecropping system. Landholdings became smaller and there was a great increase in the number of tenant farmers relative to owner-operators (Turner 1936; Spratt 1955). By 1900 most farms in Bowie County were operated by tenants or croppers.

The tenant and cropping system was based on the cultivation of cotton as a cash crop and an overall commercialization of the cotton market in Texas (Ellis 1970:507). As Spratt (1955:58-59) noted, tenant farming was stimulated by the continued escalation in cotton production, rising land prices, changes in agricultural technology (i.e., the more widespread use of farm machinery), and the need for credit to maintain the farm. For the farmer to obtain credit, the cultivation of cotton was the best choice as a commercial crop (Spratt 1955:75).

The development of the cotton industry was ultimately dependent upon access to the larger market centers. Railroad construction in Texas and the spread of cotton cultivation after 1870 are intricately linked (Boehm 1975). The Texas and Pacific Railway Company built a railway line from Marshall north to Texarkana in 1873, then extended the line west to Paris, Texas, in 1876 (Zlatkovich 1981). The line paralleled Dayton's Road established four decades earlier along the northern boundary of the RRAD. In 1880 a railway line was built between Texarkana and Mt. Pleasant by the Texas & St. Louis, which became known as the "Cotton Belt" part of the St. Louis-Southwestern of Texas railway system (Zlatkovich 1981). This line runs adjacent to the southern boundary of the RRAD.

The agricultural economy in Texas was not concentrated on the production of cotton until about 1880. In that year the Texas cotton crop had a total cash value of $54,782,000, which was several times larger than the value of all products made in the mechanical and manufacturing industries within the state (Spratt 1955:Tables VIII, XIV). The contribution of cotton to the Texas agricultural economy amounted to 44-60 percent for the years between 1870-1900, and most of that cotton was grown on the Blackland Prairie west of Texarkana, then shipped to gins and warehouses by railroad, and to markets in New Orleans, St. Louis, and Galveston (Boehm 1975). An 1882-1883 Texas business directory for Bowie County lists a number of gins in the various communities of Maud, New Boston and DeKalb, and a cotton compress in Texarkana (Jennings and Varner 1976:27-29). The export of cotton, cattle, and hides was of obvious importance in Bowie County in the late 19th and early 20th centuries. Peak periods of cotton cultivation in Northeast Texas were between 1880-1940, although noticeable declines in crop prices and production started in the mid-1930s. The reduction of the scale of the agricultural economy in Northeast Texas, as well as in Bowie County, led to a reduction in the agricultural work force, and a diversification in agricultural and nonagricultural pursuits, such as manufacturing or cattle ranching.

The arrival of the railroad in Bowie County also caused significant and profound changes in the economic structure and social landscape of the RRAD area. The most basic change was the development or relocation of new communities along the railroads and the demise of older communities located away from the lines. This community movement effected a complete reorganization of the landscape since residential, community, and industrial sites located along previous overland routes were abandoned and new ones established near the railroads.

Present Bowie County communities in the vicinity of the RRAD which were established after the arrival of the railroad include New Boston (1876), Nash (1880), Redwater (1881), Maud (1881), and Texarkana (1873)(Tarply 1969, 1980). Older communities in Bowie County, such as Boston, Myrtle Springs, and Moore's, are listed as having post offices in The Texas Almanac for 1857. These communities, however, became much less important after the introduction of the railroad (Chandler and Howe 1939; Steely 1986).

As early as 1820, it was predicted that lumber would be among the staple industries of East Texas (see Doughty 1987). In 1831 Stephen F. Austin (Barker 1924) described the region as "very abundantly supplied with living streams of pure water, which afford many favorable sites for saw and other mills, either water or steam. The lumber from this quarter will be very valuable soon as mills are put in extensive operations." Before the advent of railroads into the area, however, most timber was cut for local use and extensive exploitation of the Bowie County pineywoods did not begin until the economic recovery after the Civil War (Maxwell and Baker 1983). Railroads provided not only inexpensive transportation for the timber and lumber but were also one of the timber industry's major markets. By 1880 Bowie County had over 100 workers employed in the production of lumber (Allen 1961) and this source of manufactured goods was a major reason why Bowie County in 1880 was among the top ten counties in Texas in the value of goods manufactured (Dugas 1955). Adjacent Red River and Cass Counties in 1870 and 1880 were among the top four counties in the state in the employment of lumber workers (Allen 1961).

Although the lumber industry's peak years were between 1870 and 1930 (Maxwell and Baker 1983), it continues to play a major role within the region. As late as 1940, Bowie County employed more than 500 lumber workers and had five mills employing 100 workers or more (Allen 1961).

Saw mill operations, as a source of employment, served as a social and community focus in a rural economy such as that which characterized 1870s-1930s Bowie County. One of the larger saw mills was located in Redwater, south of the RRAD (Jennings and Varner 1976:11), and several smaller saw mills were recorded in the project area in 1941 when a 33,000 acre area was acquired by the War Department for the Lone Star Defense and Red River Ordnance Plants (Heartfield and Dieste 1984a,b).

At the completion of construction of the Red River and Lone Star Plants in 1942 all residents were moved to nearby new communities such as Victory City, Whaley, Wake Village, or to burgeoning older communities like Hooks. Hooks was a boomtown which grew from less than 400 in 1940 to more than 3,000 in 1942 when the defense plants opened (Tarpley 1969). All historic structures and outbuildings within the defense plant limits had already been demolished and burned, or removed to the newer communities by that time.

CHAPTER 4

RESEARCH GOALS AND METHODS

Research Goals

The major goal of this project was to conduct test excavations at sites 41BW182 and 41BW183 in order to acquire information sufficient to assess the potential of the sites to meet minimal criteria for eligibility to the National Register of Historic Places. The qualifications of these properties for nomination to the National Register of Historic Places is dependent upon one or more of four specific criteria, designated Criteria A, B, C, and D, as defined in 36CFR60. These four criteria are applied following the identification of relevant historical themes or patterns. A property may possess significance for (1) its prehistoric or historic association with events or persons (Criteria A and B); (2) its illustration of a period, type or method of construction, or for aesthetic values (Criterion C); or (3) its potential for yielding information important for prehistory or history (Criterion D). Although the historic component at site 41BW182 may be evaluated under criteria A or B, both sites will most probably be evaluated under Criterion D. Any consideration of a property under Criterion D must address whether the property contains information which can contribute to our understanding of history or prehistory and whether that information is important.

The first step in the evaluation process should be to define the significance of the property by identifying the particular aspect of history or prehistory to be addressed and why information on that topic is important. The second step is to define the kinds of evidence or the data requirements that the property must exhibit to provide significant information. These data requirements in turn indicate the kind of integrity that the property must possess to be significant. This concept of integrity relates both to the contextual integrity of the archeological deposits and to the applicability of the potential data base to pertinent research questions. Without such integrity, the significance of a property is very limited.

The determination of eligibility, therefore, depends upon an assessment of the property's integrity, the types of data present, and the applicability of that data to important regional research questions. The data collection procedures outlined below are designed to accomplish these goals.

Research Methods

Test Excavation Methods

The determination of National Register eligibility for sites 41BW182 and 41BW183, and assessment of the potential impact of the borrow pit activities on the sites, was dependent upon the retrieval of information concerning: a) site boundaries, b) presence of structural remains or features, c) depth and contextual integrity of the deposit, d) density of cultural remains, and e) the nature of the artifact assemblage. To accomplish this goal 50x50 cm units were to be placed along the cardinal axes of the sites as a means of determining the spatial boundaries and the integrity of the sites. Using information gained on site area and artifact density from these units, a limited number of larger units (1x1 m squares) would be excavated to sample primary activity areas and to assess the potential for the presence of features.

Testing procedures were similar for both sites, with the initial work involving a visual inspection of the site area and the placement of a random series of 30x30 cm circular shovel tests across the site in order to gain an initial idea of site density, extent, and depth. These shovel tests were screened through 6.4 mm (1/4 inch) hardware cloth and the artifacts bagged by shovel test. Based on the results of these tests, a series of north-south and east-west base lines were laid out across the site with a transit so as to intersect any identifiable areas of "high" artifact density. A series of 50x50 cm square units was excavated at 10 m intervals along these base lines using arbitrary excavation levels (either 10 or 20 cm levels, as determined by the nature of the site and deposit). As with the shovel tests, the fill from these units was screened through 6.4 mm (1/4 inch) hardware cloth and the recovered artifactual material saved. At 41BW182, the additional procedure of auger testing was used to investigate an area of possible historic period utilization in the southeast part of the site. This involved the excavation of a series of circular auger holes (20 cm in diameter) to a depth of about 80 cm, with the fill subsequently screened and artifactual material saved. The final stage of testing at both sites involved the excavation of a series of larger 1x1 m square units in areas of "high" artifact density, based on the previous testing, or in areas of "high" feature potential, based on surface indications. These units were excavated in 10 cm arbitrary levels, with the fill screened through 6.4 mm (1/4 inch) hardware cloth and all artifactual material saved.

The final work at each site involved mapping the locations of all of the initial shovel tests, shooting elevations for each excavated unit to provide vertical control for the excavations and to allow the later construction of a topographic map of the site area, and profiling a selected number of units to show stratigraphic relationships across the site area. A complete photographic record was kept throughout the testing of each site, with all pictures being recorded on site photographic record forms. Following the completion of testing, all excavated units at site

41BW182 were backfilled, but the shallower units at site 41BW183 were left open, with the permission of the COE contact, in anticipation of the site being destroyed.

Archival Research Methods

Archival research relating to site 41BW182 was conducted at the following repositories: the Bowie County Courthouse in New Boston; the Texarkana Historical Museum in Texarkana, Texas; the General Land Office in Austin; the Barker Texas History Center at the University of Texas at Austin; the Texas State Archives; and the Genealogy Division of the Texas State Archives. Data were collected from real property records, county census records, county tax rolls, and oral informants. General information about the county was also scanned. Pertinent data were extracted from all of the information that was collected and is presented in the discussion of site 41BW182 by category of information. A summary discussion follows the categorical data.

Laboratory Methods

Analysis of the artifact assemblages was designed to fully characterize the range of activities conducted at the sites. Since the primary objective of the testing procedure was to determine the presence of distinctive cultural components, analysis focused on the temporally diagnostic artifacts. Nevertheless, the analysis addressed all artifact classes with sufficient detail so that the nature of the occupation could be characterized. Information recorded for the stone artifacts included size, cortex retention, material type, and platform type; tool analysis included size and shape attributes, cortex retention, retouch type and location, and material type (Appendix A). Analysis of the historic artifacts focused on the diagnostic elements as well as total assemblage composition. All historic artifacts were assigned to major categories of artifact function as defined in Moir and Green (1988). Diagnostic types of refined earthenware, glass, stonewares, and metal were analyzed in greater detail.

Artifact processing commenced in the field where daily finds were washed and examined prior to the commencement of the next day's field work. Not only did this shorten artifact processing time once field work was terminated, but it also allowed the Project Archeologist to monitor the progress of testing at each site and modify the test excavation strategy, as required by these results, on a day-to-day basis.

Following the completion of the field work, all artifacts were returned to Geo-Marine, Inc.'s Plano, Texas office for final processing and analysis. The results of the final day's excavations were washed at that time and all artifacts were catalogued, labelled, and bagged in compliance with the stipulations of the Texas Archeological Research Laboratory for

the preparation of archeological material collections. Analysis of both prehistoric and historic artifact assemblages was carried out, by Geo-Marine, Inc. personnel. Following completion of artifact processing, the photographic record compiled during site testing was also catalogued in compliance with Texas Archeological Research Laboratory standards.

The final repository for the artifacts and records compiled as a result of the testing of sites 41BW182 and 41BW183, as well as records resulting from the archival research for site 41BW182, will be The Institute of Applied Sciences, University of North Texas, Denton.

CHAPTER 5

SITE 41BW182

Setting

Site 41BW182 is located within the area of the Red River Army Depot (RRAD) in Bowie County, Texas. It is within the drainage basin of the Sulphur River, on the western slope of the drainage divide between Caney Creek to the west and Nettles Creek to the east. It is situated at the top of the slope above what is today Caney Creek Reservoir, about 90 m to the west, and what would have been in the past the floodplain of Caney Creek. The site is at an elevation of between approximately 99 and 100.5 m (325 to 330 ft) above sea level and is situated in a mixed pine and hardwood forest with heavy understory. Nearby archeological sites include site 41BW183 about 250 m to the northeast (largely prehistoric), site 41BW184 about 210 m south-southeast (also prehistoric), and sites RRAD #s 1 and 2 about 350 m to the east-northeast (containing both historic and prehistoric components), recorded by a previous survey (Newman 1988:20-21, Figure 1).

The site is apparently located on Darden loamy fine sand close to its interface with Woodtell very fine sandy loam, which occupies the slope to the west of the site (Fox 1980:Sheet 50). Darden loamy fine sand is described as consisting of dark yellowish brown, strongly acid loamy fine sand down to 12.7 cm below the surface; yellowish brown, very strongly acid loamy fine sand down to 63.5 cm; and strong brown, very strongly acid loamy fine sand down to 203.2 cm below the surface (Fox 1980:19-20). In contrast, Woodtell very fine sandy loam consists of brownish very fine sandy loam from the surface down to 15.2 cm; clay (red in the upper part and grayish in the lower part) mottled with shades of red, brown, and gray down to 134.6 cm; and finally partially weathered, stratified, light brownish gray shale and sandy clay loam down to 182.9 cm below the surface (Fox 1980:33-34).

Site 41BW182 was recorded in January, 1988, as a light scatter of prehistoric and historic material noted in a shallow bulldozer cut on the western edge of the proposed borrow area (Newman 1988:21). This material included two flakes, four pieces of clear bottle glass, a small fragment of red brick, three pieces of brown snuff bottle glass, two milkglass fragments, and fifteen sherds of refined earthenware (including 5 rims, 8 body sherds, and 2 base fragments). Nine shovel tests were excavated at 25 m intervals along two transects, perpendicular to one another, and one (located at the intersection of the two transects) contained a metal tobacco can cover and two white earthenware fragments (Newman 1988:21). Based on this material, the historic occupation of the site was suggested to date between 1890 and the 1930s, and the site was apparently felt to be potentially eligible for inclusion on the National Register of Historic

Places on the basis of the prehistoric component and of the possible pre-20th century date for the historic occupation.

Archival Research

Deed Record Data

Archeological site 41BW182 is located on the James Harper R.R. 1-527 Survey in Bowie County (Figure 5). The land was originally granted to James Harper "by virtue of Certificate No. 602 issued by the Board of Land Commissioners of Red River County June 7th 1838." (Bowie County Patent No. R.R. 1-527, General Land Office, Austin, Texas). The official document transferring this land was not actually produced until November 9, 1854, when it was entered into the records of the General Land Office. During the following 40 years the chain of ownership for this property is unknown, for the Bowie County Courthouse containing all real property records burned in 1889. At some point during that 40-year period, the land was subdivided. The site in question is located on Tract 583 of the Harper Survey. The chain of title for Tract 583, as obtained from deed records, is as follows:

Deed Volume 57 page 6 Feb. 27, 1906
John H. Brown and Martha Brown (husband and wife)
to H.B. Beard. 61 acres for $600.00 to be paid in 6 yearly installments of $100 each.

Deed Volume 57 page 7 Jan. 10, 1907
H.B. Beard and M.E. Beard (husband and wife)
to H.B. Bailey, who agrees to pay notes mentioned above plus $10 in hand for the 61 acres.

Deed Volume 57 page 8 Sept. 18, 1909
H.B. Bailey and Lizzie Bailey (husband and wife)
to L.M. Yates, who agrees to take over payments plus $10 in hand for the 61 acres.

Deed Volume 190 page 294 April 14, 1942
L.M. Yates and Mary F. Yates (husband and wife)
to U.S.A. for $900. This is specified as Tract 583 containing 61 acres.

Based on these transactions, it appears that the Yates family probably held the land at the time the site was occupied.

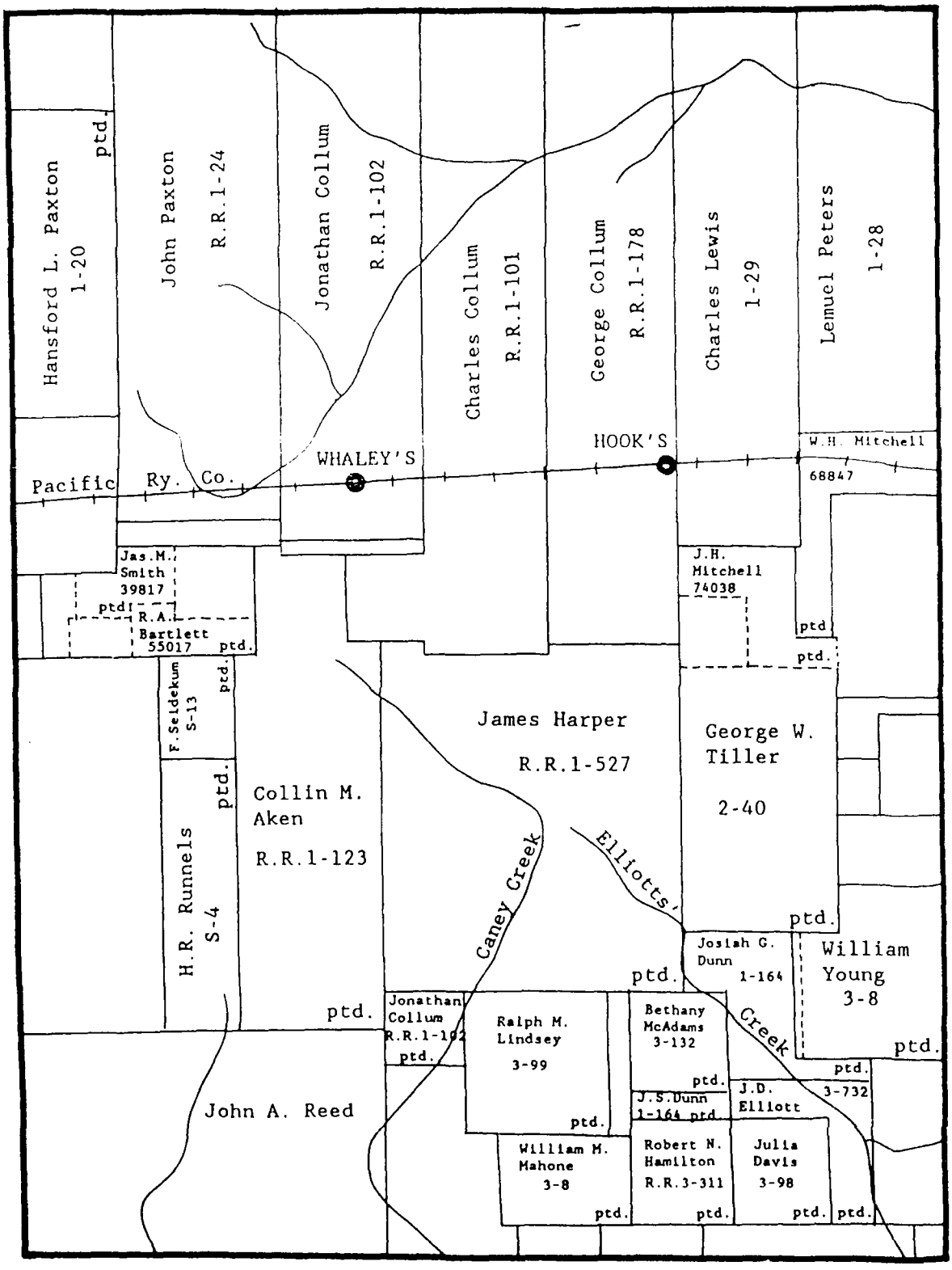


Figure 5. Section of General Land Office map of Bowie County showing James Harper and surrounding surveys.

Census Data

A check was made for specific names in the census records for the years between 1840 and 1910, with some effort being made to locate information relating to James Harper. Although he was the first owner of the property on which the site was located, he was probably not physically associated with site 41BW182. No listings for any Harpers at all were found in the census records for Bowie County until the year of 1880 at which time there were five different entries under Harper as a surname. The heads of household for these families were T.J. Harper, T.E. Harper, R.R. Harper, G.H. Harper, and Buck Harper. None of the Harpers listed has the correct given name, although it is possible that any might be related. The Federal Census of the United States, including Texas, for 1890 was destroyed by fire. By 1900 the population of Bowie County had proliferated to the extent that it did not seem useful to scan for such a common name, especially since the Harpers had long given up all rights to the property.

The next name to be investigated in the census records was John H. Brown. No Browns are listed in the census for Bowie County until 1860, at which time two appear. No John Browns appear until 1870, when John is listed as a 22-year-old mulatto and his wife, Nora, as an 18-year-old black. However, the John Brown in the Deed Record Vol. 57 p. 6 specifies his wife's name is Martha. It is of course entirely possible that Martha could be a later wife to the same individual. In the 1880 census for Bowie County there are three entries for John or J. Brown. The first is the same John and Nora listed in the 1870 census, now including two daughters as well. The second is a J.R. Brown, a white male, 30 years old, from Alabama (this name is included since it is common to mistake R and H in script, and the version of the document available for study is transcribed and typewritten). And finally, there is J. Brown, a black male, 19 years old, from Kansas who lists his occupation as laborer. No John H. Browns are listed in Bowie County for the years of 1900 or 1910.

The names of Bailey and Beard were not investigated because of their extremely short association with the site. Also, due to the large number of Baileys and Beards in the records, it was not deemed a profitable pursuit given the limited amount of research time available.

The first Yates listed in the Bowie County census records appears in 1850. J. Mc. Yates, a 34-year-old male from Ohio, is listed with his wife, Harriat, and his daughter, Mary. He lists his occupation as a "gen. wright" and states that he owns 1,000 acres of land. In 1860 the same J. Mc. Yates is shown with two additional daughters, M.E. and Francis L. No Yates are listed in the 1870 census, and the 1880 census shows only one as a head of household: J.J. Yates. In the 1900 census, in which only specific given names were searched, there is no Louis M. Yates listed. However, the 1910 census contains both Mr. Yates and his family. Louis M. Yates lists himself as a white male, 48 years old, who was born in Georgia. He is shown as being married for 22 years, he speaks English, and is a self-employed farmer who can read but cannot write. He also owns his own farm. His wife, Mary F. Yates, was born in Alabama. She lists

no trade and can both read and write. They show five children: Susie A. - 16, William P. - 11, Mattie B. - 8, Walter L. - 4, and Elzie - 2. Both Susie A. and William P. are listed as laborers on their father's farm. The census indicates that the family had immigrated from Alabama. Because of the Privacy Act, no census records are yet available after 1910.

Tax Roll Information

Tax rolls were studied in an attempt to obtain more information about specific individuals. Due to the massive amount of information, only pertinent years were examined. The tax assessments taken between 1840 and 1845 are missing; therefore, the first available assessment for study is 1846. This document lists Elizabeth Harper as the only Harper residing in the county. She is shown as paying tax on six Negroes, but no land holdings are claimed. In 1847 Elizabeth Harper is once again the only Harper listed. In this year, she pays tax on seven Negroes and claims no land holdings. In 1848, however, she claims 3,000 acres on the J.S. Harper Survey, in addition to five Negroes. She is not listed in the tax rolls after 1848.

J.H. Brown is not listed in the tax rolls until 1898. In that year he is shown paying tax on two horses or mules and one carriage. He is not listed in 1899 or 1900. In 1901, J.H. Brown is listed with one horse or mule, one cow, one hog, one carriage, and nine "misc. property". He claims no land holdings. However, in 1902 he is shown as paying tax on 101 acres in the Jas. Harper Survey, as well as having one horse or mule, one cow, and one carriage. He is not listed in the 1903 tax records but is listed once again in 1904. In this year, he is paying tax on only 61 acres in the Jas. Harper Survey (which is the same amount of acreage as Tract 583). He also lists one horse or mule, four cows, and one carriage. J.H. Brown is not shown in the tax records after 1905 (scanning for this name was discontinued after 1910).

L.M. Yates does not begin paying taxes in the Harper Survey until 1910. He is listed in the tax rolls in 1909 as paying tax on 100 acres in the R.M. Lindsey Survey (this survey is directly south of the Harper Survey, see Figure 5). In 1910 he is shown as paying tax on an unknown amount of acreage in the Harper Survey, as well as on two horses or mules, four cows, nine hogs, one carriage, and 25 "misc. properties". L.M. Yates is shown on the 1911 tax rolls for Bowie County as paying tax on 61 acres in the Jas. Harper Survey, as well as on two horses or mules, five cows, eight hogs, and one carriage. Given the limited amount of time available for this study, it was impossible to review the tax rolls for L.M. Yates after 1911; however, this could certainly be considered a worthwhile endeavor for further phases of investigation.

Oral Informant Data

Mr. Glyn Yates is the grandson of Louis M. Yates and he remembers visiting the site as a child in the company of his father, Walter L. Yates. He stated in conversation that his grandfather was a farmer, growing cotton, corn, and peas. Cotton was grown as a cash crop. He had been told that there was a frame house there at the time they purchased the property in 1909. They made improvements on this house, and two years before the government purchased the land (ca. 1940) they tore the old house down and built a new frame house at the same site. He stated that at the time the site was purchased by the government, the family was given an option to have the house moved to a new location, but that the family did not elect to do this. He has no information about what happened to the house and other outbuildings after the family moved out around 1942.

Mr. Yates confirmed that the family was originally from Alabama and that they came to Texas after 1900. Census data show that all the children listed in the 1910 census were born in Alabama. The youngest child listed is Elzie, who was two years old. It can therefore be deduced that the family moved to Texas around 1908. Mr. Yates also indicated that his grandmother liked to garden and that there were many plantings around the house; he remembers roses in particular. In addition to farming, they had a house garden and canned many of their own vegetables. Louis and Mary Yates were both still living when their land was purchased by the government. They relocated to another farmsite in Bowie County. Mr. Yates stated that they were both in their 90's when they passed away.

Summary

The property on which 41BW182 is located first passed out of public domain in 1838, when it was granted to James Harper (Bowie County Patent No. R.R. 1-527, General Land Office, Austin, Texas). The original grant was for 17.45 labors of land (or 3,091 acres). Mr. Harper did not receive official title to this property until 1854, by which time he was no longer paying taxes on the property. Taxes on 3,000 acres of the property were being paid by Elizabeth Harper in 1848 (Bowie County Tax Rolls, 1848). It is probable that Elizabeth Harper was the wife or other close relative of James Harper. It is not clear who owned the property by 1849, since Elizabeth no longer appears in the tax rolls.

The property is not again discernible in the records until 1906, when it is transferred from John H. and Martha Brown to H.B. Beard (Bowie County, Texas Deed Volume 57, page 6). Several J. Browns are listed in the census data for various years, but none can be tied directly to the site. J.H. Brown appears in the tax rolls in 1898 but does not begin paying taxes on property in the James Harper Survey until 1902 (Bowie County Tax Rolls, 1902). In 1902 he is paying taxes on 101 acres of land. By 1904 he is only paying taxes on 61 acres (Bowie County Tax Rolls, 1904). This is the same amount of acreage that was included in Tract 583.

H.B. Beard apparently only held the property for one year, after which time it was transferred to H.B. Bailey (Bowie County, Texas Deed Volume 57, page 7). Mr. Bailey had owned the property for two years when he and his wife, Lizzie, sold the property to L.M. Yates, who held the property until it was purchased by the U.S. Government in 1942 (Bowie County, Texas Deed Volume 190, page 294).

According to Mr. Glyn Yates (personal communication, 1988) a frame house was already on the property when it was purchased by L.M. Yates. It is probable that this structure can be associated with J.H. Brown, and less likely, with the Beard or Bailey families (given their relatively short association with the site). This structure was removed around 1940, at which time a new frame house was completed. The 1940 house was destroyed at some date after the site was purchased by the U.S. Government in 1942. Mr. Yates also indicated that other outbuildings existed at the site, including a barn, storage house, outhouse, and garage.

Excavation Methodology

At the time of testing, the planned borrow area was being excavated to the east of site 41BW182, and the site had been delineated on three sides, to the north, east, and south, by large earthen berms raised between the active borrow area and the site (Figure 6). As a result of this, the preserved site area measured approximately 75 m north to south, and extended about 70 m east from the planned western margin of the borrow area. The site area was thus delimited to the north, south, and east by the borrow area, and was found to be delimited on the west by the edge of the slope above Caney Creek Reservoir, only 20 to 25 m west of the planned margin of the borrow area (Figure 7a).

The site itself was found to be heavily disturbed by earthmoving activities, some associated with coring operations prior to commencement of work on the borrow area and others, apparently earlier than this, possibly associated with logging activities subsequent to 1940. The central and eastern portions of the site had been impacted by several bulldozer trails and earthen berms resulting from the coring (Figure 7b). It was presumably in these areas that the original surveyor had located the surface artifacts. In the woods, to the west of these areas, a large amount of older disturbance was noted, consisting of large north-south gullies and ruts, and a wide earthen berm on the southwest margin of the site, apparently marking the limit of disturbance in that direction. In addition to this, large brush piles and pushed over trees were located on the northeast and southeast margins of the site, close to the edge of the borrow area.

Upon arrival on the site, a series of 17 randomly placed 30x30 cm circular shovel tests was rapidly excavated across the area in order to better delineate the location of former human occupation (Units 1-12 and 36-40). The depth of these shovel tests varied from about 20 to 50 cm and their fill was screened through 6.4 mm (1/4 inch) hardware cloth. Although only

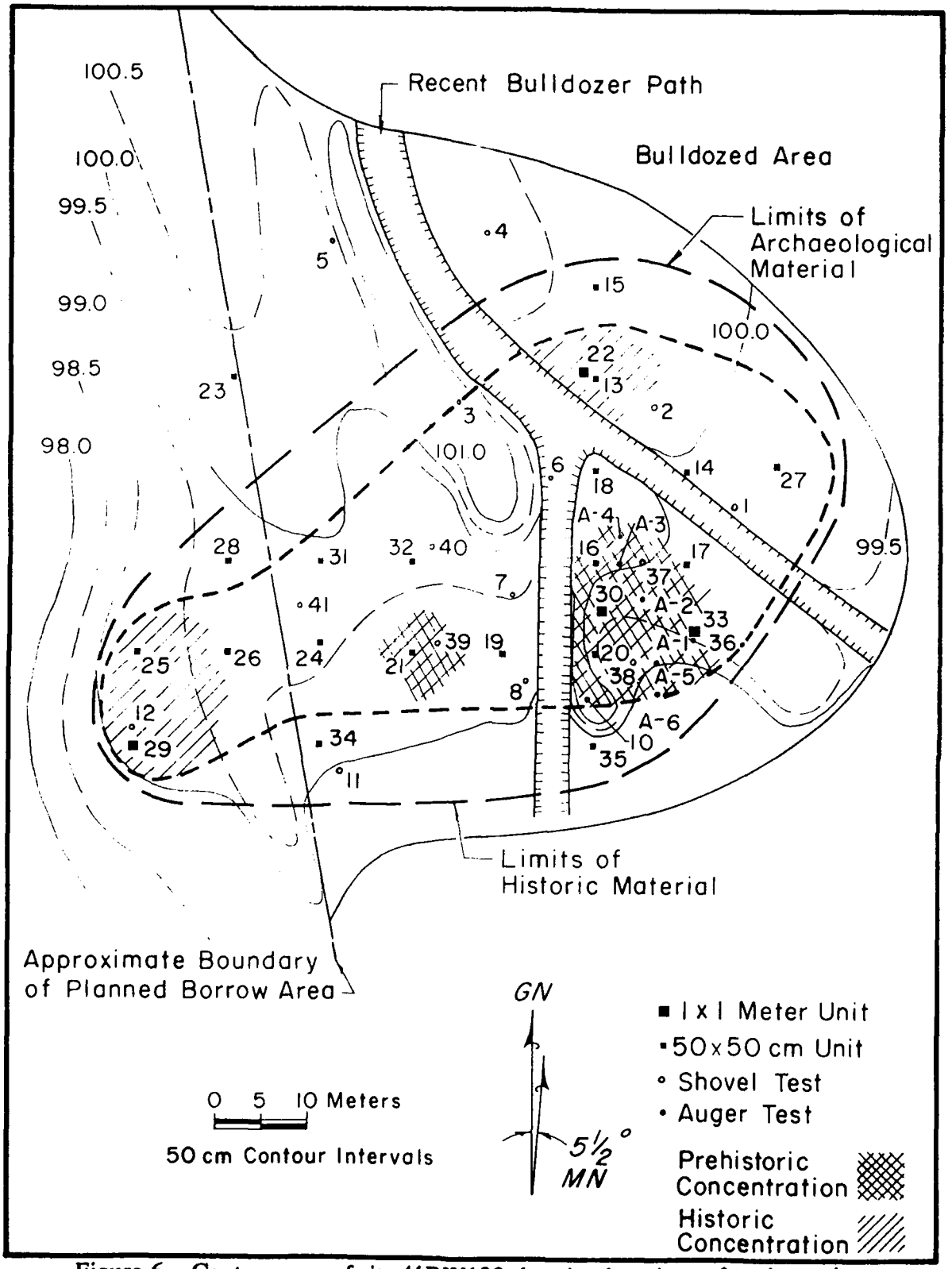


Figure 6. Contour map of site 41BW182 showing locations of testing units.

a

b

Figure 7. Site 41BW182: (a) view of site from 41BW183 (site is in area projecting into borrow pit); (b) view north along recent bulldozer cut.

five of the seventeen shovel tests contained cultural remains, they did clarify the nature of the site deposits. Based on these shovel tests, it appeared that the depth of the artifact-bearing deposit approached the surveyor's original estimate of 70 cm for most areas of the site. They also indicated that the historic occupation centered on the southeastern portion of the site, in an area notable for the presence of crepe myrtle bushes and several large oak and maple trees. In addition, two shovel tests (Units 11 and 12) revealed prehistoric material at a depth of around 25 to 40 cm on the southern and southwestern margins of the site area. This material, three flakes and a plain body sherd, indicated that the prehistoric component of site 41BW182 extended further to the west than had originally been believed.

As a result of this shovel testing, as well as a visual inspection of the general site area, it was decided to place the site datum (wooden stake) at the intersection of the two most recent bulldozer cuts in the east central area of the site. This datum was given the coordinates N200/E200, and the ground surface at that point was arbitrarily designated 100.00 m. From this point, a north-south baseline was shot in with a transit and six 50x50 cm squares were laid out at 10 m intervals (from north to south these were excavated as Units 15, 13, 18, 16, 20, and 35 with Unit 18 located at the N200/E200 datum point). At the same time, a baseline was shot in running east from the N200/E200 point to the beginning of the bulldozed borrow area, and two additional 50x50 cm units were laid out (Units 14 and 27). Since the area to the west of the N200/E200 point was heavily overgrown with brush and disturbed with the presence of a berm and *apparent* bulldozer ruts, it was decided to move 20 m to the south before laying out a baseline to the west. This also had the advantage of enabling the testing of the southeastern area of the site which shovel testing had shown to have prehistoric remains. Therefore, a second east-west baseline was shot in along the N180 line, from N180/E200 to N180/E150 and five more 50x50 cm units were laid out at 10 m intervals (from east to west, Units 19, 21, 24, 26, and 25). Finally, in order to insure adequate coverage of the site area, an additional six 50x50 cm units were placed at selected localities off of the baselines: Unit 17 was shot in with a transit at N190/E210; Unit 23 was located with a compass and tape at N210/E160; Units 28, 31, and 32 were laid out with a tape and compass at N190/E160, N190/E170, and N190/E180, respectively; and finally Unit 34 was located at N170/E170 with a tape and compass. Five of these units (13 through 17) were excavated in arbitrary levels of 10 cm down to the bottom of the A horizon. Based on the results of this work, it was decided that the rate of excavation could be increased by excavating the remaining 50x50 cm units in 20 cm thick levels to the same depth. The fill from all units was screened through 6.4 mm (1/4 inch) hardware cloth.

The 50x50 cm units provided a much more accurate picture of the subsurface structure of the site than that yielded by the shovel tests. Based on the results of this phase of testing, two major concentrations of prehistoric material could be identified: one in the north central portion of the site centered around Unit 13, and the other on the southwestern margin of the site around Shovel Test 12 and Unit 25. These two concentrations were further tested with two additional 1x1 m square units: Unit 22 close to

Unit 13 at N211/E199, and Unit 29 south of Unit 25 at N170/E150. Both of these units were laid out with tape and compass.

The 50x50 cm units also showed that the primary concentration of historic material was located in the southeastern portion of the site around Units 16 and 20. Unfortunately, neither of these units had yielded any indications of the existence of historic features, and in an effort to gather such indications, a series of six circular auger holes (20 cm in diameter) were drilled in the area east of the E200 line (Auger Holes 1-6). These holes were drilled to a depth of about 80 cm and the fill screened through 6.4 mm (1/4 inch) hardware cloth. These auger holes were successful in confirming the existence of historic refuse in this area and the recovery of a number of nails suggested the former presence of a structure. However, the auger holes failed to located any historic features. As a result, it was decided to place all further units simply in areas which had yielded architectural remains and high artifact densities. This portion of the site was further tested with two more 1x1 m units: Unit 30 at N185/E201 and Unit 33 at N183/E211. These units were also laid out with tape and compass and were excavated in arbitrary levels of 10 cm, screening the fill through 6.4 mm (1/4 inch) hardware cloth.

Following the completion of excavations at site 41BW182, the transit was used to shoot in elevations for all excavated units using the arbitrary elevation of 100.00 m for the ground surface at point N200/E200. The shovel tests and the auger holes were pace-and-compass mapped, but elevations were not shot on them. A sketch map was made of the site to serve as the base for a more detailed contour map to be drawn later, a representative series of profiles was drawn along the east-west and the north-south baselines, and all excavated units were backfilled.

Stratigraphic Context

The majority of the cultural material recovered during the testing of site 41BW182 was recovered from the A horizon, a unit of soft fine loamy sand which covered the site to varying depths. The nature of this unit varied across the site, apparently being affected by the depth of the zone and the amount of recent disturbance. On the eastern side of the site, the depth of this A horizon was relatively uniform, varying only from about 70 to 75 cm in thickness. In this portion of the site, the A horizon could be subdivided into an upper member of light gray (10YR7/2) to very pale brown (10YR7/3), fine loamy sand and humus from about 15 to 45 cm thick, overlying a lower member of lightly mottled, light gray-pale brown (10YR7/2-6/3) to very pale brown-brownish yellow (10YR7/3-6/8), fine loamy sand between about 21 and 51 cm thick (Figure 8).

In the central area of the site, where recent surface disturbance was the heaviest, the A horizon varied from only 30 to 40 cm thick, with an upper member of pale brown (10YR6/3), fine loamy sand and humus, about 20 cm thick, overlying a lower member of very pale brown (10YR7/3), fine loamy sand, up to 20 cm thick (Figure 9). On the western side of the site, the

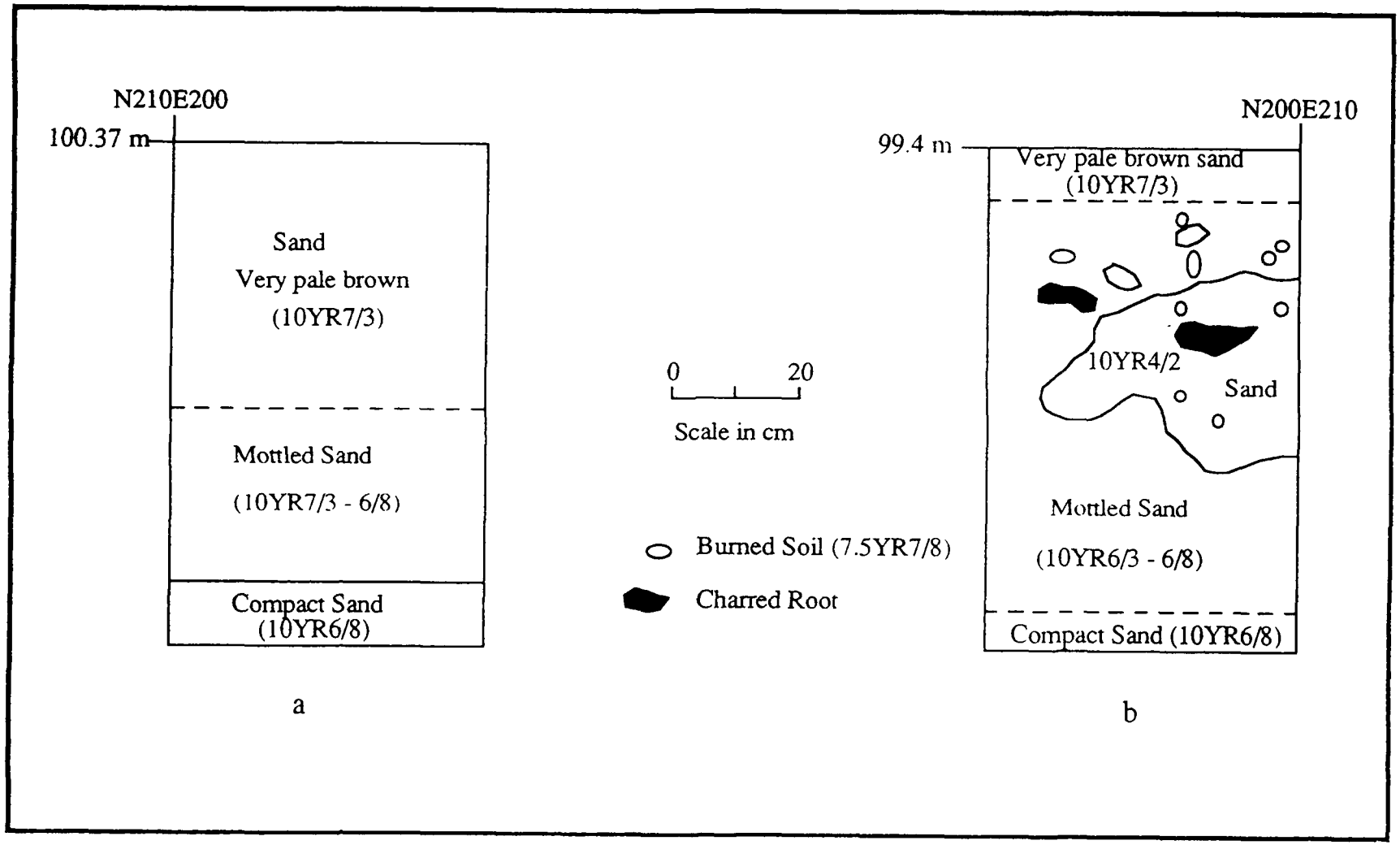


Figure 8. Site 41BW182 stratigraphy, eastern portion of site: (a) Unit 13, east profile; (b) Unit 14, north profile.

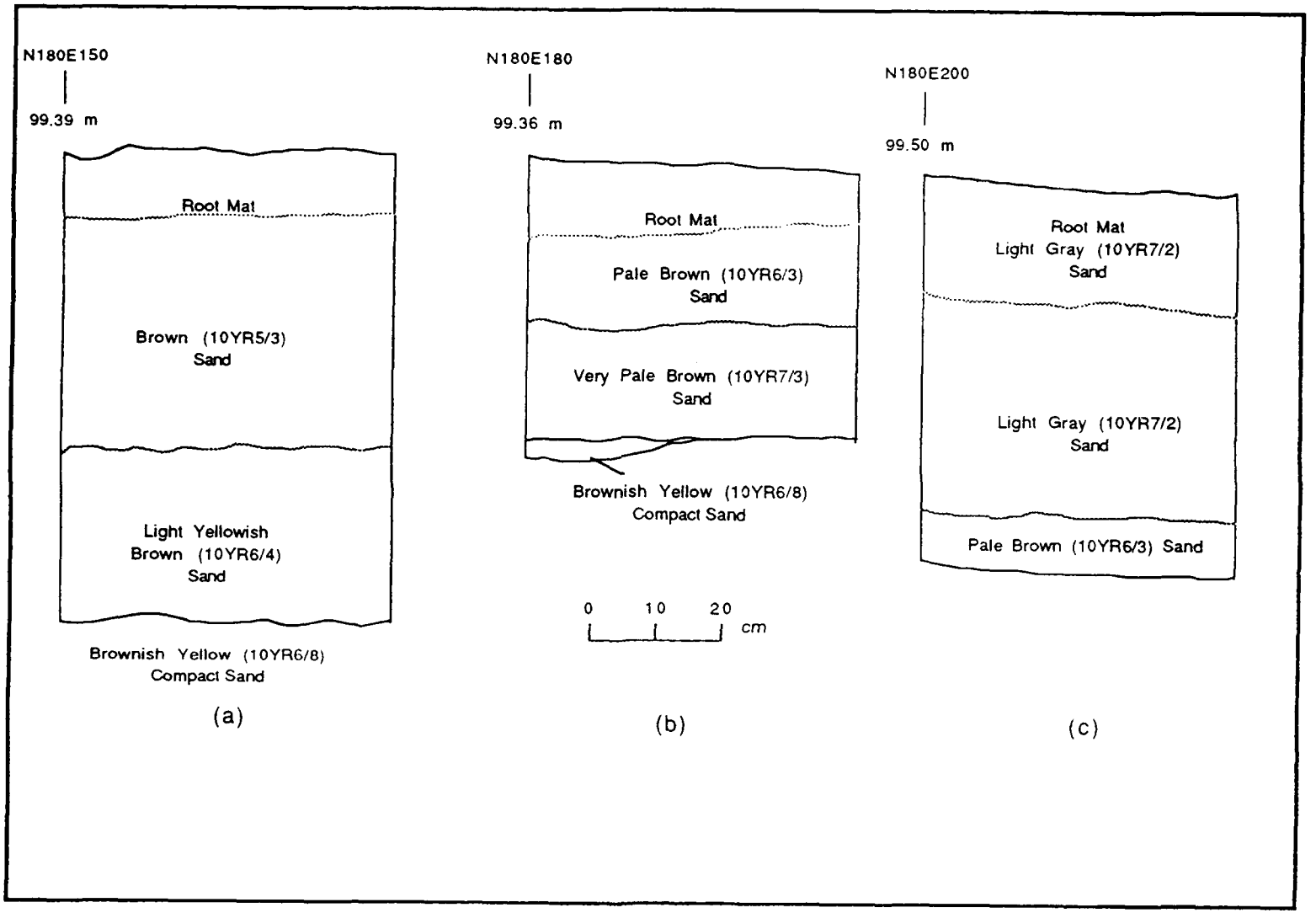


Figure 9. Site 41BW182 stratigraphy, southern east-west baseline: (a) Unit 25, east profile; (b) Unit 21, east profile; (c) Unit 20, east profile.

culture-bearing deposits were deeper in places than on the east, but overall they were more variable in depth. In this portion of the site, the A horizon varied from 58 to 80 cm thick, with 60 cm being the modal depth. The A horizon consisted of an upper member of brown (10YR5/3), fine loamy sand and humus up to 40 cm thick, overlying a lower member of light yellowish brown (10YR6/4), sand which was a maximum of 40 cm thick. In all three areas of the site, the A horizon was underlain by a deposit of very compact brownish yellow (10YR6/8) fine sand, heavily mottled with a strong brown (7.5YR5/8) sand.

Both prehistoric and historic artifacts were distributed throughout the entire A horizon in most of the test units, but this distribution was not an even one. The prehistoric material was most concentrated between 10 and 30 cm below the surface across the site in general, while the historic remains were generally within 20 cm of the surface. All of the test units taken together show that 44.3 percent of the prehistoric artifacts were recovered from 20 to 40 cm below the surface, with 96.5 percent within 60 cm of the surface. When the units excavated in arbitrary 10 cm levels are examined separately, this pattern is refined, with 50.8 percent of the prehistoric material from these units about evenly distributed within the two levels between 10 and 30 cm below the surface (20.9 percent from 10-20 cm, and 29.9 percent from 20-30 cm b.s.). In these units, 94.1 percent of the prehistoric artifacts were recovered from the surface down to 50 cm.

As noted above, the majority of the historic material was recovered from a more shallow depth than was the prehistoric material. For all of the excavation units together, 72.9 percent of the historic artifacts were from within 10 cm of the surface, with 95.5 percent within 20 cm of the ground surface. For the units which were excavated in 10 cm levels, the densest depth was 10-20 cm below the surface, with 61.9 percent of the artifacts, while 94 percent of the historic material was within only 30 cm of the surface.

This vertical distribution of artifacts suggests that bioturbation and pedoturbation have contributed to the downward migration of artifacts within the relatively soft matrix. The historic artifacts, deposited on a stable surface within the last 80 to 100 years, have become distributed from the surface down to a maximum of 60-70 cm below the surface. The majority of the artifacts are within 30 cm of the surface while the zone of maximum concentration is between 10 and 20 cm in depth. The prehistoric material, subject to vertical migration for a longer period of time, shows the same range of depth, but the majority of the material is within 50 cm of the surface with a deeper zone of artifact concentration between 20 and 50 cm below the surface. It is suggested that the only factor producing this difference in artifact distribution patterns is that of time.

Of the total of 66 artifact-bearing levels excavated at site 41BW182, 39.4 percent (26 levels) contained both prehistoric and historic material. This pattern is even more clear-cut when units containing both prehistoric and historic material are isolated. When this is done, fully 48.1 percent

of all levels are mixed (26 out of 54 levels). Finally, when this pattern is examined on a level by level basis, the evidence for mixing of deposits is clear. Looking only at artifact-bearing levels for units containing both historic and prehistoric remains, mixed deposits occurred in 75 percent of the 0-20 cm levels (12 of 16), in 50 percent of the 20-40 cm levels (7 of 14), in 42.9 percent of the 40-60 cm levels (3 of 7), and in 25 percent of the 60-80 cm levels (1 of 4). For the artifact-bearing levels of multicomponent units excavated in 10 cm levels, mixed deposits occurred in 50 percent of the 0-10 cm levels (4 of 8), in 50 percent of the 10-20 cm levels (4 of 8), in 42.8 percent of the 20-30 cm levels (3 of 7), in 25 percent of the 30-40 cm levels (1 of 4), in 40 percent of the 40-50 cm levels (2 of 5), in 50 percent of the 50-60 cm levels (1 of 2), and in 50 percent of the 60-70 cm levels (1 of 2).

This potential for mixing is most dramatically demonstrated in the 20-40 cm level of Unit 34, from which a fragment of a Plainview point (dated ca. 8150-8010 B.C. [Turner and Hester 1985:141]) was recovered along with several pieces of very corroded barbed wire, ca. 1900. It should be noted that while the degree of mixing of historic and prehistoric materials can be identified, it is impossible to be certain of the degree of mixing present in multicomponent prehistoric deposits when diagnostic artifacts are rare as at site 41BW182. The conclusion to be reached from this is that the A horizon at site 41BW182, the deposit which contains both the prehistoric and historic artifacts at the site, has been thoroughly mixed through bioturbation and cultural disturbances. The absence of good contextual integrity therefore precludes the recognition of individual occupational episodes.

Horizontal Patterning

In regard to the horizontal distribution of artifacts across site 41BW182, an examination of the artifact frequencies from all of the excavated units at the site indicates the existence of two primary concentrations of prehistoric material, and one primary and one secondary concentration of historic material (see Figure 6). Beyond these concentrations, artifact density for both historic and prehistoric material is very low.

The two concentrations of prehistoric activity were located in the northern area of the site, around Units 13 and 22, and in the southwestern portion of the site, in the vicinity of Units 25, 29, and 34. The northern concentration consisted of about 60 cm of deposit containing primarily prehistoric remains with a small amount of historic material. Unit 13, a 50x50 cm square, yielded 17 prehistoric artifacts and one historic artifact within 50 cm of deposit, for a density of prehistoric material of 136 artifacts per cubic meter. Unit 22, a 1x1 m square placed nearby, contained 45 prehistoric and 6 historic artifacts within 60 cm, for a density of prehistoric material of 75 artifacts per cubic meter. The size of this area is uncertain, but surrounding units to the north and south suggest it was only approximately 10 meters across. The only

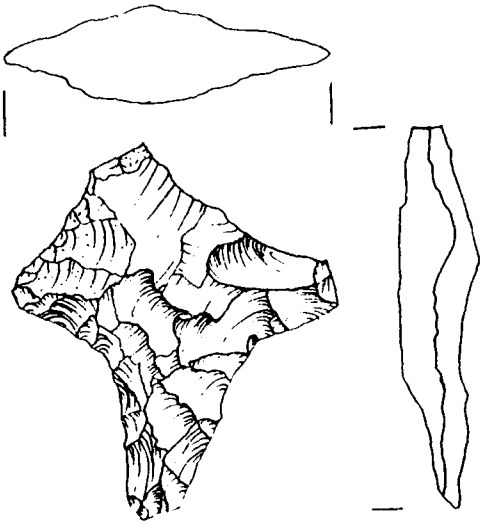
diagnostic artifact recovered from this concentration consisted of a small, crudely made arrow point with a bulbous stem (Figure 10a).

The southwestern concentration was almost entirely composed of prehistoric material. It is within 60 to 80 cm of deposit, being deepest on the northwest and shallowest on the east. Unit 25, a 50x50 cm square, was located in the northwestern portion of this concentration and contained 18 prehistoric artifacts and 4 historic ones within 80 cm of fill, yielding a density of prehistoric material of 90 artifacts per cubic meter. A 1x1 m square, Unit 29, was placed in the southwestern portion of this concentration and yielded 36 prehistoric artifacts and only one historic artifact within 60 cm of deposit, for a prehistoric artifact density of 60 artifacts per cubic meter. Unfortunately, the only diagnostic artifact recovered from this area consisted of a small, plain bodysherd from Shovel Test 12. This sherd was well made, with a fine textured paste tempered with fine grit, suggesting an origin late in the prehistoric period. This concentration measured approximately 20 m north-south by approximately 10 m east-west.

The historic artifacts were located primarily in a concentration in the southeastern portion of the site, and in a secondary concentration about 20 m to the west. The primary concentration was associated with an area of crepe myrtle bushes and oak and elm trees and may have been the location of a former structure as indicated by the numerous wire nails recovered. This area measured about 20 m across, and was tested with two 50x50 cm squares (Units 16 and 20) and two 1x1 m squares (Units 30 and 33). Unit 16, located on the northern margin of this area, contained 8 prehistoric and 70 historic artifacts in 70 cm (the historic material was confined to the upper 50 cm), yielding a density of 560 historic artifacts per cubic meter. Unit 20 was located 10 m to the south and contained 3 prehistoric and 22 historic artifacts in 60 cm of fill for a density of 146.7 historic artifacts per cubic meter. Unit 30 was located between these two units, but yielded only 12 prehistoric and 7 historic artifacts in 40 cm (the historic material was recovered from the upper 30 cm only), for a density of only 23.3 historic artifacts per cubic meter. Finally, Unit 33 was placed about 10 m to the east of these units, and contained 5 prehistoric and 43 historic artifacts in 30 cm for a density of 143.3 historic artifacts per cubic meter.

A secondary area of historic artifact concentration was revealed about 20 m west of this first one by the 50x50 cm square, Unit 21. This unit contained 2 prehistoric artifacts and 12 historic artifacts in 40 cm of deposit, for a density of historic material of 120 artifacts per cubic meter. Since much of this material consisted of burned fragments of broken earthenware, it is very probable that this area represents the location of a former trash burning area or dump. Based on their artifact content, both of these historic activity areas date to the early part of the twentieth century.

(a) (b)



(c)

Figure 10. Diagnostic artifacts recovered from site 41BW182: (a) unidentified arrow point (Unit 13.2); (b) Plainview stem fragment (Unit 32.2); (c) Gary preform (Auger H.6).

Prehistoric Artifact Assemblage

A total of 210 prehistoric artifacts was recovered through surface collection and test excavations at site 41BW182. This artifact assemblage is almost totally limited to lithic artifacts, except for the presence of a single ceramic sherd. Projectile points, preforms, unifaces, flakes, nondiagnostic shatter, cores, and burned rock comprise the lithic assemblage (Table 1). Ground, pecked, and battered stone and bifaces other than projectile points are absent while burned rock is extremely rare. A tabulation of all artifacts by level provenience is provided in Appendix B.

Tools

Formal tools, consisting of projectile points, preforms, and unifaces were recovered in very limited numbers. The nine specimens comprise 4.3 percent of the total artifact assemblage.

Projectile Points

Two projectile points, an arrow point from Level 2 of Unit 13 and a dart point base from Level 2 of Unit 32, were recovered from site 41BW182. The arrow point (Figure 10a) is made of a dark red chert and is quite small (length = 15 mm; width = 13 mm; thickness = 4 mm). The short blade (11 mm) is asymmetrical in shape and the expanding stem is bulbar. The unbalanced notches are only 1 to 2 mm in depth. This arrow point weighs only 1.0 gram. This particular specimen may fall within the range of variability for the Homan type, having been modified by resharpening of the blade (Brown 1976:92-93, Fig. 17j,k). Homan points are distributed throughout the Great Bend of the Red River and are dated to A.D. 950-1200.

The dart point base fragment (Figure 10b), on the other hand, exhibits characteristics which permit its classification as a Plainview point. The base, which is 17 mm in length and 23 mm in width, exhibits grinding along the entire length of the basal and lateral edges. Both faces of the fragment exhibit basal thinning. The cross-section is symmetrical and lenticular with a maximum thickness of 6 mm. The concave base is 3 mm in depth. The raw material of this point is a gray chert with minute white inclusions providing a speckled effect. Such raw material is more common in Central Texas, but it may be found in the upland lag gravels on the major drainage divides in North Central Texas. Similar raw materials were not recovered from any of the units excavated at site 41BW182. It is likely that this base fragment represents the discard of the broken spear point during reshafting activities conducted at this locality.

Table 1

Artifact Classes Recovered from Test Excavations
of Site 41BW182, Red River Army Depot

PROVENIENCE	PROJECTILE POINT	PREFORM	STEEPLY CHIPPED UNIFACE	MARGINALLY MODIFIED UNIFACE	FLAKE	NONDIAGNOSTIC SHATTER	CORE	CERAMIC	BURNED ROCK	TOTAL
SURFACE					3					3
AUGER HOLES										
3						1				1
6		1								1
SHOVEL TESTS										
11					2					2
12					1			1		2
50X50 CM UNITS										
13	1				5	11				17
14					2	1			1	4
15					2	2				4
16					3	5				8
17					4					4
18					4	2				6
19									1	1
20					3	1				4
21					1	1				2
24					1	2				3
25					11	7				18
26				1	5	1				8
27					1					1
28					3	4				7
31					1	1				2
32	1				2		1			4
34					4	3				7
35					1	3				4
1X1 M UNITS										
22				2	26	14			2	45
29			1	2	13	11			9	36
30					10	1				11
33					2	3				5
TOTAL	2	1	1	5	110	74	3	1	13	210

Preforms

A single bifacial preform (Figure 10c) was recovered from Auger Hole 6. The specimen exhibits a long narrow contracting stem similar to that of the Gary point, but the blade portion of the specimen is relatively thick (12 mm) and asymmetrical in cross-section. The break, which truncates the blade, probably happened during manufacture. The raw material is a coarse-grained quartzite with bands of white, red, and gray. The stem of this dart preform is very similar to the stem of a Gary point previously recovered from site 41BW184 nearby (Newman 1988:22,26). Dimensions of this preform are: length = 49 mm; width = 45 mm; thickness = 12 mm; stem length = 23 mm; weight = 14 grams).

Unifaces

Six specimens, one steeply chipped and five marginally modified, comprise the unifacial tool sample. The steeply chipped specimen exhibits a retouched edge (17 mm) along one end of a rectangular chert stream pebble. The retouch on the end of the pebble and a flake scar on one surface exhibit a patina. A more recent flake scar adjacent to that exhibiting a patina lacks any such weathering. This specimen was apparently used as a scraper at this locality. The presence of the patina suggests that it may have been associated with an early occupation of the site.

The remaining unifaces were recovered from Units 26 (Level 2), 22 (Level 3), and 29 (Level 3). All five marginally modified pieces exhibit straight working edges ranging from 6 to 12 mm in length. Such modification is probably the result of use rather than the intentional modification of such small flakes (Table 2). All five specimens are made on chert flake blanks. Three are interior flakes while two exhibit a minimal amount of cortex. Platform types are quite variable with cortical (n=1), single faceted (n=1), multifaceted (n=1), and crushed (n=2) all represented.

Table 2

Dimensions and Location of Retouch of
Marginally Modified Pieces Recovered from Site 41BW182

Provenience	Length (mm)	Width (mm)	Thickness (mm)	Weight (g)	Location of Retouch
Unit 26, Level 2	16	18	4	1	Lateral obverse
Unit 22, Level 3	20	22	3	1	Distal obverse
	18	17	5	1	Lateral inverse
Unit 29, Level 3	15	21	3	1	Distal inverse
	13	13	2	1	Distal obverse

Lithic Debitage

Lithic debitage, consisting of cores, flakes, and nondiagnostic shatter, comprises the majority (88.1 percent) of the artifact assemblage. Chert (84.3 percent), quartzite (14.1 percent), and novaculite (1.6 percent) are the only raw material types represented. Whole flakes (n=73) are the most common debitage category. Nondiagnostic shatter (n=72), broken flakes (n=37), and cores (n=3) follow in frequency.

Cores

The three cores recovered from site 41BW182 are all indeterminate fragments of once larger cobbles. Two specimens, one of chert and one of quartzite, were recovered from Level 6 of Unit 22, while the third is a chert specimen from Level 2 of Unit 26. All three core fragments are quite small (Table 3) and exhibit considerable cortex. These fragments probably represent the removal of the cobble extremity during the setting up of platforms for controlled flake removal.

Table 3

Dimensions and Proveniences of Core Fragments Recovered from Site 41BW182

Provenience	Length (mm)	Width (mm)	Thickness (mm)	Weight (g)	Raw Material
Unit 22, Level 6	46	30	12	22	Chert
Unit 22, Level 6	48	33	11	21	Quartzite
Unit 26, Level 2	31	28	18	16	Chert

Flakes

Lithic debitage exhibiting a bulb of percussion and a striking platform were classified as flakes. Flakes were categorized as whole or fragmentary. Of the 110 flakes, 37 (33.6 percent) were missing their distal portion. Chert is the primary raw material for both the whole (81.8 percent) and the fragmentary (94.1 percent) specimens. Quartzite is the raw material for the remainder of the specimens except for three of novaculite. Dorsal cortex is not characteristic of this assemblage -- 50.9 percent of the flakes exhibit no cortex and an additional 29.1 percent exhibit less than 50 percent dorsal cortex (Table 4). Interestingly, the proportional representation of platform types changes very little in relation to the amount of dorsal cortex (see Table 4).

Flake size, as measured by its greatest dimension, however, is related to the amount of cortex remaining. A much larger proportion of the interior flakes are less than 1 cm in size when compared with any other cortical class. The proportions of the cortical classes and the limited size variability of the flakes probably reflect the reduction of small cobbles or stream gravels as previously documented by studies in North Central Texas (Peter and McGregor 1987, 1988:277-313).

Table 4

Cross-Tabulation of Platform Type and Flake Size by Percent of Dorsal Cortex of Flake Specimens Recovered from Site 41BW182

		Platform Type			Flake Size		
Percent of Dorsal Cortex	Cortex	Single Faceted	Multi-faceted	Crushed	<1cm	1-3cm	>3cm
0 (n=56)	2	25	12	17	17	38	1
1-50 (n=32)	5	15	6	6	4	25	3
51-75 (n=9)	1	4	3	1	4	4	1
76-100 (n=8)		5	1	2	1	7	
Platform only (n=5)	5				1	4	

Nondiagnostic Shatter

Nondiagnostic shatter is defined as lithic debris which is usually angular in shape and exhibits neither a striking platform or a bulb of percussion. Seventy-two specimens were recovered from units throughout the site (see Table 1). Chert (n=60) is again the primary raw material type. The remainder of the specimens (n=12) are of quartzite. Cortex is more common on the shatter than on the flakes. Only 27 specimens (37.5 percent) exhibit no cortex while the remainder (n=45) exhibit cortex. Approximately 42 percent exhibit cortex over less than 50 percent of their surfaces. Size variability of the shatter is very similar to that of the flake assemblage. Sixty-four percent of the shatter is larger than 1 cm along its maximum dimension.

Burned Rock

Angular fractured rock, primarily quartzite (n=12) or hematite (n=1), which may also exhibit discoloration, pot-lid fractures, or crazing has been classified as burned rock. Burned rock, which may be the by-product of stone boiling or of the use of heated rocks for earth ovens or griddles, is very sparse at site 41BW182. Either alternative cooking techniques over an open fire were used or the occupation of the site was

so limited that major cooking or processing activities were not conducted there.

Ceramics

A single ceramic sherd was recovered from Shovel Test 12. This sherd, which appears to have broken along a coil, is an undecorated body sherd with a fine grit temper. The interior core color is very dark gray (10YR3/1) and the exterior surface is brown (7.5YR3/1). The sherd is 6 mm thick and has a maximum dimension of 30 millimeters.

Historic Artifact Assemblage

A total of 222 historic artifact fragments was recovered during the excavations at site 41BW182, representing at most 168 separate artifacts (Table 5 and Appendix C). The majority of these (51.8 percent) consisted of glass vessel fragments, with architectural items (20.8 percent) and ceramic vessel fragments (20.2 percent) being next in frequency. Low frequency artifacts included personal items (1.2 percent), thin metal (4.2 percent), heavy iron parts (1.2 percent), and fire arms (0.6 percent). Together, glass and ceramic vessel fragments make up 72 percent of the total artifact assemblage from the site.

The ratio of identifiable bottle glass to ceramics was only 1:1.1, but when unidentifiable fragments of glass (probably from bottles) are included, this ratio changes to 2.4:1. Identifiable snuff bottle fragments were present in some abundance, representing 16.1 percent of the glass vessel pieces. Glass fruit jar remains were far less common, with identifiable jar and lid pieces making up 4.6 percent of the glass fragments.

Diagnostic elements of the glass assemblage suggest an occupation of the site subsequent to 1900. One segment of a vessel base manufactured in an Automatic Bottle Machine dates post-1903 (Newman 1970:Figure 2), while two fragments of fruit jars are embossed with captions of "Kerr" (post-1912) and "Kerr 'Self Sealing'" (post-1915) (Toulouse 1969:42-43). Manganese solarized glass (pale purple tinted) made up only 18.4 percent of the total glass vessel assemblage. Most of the glass was brown (44.8 percent), with clear (19.5 percent) and purple glass being present in lower frequencies. Other colored glass totalled 12.6 percent of the glass assemblage, and included light green (5.7 percent), milk (3.4 percent), pale blue (2.3 percent), and olive green (1.1 percent).

Architectural remains were equal in frequency to ceramic vessel remains, with nails being the most frequent artifact type (62.9 percent). Over 95 percent of the nail assemblage from site 41BW182 were wire nails, and it has been proposed that a frequency of wire nails over 75 percent would date a site subsequent to 1895 (Walker 1980:352, cited in Jurney 1987:90).

Table 5

Historic Artifacts Recovered from Site 41BW182

ARTIFACT CLASS & SUBCLASS	FREQUENCY	PERCENTAGE(%)
CERAMIC VESSEL FRAGMENTS		
REFINED EARTHENWARES	30	17.8
STONEWARES	4	2.4
GLASS VESSEL FRAGMENTS		
BOTTLES/JARS &LIDS	31	18.4
TABLE GLASS	4	2.4
UNIDENTIFIABLE GLASS	52	30.9
ARCHITECTURAL REMAINS		
NAILS	22	13.1
STAPLES	1	0.6
BRICK	6	3.6
WINDOW GLASS	2	1.2
WIRE	4	2.4
PERSONAL ITEMS		
PORCELAIN DOLL'S HEAD	1	0.6
TOBACCO TIN LID	1	0.6
THIN METAL	7	4.2
HEAVY IRON PARTS		
METAL RING	1	0.6
UNIDENTIFIED	1	0.6
FIREARMS		
CENTERFIRE SHOTGUN SHELL	1	0.6
TOTAL	168	100.0

In addition, 17.1 percent of the architectural items were bricks, while window glass accounted for only 5.7 percent of the architectural assemblage. All of the bricks were machine-made, while both fragments of window glass were 3 mm in thickness.

The ceramic vessel assemblage accounted for only 20.2 percent of the total artifact assemblage from the site and was composed largely of refined earthenwares (88.2 percent) with stonewares being in a distinct minority at 11.8 percent of the total. The majority of the refined earthenware was non-molded and undecorated (80 percent) with four sherds showing various light relief decoration and one sherd being bichrome painted. With one exception which might have been Blue Tinted Ironstone (1840-1910), all of the pieces of refined earthenware appeared to be Pure White Whiteware (post-1890) (Moir 1987:102). As noted above, stoneware accounted for only 11.8 percent of the total ceramic vessel assemblage. This sample included two sherds with an exterior Bristol glaze and an interior natural clay dark brown (5YR2.5/1) slip/glaze, and two sherds with a natural clay dark reddish brown (5R2.5/1) slip/glaze on both the interior and exterior. The use of natural clay slips/glazes in North Central and East Texas begins in the 1860s and lasts until about 1940, with the period of greatest popularity being 1875-1915 (Lebo 1987:131). Bristol glazes were introduced into the United States in the 1880s, but their use with natural clay interior slips/glazes was discontinued in 1920 (Lebo 1987:132). The period of most popularity for Bristol glazes with interior natural clay slips/glazes was from 1900-1920 (Lebo 1987:132).

The remaining 7.1 percent of the historic artifact assemblage from site 41BW182 was composed of low frequency items, including a fragment of a porcelain doll's head, a tobacco tin lid, miscellaneous thin metal and heavy iron parts, and a centerfire shotgun shell.

Features

A single feature, containing burned soil and charcoal, was uncovered in the eastern portion of the site in Unit 14. This consisted of large pieces of reddish yellow (7.5YR7/8) burned soil and charcoal in a matrix of brown (10YR5/3) to dark brown (10YR4/3) fine sandy loam noted in the 10-20 cm level. However, the occurrence of several large pieces of burned root in the level immediately below this convinced the excavators that the feature was the result of a natural fire. This interpretation was supported by the fact that neither historic nor prehistoric artifacts were found associated with the burned earth and charcoal.

Summary

Site 41BW182 is a multiple component prehistoric and historic site with evidence of occupation from the Paleo-Indian period, 10,000 years ago, until the middle of this century. Prehistoric diagnostics recovered

include a Plainview point of the late Paleo-Indian period, a Gary point preform (200 B.C.-A.D. 800), and a small untyped arrow point and plain potsherd (A.D. 800-1600). The historic artifacts recovered from the site strongly suggest a post-1900 occupation. Archival research has associated the site with the names of several owners through whose hands the property passed from 1906 to 1909, but the only certain occupant of the site was the L.M. Yates family, which purchased the property in 1909 and resided there until the property was acquired by the U.S. Government in 1942. Although in 1909 there reportedly was a frame house already standing on the site, the archeological data recovered by testing suggests that it could not have been constructed much prior to 1900, if indeed it was that early.

The testing of site 41BW182 revealed that the site stratigraphy consists of a 40 to 70 cm deep deposit of very pale brown to white sand overlying a compact mottled very pale brown and yellowish red sand. The upper unit was very soft with artifactual material throughout, while the lower unit was very hard and compact. A number of cases were noted of historic and prehistoric material being mixed in the same level all the way to the bottom of the upper unit, indicating that the site has no stratigraphic integrity. Furthermore, diagnostics of several prehistoric periods were recovered from various parts of the site; consequently, the prehistoric utilization of the site was intermittent over a long time period. The spatial overlap of these occupations has resulted in a palimpsest which is difficult to interpret.

Artifact densities for both historic and prehistoric material were extremely low and localized at the site, with the highest density prehistoric areas containing less than 20 artifacts from a 50x50 cm unit (Units 13 and 25), and the densest historic area containing 68 artifacts from a 50x50 cm unit (Unit 16). Across the site as a whole, the modal number of prehistoric artifacts from 50x50 cm units was four, while the modal number of historic artifacts was one. High density areas of prehistoric material were noted in the north central and western portions of the site, while the highest density of historic material was observed in the south and southeastern portions. The excavation of several 1x1 m units in each of these areas failed to reveal any preserved cultural features or structural remains.

CHAPTER 6

SITE 41BW183

Setting

Site 41BW183 is located within the Red River Army Depot in Bowie County, Texas, within the drainage of the Sulphur River. It is in the uplands on the drainage divide between Caney Creek to the west and Nettles Creek to the east. The site is situated on the southern end of an elongated hilltop on a north-south trending ridge between the two drainages at an elevation of about 106 m (ca. 350 ft) above sea level. Site 41BW183 is about 350 m east of the old channel of Caney Creek (elevation below 91 m/300 ft) and about 275 m north-northeast of the modern Caney Creek Reservoir. Additional prehistoric remains have been noted 250 m southwest on site 41BW182 and about 175 m east on RRAD Site #1, recorded by an earlier survey (Newman 1988:20-21, Figure 1). The site is mapped as being on Darden loamy fine sand (Fox 1980:19-20, Sheet 50), described as consisting of a dark yellowish brown, strongly acid loamy fine sand from the surface down to about 12.7 cm. Below this to a depth of about 63.5 cm, the profile consists of a yellowish brown, very acid loamy fine sand. Finally, to a depth of 203.2 cm, Darden loamy fine sand consists of a strong brown, very strongly acid loamy fine sand (Fox 1980:19-20). The parent material for Darden loamy fine sand apparently consists of stratified loamy and shaly sediments (Fox 1980:Figure 1).

Site 41BW183 was recorded in January of 1988 as a diffuse scatter of lithic material within a shallow bulldozer cut made on the southern end of the crest of the hill (Newman 1988:21). At that time, two flakes (one chert and one identified as Ogallalla quartzite) and a complete dart point of chert were recovered, presumably from the bulldozed area. This dart point was identified as "Edgewood-like" (Newman 1988:21), but it seems to more closely resemble the description for the Ellis type (Suhm et al. 1954:420). A series of nine shovel tests placed in the general site area failed to reveal any further material. The conclusion of the surveyor was that the site represented "an upland Archaic hunting camp/specialized activity locus (single component) with sparse cultural material" (Newman 1988:21) and that the site might prove "significant in understanding the past cultural dynamics of the Red River Army Depot area" (Newman 1988:21) and as such was potentially eligible for inclusion on the National Register of Historic Places.

Excavation Methodology

When work started on this site, it occupied an isolated circular area on top of the ridge, measuring approximately 57 m north-south by 62 m east-west (Figure 11). On all four sides, the surrounding topsoil beyond the

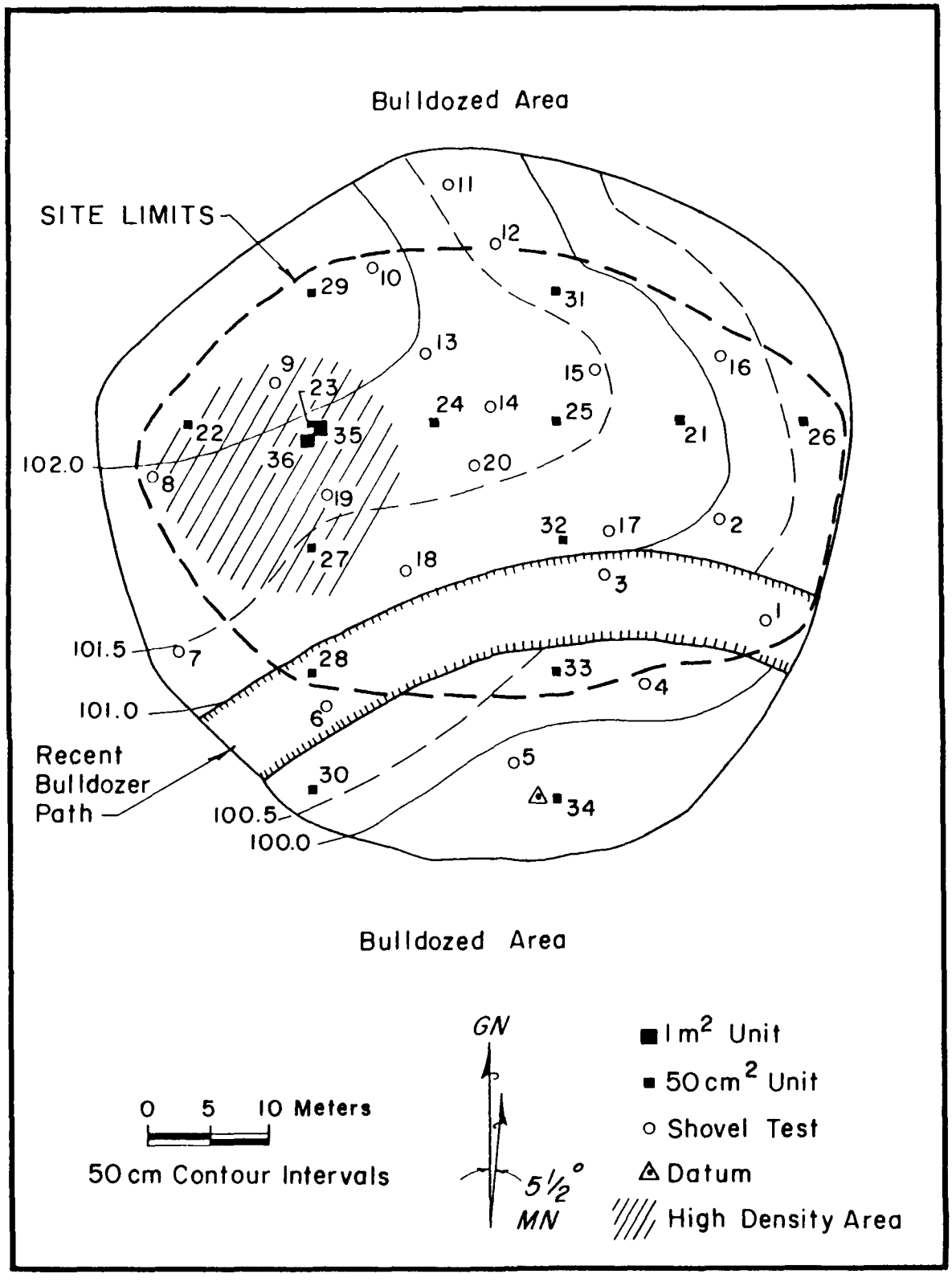


Figure 11. Contour map of site 41BW183 showing locations of test excavation units.

a

b

Figure 12. Site 41BW183: (a) view of site from southeast (site is in isolated wooded area); (b) southern side of site showing recent bulldozer path and Unit 28 in background.

limits of the site had been removed by bulldozing down to a depth of approximately 50-60 cm below the surface (Figure 12a).

The test excavations at site 41BW182 included 20 30x30 cm shovel tests, 14 50x50 cm units, and 2 1x1 m units. This work began with the random placement of a series of circular shovel tests across the entire site area (Units 1 to 20). This was done in order to rapidly assess the subsurface deposits and density of artifacts at the site. These units were all excavated down to the base of the A horizon and the resulting excavated fill screened through 6.4 mm (1/4 inch) hardware cloth. Based on this work, the A horizon, composed of a very pale brown sand (10YR7/3-8/3), was found to vary in thickness from as little as 26 to as much as 55 cm, with a mean depth of 37.25 cm below the surface. Only 6 of these 20 shovel tests contained possible artifactual material, and of these 6, only 2 contained unequivocal cultural remains: 2 chert flakes.

Based largely on the location of the two units yielding cultural material (Units 8 and 15), a 55 m long east-west baseline was shot in with a transit through the center of what appeared to be the site area based on the shovel tests. Six 50x50 cm square units were then excavated along this baseline at 10 m intervals (Units 21 to 26). These units were all excavated down to the base of the A horizon in 10 cm arbitrary levels and the fill was screened through 6.4 mm (1/4 inch) hardware cloth. The westernmost of these units (Unit 22) was given the grid coordinates N100/E100 and the remaining units located accordingly on an approximately north-oriented grid. The unit which was second from the west along this line (Unit 23) was found to contain the most cultural material of any of these units and a north-south baseline was laid out with the transit along the E110 line on which this unit was located. Along this line, an additional four 50x50 cm units were excavated at 10 m intervals (Units 27 to 30) (Figure 12b).

Subsequently, it was decided to excavate a second north-south line of 50x50 cm units to insure adequate coverage of the eastern portion of the site. For this reason, another north-south baseline was shot in with the transit along the E130 line, 20 m east of the original north-south baseline, and four more 50x50 cm units placed along it at 10 m intervals (Units 31 through 34). While these units were being excavated, the transit was used to shoot in the locations of the randomly placed shovel tests and the elevations of all excavated units and shovel tests, and to make a contour map of the unbulldozed area surrounding site 41BW183. A railroad spike in a tree at N70/E128 was used as an arbitrary datum of 100.00 m.

Based on the results of the shovel testing and the 50x50 cm units, site 41BW183 appeared to be a very low density site covering a roughly oval area of approximately 36 m north to south by 58 m east to west (approximately 2,088 square meters). The area of Unit 23 in the west central portion of the site remained the area of "highest" artifact density following the completion of all of the 50x50 cm test units and it was decided to place two additional units, 1x1 m squares, in this area in hopes of significantly increasing the artifact sample from site 41BW183

and of locating features. As with all previous units, these two squares (Units 35 and 36) were excavated in 10 cm thick arbitrary levels down to the base of the A horizon, with the excavated matrix being screened through 6.4 mm (1/4 inch) hardware cloth. With the completion of the excavation of these two 1x1 m units, the work at site 41BW183 was terminated.

Stratigraphic Context

The cultural material at site 41BW183 was largely recovered from the A horizon: a deposit of very pale brown (10YR7/3-8/3) loamy fine sand which varied in thickness from about 15 to 50 cm (Figure 13). The surface of the A horizon was capped by a thick root mat which varied in thickness from about 7 to 15 cm, but which did not show any difference in color or texture from the rest of the A horizon. Underlying the A horizon was what appeared to be a transitional zone of mottled very pale brown (10YR7/3-8/3) and yellow to brownish yellow (10YR7/8-6/8), loamy fine compact sand. Below this at an unknown depth was a deposit of strong brown (7.5YR5/8) compact loamy sand and clay. This latter deposit was exposed in the bulldozed area surrounding site 41BW183 at an approximate depth of 50-60 cm below the original ground surface.

Cultural material was recovered throughout the entire depth of the sandy A horizon, but the majority of the material was located in the upper 10 cm of the deposit. Collapsing all of the excavated units, 46.5 percent of the cultural remains were recovered from the top 10 cm. Below 10 cm, artifact frequency steadily dropped off, with 30.2 percent of the material from 10-20 cm, 16.3 percent of the material from 20-30 cm, 2.3 percent of the material from 30-40 cm, and 4.7 percent of the material from 40-50 cm below the surface.

This vertical distribution of material is probably due to downward vertical migration of artifactual material through the soft surface sediments due to bioturbation, plowing, or other natural processes. This suggestion is supported by the recovery of a fragment of twentieth century stoneware from 20-30 cm in Unit 33. This stoneware fragment was the only historic artifact recovered from site 41BW183 and its occurrence more than 20 cm below the modern ground surface strongly suggests downward vertical movement. It should also be mentioned that the vast majority of the prehistoric assemblage from site 41BW183 consists of very small interior flakes which would be readily amenable to such downward migration. Based on this evidence, it was concluded that the A horizon at site 41BW183 represented a mixed stratum of material deposited on the surface of the site during past occupations, largely prehistoric but with a very small amount of historic material.

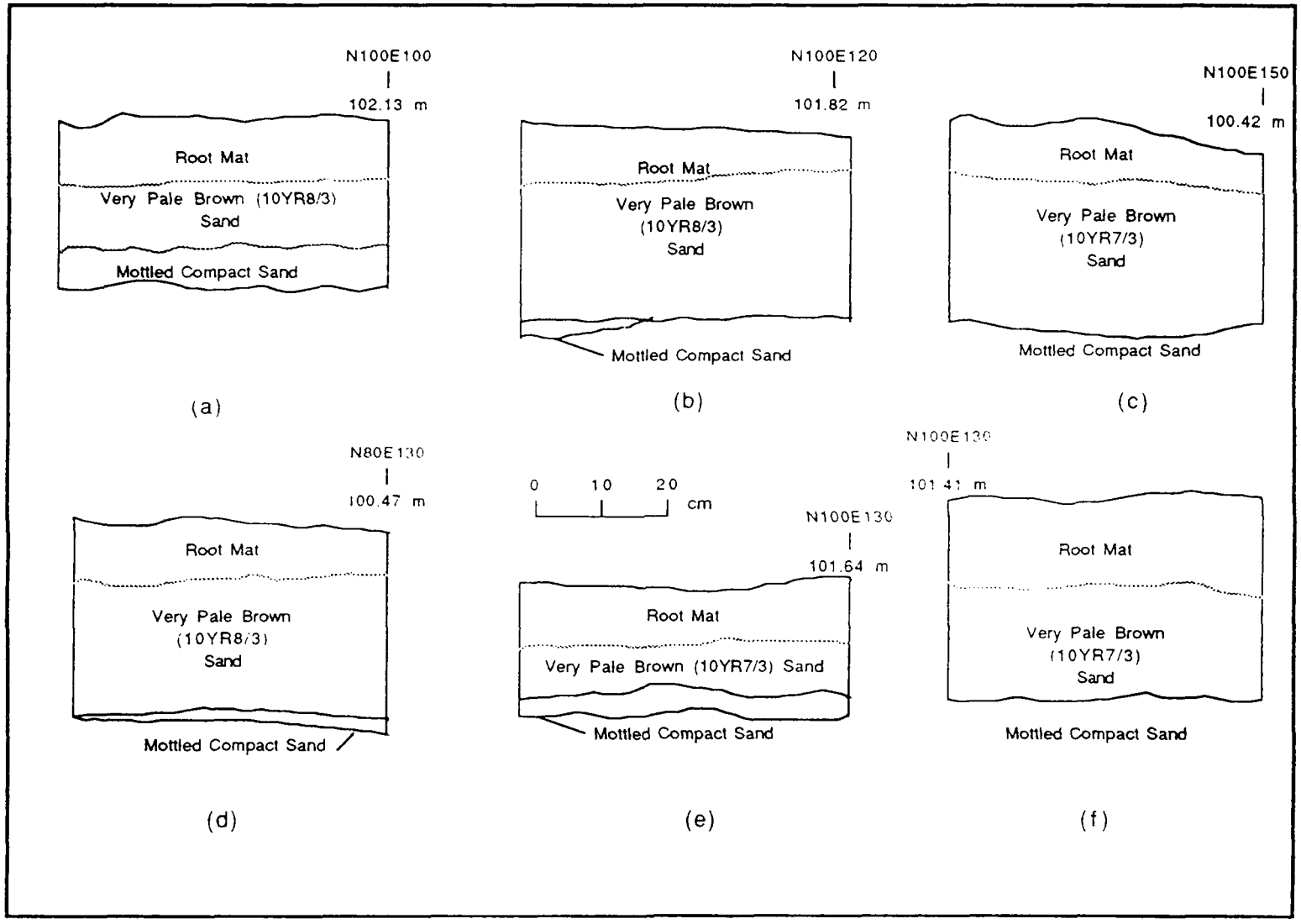


Figure 13. Site 41BW183 stratigraphy: (a) Unit 22, north profile; (b) Unit 24, north profile; (c) Unit 26, north profile; (d) Unit 33, north profile; (e) Unit 25, north profile; (f) Unit 31, south profile.

Horizontal Patterning

The program of shovel testing and 50x50 cm test excavations indicated that site 41BW183 was characterized by a very low density of cultural material spread across the entire site. The mean frequency of prehistoric artifacts from the 50x50 cm units on the site was 1.5 per unit. If Units 30 and 34 are excluded as being beyond the limits of the site, then the mean is raised to only 2.75 artifacts per unit. Similarly if Unit 23 is excluded as being within a "high" density area, then the mean drops to only 1.45 artifacts per unit.

In terms of volumetric density, the 50x50 cm units vary from a low of 0 artifacts per cubic meter to as many as 50 artifacts per cubic meter for Unit 23. Excluding Unit 23, the mean volumetric density was 22.9 artifacts per cubic meter, with the highest density units located in the north central and western portion of the site, largely around Unit 23. It would appear that the primary area of occupation on site 41BW183 was in the western portion of the site, around Unit 23.

For this reason, two additional excavation units, consisting of 1x1 m squares, were located adjoining Unit 23 to the east and south (Units 35 and 36). These units yielded only 13 and 9 artifacts, respectively, with most of this material coming from the upper 20 cm of deposit. Both of these units yielded volumetric density figures which were lower than that of Unit 23, but which were nevertheless concomitant with their location in this part of the site (43.3 artifacts per cubic meter for Unit 35 and 30 artifacts per cubic meter for Unit 36). Unfortunately, none of the test units at site 41BW183 revealed any features or any indications of midden deposits.

Prehistoric Artifact Assemblage

A total of 57 artifacts was recovered through surface collection and test excavations at site 41BW183. This assemblage is limited to lithic artifacts only. This extremely small collection consists of dart points, cores, hammerstones, unifaces, flakes, nondiagnostic shatter, and burned rock (Table 6). Ground stone and bifaces other than projectile points are noticeably absent. Burned rock is also only minimally represented within this sample. Tabulation of the level proveniences of the artifact classes is presented in Appendix B.

Tools

Formal tools, consisting of dart points, hammerstones, and unifaces, comprise only 8.8 percent of the total artifact assemblage.

Table 6

Artifact Classes Recovered from Test Excavations
of Site 41BW183, Red River Army Depot

PROVENIENCE	DART POINT	CORE	HAMMERSTONE	STEEPLY CHIPPED UNIFACE	MARGINALLY MODIFIED UNIFACE	FLAKE	NONDIAGNOSTIC SHATTER	BURNED ROCK	TOTAL
SURFACE	1				1		2		4
SHOVEL TEST									
1		1							1
2						1	1		2
3			1					3	4
8						1			1
13							1		1
15							1		1
50 X 50 CM UNITS									
21								1	1
22						1		1	2
23						3	2		5
24					1	1			2
26							1		1
27						2			2
28						1			1
29						2			2
31		1				1	1		3
32		1				1			2
1 X 1 M UNITS									
35						8	3	2	13
36				1		6	1	1	9
TOTAL	1	3	1	1	2	28	13	8	57

Dart Point

The single dart point (Figure 14) recovered from the surface of the site exhibits an expanding stem and associated corner notches. This specimen, which is made of heat treated white chert, most closely resembles the Ellis point as described by Suhm et al. (1954:420, Plate 89). The blade of the point is short (29 mm) and broad (29 mm) with slightly convex lateral edges. The expanding stem exhibits a straight to slightly concave base. The maximum stem width is 25 mm and the neck width is 15 mm. The blade has been finely thinned to a maximum thickness of 6.7 mm. The specimen, which is 38 mm in length, weighs 7.0 grams.

Hammerstone

The single hammerstone recovered from Shovel Test 3 is made of quartzite and exhibits battered surfaces from use as a hammer on four edges. Spalling of the cortex has occurred on the edge which was probably used most often. The cobble is quite large in size (length = 84 mm; width = 61 mm; thickness = 60 mm) and weighs 362 grams.

Unifaces

Three specimens, one steeply chipped and two marginally modified, comprise the unifacial tool sample. The steeply chipped specimen is a fragmentary piece of brown chert with only a 6 mm span of retouch exhibited on one end of the piece. A snap fracture has removed the edge which may have exhibited more substantial scraper retouch. The chert blank is 50 mm in length, 34 mm in width, and 8 mm thick. Cortex is present on one surface of the lenticular blank while shallow flake scars comprise the other surface. This specimen weighs 15 grams.

The two marginally modified pieces exhibit very minimal continuous retouch along one edge. The larger specimen (3 grams), which was recovered from the surface of the site, exhibits retouch for a distance of 17 mm along the distal obverse edge of the chert flake blank. The flake, which is 25 mm long, 29 mm wide, and 4.5 mm thick, exhibits a multifaceted platform and cortex on 20 percent of its dorsal surface. The other specimen, exhibiting a straight retouched edge (7 mm in length), is also of chert, but no flake platform is present. This piece is extremely small (length = 25 mm; width = 10 mm; thickness = 2 mm) and weighs only 1 gram. It was recovered from Level 1 of Unit 24.

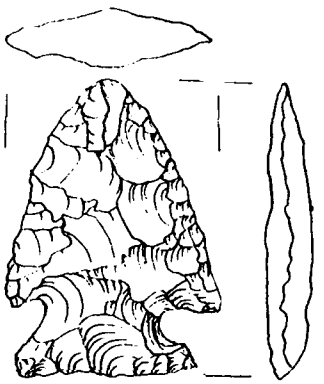


Figure 14. Ellis dart point recovered from surface of site 41BW183.

Lithic Debitage

Lithic debitage, consisting of cores, flakes, and nondiagnostic shatter, makes up the majority (77.2 percent) of the artifact assemblage. The cores are all of quartzite, while only 24.4 percent of the remaining debitage is of quartzite. Chert (73.2 percent) is the primary raw material of the debitage; novaculite is also represented by one specimen.

Cores

The three cores recovered from site 41BW183 are all tested nodules. Consequently, the low proportion of quartzite debris may be explained by the apparent unsatisfactory nature of the cobbles for the knapper's purposes. The three specimens, which are quite variable in size (Table 7), exhibit cortex over 50 to 90 percent of their outer surfaces.

Table 7

Dimensions and Proveniences of Cores
Recovered from Site 41BW183

Provenience	Length (mm)	Width (mm)	Thickness (mm)	Weight (g)
Unit 1	96	62	41	283
Unit 31	88	56	37	220
Unit 32	39	37	26	44

Flakes

Lithic debitage exhibiting a bulb of percussion and a striking platform were classified as flakes. Flakes were categorized as whole or fragmentary. Of the 28 flakes, only two were missing their distal end. Chert (n=22) was the dominant raw material. Quartzite (n=4) and novaculite (n=2) were very poorly represented. The amount of dorsal cortex remaining on these specimens and their size (Table 8) indicate that the reduction of blanks or tool maintenance were the primary reduction activities conducted at the site. Seventy-five percent of the flakes exhibit either no dorsal cortex or less than 50 percent dorsal cortex. All but one of the flakes exhibit a maximum dimension of less than 3 cm (see Table 8), also suggesting that the reduction of large cobbles was not conducted at site 41BW183. Single faceted platforms are clearly predominant on those flakes exhibiting cortex while multifaceted platforms

are more common on interior flakes. Only one specimen exhibited evidence of thermal alteration in the form of pot-lid fractures.

Table 8

Cross-Tabulation of Platform Type and Flake Size
by Percent of Dorsal Cortex of Flake Specimens
Recovered from Site 41BW183

		Platform Type			Flake Size		
Percent of Dorsal Cortex	Cortex	Single Faceted	Multi-faceted	Crushed	<1cm	1-3cm	>3cm
0 (n=10)		3	6	1		10	
1-50 (n=11)	1	7	1	2	3	8	
51-75 (n=3)		2	1		2		1
76-100 (n=3)	1	2			1	2	
Platform only (n=1)		1				1	

Nondiagnostic Shatter

Nondiagnostic shatter is defined as lithic debris which is usually angular in shape and exhibits neither a striking platform or a bulb of percussion. Thirteen specimens were recovered from various portions of the site (see Table 6). Quartzite (n=6) and chert (n=6) are equally represented within this artifact class, and one limestone fragment was also recovered. The amount of cortex on these specimens is primarily either below 50 percent (n=7) or greater than 75 percent (n=5). Only one specimen exhibited no cortical surface. As with the flakes, size variability is quite small. Ten specimens are between 1 and 3 cm in their maximum dimension while only two specimens are smaller than 1 cm in maximum dimension.

Burned Rock

Angular fractured rock, primarily quartzite (n=5) or limestone (n=3), which may also exhibit discoloration, pot-lid fractures, or crazing has been classified as burned rock. Burned rock, which may be the by-product of stone boiling or the use of heated rocks for earth ovens or griddles, is very sparse (n=8) at site 41BW183. Either cooking activities were extremely limited at this site or alternative cooking techniques over an open fire were used.

Historic Artifact Assemblage

Only two historic artifacts were recovered from site 41BW183 -- a large fragment of a bottle found on the surface of the site and a small sherd of stoneware recovered from 20-30 cm below the surface in Unit 33. The bottle fragment consisted of the neck and a small portion of the side of a flat-sided bottle. The glass had a slight pale purple tint to it, but the seam ran completely up the side of the neck to the rim, indicating its manufacture by an Automatic Bottle Machine. Purple discoloration of glass can occur as late as 1925, while the use of the Automatic Bottle Machine began as early as 1920 (Newman 1970:Figure 1, Figure 3). The occurrence of both attributes on this specimen places its date of manufacture around 1920-1925.

The other historic specimen consists of a very small fragment of stoneware recovered from Unit 33. The exterior surface is missing from this piece, but the interior is present and is covered with a brown (10YR3/4) natural clay slip/glaze with throw marks. Natural clay slips/glazes were reportedly used as early as 1860 in North Central and East Texas, were quite common between 1875 and 1915, and continued in use in some potteries into the 1940s (Lebo 1987:131).

Summary

Site 41BW183 is primarily a small, low density prehistoric site with a very small amount of historic material present. The artifact assemblage recovered by testing at the site included a small number of tools in addition to the single diagnostic artifact, an Ellis point, recovered during the initial recording of the site. This point suggests a Late Archaic (2000-200 B.C.) date for the site, but it is difficult to place a great deal of confidence in such a single-diagnostic artifact dating, especially in light of the evidence of both earlier and later occupations during the prehistoric period at the nearby site 41BW182, only 250 m away.

Site 41BW183 is contained within an area of about 55 m north-south by 60 m east-west, isolated by the removal on all four sides of surface deposits for construction of a borrow pit. The southern and south central area of the site had been impacted by limited bulldozing during the coring of the area prior to commencement of borrow pit construction and it is possible that the site had been further impacted by agricultural practices or more recent lumbering activities, given its shallow depth. Stratigraphy consisted of roughly 20 to 40 cm of a pale yellow to white sand overlying a deposit of mottled white to yellowish brown compact sand. The bulldozing revealed that this in turn was underlain by a deposit of strong brown sandy clay. Prehistoric material was found throughout the upper sand unit and in the top of the lower compact sand unit. The site also contained a few pieces of historic material, dating to the early part of this century but not enough to designate an historic component for the

site. Testing showed that archeological material covered a roughly oval area measuring approximately 36 m north-south by 58 m east-west.

As noted above, other than the single Ellis point recovered during the initial location of this site (Newman 1988:21), no diagnostic artifacts were recovered. Artifact density across the site area was extremely low with the densest part of the site containing five flakes per 50x50 cm unit in the northwest part of the site (Unit 23), while the modal density was only two artifacts per 50x50 cm unit. Both 1x1 m squares (Units 35 and 36) were located in the northwest part of the site, where the greatest density of material was revealed by the 50x50 cm unit testing, but both failed to reveal any features and neither was found to contain a high density of material.

CHAPTER 7

ASSESSMENTS AND RECOMMENDATIONS

Assessment of Sites 41BW182 and 41BW183

The assessment of the significance of these cultural properties is determined by criteria set forth in 36CRF60.4 for eligibility for nomination to the National Register of Historic Places. As stated in Chapter 4, four criteria are applied following the identification of relevant historical themes or patterns. Under these criteria, a property may possess significance for (1) its historic association with an event; (2) its historic association with a person; (3) its illustration of a period, type or method of construction, or for aesthetic values; or (4) its potential for yielding information important for prehistory or history. Although the historic component at site 41BW182 can be evaluated under the first two criteria of significance, both sites can be evaluated under the fourth criterion. Any consideration of a property under the final criterion must address whether the property contains information which can contribute to our understanding of history or prehistory and whether that information is important.

Site significance, however, is not judged in relation to an absolute scale, but rather to a relative scale determined by the quantity and quality of prior research within the region in concert with the criteria for eligibility. For example, our knowledge of the prehistoric use of upland habitats in Northeast Texas during all time periods is extremely limited, since most previous research efforts have focused on major alluvial valleys. Consequently, the presence of sites 41BW182 and 41BW183 on the upland divide between the Red and Sulphur River drainages greatly enhances their potential for providing needed information concerning a little known portion of prehistoric settlement-subsistence systems.

The mere presence of these sites within an upland environment, however, does not make them significant. These sites must exhibit particular kinds of evidence in order to be regarded as significant properties. First, isolable components, whether identified vertically or horizontally, are essential to the documentation of changing site functions or subsistence patterns through time. Second, such components must yield datable materials or diagnostic artifacts which permit the assignment of the component to particular time periods. Third, the recovery of features or middens, with preserved floral and faunal remains, is desirable if subsistence patterns are to be reconstructed. Any upland site must, therefore, exhibit a high degree of contextual integrity if such data requirements are to be met.

Unfortunately, neither site 41BW182 nor site 41BW183 meet the criteria for eligibility for nomination to the National Register of Historic Places. Site 41BW182 was occupied intermittently throughout prehistory, but the

low density of artifacts and associated diagnostics preclude the recognition of horizontally isolable components. Additionally, the stratigraphic integrity of the site has been destroyed by processes of bioturbation and pedoturbation. The context of the historic component and a portion of the prehistoric component has also been radically altered by historic land disturbances, such as logging activities and the removal of the historic structures in 1942. The archival research conducted for site 41BW182 further demonstrates that the site is not related to important persons or events in history on either a local, regional, or national level.

Site 41BW183, on the other hand, is certainly in a less disturbed context. However, the extremely low artifact densities and a very limited potential for the preservation of features, indicate that the site has little to offer which would contribute to our understanding of the prehistoric or historic use of the area.

Recommendations

Although neither site 41BW182 nor site 41BW183 meet the minimal criteria for eligibility for inclusion on the National Register of Historic Places, the present lack of a regional research design and the general lack of knowledge concerning prehistoric or historic adaptations to upland environments suggest that it is prudent to give special consideration to such cultural resources when preservation decisions are made. For example, our present knowledge of upland, low density sites, such as site 41BW182, is extremely limited. Admittedly, the preservation environment of the sandy matrix is hardly ideal, but no concerted effort to locate features in such sites has been conducted. The lack of features in the isolated test units at site 41BW182 is hardly unequivocal evidence that features are not present. The intermittent use of site 41BW182 throughout prehistory certainly enhances the probability of formal features having been constructed within the site matrix. However, without a better comprehension of the variability of upland site contexts and their associated preservation environments, it is presently difficult to evaluate the worth of site 41BW182 in relation to other sites in similar contexts. Until a better comparative data base is available, it is recommended that site 41BW182 be preserved. If avoidance of the site is not feasible, it is recommended that a professional archeologist monitor the removal of the A horizon as a means of documenting the presence or absence of features in such site contexts. It is only through such monitoring that we will gain sufficient data to be able to predict accurately whether or not features will be present in particular contexts at the RRAD or elsewhere in Northeast Texas.

REFERENCES

Allen, R.A.
1961 The East Texas Lumber Workers: An Economic and Social Picture, 1870-1950. University of Texas Press, Austin.

Aten, L.E., and C.N. Bollich
1981 Archeological Evidence for Pimple (Prairie) Mound Genesis. Science 213:1375-1376.

Banks, L.D.
1983 Prehistoric Engineering Along a Meandering River: An Hypothesis In River Meandering: Proceedings of the Conference on Rivers, 1983, edited by C.M. Elliott, pp. 191-203. American Society of Civil Engineers, New York.

Banks, L.D. and J. Winter
1975 The Bentsen-Clark Site, Red River County, Texas: A Preliminary Report. The Texas Archeological Society, Special Publication No. 2.

Barker, E.C.
1924 Stephen F. Austin's Descriptions of Texas. Southwestern Historical Quarterly 28(2):98-121.

Barnard, H.D.
1939 Early History of Research in Texas Archeology by the Department of Anthropology, and the History of the Anthropology Museum of the University of Texas. Unpublished Master's thesis, The University of Texas at Austin.

Bell, M.
n.d. Titus County site forms. On file at the Texas Archeological Research Laboratory, Austin.

Binford, L.R.
1980 Willow Smoke and Dog's Tails: Hunter-Gatherer Settlement Systems and Archaeological Site Formation. American Antiquity 45:4-20.

Boehm, R.G.
1975 Exporting Cotton in Texas: Relationships of Ports and Inland Supply Points. Urban and Regional Studies, No. 2. Bureau of Business Research, University of Texas at Austin.

Bollaert, W.
1850 Observations on the Indian Tribes in Texas. London Ethnological Society Journal, Volume 2.

Bousman, C.B., M.B. Collins, and T.K. Perttula
1988 Quaternary Geomorphology at Cooper Basin: A Framework for Archeological Inquiry, Delta and Hopkins Counties, Texas. Report of Investigation, No. 55. Prewitt and Associates, Inc.

Breckey, C.
n.d. Site forms for 41BW120 and 41BW121. On file at the Texarkana Historical Museum, Texarkana.

Briggs, A.K., and J. Malone
1970 An Archaeological Survey of the Texarkana Reservoir Enlargement Area. Archaeological Survey Report No. 7. Texas Historical Survey Committee and Texas Water Development Board, Austin.

Brown, J.A.
1971 Pottery Vessels. Spiro Studies No. 3. University of Oklahoma Research Institute, Norman.

1976 Spiro Studies, Volume 4: The Artifacts. The Stovall Museum of Science and History, The University of Oklahoma, and The University of Oklahoma Research Institute, Norman.

Bruseth, J.E., and T.K. Perttula
1981 Prehistoric Settlement Patterns at Lake Fork Reservoir. Texas Antiquities Permit Series Report No. 2. Archaeology Research Program, Southern Methodist University, Dallas.

Carley, P.
n.d. Evidence of Early Man in Northeast Texas. Preliminary report submitted to the Texas Historical Commission, Austin.

Chandler, B.O., and J.E. Howe
1939 History of Texarkana and Bowie and Miller Counties, Texas, Arkansas.

Cheatwood, G.
1988 Notes on the Stratigraphic Position of Archaeological Remains in the Sulphur River Valley, Red River County, Texas. Appendix B in Quaternary Geomorphology at Cooper Lake: A Framework for Archaeological Inquiry. By C.B. Bousman, M.B. Collins, T.K. Perttula, pp. 139-143. Report of Investigations No. 55, Prewitt and Associates, Inc.

Creel, D., and R. Fields
1979 Field Notes on the Tilson site. On file with the Texas Historical Commission, Austin.

Davis, E.M.
1970 Archaeological and Historical Assessment of the Red River Basin in Texas. In Archaeological and Historical Resources of the Red River Basin, edited by H.A. Davis, pp. 25-65. Research Series No. 1. Arkansas Archeological Survey, Fayetteville.

Dickinson, S.D.
1941 Certain Vessels from the Clements Place, an Historic Caddo Site. Bulletin of the Texas Archeological and Paleontological Society 13:117-132.

Dobyns, H.F.
1983 Their Number Became Thinned: Native American Population Dynamics in Eastern North America. The University of Tennessee Press, Knoxville.

Doehner, K., and R.E. Larson
1978 Archaeological Research at Proposed Cooper Lake, Northeast Texas, 1974-1975. Research Report No. 108. Archaeology Research Program, Southern Methodist University, Dallas.

Doehner, K., D. Peter, and S.A. Skinner
1978 Evaluation of the Archaeology at the Proposed Cooper Lake. Research Report No. 114. Archaeology Research Program, Southern Methodist University Dallas.

Doughty, R.W.
1987 At Home in Texas: Early Views of the Land. Texas A & M University Press, College Station.

Duffield, L.F.
1959 Archeological Reconnaissance at Cooper Reservoir, Delta and Hopkins Counties, Texas, February, 1959. The Texas Archeological Salvage Project, The University of Texas at Austin. Submitted to the National Park Service, U.S. Department of the Interior.

Dugas, V.L.
1955 Texas Industry, 1860-1880. Southwestern Historical Quarterly 59:151-183.

East Texas State University
1971 An Environmental Inventory and Survey of the Sulphur River Basin. Commerce.

Ellis, L.T.
1970 The Revolutionizing of the Texas Cotton Trade, 1865-1885. Southwestern Historical Quarterly 73: 478-508.

Espey, Huston & Associates, Inc.
1980 An Archaeological/Historic Survey of Sections of the Proposed Welsh-N.W. Texarkana 345 KV Transmission Line, Cass and Bowie Counties, Texas, Department of the Army Permit No. SWF-80-CASS-329. Submitted to Southwestern Electric Power Company, Shreveport, Louisiana.

Ewers, J.C. (editor)
1969 The Indians of Texas in 1830 by Jean Luis Berlandier. Smithsonian Institution Press, Washington, D.C.

Fisher, W.L.
1965 Rock and Mineral Resources of East Texas. Report of Investigations No. 54. Texas Bureau of Economic Geology, Austin.

Flores, D.L. (editor)
1984 Jefferson and Southwestern Exploration - The Freeman and Custis Accounts of the Red River Expedition of 1806. University of Oklahoma Press, Norman.

1985 Journal of an Indian Trader: Anthony Glass and the Texas Trading Frontier, 1790-1810. Texas A&M University Press, College Station.

Fox, R.W.
1980 Soil Survey of Bowie County, Texas. United States Department of Agriculture, Soil Conservation Service in cooperation with Texas Agricultural Experiment Station, College Station.

General Land Office, Texas
1941 Texas Land Title Abstracts, Volume 1-A. Austin.

Gilmore, K.
1986 French-Indian Interaction at an Early Eighteenth Century Post: The Roseborough Lake Site, Bowie County, Texas. Contributions in Archaeology No. 3, Institute of Applied Sciences, North Texas State University, Denton.

Gilmore, K., and N. Hoffrichter
1964 Preliminary Investigations of the L.O. Ray Site, Delta County, Texas. The Record 19(1):3-17.

Gilmore, K., and O. McCormick
1980 Red River Archaeological Project, Phase I. Institute of Applied Sciences, North Texas State University, Denton.

1982 Red River Archaeological Project, Phase I and II. Contributions in Archaeology No. 2, Institute of Applied Sciences, North Texas State University, Denton.

Goldschmidt, W.R.
1935 A Report on the Archaeology of Titus County in East Texas. Bulletin of the Texas Archeological and Paleontological Society 7:89-99.

Gould, F.W.
1975 Texas Plants: A Checklist and Ecological Summary. Texas A & M University Press, College Station.

Guendling, R.L.
1985 Archeological Survey of Arkla, Inc., AM-45 Pipeline Corridor, Bowie County, Texas. Arkansas Archeological Survey, Fayetteville. Submitted to Arkla, Inc., Shreveport, Louisiana.

Harris, R.K.
1953 The Sam Kaufman Site, Red River County, Texas. Bulletin of the Texas Archeological Society 24:43-68.

Harris, R.K., I.M. Harris, and M.P. Miroir
1980 The Atlanta State Park Site in Northeastern Texas. Louisiana Archaeology 6:231-239.

Heartfield, Price and Greene, Inc.
1982a A Cultural Resources Survey of High Site Probability Locations Which Will Be Affected by Proposed Levee Construction within Angelina Farms, Red River County, Texas. Heartfield, Price, and Greene, Inc., Monroe, Louisiana.

1982b A Cultural Resources Survey of Portions of Harts Bluff Ranch in connection with Corps of Engineers Permit No. SWF-81-TITUS-396. Heartfield, Price, and Greene, Inc., Monroe, Louisiana.

Heartfield, L., and T. Dieste
1984 An Archeological Overview and Management Plan for the Red River Army Depot, Bowie County, Texas. DARCOM Report No. 18. Submitted to the National Park Service, U.S. Department of the Interior, Atlanta, by Woodward-Clyde Consultants, Walnut Creek, California.

Hemmings, E.T.
1983 Vertebrate Fossils from Recent Red River Point Bar and Channel Bar Deposits in the Great Bend Region. In Contributions to the Archeology of the Great Bend Region, edited by F.F. Schambach and F. Rackerby, pp. 30-38. Research Series No. 22. Arkansas Archeological Survey, Fayetteville.

Hilliard, J.E.
1980 Prehistoric Ozark Settlement-Subsistence and Nut Resource Utilizations. Unpublished Master's thesis, University of Arkansas, Fayetteville.

Hudson, C.
1986 Hernando De Soto in the Caddo Area. Paper presented at the 28th Caddo Conference, Little Rock, Arkansas.

Hyatt, R.D., B.H. Butler, and H.P. Mosca
1974 Archaeological Research at Cooper Lake, 1970-1972. Contributions in Anthropology No. 12. Southern Methodist University, Dallas.

Hyatt, R.D., and K. Doehner
1975 Archaeological Research at Cooper Lake, Northeast Texas, 1973. Contributions in Anthropology No. 15. Southern Methodist University, Dallas.

Hyatt, R.D., and S.A. Skinner
1971 Archaeological Resources of the Cooper Reservoir, Texas. Department of Anthropology, Southern Methodist University. Submitted to the National Park Service, U.S. Department of the Interior.

Jackson, A.T.
1931 Department of Anthropology Field Notebook No. 3 for 1931: April 17, 1931 (Tom N. Cole or Mustang Creek Site). On file at the Texas Archeological Research Laboratory, The University of Texas at Austin.

1932 Exploration of a Burial Site on E.H. Moores Plantation in Bowie County, Texas. Ms. on file, Texas Archeological Research Laboratory, Austin.

Jelks, E.B.
1961 Excavations at Texarkana Reservoir, Sulphur River, Northeastern Texas. River Basin Survey Papers No. 21, B.A.E. Bulletin No. 179. Bureau of American Ethnology, Washington, D.C.

Jennings, N.W., and E.E. Varner
1976 Bowie County, Texas Historical Handbook. Smart Printing Co., Texarkana.

Johnson, L., Jr.
1962 The Yarbrough and Miller Sites of Northeastern Texas, with a Preliminary Definition of the LaHarpe Aspect. Bulletin of the Texas Archeological Society 32:141-284.

n.d. The Last Paleo-Indians on the Woodland Edge of Oklahoma and Texas. Ms. in preparation.

Jordan, T.G.
1981 Trails to Texas: Southern Roots of Western Cattle Ranching. University of Nebraska Press, Lincoln.

1986 A Century and a Half of Ethnic Change in Texas, 1836-1986. Southwestern Historical Quarterly 89:385-422.

Jurney, D.H.
1987 Cut and Wire Nails: Functional and Temporal Interpretations. In Historic Buildings, Material Culture, and People of the Prairie Margin, edited by D.H. Jurney and R.W. Moir, pp. 83-96. Richland Creek Technical Series Volume V. Archaeology Research Program, Southern Methodist University, Dallas.

1988 Summary of Historic Archaeology: Results of the 1987 Field Season. In Archaeological Investigations at Cooper Lake: 1987 Season Report, edited by R.W. Moir and D.E. McGregor. Archaeology Research Program, Southern Methodist University, Dallas. (Draft).

Krieger, A.D.
1946 Culture Complexes and Chronology in Northern Texas. Publication 4640. The University of Texas at Austin.

Lathrop, B.F.
1949 Migration into East Texas 1835-1860: A Study from the United States Census. The Texas State Historical Association, Austin.

Lebo, S.A.
1987 Local Utilitarian Stonewares: A Diminishing Artifact Category. In Historic Buildings, Material Culture, and People of the Prairie Margin, edited by D.H. Jurney and R.W. Moir, pp. 121-142. Richland Creek Technical Series Volume V. Archaeology Research Program, Southern Methodist University, Dallas.

1988 The Tucker(41DT104) and Sinclair (41DT105) Cemeteries of Delta County, Texas: An Archaeological and Bioarchaeological Perspective. Institute of Applied Sciences, University of North Texas, Denton.

Lewis, G.A.
1987 The Clements Brothers' Farm Site 41CS25. Unpublished Master's thesis, University of Texas.

Lowe, R.G., and R.B. Campbell
1987 Planters and Plain Folk: Agriculture in Antebellum Texas. Southern Methodist University Press, Dallas.

McCall, E.
1988 The Attack on the Great Raft. American Heritage of Invention and Technology 3(3):10-16.

McClurkan, D.B., E.B. Jelks, and H.P. Jensen
1980 Jonas Short and Coral Snake Mounds: A Comparison. Louisiana Archaeology 6:173-206.

McGregor, D.E.
1988 Summary of Prehistoric Archaeology Results: The 1987 Field Season. In Archaeological Investigations at Cooper Lake: 1987 Season Report, edited by R.W. Moir and D.E. McGregor. Archaeology Research Program, Southern Methodist University, Dallas. (Draft).

McGregor, D.E., and J.E. Bruseth (editors)
1987 Hunter - Gatherer Adaptations along the Prairie Margin: Site Excavations and Synthesis of Prehistoric Archaeology. Richland Creek Technical Series Volume III. Archaeology Research Program, Southern Methodist University, Dallas.

Mallouf, R.J.
1976 Archeological Investigations at Proposed Big Pine Lake, 1974-1975, Lamar and Red River Counties, Texas. Archeological Survey Report No. 18. Texas Historical Commission, Austin.

Martin, W.A., J. Bruseth, G. Fritz, P. Murry, and R. Fullington
1987 Subsistence Patterns. In The Bird Point Island and Adams Ranch Sites: Methodological and Theoretical Contributions to North Central Texas Archaeology, edited by J. Bruseth and W. Martin, pp. 127-142. Richland Creek Technical Series Volume II. Archaeology Research Program, Southern Methodist University, Dallas.

Maxwell, R.S., and R.D. Baker
1983 Sawdust Empire: The Texas Lumber Industry, 1830-1940. Texas A & M University, Press, College Station.

Meltzer, D.J., and B.D. Smith
1986 Paleoindian and Early Archaic Subsistence Strategies in Eastern North America. In Foraging, Collecting and Harvesting: Archaic Period Subsistence and Settlement in the Eastern Woodlands, edited by S.W. Neusius, pp. 3-31. Occasional Paper No. 6. Center for Archaeological Investigations, Southern Illinois University, Carbondale.

Miller, J.E.
1986 The Myers Mound: Salvage Excavations at a Caddo II Site in Southwest Arkansas. The Arkansas Archeologist, Bulletin 23/24.

Miroir, M.P.
n.d. Site Notes. On file at the Texarkana Historical Museum, Texarkana.

Miroir, M.P., R.K. Harris, J.C. Blaine, and J. McVay
1973 Benard de la Harpe and the Nassonite Post. Bulletin of the Texas Archeological Society 44:113-168.

Moir, R.W.
1987 Refined Earthenwares and Rural Ceramic Traditions. In Historic Buildings, Material Culture, and People of the Prairie Margin, edited by D.H. Jurney and R.W. Moir, pp. 97-120. Richland Creek Technical Series Volume V. Archaeology Research Program, Southern Methodist University, Dallas.

Moir, R.W., and M.M. Green
1988 Analysis of Historic Artifacts. In Historic Farming on the Hogwallow Prairies: Ethnoarchaeological Investigations of the Mountain Creek Area, North Central Texas, compiled by D.H. Jurney, S.A. Lebo, and M.M. Green, pp. 235-250. Joe Pool Lake Archaeological Project Volume II. Archaeology Research Program, Southern Methodist University, Dallas.

Moir, R.W., and D.E. McGregor (editors)
1988 Archaeological Investigations at Cooper Lake: 1987 Season Report. Archaeology Research Program, Southern Methodist University, Dallas. (Draft).

Moore, C.B.
1912 Some Aboriginal Sites on Red River. Journal of the Academy of Natural Science of Philadelphia, Volume 14.

Moorman, E.H., and E.B. Jelks
1952 Appraisal of the Archeological Resources of the Cooper Reservoir, Delta and Hopkins Counties, Texas. River Basin Surveys, Smithsonian Institution, Texas Area, Austin.

Murray, G.E.
1960 Geologic Framework of Gulf Coastal Province of United States. Association of Petroleum Geologists, Tulsa.

Newman, J.R.
1988 A Cultural Resources Survey of the Proposed Central Distribution Center (CDC) Construction Site, Borrow Area, and Sanitary Landfill Area at the Red River Army Depot, Bowie County, Texas. U.S. Army Corps of Engineers, Fort Worth District. (Draft).

Newman, T.S.
1970 A Dating Key for Post-Eighteenth Century Bottles. Historical Archaeology 4:70-75.

Pearce, J.E.
1932 The Archaeology of East Texas. American Anthropologist 34:670-687.

Perino, G.
1983 The Bob Williams Site (41RR16), Red River County, Texas. Museum of the Red River, Idabel, Oklahoma.

Perttula, T.K.
1988a Contact and Interaction between Caddoan and European Peoples: The Historic Archaeological and Ethnohistorical Records. Ms. on file, University of North Texas, Denton.

1988b Cultural Resources Survey at Cooper Lake, Delta and Hopkins Counties, Texas. Institute of Applied Sciences, North Texas State University, Denton.

1988c The Hurricane Hill Site (41HP106): Excavations at an Early Ceramic-Caddoan Settlement at Cooper Lake, Hopkins County, Texas. Institute of Applied Sciences, University of North Texas. Denton. (Draft).

1988d The James Frank Site (41DT97): Excavations at an Antebellum Farmstead in the South Sulphur River, Cooper Lake, Northeast Texas. Institute of Applied Sciences, North Texas State University, Denton. (Draft).

1988e Test Excavations at Three Late Nineteenth-Early Twentieth Century Farmsteads at Cooper Lake, Delta and Hopkins Counties, Texas. Institute of Applied Sciences, North Texas State University, Denton. (Draft).

Perttula, T.K., S. Gaither, and G. Cheatwood

1988 The Cheatwood Place (41RR181), An Early Ceramic-Caddoan Midden on Little Mustang Creek, Red River County, Texas. Ms. in preparation.

Peter, D.E., and D. McGregor

1987 Lithic Reduction Systems and Interassemblage Variability: Problems of Recognition. In Hunter-Gatherer Adaptations Along the Prairie Margin: Site Excavations and Synthesis of Prehistoric Archaeology, edited by D.E. McGregor and J.E. Bruseth. Richland Creek Technical Series, Volume III. Archaeology Research Program, Southern Methodist University, Dallas.

1988 Raw Material Availability and Lithic Reduction Strategies: Consequences for Interassemblage Variability. In Late Holocene Prehistory of the Mountain Creek Drainage, edited by D.E. Peter and D.E. McGregor, pp. 277-314. Joe Pool Lake Archaeological Project Volume I. Archaeology Research Program, Southern Methodist University, Dallas.

Preston, N.E.

1972 Multiple Paleo Finds in Hunt County, Texas. Missouri Archaeological Society Newsletter, October 1972:6-8.

1974 Waco Sinkers in Association with Paleo-Indian Artifacts. The Record 30(4):4-5.

Purdue, J.A.
1983 The Environmental Implications of the Fauna Recovered from Rodgers Shelter. In Holocene Adaptations within the Lower Pomme de Terre Valley, Missouri, edited by M. Kay, pp. 199-261. The Illinois State Museum, Springfield. Submitted to the U.S. Army Corps of Engineers, Kansas City District.

Schambach, F.F.
1982 An Outline of Fourche Maline Culture in Southwest Arkansas. In Arkansas Archeology in Review, edited by N.L. Trubowitz and M.D. Jeter, pp. 132-197. Research Series No. 15, Arkansas Archeological Survey, Fayetteville.

1983 The Archaeology of the Great Bend Region in Arkansas. In Contributions to the Archeology of the Great Bend Region of the Red River Valley, Southwest Arkansas, edited by F.F. Schambach and F. Rackerby, pp. 1-11. Research Series No. 22, Arkansas Archeological Survey, Fayetteville.

Scurlock, J.D.
1962 The Culpepper Site, A Late Fulton Aspect Site in Northeast Texas. Bulletin of the Texas Archeological Society 32:285-316.

Shafer, H.J.
1977 Early Lithic Assemblages in Eastern Texas. The Museum Journal 17:187-197. West Texas Museum Association, Lubbock.

Skinner, S.A., R.K. Harris, and K.M. Anderson
1969 Archaeological Investigations at the Sam Kaufman Site, Red River County, Texas. Contributions in Anthropology, No. 5. Southern Methodist University, Dallas.

Slaughter, E.H., and B.R. Hoover
1963 Sulphur River Formation and the Pleistocene Mammals of the Ben Franklin Local Fauna. Journal of the Graduate Research Center 31(3):132-148. Southern Methodist University, Dallas.

Spratt, J.S.
1955 The Road to Spindletop: Economic Change in Texas, 1875-1901. The University of Texas Press, Austin.

Steely, S.
1986 Six Months from Tennessee. Hennington Publishing Company, Wolfe City, Texas.

Stephenson, R.L.
1950 Archaeological Survey of Texarkana Reservoir, Bowie and Cass Counties, Texas. River Basin Surveys, Smithsonian Institution, Washington, D.C.

Story, D.A.
1981 An Overview of the Archaeology of East Texas. Plains Anthropologist 26-92:135-158.

1985 Adaptive Strategies of Archaic Cultures of the West Gulf Coastal Plain. In Prehistoric Food Production in North America, edited by R.I. Ford, pp. 19-56. Anthropological Papers No. 75. Museum of Anthropology, University of Michigan, Ann Arbor.

1988 Caddoan Archaeology. Paper presented at the 30th Caddo Conference, Dallas.

Strickland, R.W.
1937 Anglo-American Activities in Northeastern Texas, 1803-1845. Unpublished Ph.D. dissertation, The University of Texas at Austin.

Suhm, D.A., A.D. Krieger, and E.B. Jelks
1954 An Introductory Handbook of Texas Archeology. Bulletin of the Texas Archeological Society, Volume 25.

Swanton, J.R.
1939 Final Report of the United states De Soto Expedition Commission. 76th Congress, 1st Session, H.R. 71. Washington, D.C.

1942 Source Material on the History and Ethnology of the Caddo Indians. BAE Bulletin 132. Bureau of American Ethnology, Smithsonian Institution, Washington, D.C.

Tarpley, F.
1969 Place Names of Northeast Texas. East Texas State University Press, Commerce.

1980 1001 Texas Place Names. The University of Texas Press, Austin.

Taylor, H.C.
1949 An Archaeological Survey of the Mounds on the Red River from DeKalb, Texas to Ida, Louisiana. Ms. on file, Texas Archeological Research Laboratory.

Thurmond, J.P.
1985 Late Caddoan Social Group Identifications and Sociopolitical Organization in the Upper Cypress Basin and Vicinity, Northeastern Texas. Bulletin of the Texas Archeological Society 54:185-200.

1988 Caddoan Archeology - Its Present Status and Future Directions: A Perspective from Northeast Texas. Paper presented at the 30th Caddo Conference, Dallas.

Toulouse, J.H.
1969 Fruit Jars. Thomas Nelson Inc., Nashville, Tennessee, & Everybodys Press Inc., Hanover, Pennsylvania.

Turner, H.A.
1936. A Graphic Summary of Farm Tenure. Miscellaneous Publication No. 261, U.S. Department of Agriculture, Washington, D.C.

Turner, E.S., and T.R. Hester
1985 A Field Guide to Stone Artifacts of Texas Indians. Texas Monthly Press, Austin.

Walker, K.J.
1980 Fasteners. In Waverly Plantation: Ethnoarchaeology of a Tenant Farming Community, edited by William H. Adams, pp. 543-555. Resources Analysts, Inc., Bloomington.

Watson, P.J.
1988 Prehistoric Gardening and Agriculture in the Midwest and Midsouth. In Interpretations of Culture Change in the Eastern Woodlands during the Late Woodland Period, edited by R.W. Yerkes, pp. 39-67. Occasional Papers in Anthropology No. 3. Ohio State University, Columbus.

Wedel, M.M.
1978 LaHarpe's 1719 Post on Red River and Nearby Caddo Settlements. Bulletin 30. Texas Memorial Museum, The University of Texas at Austin.

Wormser, A.
1988 41MX5, a Texarkana Phase Cemetery. Paper presented at the 30th Caddo Conference, Dallas.

Zlatkovich, C.P.
1981 Texas Railroads: A Record of Construction and Abandonment. Bureau of Business Research, University of Texas at Austin and the Texas State Historical Association, Austin.

APPENDIX A

Analytical Codes Used for Prehistoric Artifact Analysis

GENERAL PREHISTORIC CODING FORMS
SRAD/LSAAP PROJECT

Class 1 Projectile Point (count,weight)
  Subclass
    1 Dart
    2 Arrow
    3 Indeterminate
  Other
    1 Whole
    2 Tip
    3 Mid-section
    4 Base/stem
    5 Longitudinal fracture
    6 Tang
    7 Blade
    8 Other

Class 2 Biface (count,weight)
  Subclass
    1 Drill
    2 Bristol
    3 Thinned Biface
    4 Aborted, Early
    5 Aborted, Late
    6 Arrow pont preform
    7 Unidentified fragment
    8 Marginally modified only
    9 Chopper
    10 Knife
    11 Awl
    12 Dart point preform
    13 Other
  Other
    1 Whole
    2 Fragmentary

Class 3 Uniface (count, weight)
  Subclass
    1 Steeply Chipped
    2 Marginally Modified Pieces
  Other
    1 End Scraper
    2 Side Scraper
    3 Scraper with Graver Spur
    4 Graver
    5 Borer
    6 Burin
    7 Notch
    8 Denticulate
    9 Straight to Convex
    10 Concave/Convex
    11 Multiple Worked Edges
    12 Other

Class 4 Flake (count only, weight=0)
  Subclass
    1 Whole flake
    2 Broken with platform or bulb
    3 Shatter (non-diagnostic)
  Other
    1 Non-thermally altered
    2 Thermally altered-glossy,crazing

Class 5 Cores (count and weight)
  Subclass
    1 Tested Nodule
    2 Multidirectional
    3 Bidirectional
    4 Discoidal
    5 Fragment and Indeterminate
  Other
    1 Bifacial platform
    2 Cortex Platform, single
    3 Cortex Platform, double opposed
    4 Cortex Platform, double perpendicular
    5 Cortex Platform, multifaceted nodule
    6 Prepared Platform

Class 6 Ground/Pecked/Battered Stone (count and weight)
  Subclass
    1 Hammerstone
    2 Mano
    3 Mano/Hammerstone
    4 Grinding Slab
    5 Anvil
    6 Waco Sinker
    7 Abrader
    8 Polished Stone
    9 Incised Stone
    10 Multipurpose
  Other
    1 Whole
    2 Fragmentary

Class 7 Sherds (count only, weight=0)
  Subclass
    1 Body
    2 Rim
    3 Base
    4 Appendage
  Other
    1 Plain
    2 Brushed
    3 Incised
    4 Engraved
    5 Brushed/Incised
    6 Punctated
    7 Punctated /Incised
    8 Fingernail Punctate
    9 Fingernail Punctate/Incised
    10 Fingernail Punctate/Punctate
    11 Pinched
    12 Slipped
    13 Slipped/Incised
    14 Slipped/Engraved
    15 Burnished
    16 Burnished/Incised
    17 Burnished/Engraved
    18 Undetermined

Class 8 Baked Clay (weight only, count=0)
  Subclass
    1 Impressed - daub
    2 Non-impressed

Class 9 Bone (weight only, count=0)
  Subclass
    1 Worked
    2 Unworked
    3 Fossilized

Class 10 Shell (weight only count=0)
  Subclass
    1 Unburned
    2 Burned
  Other
    1 Unworked
    2 Worked

Class 11 Charcoal (weight)

Class 12 Burned Rock (count, weight)
  Subclass
    1 Small (1-2.5 cm)
    2 Medium (2.5-7.5 cm)
    3 Large (over 7.5 cm)

Class 13 Unworked Cobbles (count and weight)

Class 14 Carbonized Seeds (weight only)

Class 15 Beads (count)
  Subclass
    1 Clay
    2 Glass
  Other
    1 Whole
    2 Fragmentary

Class 16 Ceramic pipes
  Subclass
    1 Bowl
    2 Stem
  Other
    1 Whole
    2 Fragmentary

Class 17 Human skeletal remains
  Subclass
    1 Teeth
    2 Bone

Material Type
  1 Quartzite
  2 Chert
  3 Silicified Wood
  4 Ogallala Quartzite
  5 Porcelain Chert
  6 Red River Yellow Siltstone
  7 Novaculite
  8 Edwards Chert
  9 Big Fork Chert
  10 Woodford Chert
  11 Transluscent Chert
  12 Sandstone
  13 Hematite/limonite
  14 Limestone
  15 Shale

Percentage Dorsal Cortex
  0 Not applicable
  1 0 percent
  2 1-50 percent
  3 51-75 percent
  4 76-100 percent
  5 Platform only

Platform Type
  1 Cortex
  2 Single faceted
  3 Multi-faceted
  4 Crushed

Flake Size
  1 Small (LT 1 cm)
  2 Medium (1.0 - 3.0 cm)
  3 Large (GT 3.0 cm)

Ceramic Temper
  1 Grog
  2 Grit (sand)
  3 Bone
  4 Shell
  5 Grog/grit
  6 Grog/grit/bone
  7 Grit/Bone
  8 Grit/Shell
  9 Bone/Grog
  10 Grog/Shell
  11 Grog/Grit/Shell

Collection Unit
  0 Not applicable
  1 Controlled surface
  2 General surface
  3 Shovel tests
  4 Auger holes
  5 50x50 cm units
  6 1x.5 m units
  7 1x1 m units
  8 Backhoe trench
  9 Feature
  10 Post Hole

Screen Type
  0 Not applicable
  1 1" mesh
  2 Fine mesh
  3 Flotation

Feature Number
  F1 Hearth, etc.
  B1 Burial
  P1 Post hole

APPENDIX B

Prehistoric Artifacts Recovered from Sites 41BW182 and 41BW183

NOTE: In the following Tables B-1 and B-2, "provenience" refers to the numbered unit and the depth below surface in centimeters. The excavation units include shovel tests, auger tests, 50x50 cm squares, and 1x1 m squares.

Table B-1

Prehistoric Artifacts from Site 41BW182

PROVENIENCE	PROJECTILE POINT	BIFACE	UNIFACE	FLAKE	CORE	CERAMIC	BURNED ROCK	TOTAL
SURFACE				3				3
AUGER HOLES								
3				1				1
6		1						1
UNIT 11				2				2
UNIT 12				1		1		2
UNIT 13								
(0-10)				2				2
(10-20)	1			5				6
(20-30)				5				5
(30-40)				3				3
(40-50)				1				1
UNIT 14								
(0-10)				3				3
(10-20)							1	1
UNIT 15								
(0-10)				1				1
(10-20)				2				2
(20-30)				1				1
UNIT 16								
(0-10)				1				1
(10-20)				3				3
(40-50)				2				2
(50-60)				1				1
(60-70)				1				1
UNIT 17								
(20-30)				1				1
(40-50)				2				2
(60-70)				1				1
UNIT 18								
(0-20)				3				3
(20-40)				3				3
UNIT 19								
(20-40)							1	1
UNIT 20								
(0-20)				1				1
(20-40)				1				1
(40-60)				2				2
UNIT 21								
(0-20)				2				2
UNIT 22								
(0-10)				4				4
(10-20)				6				6
(20-30)			2	16				18
(30-40)				6				6
(40-50)				4			2	6
(50-60)				4	1			5

Table B-1 (cont'd)

Prehistoric Artifacts from Site 41BW182

PROVENIENCE	PROJECTILE POINT	BIFACE	UNIFACE	FLAKE	CORE	CERAMIC	BURNED ROCK	TOTAL
UNIT 24								
(0-20)				2				2
(20-40)				1				1
UNIT 25								
(0-20)				4				4
(20-40)				10				10
(40-60)				2				2
(60-80)				2				2
UNIT 26								
(20-40)			1	3	1			5
(60-80)				3				3
UNIT 27								
(0-20)				1				1
UNIT 28								
(0-20)				4				4
(20-40)				1				1
(40-60)				2				2
UNIT 29								
(0-10)				1			2	3
(10-20)				4				4
(20-30)			2	7				9
(30-40)				4			6	10
(40-50)			1	8			1	10
UNIT 30								
(0-10)				1				1
(10-20)				3				3
(20-30)				5				5
(30-40)				2				2
UNIT 31								
(0-20)				2				2
UNIT 32								
(0-20)				2				2
(20-40)	1				1			2
UNIT 33								
(0-10)				1				1
(10-20)				3				3
(20-30)				1				1
UNIT 34								
(0-20)				3				3
(20-40)				4				4
UNIT 35								
(0-20)				4				4
TOTAL	2	1	6	184	3	1	13	210

Table B-2

Prehistoric Artifacts from Site 41BW183

PROVENIENCE	PROJECTILE POINT	UNIFACE	FLAKE	CORE	GROUND STONE	BURNED ROCK	TOTAL
SURFACE	1	1	2				4
UNIT 1				1			1
UNIT 2			2				2
UNIT 3					1	3	4
UNIT 8			1				1
UNIT 13			1				1
UNIT 15			1				1
UNIT 21							
(40-50)						1	1
UNIT 22							
(0-10)			1			1	2
UNIT 23							
(0-10)			2				2
(10-20)			1				1
(20-30)			2				2
UNIT 24							
(0-10)		1	1				2
UNIT 26							
(0-10)			1				1
UNIT 27							
(0-10)			1				1
(10-20)			1				1
UNIT 28							
(10-20)			1				1
UNIT 29							
(0-10)			1				1
(40-50)			1				1
UNIT 31							
(0-10)			2	1			3
UNIT 32							
(10-20)			1				1
(30-40)				1			1
UNIT 35							
(0-10)			7				7
(10-20)			3			2	5
(20-30)			1				1
UNIT 36							
(0-10)		1					1
(10-20)			3			1	4
(20-30)			4				4
TOTAL	1	3	41	3	1	8	57

APPENDIX C

Historic Artifacts Recovered from Sites 41BW182 and 41BW183

NOTE: In the following Tables C-1, C-2, and C-3, "provenience" refers to the numbered unit and the depth below surface in centimeters. The excavation units include shovel tests, auger tests, 50x50 cm squares, and 1x1 m squares. The notation "2/1" in the tables refers to two conjoined pieces from one artifact, while "(B)" indicates a burned artifact and "(E)" stands for an embossed piece. Finally, "(S)" indicates a glass vessel fragment with part of a seam.

Ext. = Exterior
Int. = Interior
NC = Natural Clay

Table C-1

Ceramic Vessel Fragments from Sites 41BW182 and 41BW183

PROVENIENCE	REFINED EARTHENWARE					STONEWARE			TOTAL
	NON-MOLDED		MOLD-DECORATED						
	UNDECORATED	PAINTED BICHROME	BEVELED RIM	SCALLOPED RIM WITH LIGHT RELIEF	LIGHT RELIEF	EXT. BRISTOL GLAZE/ INT. NC SLIP/GLAZE	EXT./INT. NC SLIP/GLAZE	INT. NC SLIP/GLAZE	
41BW182									
SURFACE	14		1	1	2	1			19
UNIT 6						1			1
UNIT 9	1								1
UNIT 16									
(0-10)	1								1
UNIT 17									
(0-20)	1								1
UNIT 20									
(0-20)	1						1		2
(20-40)	1								1
UNIT 21									
(0-20)	4(1B)	1(B)		1(B)			1		7
(20-40)	1								1
SUBTOTAL	24	1	1	2	2	2	2	-	34
41BW183									
UNIT 33									
(0-10)								1	1
TOTAL	24	1	1	2	2	2	2	1	35

Table C-2

Glass Vessel Fragments from Sites 41BW182 and 41BW183

	BOTTLES, JARS, AND LIDS										TABLE GLASS		UNIDENTIFIABLE VESSEL GLASS						
PROVENIENCE	CLEAR	PALE PURPLE, TINTED	LIGHT GREEN	FLAT-SIDED, CLEAR	FLAT-SIDED, PALE PURPLE	FLAT-SIDED, BROWN (SNUFF)	FRUIT JAR, CLEAR	LID LINER, MILK GLASS	PERSONAL TOILETRY, MILK GLASS	MEDICINAL, PALE PURPLE	SERVING VESSEL	ORNAMENTAL	CLEAR	BROWN	PALE PURPLE TINTED	PALE BLUE	OLIVE GREEN	LIGHT GREEN	TOTAL
41BW182																			
SURFACE		1(S)		1		1(S)	1(E)	1	1				3(1S)	2					11
UNIT 8	1																		1
UNIT 9													1						1
UNIT 13 (10-20)														1					1
UNIT 14 (0-10)		1		1(S)															2
UNIT 16 (0-10)														1	2	2(E)			5
(10-20)				1(S)						54/1									2
(40-50)										1				2	1				4
UNIT 17 (10-20)												1							1
(20-30)												1							1
(60-70)												1							1
UNIT 18 (0-20)														2					2
UNIT 20 (0-20)		1			1(S)		1						1		1				6
(20-40)					1	7		1							1		1		11
UNIT 21 (20-40)																		1	1
UNIT 22 (50-60)						1													1
UNIT 25 (20-40)													1					1(S)	2
UNIT 27 (0-20)															1				1
UNIT 29 (30-40)													1						1
UNIT 30 (0-10)													1						1
(10-20)														1					1
UNIT 31 (0-20)														1					1
UNIT 33 (0-10)						5									3/2				7
(10-20)			1(E)										2	1 1	1				14
(20-30)														4					6
AUGER HOLES 2													1						1
3											1		1						2
5													1						1
SUBTOTAL	1	3	1	3	2	14	2	2	2	2	1	3	13	26	9	2	1	2	87
41BW183																			
SURFACE		1(S)																	1
TOTAL	1	4	1	3	2	14	2	2	1	2	1	3	13	26	9	2	1	2	88

Table C-3

Architectural Remains and Low Frequency Items from Site 41BW182

	ARCHITECTURAL REMAINS					WIRE		PERSONAL ITEMS		THIN METAL	HEAVY IRON PARTS		FIRE ARMS	
PROVENIENCE	NAILS CUT	NAILS WIRE	STAPLES	BRICK	WINDOW GLASS	PLAIN	BARBED	PORCELAIN DOLL'S HEAD	TOBACCO TIN LID		METAL RING	UNIDENTIFIED	CENTERFIRE SHOTGUN SHELL	TOTAL
SURFACE				1(B)					1					2
UNIT 8					1									1
UNIT 16														
(0-10)		2												2
(10-20)		4												4
UNIT 17														
(10-20)				1(B)										1
UNIT 20														
(0-20)			1	1										2
(20-40)										1				1
(40-60)				1(B)										1
UNIT 21														
(0-20)		1								1			1	3
UNIT 22														
(20-30)										1				1
(40-50)		1								2				3
(50-60)				1										1
UNIT 26														
(0-20)	1													1
UNIT 27														
(0-20)												1		1
UNIT 30														
(0-10)		2												2
(10-20)		2												2
(20-30)					1									1
UNIT 32														
(20-40)						2	1							3
UNIT 33														
(0-10)		1		1										2
(10-20)		1						1		2				4
AUGER HOLES														
3		5				1					1			7
4		1												1
6		1												1
TOTAL	1	21	1	6	2	3	1	1	1	7	1	1	1	47