

## **APPENDIX Q: ENVIRONMENTAL REPORT SUPPORTING AN APPLICATION FOR A 404 PERMIT FOR LOWER BOIS D'ARC CREEK RESERVOIR**

**Q-1: FINAL ENVIRONMENTAL REPORT SUPPORTING AN APPLICATION FOR A 404 PERMIT FOR LOWER BOIS D'ARC CREEK RESERVOIR**

**Q-2: APPENDIX A - PROBABLE MAXIMUM FLOOD ANALYSIS, LOWER BOIS D'ARC CREEK RESERVOIR**

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*These documents may be found in Appendix E of the FEIS for the Lower Bois d'Arc Creek Reservoir*

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*THIS DOCUMENT MAY BE FOUND IN APPENDIX J OF THE FEIS FOR THE LOWER BOIS D'ARC CREEK RESERVOIR*

**Q-6: APPENDIX E - NATIONWIDE PERMIT 12 UTILITY LINE ACTIVITIES**

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**THE ARCHAEOLOGICAL POTENTIAL  
OF THE PROPOSED  
LOWER BOIS D'ARC CREEK  
RESERVOIR  
FANNIN COUNTY, TEXAS**

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## **ABSTRACT**

The North Texas Municipal Water District is considering the construction of a water supply lake that is presently known as the Lower Bois d'Arc Creek Reservoir. The lake study area consists of approximately 17,000 acres located in northeastern Fannin County, Texas. The purpose of the present investigation is to determine the likelihood of encountering significant prehistoric and historic archaeological sites within the lake area. The study was done for Freese and Nichols, Inc. which is managing environmental permitting for the project. The lake study area extends approximately 14 miles upstream from about 2 miles northeast of Bonham and will inundate the floodplain of Bois d'Arc Creek and several of its tributaries. The conservation pool elevation of the lake is proposed to be at the 534 foot contour. Environmentally, water will cover the floodplain, Pleistocene terraces on both sides of the creek, and the upland toe.

Archaeological investigations in Fannin County have been limited but the majority has been conducted within the Bois d'Arc Creek Watershed. This information, along with more intensive investigations in Lamar County just to the east, provide a corpus of information with which to develop predictions about the potential for encountering significant cultural resources in the lake area. As described in the report, Native American occupation was established by no later than 9000 BC and continued into the historic period. Anglo-American occupation began in the early 1800s and has continued to the present.

Based upon the records review, personal knowledge of the authors and analogous settings and archaeological surveys and excavations conducted in adjacent Lamar County, Texas, AR Consultants, Inc. feels that the potential is high that prehistoric archaeological sites ranging in age from Paleo-Indian to Late Caddoan times would be encountered during an archaeological survey of the study area. It is known that a historic cemetery will be inundated as well as possibly other unrecorded cemeteries. In addition, it also is likely that historic homestead sites, foundations, wells/cisterns and trash accumulations will be encountered.

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## **INTRODUCTION**

The North Texas Municipal Water District (NTMWD) is considering the construction of the Lower Bois d'Arc Reservoir northeast of Bonham in Fannin County, Texas (Figure 1). The proposed reservoir will inundate approximately 16,600 acres in Bois d'Arc Creek's floodplain that runs from south of Bonham northeast to south of Coffee Mill Lake and west of the community of Sells. The lake will cover 23 km (14 miles) of the present channel of Bois d'Arc Creek, all of which was channelized in the early part of the 1900s. Portions of several tributaries will also be inundated and these include Sloans, Timber, Bullard, Cottonwood, Sandy, Ward, Yoakum and Honey Grove creeks. The conservation pool level is to be 534 feet msl. Freese and Nichols, Inc., which is designing the reservoir for the NTMWD, requested that AR Consultants, Inc. prepare an evaluation of the archaeological potential of the proposed lake area.

This report was written in accordance with report guidelines adopted by the Texas Historical Commission, Archeology Division, and developed by the Council of Texas Archeologists (ND). The following report contains a brief description of the natural environment that have a direct bearing on the burial, preservation, and exposure of cultural resources and on the natural resources which would have been available to the historic and prehistoric people who inhabited the area. This is followed by a review of the culture history of Fannin and adjacent Lamar County. Then a summary of previous investigations in the lake study area is presented. The last chapter presents the archaeological evaluations that arise from the study. A list of references cited concludes the report.

## **NATURAL ENVIRONMENT**

Fannin County is located in Northeast Texas and abuts the southern border of Oklahoma. Most of the county consists of Blackland Prairie and the topography ranges from generally level to moderately rolling hills (Pigott 2006:1). However, the northern portion of the county is placed in the Red River Area (Diggs et al. 1999:3). The North Sulphur River drains the southern part of the county and the Red River drains the northern part of the county which is where Bois d'Arc Creek is situated. Numerous named and unnamed springs are present. Trees within the county consist mainly of oak, hickory, ash, walnut, pecan, cottonwood, elm, cedar, bois d'arc, redbud, spicewood, dogwood, pawpaw and dwarf buckeye (Pigott 2006:1).

The underlying geological formations for the study area consist of the Upper Cretaceous-aged Eagle Ford Formation and the Austin Group which contains the Bonham Marl and Blossom Sand. Two Quaternary terraces are present adjacent to Bois d'Arc Creek and the present floodplain is mapped as Quaternary alluvium (Bureau of Economic Geology 1967). The Upper Cretaceous-aged sediments contain a wide variety of fossil species consisting mainly of molluscs, diatoms, foraminifera, and reptiles.

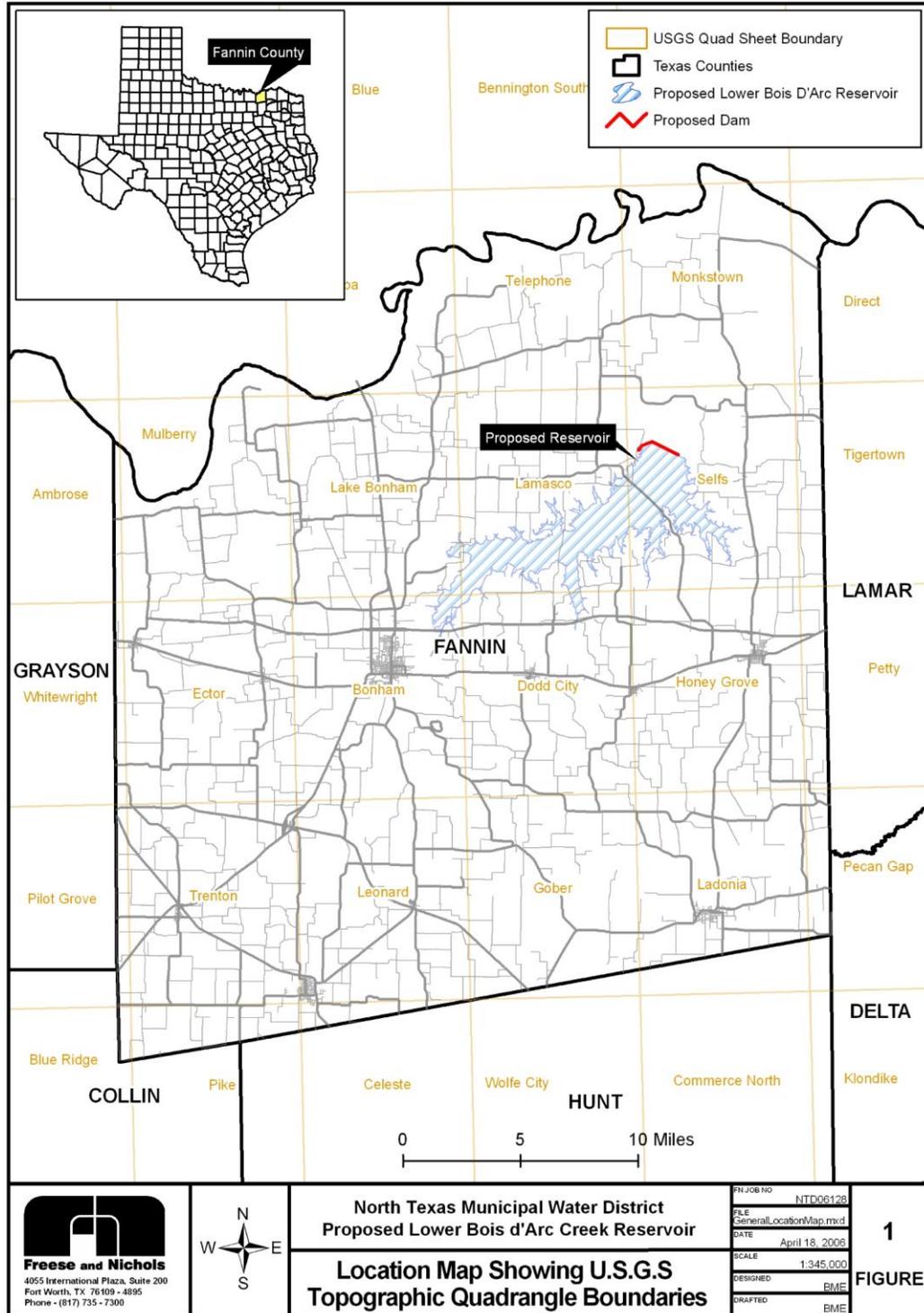


Figure 1. Location map of proposed Lower Bois d'Arc Creek Reservoir in Fannin County, Texas. Map provided by Freese and Nichols, Inc.

The proposed lake area will cover a variety of soil associations (Figure 2). Upland clays and loams belong to the Whitewright-Howe, Ellis-Crockett and Normangee-Wilson-Bonham soil association while the Whakana-Porum-Freestone soil association is associated with loams on terraces. Floodplain soils belong to the Tinn and Frioton soil associations (Goerdel 2001:General Soils Map). More specifically, Bois d'Arc Creek's floodplain is mapped as containing frequently flooded Tinn clay and tributaries such as Yoakum and Honey Grove Creeks contain occasionally flooded Frioton silty clay loam. The top of the Tinn clay subsoil is listed as being 50 inches below the ground surface and 24 inches below the ground surface for the Frioton silty clay loam (Goerdel 2001:71 and 49, respectively). However, it is likely that the mapped subsoil is underlain by earlier developed soil horizons as was shown along the North Sulphur River in southern Fannin County (Bousman 2005).

Fannin County is within the Blackland Prairie which makes up most of the county and essentially surrounds the lake study area. Kuchler (1969) classifies the prairie as being dominated by *Andropogon-Sipa* grasses although various other grasses are present as well. Mesquite is also present today but this is due to recent invasion of this species into the Blackland. The Red River Area is a vegetationally different ecoregion with sandy soils that support numerous plants typically found to the east in the Post Oak Savannah (Diggs et al. 1999:54-56). Oaks are the dominant tree but black gum, hickory, sycamore, pecan and hickory trees are present. Bois d'Arc trees are commonly associated with the valley floodplain. According to various authors, including Lynott (1979), the Blackland Prairie once supported a cover of tall grasses and was inhabited by now absent herbivores including bison and antelope. Certainly, deer inhabited the floodplain forests of the Red River and Bois d'Arc Creek where nuts were produced and consumed by various mammals and humans. However, the prairie environment is one of low biotic diversity. Various plants such as grapes, berries were abundant in the past. Forty-nine species of mammals occur in the Texan province, including deer, raccoons, rabbits, and opossums. Two species of terrapene (*Terrapene ornata* and *Terrapene carolina*) occur, as do nine species of lizards. In addition, thirty-nine types of snakes can be found, along with thirteen species of anuran fauna (Blair 1950:101-102).

Bois d'Arc Creek and its major tributaries are mapped as perennial on both the geological atlas and the USGS maps although in times of drought today these drainages are dry and carry water primarily after rains. The channelized creeks carry water off more rapidly than when the shallower creeks meandered across the floodplains. The pre-channelized creeks can be reconstructed using USGS maps and the early 1900s soil map of Fannin County. Pinckney Selfs Springs are located approximately two miles west of Selfs and According to Brune (1981:181), the springs no longer flow. Springs adjacent to the study area are Cross Springs and Honey Grove Springs. Bois d'Arc Springs are located two miles northeast of Lake Coffee Mill and were flowing in 1979 when Brune (1981:180) visited them.

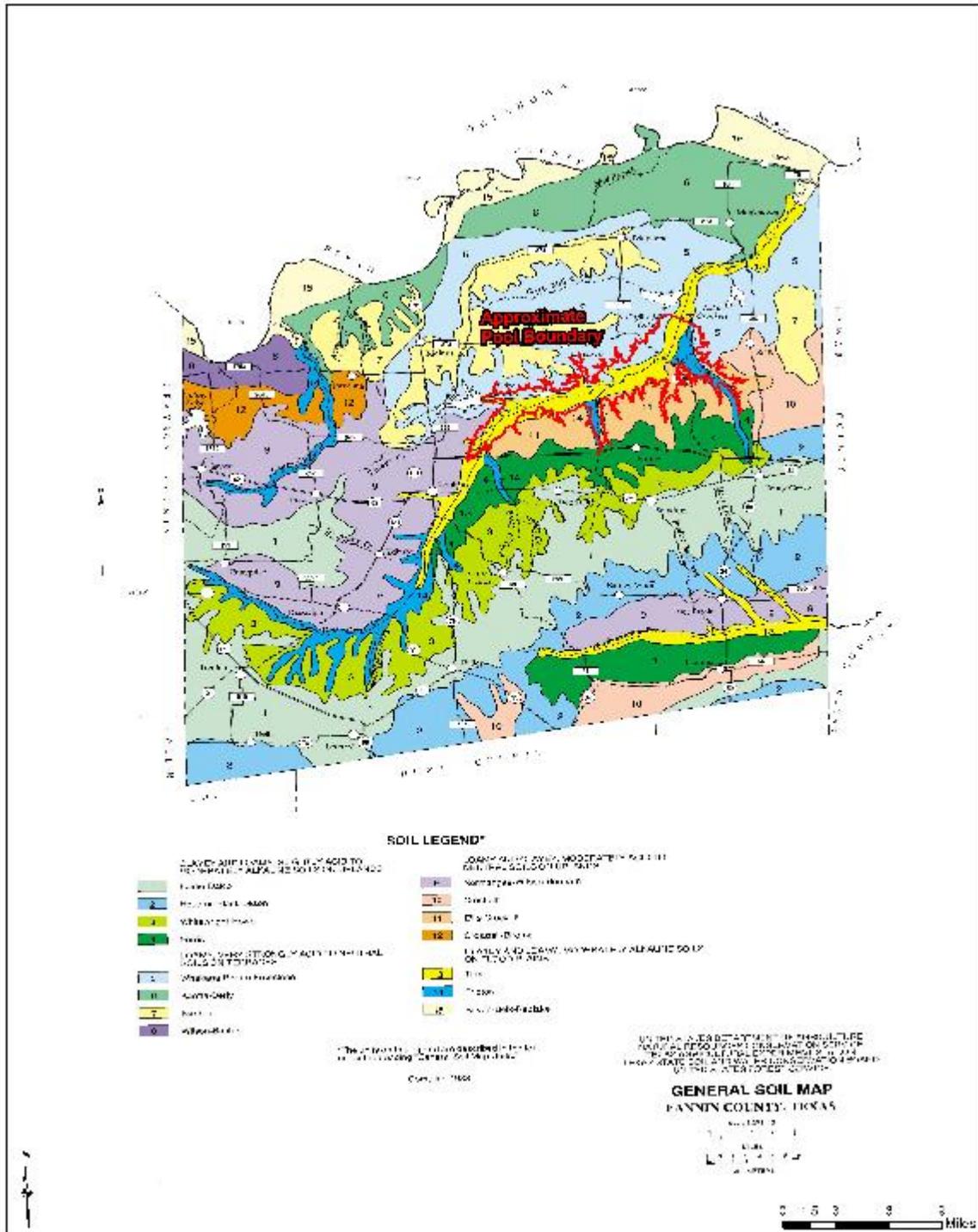


Figure 2. Proposed Lower Bois d'Arc Creek Reservoir plotted on the General Soil Map for Fannin County, Texas (Goerdel 2001).

## CULTURE HISTORY REVIEW

### Introduction

The Cultural History is presented in two parts. The first part deals with the prehistory of Fannin County and the second with the history. Since few archaeological investigations have been done in northeast Fannin County, supplemental information from adjacent Lamar County is also included. These studies include survey and excavation at Pat Mayse Reservoir (Lorrain and Hoffrichter 1968) and Big Pine Lake (Hyatt and Mosca 1972; Mallouf 1976) as well as surveys at Lake Crook (Todd and Skinner 2003) and in the Camp Maxey area south of Pat Mayse Reservoir (Nichols et al. 1998; Lyle et al. 2001; Greaves 2003; Skinner 2001). Probably the most important excavation in Lamar County was at the Sanders site (Krieger 1946; Jackson et al. 2000) but additional investigations have been conducted at the Womack site (Blaine et al. 1965), the Mackin Mound (Mallouf 1976), the Ray site (Bruseth et al. 2001), and the Gene and Ruth Ann Stallings site (Skinner 2007). Most of the historic material is taken from Carter (1885), Strickland (1930), Scott (1982), and Plumb and Wilson (2005).

Archaeological surveys of the three lakes mentioned in the previous paragraph provide a glimpse of site density that may be encountered in the Bois d'Arc Creek floodplain. Survey at Pat Mayse was unsystematic and focused on likely site locations. A total of 23 sites were recorded, four were excavated and five were tested. At Big Pine Lake, a total of 116 mostly prehistoric sites were located using a technique that did not involve deep testing or shovel testing, which in fact relied on surface exposure. Five sites were found around the edge of Lake Crook although it had been predicted that sites would not be present due to the distance of the trail from the creek and the location near the upper end of the drainage. Likewise, survey of upland areas south of Pat Mayse found numerous prehistoric lithic procurement and temporary camps in these settings well away from any reliable water sources.

With regard to site locations, sites were found on the surface of the floodplain, on knolls in the floodplain, on terrace remnants, and adjacent to tributaries. At Big Pine Lake, 116 prehistoric Archaic and Caddoan sites were found on alluvial islands (knolls), terrace deposits and on the upland edge (Figure 3). This provided an average of one site per 55 acres and if a comprehensive survey with testing had been done, it is likely that the average would have been one site per 30 acres. All three lakes provide settings and elevations roughly comparable to those in Lower Bois d'Arc Creek Reservoir but the Big Pine survey provides the best comparable information from the nearby Red River Watershed.

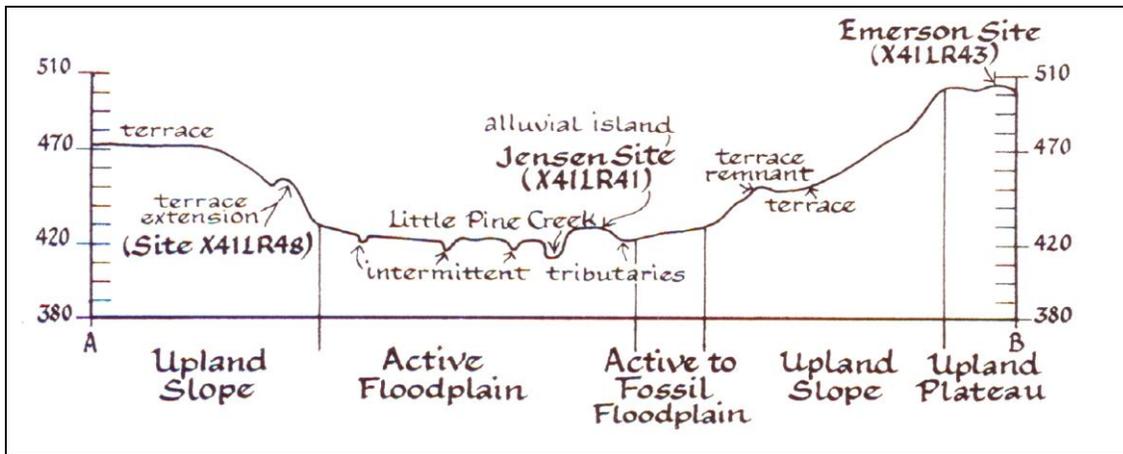


Figure 3. Profile across Little Pine Creek. Numbers on sides of profile are feet above msl. Note sites are found adjacent to Little Pine Creek on alluvial islands.

Prehistoric Occupation in the Fannin County Area

The following time framework for the prehistory of the Fannin County area relies heavily on Mahoney (2001) and Perttula (1998, 2004). Historic periods have been added to complete the chronology.

Anglo-American settlement	A.D. 1815 to present
Historic European	A.D. 1700 to 1815
Late Caddoan	A.D. 1400 to 1700
Middle Caddoan	A.D. 1200 to 1400
Early Caddoan	A.D. 1000 to 1200
Formative Caddoan	A.D. 800 to 1000
Woodland	200 B.C. to A.D. 800
Archaic	6,000 to 200 B.C.
Paleo-Indian	12,000 to 6,000 B.C.

The earliest occupation in Fannin County was during the Paleo-Indian period by Native Americans who made very distinctive Clovis points. The base of a Clovis point was found on a terrace above Big Pine Creek; however, these point styles and other early styles are present in artifact collections from sites in the county, but they have not been recorded at TARL (Meltzer and Bever 1995:Table 1). The Paleo-Indian period is divided into two phases. The early phase is marked by fluted points made from non-local materials. Points found in the late phase are characteristically dart points made of non-local materials. Dalton and Plainview points and other Late Paleo-Indian artifacts were recovered from the Snapping Turtle site which is now under Pat Mayse Lake (Lorrain and Hoffrichter 1968:28-29, Figure 7g-i, Figure 9, and Figure 5j). Even with insufficient data on Paleo-Indian occupation in Fannin County, there is little question that the region was occupied during this time period. The lack of perennially occupied sites, the abundance of non-local cherts, and the abundance of spear points suggest that the Paleo-Indian peoples were highly nomadic, mobile hunters (Mahoney 2001:8).

Subsequent occupation during the Archaic period (6,000 to 200 B.C.) is recognized as having three temporal divisions: Early, Middle, and Late. During all three, groups are characterized as being mobile bands that were subsisting by hunting and gathering. In the Early Archaic, group territories were poorly defined and sites were either transitory sites represented by lithic scatters or were repeatedly occupied. Burned rock features and concentrations occur in the Middle Archaic and indicate cooking and greater use of plant food. In the Late Archaic, it appears that group mobility was limited by an increased population density and group territories were more tightly defined. The use of local lithic material instead of exotic material tends to support this idea (Perttula 1998:17–18).

During the Woodland period or the Fourche Maline which ranged from approximately 200 B.C. to A.D. 800 the population became more sedentary as indicated by the presence of rectangular houses, thick-walled Williams Plain pottery, and the increased presence of plant foods including domesticated corn. Gary dart points were ultimately replaced by arrow points (Perttula 2001:67) during this period. A rectangular house eighty feet long and more than twenty feet wide was recently unearthed at the Gene and Ruth Ann Stallings site north of Paris in Lamar County (Skinner 2007). A similar house was reported at the Poole site in southwestern Arkansas (Wood 1981). Coles Creek pottery and chipped stone artifacts appear to be present after A.D. 600. At this time, there is evidence that the prehistoric Native Americans had settled into small hamlets and camps dispersed within recognizable territories (Perttula et al. 1993). These technological changes coincided with a gradual increase in population size. The Ray site in east central Lamar County contains a deposit that spans this time period (Bruseh, Banks, and Smith 2001).

The Formative Caddoan peoples are first recognized about A.D. 800 and the time period lasted until approximately A.D. 1000. Incipient horticulture was practiced by these people, but hunting and gathering was the main source of subsistence (Mahoney 2001:10). Settlements consisted of villages, hamlets and single family dwellings. Some of the villages contain burial mounds. The Bentsen-Clark site (Banks and Winter 1975) on the south bank of the Red River in Red River County contained two large shaft tombs dated to this time period.

In the Early Caddoan period (A.D. 1000-1200), intensive maize agriculture predominated subsistence patterns (Perttula et al. 1993), but foraging supplemented the diet (Mahoney 2001:10). Middle Caddoan period sites along the Red River have been related to the time of the Sanders phase and include dispersed farmsteads and hamlets along with a few large villages. Multiple mounds were present and burials with abundant and exotic grave goods were also common, indicating the presence of high status items (Perttula 1998:11). The best known site from this time period is the Sanders site which is located 20 miles northwest of Paris near the mouth of Bois d'Arc Creek. The site consisted of two earthen mounds containing 21 burials, many multiple, with a wide variety and number of grave goods (Krieger 1946; Jackson, Goldstein and Krieger 2000). Some authors (Bruseh et al. 1995; Schambach 2000) have discussed the role of the site in being an outpost for the Spiro site in Oklahoma but this is not a settled issue. The Sanders phase was a time of great exchange between Northeast Texas and the Plains and the Southeastern Ceremonial Complex. Pottery vessels associated with the Sanders phase include Sanders Plain, Sanders Engraved, Canton

Incised and Maxey Noded Redware. Elbow pipes of polished Ouachita Sandstone indicate trade with Oklahoma inhabitants. Houses were three-sided with one side open and agricultural implements made of shell and bison-scapula hoes are present (Krieger 1946). Krieger (1946:216) states that the Sanders site was occupied from at least 1300 A.D. However, recent belief is that the Sanders site was occupied by at least A.D. 1000. The site is located approximately one-half mile from the Red River and is approximately 450 feet msl.

The A. C. Mackin site consists of two mounds constructed on top of them. Apparently the houses were intentionally destroyed when the site was abandoned. Artifacts collected from the site includes lithic debitage from knappable lithic material collected from gravels found in the Red River or possibly traded for from Oklahoma. Cores, lithic tools also were recovered as well as several dart and arrow points. Dart point types include Gary, Bulverde, Yarborough, Edgewood and Trinity while arrow point types consist mainly of Bassett, Bonham, Alba, Scallorn, Reed, Washita and Hayes. Celts were apparently used at the site and anvils and hammerstones were used in lithic working. Plant processing occurred based upon the amount of ground stone fragments recovered. Although the pottery sherds were too small to be identified, some of the pottery descriptions fit either Sanders Plain or Paris Plain. Also, ceramic pipes were recovered. The Mackin site was occupied throughout most of the Caddoan periods but apparently the major occupation was during the Early Caddoan to Middle Caddoan times.

Large temple and mound structures are associated with the Middle Caddoan times, from A.D. 1200 to 1400, indicating socially complex societies. However, only a few single mounds have been found along the lower Sulphur River basin. The material culture was as rich as during the Early Caddoan times and the subsistence strategies basically were similar. The Tyson site (41SY92) in the Attoyac Bayou basin in Shelby County may be a habitation site for the residence of a chiefly elite or *caddi*.

In the Late Caddoan period, from A.D. 1400 to 1700, a shift in site location away from the major drainages, and into the headwaters of smaller tributaries resulted in the rearrangement of people into small, but numerous, hamlets scattered throughout most of Northeast Texas. However, major sites, such as Sam Kaufman (Roitsch) and Belcher, seem to have continued being occupied on the banks of the Red River in Texas and in Louisiana during this period. Farming was certainly important at this time, and these people are recognized in the historic period as the Hasinai Confederacy of the Caddo. The intensive use of maize resulted in health and diet problems as noted in Late Caddoan skeletons. Traded materials ranged from the Plains to the Texas Gulf Coast (Perttula 1998:12).

There is a general break in the archaeological record for a period of several hundred years at the end of the Late Caddoan period. No significant Spanish or French occupation is known to have occurred in Fannin or Lamar counties. In addition, The only evidence of historic Native American occupation in the area is at the Womack site which is located on a bluff overlooking the Red River in northern Lamar County (Harris, Harris, Blaine, and Blaine 1965). The site dates from approximately A.D. 1700 to 1729.

### Fannin County History

Fannin County, originally to be named Independence County, was formed from Red River County by the Republic of Texas Congress on December 14, 1837. It was named for a hero of the Texas Revolution, James Walker Fannin, Jr. (Carter 1885; Strickland 1930; Hodge 1966; Scott 1982). Today, the largest city in the county is Bonham, with around 7000 residents, and Honey Grove being the second-largest with roughly 2000 residents. Originally Fannin County was a very large land area that was later divided into 22 counties and a portion of the land was added to enlarge two additional counties. Shortly after Texas became a State on December 29, 1845, the Texas Legislature approved the present boundaries of Fannin County. Fort Warren, founded in 1836, was the location of the county's first county seat, school, post office, and Masonic Lodge and was the first successful commercial center in the county. On January 8, 1840, Fannin County's first district court was established and on April 27, 1840, the first session opened in the new courthouse. The second county seat was at Bois D'Arc which became the county seat on January 16, 1843 and was renamed Bonham in 1844. The Texas legislature wanted to honor another hero of the Alamo, James Butler Bonham, in spite of the county residents wanting the name changed to Bloomington. Bonham remains the county seat and is the county's largest commercial center.

Historically, several tribes are reported to have inhabited the area, these include the Cherokees, Tehuacanas, Keechis, Wacos, Caddoes, and others. Fannin County's early settlers and the Native Americans had many problems due to the negative effect the settlers had on the wildlife. On May 16, 1837, settlers attacked a band of Native Americans made up of various groups and relations between the settlers and the Native Americans began to seriously deteriorate. In retaliation to the settler's attack, the Native Americans began raiding the white settlements and killing settlers and stealing their livestock. The Native Americans also attacked travelers and settlers' cabins, killing white children and women and mutilating their dead bodies. The residents of Fannin County were angered and distraught by the savagery of the Native Americans. The hostilities with the Native Americans basically ended when Edward H. Tarrant signed the Treaty of Bird's Fort six years later.

Many of the county's settlers were from Tennessee and other parts of the South. In 1860 the county's population was 9,217, of which less than 1,800 of the residents were black. Fannin County's major industry was agriculture. Before the Civil War there were approximately 25,000 beef cattle in the county, making cattle the largest product produced in the county. By the end of the Civil War the number of cattle was less than half of the pre-war cattle population.

When the Civil War broke out in April 1861, Fannin County's citizens supported secession from the Union. Although State Senator Robert H. Taylor was a strong supporter of remaining in the Union and gave a speech stating so, the Confederacy was what the county citizenry supported. The Trans-Mississippi army had several companies of men from Fannin County. Bonham was the site of three important Confederate operations during the war: a hospital, a commissary, and the headquarters of the Northern Sub-district of Texas, C.S.A. The hospital was obviously important for the healing and recuperation of the wounded soldiers, the commissary supported seven brigades and the Northern Sub-district was an

important military headquarters of the Confederacy. The hospital was located in present-day Bonham's Willow Bend Cemetery.

The years following the Civil War were prosperous for Fannin County and many new businesses were opened between 1865 and 1900. The county experienced record growth with its economy being largely agricultural and as the numbers of farms increased so did crop production. The majority of the crops produced were corn and cotton. Prior to the war there were only five manufacturing firms and by 1870 there were 54 in the county. In 1872, Fannin County Bank was opened and the Texas and Pacific Railway built its tracks through the county in 1873. The Gulf, Colorado and Santa Fe Railway established Ladonia and Bagby as railroad stops in the late 1800s. With the addition of rail service, electricity, and the telephone in 1889, Fannin County became an even more desirable and prosperous area of the state by the end of the nineteenth century.

To serve the increasing population of the county, several new schools and colleges were chartered. The Fannin County school board was organized in 1888 to school the county's children. Between 1860 and 1883 several other schools, colleges, and Institutes, including Fannin College and Carleton College, were opened in Ladonia, Honey Grove, and other locations in the county.

The first three decades of the twentieth century brought many changes and events to the county. The year 1900 was a landmark year for Fannin County. Not only did its population reach a record high of 51,793, but also a record number of farms produced a record numbers of bushels of corn and swine. Another record was set by manufacturing concerns. Cotton production peaked in 1920 and Lone Star Gas Company ran natural gas lines through the county in 1925. The tower of the 1888 Fannin County Courthouse burned in 1929, but fortunately all county records were saved. That same year, residents raised enough money to build Jones Field airport near Bonham. The number of manufacturing jobs decreased to a record low of 310 and farms were valued at only 46 percent of their 1920 valuation. The 1920's also saw a sharp reduction in the number of dairy cows and milk production. The number of beef cattle also began to increase during the 1930's and steadily increased throughout the remainder of the century. By the end of the century beef cattle outnumbered milk cows nearly five to one.

As in most areas of the United States, the Great Depression of the 1930's imposed economic hardship on the county's businesses and residents until World War II. That same time period also saw the population of the county decrease and then stabilize at about 40,000 residents. The population then began to decrease in the 1950s and by 1970 decreased to the population levels of the 1880s. Agricultural production also decreased throughout the remainder of the century. Cotton production steadily decreased from the 1930's through the 1950s and by 1987 only 337 bales were produced in the county. Corn production also decreased until the late 1980s, but wheat, peanuts, and sorghum production increased during the same time period.

Between 1947 and 1987, employment in manufacturing companies more than doubled from fifteen to thirty-seven, mostly in the lumber and wood products industry. Service industries

also increased during the same time period as did banking, retail, wholesale, construction, utilities, and transportation industries.

These businesses are still prominent in the county's economy today with the addition of tourism to the economic mix. Bonham, Honey Grove, and Ladonia all have a splendid architectural history due to the stimulation of commerce brought about by the railroad in the 1880s. All three cities have a high number of extant late nineteenth and early twentieth century architectural examples. It is likely the tourism industry is being stimulated by this architectural history and has brought about such establishments as Bed and Breakfast inns.

## **PREVIOUS ARCHAEOLOGICAL INVESTIGATIONS IN FANNIN COUNTY**

According to the Texas Archeological Sites Atlas (2006), the first recorded survey in Fannin County was conducted in 1960 for the proposed Brushy Creek Reservoir (now called Valley Lake) which is located near Bells, Texas. Several prehistoric lithic scatters were recorded and range in age from the Archaic to Caddoan times. Ground stone fragments were found at one of the sites.

In 1962, the Harling Mound (formerly the Morgan Mound) was investigated by the University of Texas (Davis 1962a, b) in the vicinity of Riverby. The mound was approximately 230 feet long, 170 feet wide and 7 feet high. Excavation within the mound found no burials but ceramics were recovered which placed the site during the Sanders phase (ca A.D. 1300). The site was investigated because the land owner intended to level the mound so that he could use the land for agriculture.

The Texas State Building Commission and the Texas State Water Development Board (Hsu 1968) performed an archaeological survey of the proposed Timber Creek and Bois d'Arc Reservoirs. Timber Creek became Lake Bonham and the Bois d'Arc Reservoir was not constructed but is upstream from the present lake site study area. Two sites (41FN15 and 41FN16) were discovered during the survey of the Timber Creek Reservoir. Site 41FN15 consists of a lithic scatter, a Scallorn point, two Gary points and a sherd. A Gary point and lithic scatter made up site 41FN16. Both sites were found on the edge of the first terrace of Timber Creek.

Thirteen sites (41FN17 through 41FN29) were found adjacent to Bois d'Arc Creek approximately seven miles southwest of Bonham. Sites were located on knolls and hillsides above Bois d'Arc Creek's floodplain. Sites contained mussel shell, bones, pottery, flakes, arrow and dart points, celts, axes and fire-cracked rock. Burials also were found. It is important to note that these sites were found either eroding out of or in plowed fields as time was not sufficient for a comprehensive survey. Sites ranged in age from the Middle Archaic to the Caddoan. It is important to note that no subsurface testing in the floodplain was conducted, so we virtually know nothing about the buried cultural resources in the Bois d'Arc floodplain or the area adjacent to it except that numerous avocational archaeologists report finding dart points in the eroding channel bed.

In 1989, Southern Methodist University (Jurney et al. 1989) conducted an archaeological evaluation of three units of the Caddo Grasslands in Fannin County. As shown on Figure 33 in their report, the Bois d'Arc Creek floodplain has a high archaeological potential for prehistoric sites and the valley slope has a medium potential. Figure 34 in the same report indicates that the uplands have a low potential for historic sites while the bottomlands appear to have a medium potential except upstream from the lake site where they consider the historic potential to be high.

In 2005, AR Consultants, Inc. (Skinner et al. 2005) investigated approximately 1,700 acres of the proposed Lake Ralph Hall which is to be constructed in Fannin County north of Ladonia and in the North Sulphur River's floodplain. The survey resulted in the recording of seventeen historic and prehistoric sites (41FN60-76). Further testing was recommended for a Middle to Late Archaic campsite (41FN68), a deeply buried Middle Archaic campsite (41FN66) and in the vicinity of the cobble core/chopper tool (41FN73). The date for the core/chopper may be older than 10,860±40 B.P. (Beta-206953). Further survey is likely to discover more deeply buried archaeological sites.

### **KNOWN ARCHAEOLOGICAL SITES WITHIN THE EVALUATION AREA**

Meltzer and Bever (1995:53) do not show that any Clovis fluted points have been recorded in Fannin County, Texas nor does Prewitt (1995) indicate that any Paleo-Indian points have been recorded from the county. However, the senior author remembers visiting the Fannin County Museum and seeing a Clovis point and two Angostura points that had been found along Bois d'Arc Creek. The points had been collected by Dr. Griffis, a paleontologist, and this discovery was confirmed by another artifact collector who also informed us that an Early Archaic site with a possible Paleo-Indian component had been located in the vicinity of the Lake Bonham. Unfortunately, these early points had been stolen from the museum in the mid-1990s. With a caveat that some of the points have been collected along the Sulphur River, two photographs (Figures 4 and 5) are included to show the diversity of point types found along Bois d'Arc Creek. Several Paleo-Indian Dalton points are shown.

Also, the senior author went to Honey Grove to see if he could find a former private collector. The author remembers the back of the gentleman's storage room at his cleaners being filled with manos and metates that had been collected along Bois d'Arc Creek, and probably Honey Grove Creek. Unfortunately, the cleaners no longer exist and the collector could not be located. The senior author remembers the collector telling him that this was only a small portion of what other collectors had found.

Discussions with several members of the Valley of the Caddo Archeological Society in Paris confirmed the presence of several buried sites along Bois d'Arc Creek and nearby creeks. One site which reputedly contains an Early Archaic component with a possible Paleo-Indian component is located east of the Bonham Lake dam on Bois d'Arc Creek. Although not on Bois d'Arc Creek, a buried site was discovered in a creek bank near Lannius. Its presence illustrates the potential for sites along Bois d'Arc Creek.



Figure 4. Dart points and preforms collected along Bois D'Arc Creek and the Sulphur River. The pots are card board and represent Southwestern pottery.



Figure 4. Other points collected from Bois d'Arc Creek and the Sulphur River. The projectiles in the left part of the photograph include arrow points.

In addition to the non-reported site localities, several prehistoric and historic sites have been recorded on or along tributaries to Bois d'Arc Creek. The sites are presented in Table 1.

Table 1. Archaeological sites recorded along Bois d'Arc Creek and its tributaries. From Hsu (1968) and Texas Archeological Sites Atlas (2008)

Site No.	Description	Age	Location
41FN12 (Goss Farm)	Unknown, but burials are present	Caddoan	Bois d'Arc Creek
41FN15	Lithic scatter, Scallorn point, 2 Gary points, sherd	Late Archaic to Caddoan	Timber Creek
41FN16	Lithic scatter, Gary point	Late Archaic	Timber Creek
41FN17	Lithic scatter, Palmillas point, reported burials	Middle Archaic	Bois d'Arc Creek
41FN18	Lithic scatter	Unknown	Bois d'Arc Creek
41FN19	Lithic scatter, two points, axe, celts, sherds	Caddoan	Bois d'Arc Creek
41FN20	Lithic scatter, bifaces, mussel shell, burned rock	Unknown	Bois d'Arc Creek
41FN21	2 burials	Unknown	Bois d'Arc Creek
41FN22	Lithic scatter, bones, mussel shells, burned rock, Gary point, Bonham point, burials removed in the past	Late Archaic to Caddoan	Bois d'Arc Creek
41FN23	Lithic scatter, Yarborough point	Late Archaic	Bois d'Arc Creek
41FN24	Lithic scatter	Unknown	Bois d'Arc Creek
41FN25	Lithic scatter, Ellis point, untyped dart point	Middle to Late Archaic	Bois d'Arc Creek
41FN26	Lithic scatter	Unknown	Bois d'Arc Creek
41FN27	Lithic scatter, mussel shells, sherds, bone, burned rock, Gary point, burials removed in the past	Late Archaic	Bois d'Arc Creek
41FN28	Lithic scatter, sherds, Gary point	Caddoan	Bois d'Arc Creek
41FN29	Lithic scatter	Unknown	Bois d'Arc Creek
41FN35	Historic house with trash scatter	1910s	Unnamed tributary to Bois d'Arc Creek
41FN36	Possible house, brick well, historic trash scatter	Nineteenth century	Bois d'Arc Creek
41FN39	Triangular projectile points, thumbnail scrapper, lithic scatter, mussel shell, bone, sherds (McKinney Plain, Canton Incised)	Middle to Late Caddoan (?)	Bois d'Arc Creek
41FN42	Historic trash scatter	Unknown	Bois d'Arc Creek terrace
41FN51	Lithic scatter	Unknown	Bois d'Arc Creek terrace
41FN52	Historic house site with associated trash scatter	1880s to 1940	Bois d'Arc Creek
41FN53	Chert flake	Unknown	Unnamed tributary to Bois d'Arc Creek
41FN54	Quartzite hammerstone	Unknown	Unnamed tributary to Bois d'Arc Creek
41FN57	Lithic scatter	Unknown	Bois d'Arc Creek terrace
41FN58	Russel Cemetery	1769-1854 and possibly older	Pig Branch, a tributary to Bois d'Arc Creek

Of the twenty-four prehistoric sites listed in Table 1, four (41FN12, 41FN39, 41FN42 and 41FN51) would be below the proposed water level of 534 feet msl or close enough to that elevation that cultural materials might be affected by wet/dry cycles. The issue of changing

lake levels has been shown to be a major factor that impacts archaeological sites, and including unrecorded cemeteries, that are situated at the edges of existing lakes throughout the country. While lake edge erosion serves to expose slightly buried sites this same erosion frequently erodes away large areas of topsoil that has been protecting sites for centuries and results in the unintended destruction of buried site deposits that may have been recognized during an archaeological survey of a lake or may have been considered to be outside the impact area and thus not recorded until after the lake is built and erosion begins.

Selected site locations are presented in Figures 7 through 9 and the relationships of the map sections are shown on Figure 6 to indicate the distance sites are from Bois d'Arc Creek. As can be seen in the figures and Table 2, sites are located in the floodplain adjacent to the creek, on low elevations above flooding, on terraces and on ridges adjacent to the creek. The maps are placed in order from southwest to northeast. Since Bois d'Arc Creek has been channelized, recently deposited silt from flooding probably has covered the pre-channel ground surface and the old channel swales.

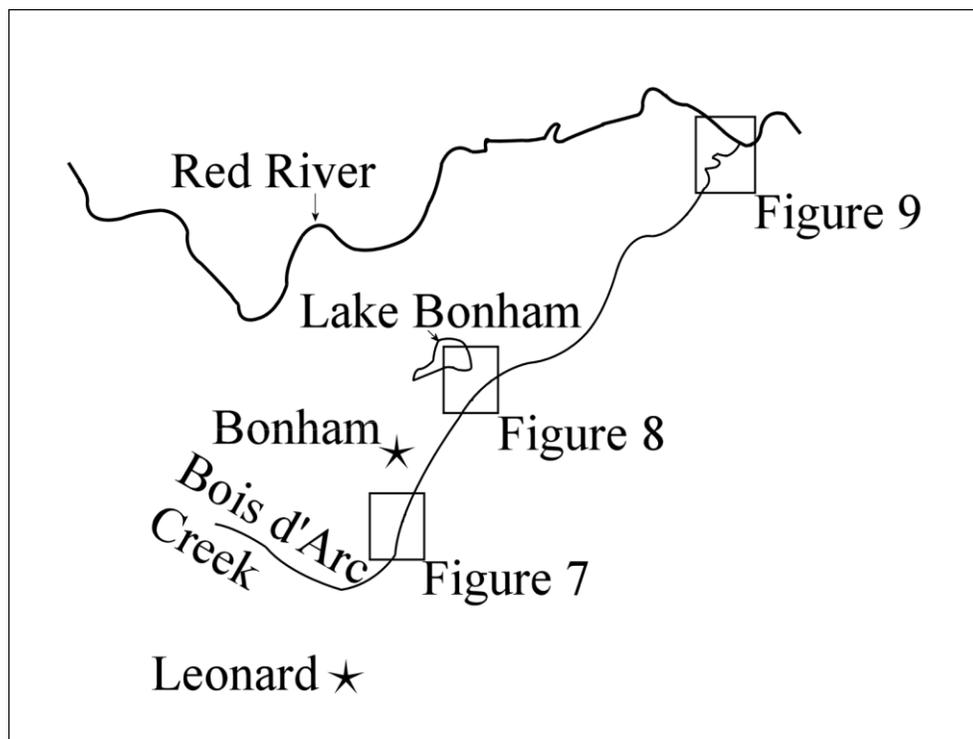


Figure 6. Locations of maps 7 through 9 along Bois d' Arc Creek.

The topographic settings for the sites shown in Figures 7 through 9 are presented below to provide the reader with a general idea of where recorded sites have been found.

Table 2. Topographic settings of sites shown on Figures 7 through 9.

Site No.	Setting
41FN12	knoll in Bois d'Arc Creek's floodplain
41FN15	first terrace of Timber Creek, now under Lake Bonham
41FN16	first terrace of Timber Creek, now under Lake Bonham
41FN17	hillside above Bois d'Arc Creek's floodplain
41FN18	low knoll in Bois d'Arc Creek's floodplain adjacent to tributary
41FN22	knoll in floodplain between Bois d'Arc Creek and tributary
41FN23	knoll in Bois d'Arc Creek's floodplain west of Freeman Creek
41FN24	hilltop overlooking Bois d'Arc Creek's floodplain
41FN25	east bank and floodplain of Bois d'Arc Creek
41FN27	knoll in floodplain down from confluence of Bois d'Arc Creek with Burr Oak Creek
41FN39	west bank and floodplain of Bois d'Arc Creek
41FN51	hillside overlooking Bois d'Arc Creek's floodplain

Prehistoric archaeological sites within the study area are mainly on knolls within Bois d'Arc Creek's floodplain. However, sites have been found within the creek's floodplain and along the terraces of tributaries to Bois d'Arc Creek. Paleo-Indian artifacts have been found by numerous artifact collectors who have walked up and down in the channelized and unchannelized parts of the creek and have found these distinct spear points lying on the creek bed. No sites have been officially reported from these settings but it seems most likely that these buried sites were situated adjacent to the creek channel either on overbank flooding levees or on the floodplain slightly away from the low levees. In any case, channelization appears to have exposed parts of these sites and dropped artifacts into the water and may have been moved an unknown distance downstream. Apparently, Archaic sites may be found along tributaries to Bois d'Arc Creek, within the creek's floodplain and on knolls in the floodplain. Caddoan sites also may be found in similar settings which would suggest that sites might be found that range in age from at least Middle Archaic, if not before, to possibly Late Caddoan along a variety of topographic settings.

Although no archaeological evidence of historic Native American occupation of Fannin County has been found, Brune's mention of the Shawnee village that was occupied in 1836 at Pinckney Selfs Springs approximately two miles west of Selfs should not be overlooked. The location of the supposed Shawnee village may not fall within the study area, but nonetheless, particular attention should be paid to the portion of the proposed reservoir in case historic Native American residences may be present.

According to the 1939 Soil Map for Fannin County (US Department of Agriculture 1939), several historic residence locations may be inundated by the lake if the top of the pool is 534

feet msl. The following list (Table 3) provides likely locations where historic residences and cemeteries might be impacted by the proposed reservoir.

Table 3. Likely locations for historic residences and cemeteries within the lake area.

Site type	Location
Historic house	one mile west of CR 2900
Historic house	1,200 feet north of CR 2900 and west of Onstott Creek
Historic houses	4,000+ feet north of CR 2900 and east of Onstott Creek
Historic houses	1,800 feet southeast of Old Bonham Lake Road
Historic houses	2,400 feet east of Old Bonham Lake Road
Historic house	1,900 feet southeast of CR 2610
Historic house	880 feet west of FM1396 southwest of Honey Grove Creek
Wilks Cemetery	2,200 feet east of CR 2700

The above listed high potential areas for historic residences are cursory at best. Residences built before 1927 and removed between 1927 (Fannin County Soils Map) and 1984 (USGS maps) may not be indicated on the USGS maps. However, remnants of the residences are likely to be present.

The Wilks Cemetery which the proposed lake will have burials dating from 1852 to 1932. In addition, two burials were found outside the cemetery under a tree. According to Mrs. Haley (2006), who visited the cemetery to locate her relatives' graves, the cemetery is unmaintained. A visit to the cemetery was attempted, but the cemetery is on private land and permission was not available. According to the Fannin County Cemetery web site, the locations of several cemeteries are unknown and they may lie within the study area. Known cemetery locations either in or close to the proposed lake site are shown on Figure 10.

## CONCLUSIONS

Using the information presented above, it is logical to conclude that construction of Lower Bois d'Arc Creek Reservoir will inundate both historic and prehistoric archaeological sites. At present, the Wilks Cemetery is the only recorded historic site that is known to be present in the lake area. No prehistoric or historic archaeological sites have been recorded in the lake area. The following discussion highlights the various archaeological discoveries that are likely to be encountered during a comprehensive survey of the reservoir.

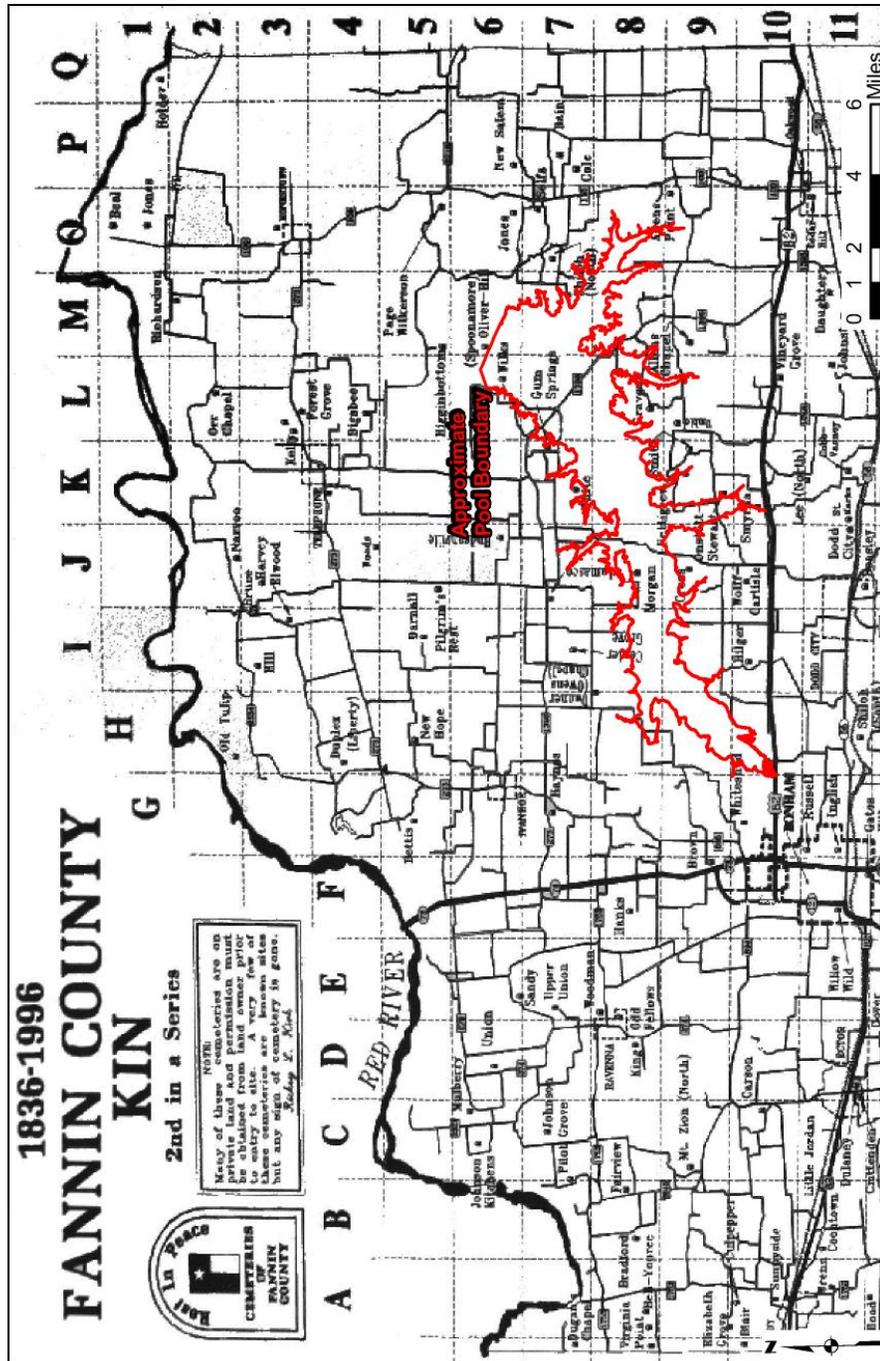


Figure 10. Known cemeteries adjacent to the proposed lake plotted on a portion of Fannin County Cemetery Map. Map provided by the Fannin County Museum of History.

- It is predicted that more than 200 prehistoric sites will be encountered in the Lower Bois d'Arc Creek lake area. This estimate is based on prehistoric site density figures from Big Pine Lake and archaeological investigations conducted in nearby watersheds. Bois d'Arc Creek lies in the Blackland Prairie and it is likely that prehistoric site density will be lower than at Big Pine. This conclusion is supported by the lower number of sites discovered at the Lake Ralph Hall site on the North Sulphur River in southern Fannin County, the upstream survey of Bois d'Arc

Reservoir, and survey at Cooper Reservoir [Lake Chapman] on the South Sulphur River (Fields et al. 1997).

- Prehistoric archaeological sites are expected to be found buried in the floodplain of Bois d'Arc Creek and its tributaries as well on elevations in the floodplain and on alluvial terraces or terrace remnants situated at the edge of the valley.
- Prehistoric archaeological sites are expected to be found buried in the Bois d'Arc Creek floodplain and its tributaries as well on elevations in the floodplain and on alluvial terraces or terrace remnants situated at the valley edge. Due to the steep slopes on the south side of the lake site, it is expected that this area has a low archaeological potential. Elevations in the floodplain and the more gently rolling north side of the lake site will have a higher potential of being occupied by prehistoric residents of Fannin County.
- The number of historic sites in the floodplain is likely to be low since most of this land was farmed in the 1900s and probably earlier but was only sparsely occupied by tenant farmers; thus, this is an area of low archaeological potential for historic sites. However, residences and family cemeteries are shown to occur around the proposed lake edge, but particularly on the north side of the lake. The south side would have a lower archaeological potential due to the steep slopes. Based on the Lake Ralph Hall survey, we predict that at least 75 to 100 historic archaeological sites will be recorded within the lake limits; some of these sites will be cemeteries.
- Buried prehistoric site deposits should be found deeply buried in the floodplain sediments under sterile soils or just below the present floodplain surface. The age of these buried sites is likely to range between 10,000 BC to AD 1700. This is the second and major area with high archaeological potential. Sites are expected to occur in the high-potential floodplain but will primarily be endangered by the excavation of borrow pits where fill will be excavated for use in creating the earthen fill for the dam. A second area in the floodplain would be where Bois d'Arc Creek or its tributaries are going to be channelized.
- Based on reports from avocational archaeologists and testing at Lake Ralph Hall, Paleo-Indian campsites are likely buried in the Bois d'Arc Creek valley although no sites dated to this time period have been confirmed.
- Despite the significance of Paleo-Indian sites, Archaic campsites are expected to be the most common type of archaeological sites found based on surveys/excavations at Cooper Lake and more recently at Lake Ralph Hall. Likewise, Woodland, prehistoric Caddoan, and possibly historic Native American sites are likely to be located. Many of these sites will have stratified deposits that can be accurately dated and will be useful for reconstructing past environments.
- At least fifty percent of the prehistoric and historic archaeological sites recorded are expected to have yielded their significance by having been recorded so they will not

be eligible for inclusion on the National Register of Historic Places or as State Archeological Landmarks. Some sites will warrant further investigation.

In summary, archaeological resources will need to be searched for, their significance evaluated, and their loss mitigated before lake construction is completed.

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**THE ARCHAEOLOGICAL POTENTIAL  
OF THE PROPOSED  
LOWER BOIS D'ARC RESERVOIR  
PIPELINE ROUTE,  
FANNIN, HUNT AND COLLIN COUNTIES, TEXAS**

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## **ABSTRACT**

The North Texas Municipal Water District is considering the construction of a water pipeline that is approximately 46 miles long with an option that is about 43.3 miles long. The proposed pipeline route begins in northeastern Fannin County and runs southwest and terminates in northeastern Collin County, Texas. The purpose of the present investigation is to determine the likelihood of encountering significant prehistoric and historic archaeological sites along the route. The study was done for Freese and Nichols, Inc. which is managing environmental permitting for the project.

Archaeological investigations in Fannin, Hunt and Collin counties have discovered archaeological sites that indicate Native American occupation was established by no later than 9000 BC and continued into the historic period. Anglo-American occupation began in the early 1800s and has continued to the present. Based upon the archaeological information and archival research, low, moderate and high potential areas for containing archaeological sites can be predicted with some degree of accuracy

Based upon the records review, personal knowledge of the author and analogous settings and archaeological surveys and excavations conducted in the counties, AR Consultants, Inc. feels that the potential is high that prehistoric archaeological sites ranging in age from Paleo-Indian to Late Caddoan/Prehistoric II times would be encountered during an archaeological survey of the study area. In addition, it also is likely that historic homestead sites, foundations, wells/cisterns and trash accumulations will be encountered.

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## **INTRODUCTION**

The North Texas Municipal Water District (NTMWD) is considering the construction of the Lower Bois d'Arc Creek Reservoir Pipeline which would extend from a pump station to be located on the south side of Bois d'Arc Creek in northeastern Fannin County southwest through the northwest corner of Hunt County and into northeastern Collin County where it would terminate at Pilot Grove Creek (Figure 1). The proposed pipeline would be used to transport water from the proposed Lower Bois d'Arc Creek Reservoir to a new northern NTMWD water treatment plant and to the upper end of Lake Lavon until such time as the new treatment plant is expanded to handle the full water supply available from the Lower Bois d'Arc Creek Reservoir.

As planned, the route would proceed south from the pump station and would skirt the community of Windom before turning to the southwest. At this point it would be situated on an upland ridge where water on the northwest drains into Bois d'Arc Creek and water on the southeast side drains into the Sulphur River Watershed. The route continues southwest along the watershed divide and then turns south to bypass the community of Bailey and then parallels SH 78 to the southwest to Leonard. Between Bailey and Leonard it crosses several drainages that flow to the southeast into the upper end of the South Sulphur. The route skirts Leonard and continues overland in Fannin County and just crosses the northwest corner of Hunt County before entering Collin County north of Frognot and east of Blue Ridge. East Fork of the Trinity River Watershed is entered on the south side of Leonard. The route turns south between Blue Ridge and Frognot and then turns westerly and will empty into the upper end of the Pilot Grove Creek Watershed which includes the Arnold, Lee, Bear, Desert, Indian and Pot Rack Creeks. The proposed pipeline route is approximately 46.0 miles long. However, an alternate route (Option 3) has been proposed and is approximately 43.3 miles long. Option 3 begins southeast of Spring Hill and runs to east of Dodd City and then slightly south to Prairie Point (Figure 1). The proposed route crosses Bullar, Spring and Cottonwood creeks. Freese and Nichols, Inc., which is designing the reservoir for the NTMWD, requested that AR Consultants, Inc. prepare an evaluation of the archaeological potential of the proposed pipeline route.

This report was written in accordance with report guidelines developed by the Council of Texas Archeologists (ND) and adopted by the Texas Historical Commission, Archeology Division. The following report begins with a brief description of the natural environment and the culture history of pipeline study area. Then a review of relevant archaeological investigations along the route is presented along with the results of a review of historic maps. The last chapter presents a discussion of the archaeological potential of the study corridor. A list of references cited concludes the report.

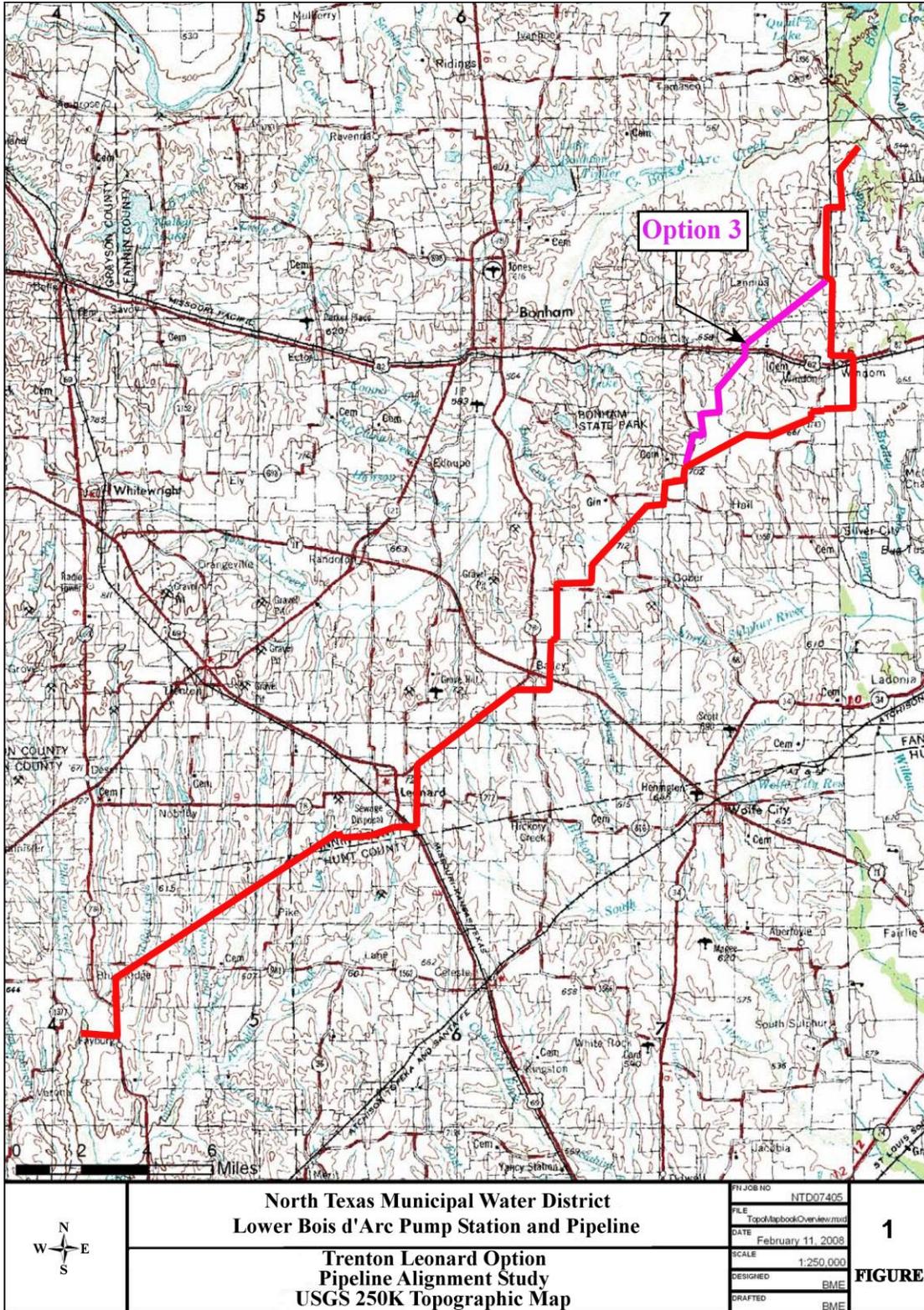


Figure 1. Location map of proposed Lower Bois d'Arc Reservoir pipeline route and Option 3 route in Fannin, Hunt, and Collin counties, Texas. Map provided by Freese and Nichols, Inc.

## NATURAL ENVIRONMENT

The proposed pipeline route begins on the edge of Bois d'Arc Creek in the vegetative zone described as the Red River Area (Diggs, Lipscomb, and O'Kennon 1999:Figure 1). This area is a narrow band of vegetation found on the primarily sandy soils adjacent to the Red River in Grayson, Fannin, and Lamar counties. Prominent trees in the area include southern red oak, sweet gum, loblolly pine, red maple, river birch and American hornbeam. The Red River Area is where the east Texas forests grade into the much less diverse and more xeric woodlands referred to as the Cross Timbers.

Soon after leaving the Bois d'Arc Creek watershed, the route enters the Blackland Prairie which extends to the south and west and includes the remainder of the proposed pipeline route. The Blackland Prairie extends south to near San Antonio and is characterized as having black, calcareous, alkaline, heavy clay commonly referred to a "black waxy" soil. It coincides with a bent of outcropping Upper Cretaceous marine chinks, marls, and shales (Hayward and Yelderman 1991). Kuchler (1969) classifies the prairie as being dominated by *Andropogon-Sipa* grasses although various other grasses are present as well. Mesquite is also present today but this is due to recent invasion of this species into the prairie. According to various authors, including Lynott (1979), the Blackland Prairie once supported a cover of tall grasses and was inhabited by now absent herbivores including bison and antelope. A variety of smaller mammals including deer, raccoons, rabbits, and opossums are present today and were likewise present in the past, although probably confined to the wooded valleys that extend from the major rivers and creeks into the headwaters of the watersheds.

The bedrock geology consists of the Gober Chalk, Brownstown Marl, Blossom Sand, and the Ozan Formation which consists of clay. The proposed route begins in undulating terrain and runs through generally level to slightly undulating terrain. The proposed route generally avoids drainages but Yoakum Creek and Pilot Grove Creek are mapped as containing Quaternary Alluvium (Bureau of Economic Geology 1966, 1967). Besides the two above drainages, the upper ends of numerous other first-order and intermittent creeks are crossed by the proposed pipeline route.

## CULTURE HISTORY REVIEW

Paleoindian points from Bois d'Arc Creek are displayed at the Red River Museum in Bonham support the belief that Fannin County was first occupied during Paleoindian times (ca. 12,000 BP). Other studies indicate that both Hunt and Collin Counties were occupied by mobile bands of hunters who lived off the land and traded or obtained exotic chert from throughout the Southern Plains. An abundance of Paleoindian artifacts has been documented in southern Fannin County from the valley of the North Sulphur River (Skinner et al. 2005; Bousman and Skinner 2007) as well as in Hunt County (Preston 1972) and in Collin County (Crook 2007a). While these early occupations are not well dated, Paleoindian occupation continued to at least 8,000 BP. Unfortunately, most of the Paleoindian artifacts have been found in surface contexts but they have been in the valleys as well as in the uplands and along minor drainages.

Subsequently, Archaic occupation has been documented along rivers and streams throughout the area and it appears that there was a settling into the natural environment that is indicated by the increased number of sites and use of local lithic resources over time. This contrasts with the Paleoindian period when exotic cherts from Central and West Texas, Oklahoma, and other plains states are found in the form of Clovis and other Paleoindian dart points. The presence of mussel shells at Archaic sites is common and along with dart points and fire-cracked rock, it appears that these people made their living by hunting and gathering wild plants and animals. We know little about the campsites of these people but most campsites appear to be located near water in the major valleys while knappable lithic resources were gathered from the tops of hills where the upland gravels have been lagged out and deposited on the bedrock.

By about 1200 BP, the bow and arrow had appeared and arrow points replaced dart points at archaeological sites. Shell-tempered pottery is found at the campsites occupied by these Late Prehistoric hunters and gatherers. An interesting feature found in the area is the unexplained presence of "Wylie Focus pits." Occupation continued by the indigenous Native American groups who may have continued the earlier practice of trading bois d'arc wood to groups in adjacent areas where this valuable wood was not available. Historic reports tell of Native American groups in the 1700s and early 1800s but virtually no archaeology of these groups has been published in the archaeological literature (Skinner 1988). Very widely scattered historic Native American archaeological sites have been described well outside the study area near Emory (Jelks 1967) and near Paris (Harris, Harris, Blaine and Blaine 1965). Mid- and late-1800 Anglo American sites are present in the uplands and along the drainage valleys where settlers built houses and farmed small plots until the advent of breaking tractors allowed for the farming of the Blackland Prairie.

Fannin County, originally to be named Independence County, was formed from Red River County by the Republic of Texas Congress on December 14, 1837. It was ultimately named for a hero of the Texas Revolution, James Walker Fannin, Jr. (Carter 1885; Strickland 1930; Hodge 1966; Scott 1982). Today, the largest city in the county is Bonham, which is the county seat, with around 10,000 residents, and Honey Grove being the second-largest with roughly 2,000 residents.

Hunt County was created out of Fannin and Nacogdoches Counties and was named for Memucan Hunt who served as a Brigadier General in the Texas Army in 1836. Hunt also served the Republic as Secretary of the Navy, and in May 1839 he was the Texas representative to the United States-Texas Boundary Commission. The size of Hunt County was reduced in 1870 when part of it was taken by Rains County.

Collin County was established in 1846 and the county seat was at Buckner until 1848 when it was moved to McKinney. Settlement has continued to the present. By the turn of the century, all of the major communities had been established and some had passed away.

## PREVIOUS INVESTIGATIONS

An archaeological survey of Timber Creek Reservoir (now known as Lake Bonham) and the proposed Lower Bois d'Arc Creek Reservoir recorded a number of prehistoric archaeological sites in the valley just to the northwest of the northern end of the pipeline route (Hsu 1968). A more recent survey of parts of the proposed Lake Ralph Hall has demonstrated the presence of sites buried in the floodplain and on elevations overlooking the lake area (Skinner et al. 2005). A review of the presence of archaeological sites in parts of the Caddo National Grasslands as well as survey of much of the Ladonia Unit of the Grasslands demonstrated the presence of sites on upland slopes away from water courses and in the vicinity of intermittent streams (Jurney, Winchell, and Moir 1989; Servello 1994). Several linear surveys that cross the upland south of the present pipeline route have found little evidence of prehistoric occupation although some evidence of upland gravel sampling and selection by prehistoric Native Americans has been found on the ridge tops north, south and west of Lake Tawakoni in similar settings. More extensive surveys have been done at Lake Lavon (Stephenson 1949) and excavations there have also demonstrated the presence of sites from the creek floodplains to the terraces and even on the upland edges east of the lake. Recently, Crook (2007a) has reported on the Frognot site which is a Late Paleoindian and Early Archaic occupation located on the first terrace west of Indian Creek near where the proposed pipeline route crosses that valley and just north of the town of Frognot.

Crook has also recently described a pure Early to Middle Archaic site, the Upper Farmersville North site located on the west side of Pilot Grove Creek and north of Farmersville (Crook 2007b). Also, numerous sites are located in southeastern Collin County on Indian Creek and Pilot Grove Creek (Crook et al. 2007:20). Many of these sites have Archaic and Late Prehistoric occupation and their presence and variety serve to highlight the potential of sites being present in the valleys and on the terraces of the major drainages, most of which have been named.

## KNOWN HISTORIC PLACES AND ARCHAEOLOGICAL SITES

The Texas Archeological Sites Atlas (2008) was examined for sites along or adjacent to the proposed pipeline route. Only three were found. No sites listed as State Archeological Landmarks or listed in the National Register of Historic Places were found. No Texas Historical Roadside Markers are present along the route, although three markers are present in the vicinity of Leonard in southwest Fannin County and two are near Farmersville in Collin County (Awbrey and Dooley 2005). However, site 41COL165, the Frognot site, which is described by Crook (2007a), is in or is immediately adjacent to the proposed pipeline right-of-way. The sites and relevant information is presented in Table 1.

Table 1. Archaeological sites recorded along the proposed pipeline route (Texas Archeological Sites Atlas 2008)

Site No.	Description	Age	Location
41COL165	Dart points, mano, lithic tools (camp site)	Paleoindian/ Early to Middle Archaic	Intersection of CRs 671 and 631
41COL173	Deeply buried prehistoric camp site	Late Prehistoric	Terrace of Desert Creek south of bridge on FM 1378
41HU38	Lithic scatter and 2 historic glazed crock fragments	Prehistoric/ Historic	Terrace overlooking Lee Creek south of CR 1137

**POTENTIAL HISTORIC SITES**

The 1939 Soil Map for Fannin County (US Department of Agriculture 1939), the 1934 Soil Map for Hunt County (Carter 1934) and the 1930 Soil Map for Collin County, Texas (Beck, Fitzpatrick and Ragsdale 1930) were examined for locations of residences or cemeteries along the proposed pipeline route. Potential historic residences and a school were found and their locations are listed in Table 2.

Table 2. Likely historic residence locations along the proposed pipeline route.

LOCATION	LIKELY HISTORIC RESIDENCE LOCATIONS ALONG THE PROPOSED PIPELINE ROUTE
1	From beginning of pipeline route to approximately 1,500 feet south of CR 2980
2	Intersection of CR 2992 and FM 1743
3	FM 1743, 600 feet south of Cottonwood Creek to where route turns east, north of Windom.
4	Along unnamed farm road 3,700 feet east of FM 1743
5	Intersection of pipeline route and CR 3497
6	Intersection of pipeline route at bend in CR 3410
7	Intersection of CRs 3210 and 3220
8	Intersection of pipeline route and CR 3060 approximately 2,000 feet north of Clutter Point. This is the Clutter School House
9	Intersection of pipeline route and CR 3115 approximately 1,200 feet north of FM 68.
10	Unnamed farm road approximately 2,000 feet south of FM 68.
11	Intersection of CR 3115 and FM 1552
12	3,700 feet southwest of Bailey on SH 78
13	Intersection of CRs 4860 and 4865
14	Intersection of CR 4865 and FM 272
15	3,400 feet south of FM 272
16	CR 1135 1,400 feet south of Locust Street
17	3,600 feet west of Locust Street along unnamed road
18	Intersection of FM 981 and 5020
19	Intersection of pipeline route with CR 673
20	Intersection of pipeline route with CR 672 at bend in road
21	Intersection of CRs 1100 and 670
22	CR 626 about 1,000 feet south of FM 981
23	Intersection of pipeline route with CR 825 approximately 760 feet east of SH 78

Route Option 3

- 1) From FM 1743 to US 82 there are at least 4 potential historic residences
- 2) From US 82 to FM 2071 there are at least 2 potential historic residences

After the soils maps were examined, the USGS maps were examined for residences along the proposed pipeline route. The USGS maps are Blue Ridge (1960), Pike (1960), Leonard (1964), Bonham (1984) and Dodd City (1984).

Table 3. Residential locations shown on the USGS maps.

LOCATION	RESIDENTIAL LOCATIONS SHOWN ON THE USGS MAPS
1	Approximately 825 feet west of CR 3210 and 318 feet south of CR 3200
2	South of intersection of CR 3235 and FM 2077
3	About 2,000 feet south of intersection of CR 3235 and FM 2077, on west side of road
4	Approximately 330 feet northeast of intersection of CR 3060 and FM 1550
5	About 2,500 feet east of intersection of SH 78 and FM 1552
6	Two residences approximately 2,500 feet south of intersection of SH 11 and FM 816
7	Approximately 1.9 miles southwest of intersection of SH 78 and SH 11
8	Approximately 2,940 feet northeast of intersection of FM 1553 and SH 78
9	CR 4865 from CR 4860 to FM 272
10	CR 1137 approximately 1,362 feet east of FM 981
11	Intersection of CRs 671 and 631
12	Intersection of CRs 626 and 820 (old SH 78)

### WINDSHIELD SURVEY

The senior author conducted a windshield survey that began at CR 2980 in Fannin County and terminated at CR 820 in Collin County, Texas of the locations listed in Table 3. The results of the survey are listed in Table 4 and the numbers listed refer specifically to the locations listed in Table 3. Due to recent rains, only residences on gravel or hard top roads were examined. Dirt two-track roads were impossible to travel.

Table 4. Investigated locations from Table 3. Numbers refer to locations in Table 3.

LOCATIONS	INVESTIGATED LOCATIONS FROM TABLE 3 [NUMBERS ARE FROM TABLE 3]
1	Could not examine
2	No house present
3	Modern brick house. However, behind the residence is a tin metal garage and equipment that appears to be older than 50 years.
4	Houses removed for farming. May have cisterns and wells still present
5	No house present
6	East side of road, brick house, west side of road only shed remains
7	Modern brick house
8	No house present
9	No houses present. However, have recent house with barn and cow pens
10	No house present but possible historic residence is south and on other side of Road (See discussion below)
11	Two historic residences. See discussion below
12	Relatively modern house that might be impacted

In addition, other pertinent information is included at the end of the windshield portion of the report.

A house outside the right-of-way was examined east of the intersection of FM 473 and CR 2980. In discussions with Mr. Dean Cox, owner of the house, he stated that two graves were located north of the house and were recorded on the deed to the land.

Two residences located on the east side of FM 743 north of where the pipeline route turns east and south of FM 2998. Neither house is shown on the 1984 USGS map. The northern-most house has been modified extensively and the house south of it consists of a wood clapboard single story structure. The front door has been recently installed and has not been painted.

The next potential historic structure was examined in Prairie Point north of the intersection of FM 2077 and CR 3235 (Figure 2). The house is a wooden shiplap single story structure that has a storm/root cellar in the front yard. Although it is doubtful that the house will be impacted since it is on the north side of the road CR 3235 and the proposed pipeline route runs east-west and south of and parallel to CR 3235. Construction personnel should be aware of its presence.

Along SH 78 close to Mustang Creek is an unmarked cemetery (Figure 3) on the southeast side of the highway. The cemetery should be avoided. A potential historic residence located south of CR 1137 is a shiplap, single story wooden house (Figure 4). Several brick residences are south of this residence.



Figure 2. Possible historic structure in Prairie Point in Fannin County, Texas. View is to the east.

A house is present at the intersection of CRs 671 and 631 and one further north along CR 671. The one at the intersection is a wooden structure (Figure 5) that was built in 1938 and electricity was installed in 1939. The house further north on CR 671 (Figure 6) was built prior to 1938 according to Mrs. Dawn Gordey who lives in the house in Figure 5.

Other potential problems are that this is the location of the Frognot site and the grass airstrip northwest of the Gordey's residence.



Figure 3. Cemetery on southeast side of SH 78 between Bailey and Leonard. View is to the south.



Figure 4. Residence located south of CR 1137. View is to the northwest.



Figure 5. Mrs. Dawn Gordey's house at the intersection of CRs 671 and 631. View is to the northwest.



Figure 6. House further north along CR 671. House is abandoned. View is to the southeast

## ARCHAEOLOGICAL POTENTIAL

Based upon the information presented above, the construction of the proposed Lower Bois d'Arc Reservoir Pipeline along the route described above has the potential to encounter both historic and prehistoric archaeological sites. The following discussion pinpoints the various archaeological discoveries that are likely to be encountered during a comprehensive cultural resources survey of the proposed pipeline route. General areas of high potential and locations of archaeological sites are presented on Figure 7.

- 1) From the beginning of the pipeline route to CR 2980 because of the potential for both historic and prehistoric sites. The historic potential is listed in Table 2, but prehistoric sites are possibly present on the uplands overlooking Bois d'Arc and Ward creeks where knappable lithic resources might be present.
- 2) From where the pipeline route turns east of Windom to where it turns west south of Windom due to the potential for historic sites (Table 2).
- 3) The pipeline route in Prairie Point and Clutter Point should be investigated for remnants of historic residences.
- 4) The crossing of Arnold, Lee, Bear, Desert, Indian, and Pot Rack creeks and the east bank of Pilot Grove Creek for prehistoric sites. Surface and buried sites ranging from Paleoindian to Late Prehistoric times have been recorded on the terraces overlooking the Pot Rack, Indian and Desert creeks.

### Option 3

From FM 1743 to US 82. The route crosses Bullard, Spring and Cottonwood creeks. Bullard Creek has extensive floodplain.

In summary, archaeological resources will need to be searched for, their significance evaluated, and their loss mitigated by appropriate means such as re-routing the line or data recovery before the pipeline is constructed.

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