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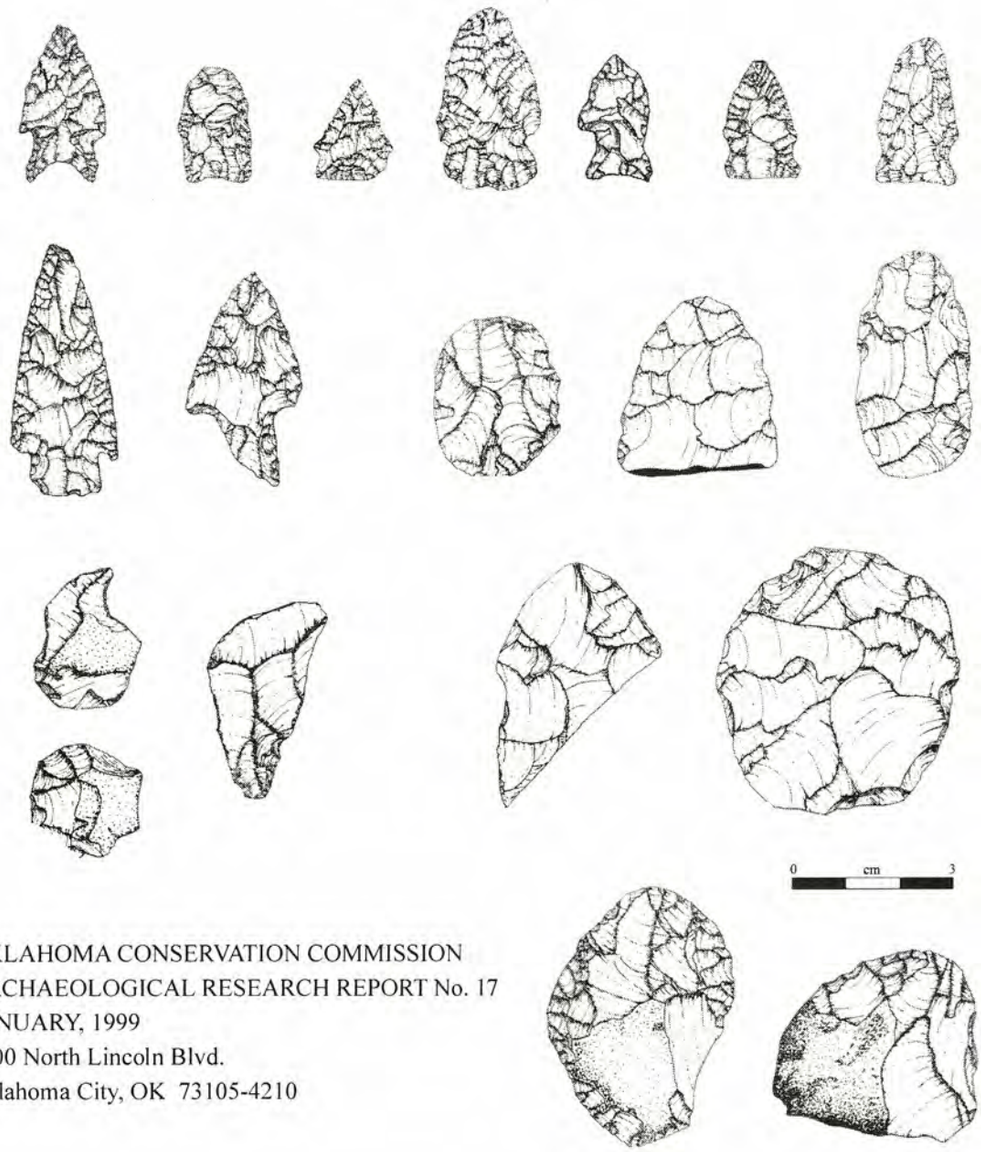
PHASE I AND II INVESTIGATIONS AT IMPOUNDMENTS 14 AND 15A, BRUSHY–PEACEABLE WATERSHED, PITTSBURG COUNTY, OKLAHOMA

Scott D. Brosowske
Rain Vehik



OKLAHOMA CONSERVATION COMMISSION
ARCHAEOLOGICAL RESEARCH REPORT No. 17
JANUARY, 1999
2800 North Lincoln Blvd.
Oklahoma City, OK 73105-4210

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NOTICE

In the event this document is released to the general public, the reservoir map on page 127 in the Appendix (Figure A.1) with site locations should be **removed** in its entirety.

Disclosure of site locations or ownership of a historic resource is specifically prohibited (National Historic Preservation Act, Section 304a as amended) and can not be accessed by means of the "Freedom of Information Act" alone. The exclusion of site location information from the public record is intended not only to preserve the data base but to impede unauthorized trespass on private property. Release of information regarding the locations of archaeological and/or historic sites to unauthorized personnel should be avoided, as such disclosure can lead to unnecessary destruction of the cultural resource base.

The specific findings and recommendations, along with any of the general background data concerning archeological sites discussed within this report, can be released to the public provided that all reference to legal locations, site maps, and current landowner ties have been deleted from the transmitted sections of the document.

Sections of this report that relate to specific properties, can, and should be provided to the various landowners. In such instances, disclosure can, and should include the specific location of the site, or sites being considered. By the landowners being kept informed of cultural resources on their holdings, it is possible that such knowledge may actually assist with preservation of cultural resource data currently under their control. Although the reservoir map in the appendix presents multiple archeological sites and historic properties combined on a single map, individual site locational maps have been prepared as part of "site forms" that are required by the Oklahoma Archeological Survey for their records. Individual site location maps extracted from the site forms should be sent to the various landowners instead of the combined site maps, as the same exclusions to locational information for adjacent properties, pertains to the various property owners in the immediate impoundment area as well.

Copies of site forms are on file at the Oklahoma Archeological Survey, University of Oklahoma, Norman, Oklahoma, as well as at the NRCS State Office, Stillwater, Oklahoma.

ABSTRACT

This report presents the results of Phase I and II investigations in the vicinity of Impoundments 14 and 15A in the Brushy-Peaceable Creek Watershed, Pittsburg County, Oklahoma. Phase I work consisted of pedestrian survey and resulted in the recording of 20 archaeological sites and several historic and isolated find localities. Although this work documents use of this portion of the watershed from the early Holocene to historic times, most sites are associated with Archaic and Woodland occupations. Artifacts recovered at these sites suggest that prehistoric use of the area focused on the acquisition of locally abundant chert and quartzite lithic resources by mobile foraging groups. Phase II investigations consisted of test excavations at two sites, 34PS277 and 34PS279, along Chippewa Creek. Fieldwork at these sites documents long-term exploitation of preferred lithic procurement locations and further supports the idea that occupants were primarily drawn to the area by abundant lithic resources. Approximately 11,000 artifacts were recovered from four test units at 34PS277, while excavation of six test units at 34PS279 recovered over 48,000 artifacts. Nearly all of the materials recovered at each of these sites are related to tool production and the refurbishment of tool-kits. The rarity of features and artifacts associated with activities other than those related to lithic procurement and production suggests that these locations were repeatedly visited by logistically organized task groups operating out of more permanent encampments located outside the project area. The results of this work concluded that additional investigations were only warranted at 34PS279. The long-term sequence of occupations preserved in virtually undisturbed deposits at 34PS279 provides a rare opportunity to further investigate Early Archaic through Early Caddoan period use of the region. As such, 34PS279 is considered eligible for National Register nomination.

PREFACE

The following report co-authored by Scott Brosowske and Rain Vehik is yet another in a series intended to provide a written record of the findings and recommendations that have resulted from past archeological work within the U.S.D.A., Natural Resources Conservation Service (former Soil Conservation Service) upstream flood protection program. These reports are coming out of a "back log" of uncompleted project investigations that has accumulated during the past 20 years.

Field investigations discussed within this report, were initiated some 14 years ago (August 1985 to July 1986). Field surveys conducted in the proposed locations of Impoundments. #14 and #15A, Brushy Peaceable Creek Watershed, documented a number of prehistoric as well as several historic sites and find localities. Of the recorded 20 sites and several isolated find localities, only two prehistoric sites were eventually recommended for testing to determine National Register of Historic Places eligibility (sites 34PS277 and 34PS279). A third site, 34PS278, was also considered to have similar potential; but, as situated outside the "direct impact" zone, no further work was recommended or conducted at that location.

This report presents findings made not only during the initial Phase I field survey, but follow-up Phase II testing work as well. Due to various reasons, the release of a final report was delayed until now. In some ways the rather late release of information deemed vital to make the correct decision about whether to continue development of the proposed floodwater retarding structure in the intended manner, or not, may seem inappropriate. Planning decisions made by the N.R.C.S. to proceed with construction in 1986 were based not only on the findings presented in the field by the principle investigator, but in consultation with the State Archaeologist (Dr. Robert Brooks). Dr. Brooks concurred with the proposed construction plan, based on the information presented at the time (not based on a full account of findings as presented in this report). At the time the decision was made to proceed with the construction plans, one of the two investigated prehistoric sites (34PS277 within the project borrow area) had been determined not to be eligible for National Register consideration, based on documentation of shallow deposits and failure to document *in situ* materials or clearly definable cultural features. Site 34PS279, on the other hand, was viewed as being potentially eligible for listing on the National Register of Historic Places based not only on the deep sequence of documented deposits, but by the site being but one a very few Early Archaic/ Transitional Middle Archaic sites know for the region.

Site 34PS279 was shown to be situated along the upper flood pool limits, or very outer margins of the reservoir direct impact area. Although the site deposits did present wood charcoal of reasonable quality for obtaining radiocarbon dates, the deposits were not conducive for the preservation of organic remains otherwise. Furthermore, the rocky nature of the bluff face, or talus slope, basically sealed the archeological deposits from the threat of occasional shoreline erosion. Consequently, *preservation in place* was recommended rather than attempting to dig or mitigate the site through more expensive means.

Now some 12 years later the basis of this recommended is being presented in a more through, written report. The site was revised in 1996, with the findings being that although shoreline erosion has removed top soil from along the lower site elevations, the main site deposits have not been visibly affected and instead seem to be in the same state as when tested in 1986. Another site however, (34PS278) documented on the higher ridge crest overlooking the valley setting (with the potential of presenting significant information concerning prehistoric use of a locally available quartzite that outcrops in the immediate area) has been negatively impacted in an "indirect" fashion.

Since completion of the reservoir, the property has changed hands and a modern day hunting lodge has been construction on the eastern end of the ridge point overlooking the reservoir. This lodge has had limited impact on site 34PS278. However, what was once a narrow farm access road has subsequently been widened to allow easy access to the hunting lodge, as well as open up the rest of the ridge for further development. That additional cabins will likely be built in the area is evident by a recent clearing situated near and overlooking the bluff that protects site 34PS279. This clearing has already

had a major impact on site 34PS278. Additional destruction of this site setting is anticipated as the years commence.

Although eventual destruction of site 34PS278 seems imminent, site 34PS279 at the base of the bluff face could remain in its current state indefinitely. It is the opinion of the principal investigator of the testing program as well as the co-authors of this report, that site 34PS279 merits National Register listing. It is believed that information presented in this report supports such beliefs.

Charles S. Wallis, Jr.
Staff Archeologist and
Principal Investigator Phase II Testing Program

ACKNOWLEDGEMENTS

Funding for field work and completion of this project was provided by the Oklahoma Conservation Commission. This report is made possible through a cooperative agreement between the Oklahoma Conservation Commission and the University of Oklahoma. The Oklahoma Archeological Survey, as University sponsor, provided the authors with resources and office and laboratory space throughout all portions of this project. Its commitment is appreciated. The Pittsburg County Conservation District, in particular Jerry Mathiews, the district conservationist, provided access to the project area. Special thanks to the Hunt brothers for access to properties impacted by this project. Rain Vehik, Charles Wallis, George Zabawa, Jim Simpson, and James Vater performed the fieldwork portions of this project many years ago. Brian Andrews volunteered many long hours as a part of the 34PS279 flake analysis. The authors would like to thank Chris Cook for his invaluable assistance in formatting and drafting figures for this report. His help in completing this report went well beyond the call of duty. We truly appreciate his time and effort. Mary Goodman drafted many of the original maps and profile drawings. Rain Vehik donated his time in editing earlier drafts and completing other aspects of the report. Bob Brooks also kindly contributed his time to review a draft. Lastly, special thanks to Charles Wallis for reading several drafts and overseeing the completion of this project.

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CHAPTER ONE
INTRODUCTION

The Brushy Peaceable Creek Watershed encompasses 213,686 acres south of McAlester, Oklahoma (Oklahoma Water Resources Board 1980:60b). The watershed is confined to Pittsburg County, except for a small portion extending into Latimer County (Figure 1.1). The primary tributaries of this area, Peaceable, Brushy, and Elm creeks, are part of the Canadian River drainage. Immediately to the south in Atoka County, streams are part of the Red River drainage system.

The sponsors of the project are the Pittsburg County Soil and Water Conservation District, the city of McAlester, and the Brushy Peaceable Creek Conservancy District. The watershed will be composed of 44 single purpose floodwater retarding structures and two multipurpose structures (Figure 1.1). These structures are being constructed for land treatment practices and flood protection of 13,097 acres of fertile bottomland. The multipurpose structures will also add 7,750 acre feet of storage capacity for a

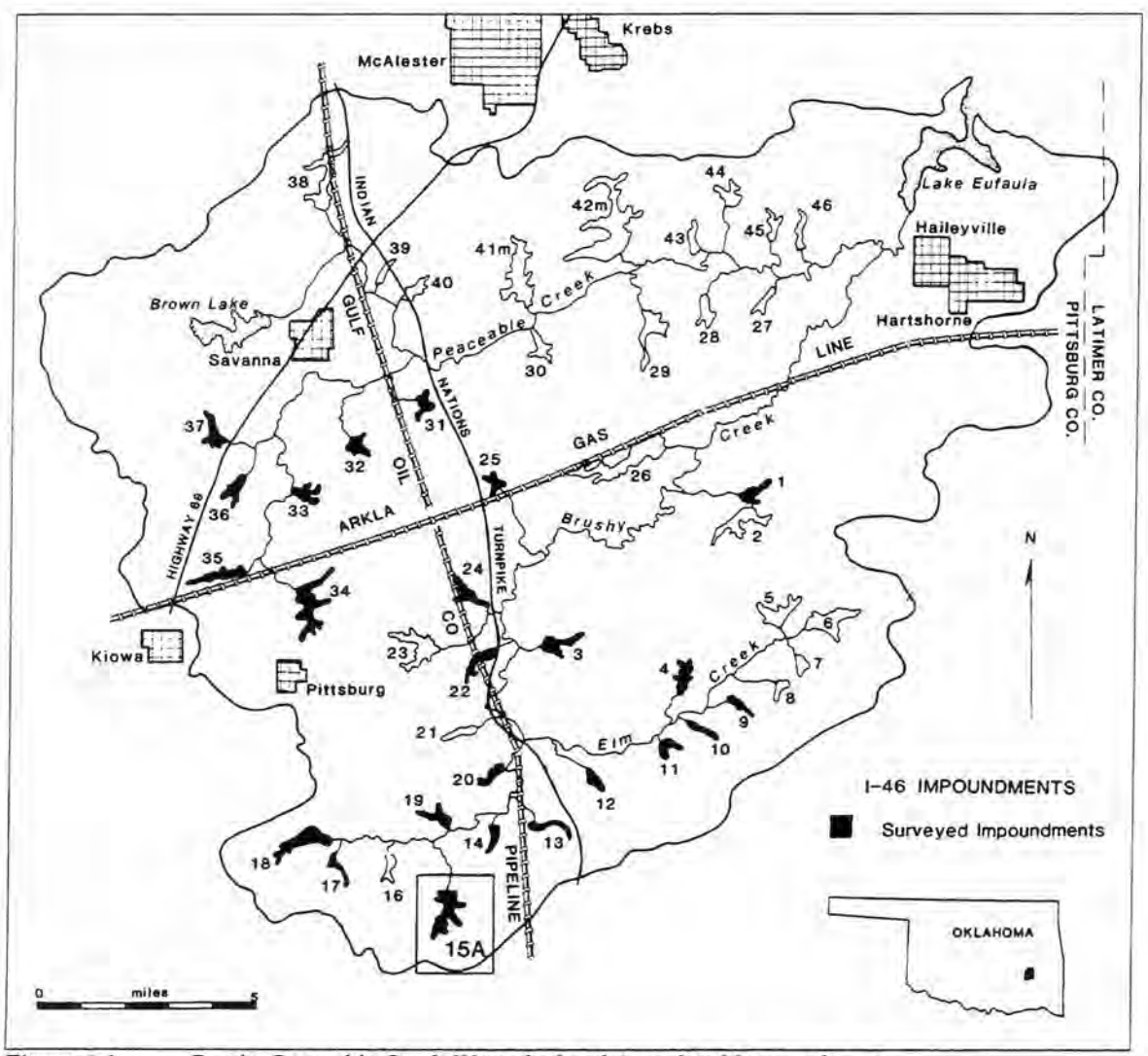

Figure 1.1 Brushy Peaceable Creek Watershed and Associated Impoundments

supplemental water supply for McAlester. The multipurpose structures have a total surface area of 668 acres and provides water oriented recreation for citizens (Oklahoma Water Resources Board 1970:81). As of 1987, 13 floodwater retarding structures had been constructed. Since that time at least two additional structures have been completed.

The research presented here includes the results of Phase I and II assessments in Impoundment 15A. The goal of Phase I fieldwork was to identify and evaluate archeological resources in Impoundment 15A, and to determine the potential impact that this structure would have on these resources. The assessment of each site included the examination of exposed areas on the ground surface for evidence of archeological materials as well as the excavation of subsurface shovel probes. Phase I assessments were completed at 16 archaeological sites (34PS277, 34PS278, 34PS279, 34PS280, 34PS281, 34PS282, 34PS284, 34PS285, 34PS286, 34PS287, 34PS288, 34PS293, 34PS294, 34PS295, 34PS296, and 34PS297) and four localities (34PS0/5, 34PS0/6, 34PS0/7, and 34PS0/8) between August 1985 and July 1986. These sites and localities were recorded by the Oklahoma Conservation Commission (OCC).

Based on the Phase I fieldwork, two sites (34PS277 and 34PS279) were recommended for additional investigations. Phase II investigations consisted of the hand excavation of test units. The recovery of more than 10,000 artifacts at 34PS277 and over 48,000 artifacts at 34PS279 indicate substantial prehistoric cultural activity at these sites. The results of Phase II investigations enabled site boundaries, content, and integrity to be assessed. This information is needed to evaluate eligibility for the National Register of Historic Places.

The results of the fieldwork, completed over ten years ago, are long overdue. Portions of this report related to all Phase I investigations in the project area and Phase II work at 34PS277 were completed shortly following fieldwork and are presented largely in their original form. In contrast, much of the analysis and write-up of Phase II investigations at 34PS279 were not begun until August of 1996.

CHAPTER TWO
ENVIRONMENTAL AND ARCHAEOLOGICAL BACKGROUND OF THE PROJECT AREA

GEOLOGY

The Brushy Peaceable Watershed falls within two geologic provinces; the McAlester Marginal Hills Belt and the Hogback Frontal Belt of the Ouachita Mountains (Curtis and Ham 1972:3). Impoundment 15A is more directly associated with the Hogback Frontal Belt (Figure 2.1). Both formations are characterized by Pennsylvanian sandstones with elevations varying between 91 and 610 meters (300 and 2000 feet), above either hilly upland plains or valley bottoms (Curtis and Ham 1972). Shales comprise many of the valleys which are separated by sandstone ridges. Another characteristic of this area is several thrust faults: Choctaw, Pine Mountain, and Ti Valley (Marcher and Bergman 1983:sheet 1). Specifically, the Ti Valley Fault crosscuts the project area and exposures to the north and south of this fault contain chert bearing deposits. These are primarily Mississippian and Pennsylvanian in age and include the Wapanucka Limestone and Chickachoc Chert exposures north of the Ti Valley Fault and Johns Valley Shale and sandstones associated with the Jackfork Formation to the south. Other major formations of the area include the Atoka and Lynn Mountain formations. Sediments along streams are either alluvium or terrace deposits that are Quaternary in age (Marcher and Bergman 1983:sheet 1). Ferring and Peter (1982) provide a discussion of the geomorphology of the Ti Valley north of Impoundment 15A.

LITHIC RESOURCES

The distribution of lithic resources, related to geologic formations, in the Ouachita Mountains is complex. Early studies concerning this topic are mainly project or site specific (e.g., Lintz 1979a:28-37; Ferring and Peter 1982:9.7-9.12; Banks 1983a:135-154, 1983b:335-365). The most comprehensive overview is provided by Banks (1984:86-92). The distribution of lithic resources in the project area is complex due mainly to problems of identifying the geologic origin of the wide variety of chert types that are present. Studies that have attempted to describe these resources, however, are often difficult to replicate.

Twelve individual units in the Ouachita Mountains contain chert (Banks 1983a:143). However, Banks (1983a:144) notes "... almost all chert types available in the Western Ouachitas occur naturally in the Johns Valley Shale Formation." These cherts are of relatively high quality, easily procured, and were commonly used by prehistoric groups for tool production. Therefore, since the Johns Valley Shale Formation, as well as formations containing quartzitic sandstone occur in the project area, most of the raw material identifications made in this study are based on gross lithology (chert versus quartzite). However, the Johns Valley Shale Formation also contains some nonlocal materials suitable for prehistoric use. These include boulders of Ft. Sill, Kindblade, West Spring Creek, Simpson, Hunton, Woodford, and Sycamore in the western part, materials of Ozark origin in the eastern part, as well as some Wapanucka varieties (Oklahoma Water Resources Board 1970:26). Because the natural occurrence of these materials is largely unknown, the amount of expected nonlocal materials from these sources cannot be predicted. As a result, when exotic raw materials are observed in an assemblage, their presence is noted, although explanations for origins remain problematic.

CLIMATE

Paleoenvironmental reconstructions for the region (see Albert 1981; Brant and Holloway 1985; Ferring 1995) suggest that a grassland or oak–savannah habitat predominated in the project area from 10,000 to 8000 years ago. Although paleoenvironmental evidence is noticeably lacking for the next 4000 years (8000–4000 BP), it is generally thought that the climatic conditions deteriorated resulting in a succession to dry, arid grasslands. During the Late Holocene (4000 BP to present) a trend toward the moister climate observed today is suggested as a grass dominated sequence is

replaced by increases in oak and hickory followed by a sharp increase in pine at Ferndale Bog. Currently, the climate of the project area is subtropical. Air currents from the Gulf of Mexico influence weather conditions for most of the year, although Pacific and Canadian air masses commonly move into the region especially during the winter months (Oklahoma Water Resources Board 1970:35). Temperatures average about 16.7° C (62.2° F). Average precipitation in the form of rain is approximately 119 cm (47 inches). The heaviest rainfall occurs from April to July in the form of high precipitation thunderstorms. The area receives approximately 15 cm (6 inches) of sleet or snow each year. The yearly average growing season is about 216 days in length (Shingleton 1971:1-3).

SOILS

Two major soil associations occur in the vicinity of Impoundment 15A. One, the Enders-Hector-Hartsell association, occurs on well drained sloping to steep upland and makes up approximately 53% of the soils in Pittsburg County (Shingleton 1971:5). The characteristic topography for this association includes smooth hill tops, steep bluffs, rock outcrops, and stone covered hills. The parent material from which these soils are derived (Atoka and Jackfork formations) occurs in the project area. Enders soils are derived from shale, while the others are from sandstone. These soils tend to be medium to strongly acidic.

The other soil association is the Ennis-Verdigris-Roseblum association. This association consists of well to poorly drained loamy soils occurring on nearly level bottomlands that are subject to frequent flooding. Its parent material is deep, old alluvium. These soils occurs as long narrow strips along major streams (Shingleton 1971). In Impoundment 15A these soils occur along Chippewa Creek. Shingleton (1971:59) classifies Enders, Hector, Ennis, and Roseblum soils as Inceptisols, Hartsell soils as Ultisols, and Verdigris soils as Mollisols.

VEGETATION

Early historic accounts of the project area describe the region as mountainous with some prairie and bottomland along Brushy Creek and its tributaries (Fitch 1900:623). Upland vegetation consisted of pine, post oak, and blackjack oak. This corresponds closely to the primary vegetation occurring with the Enders-Hector-Hartsell association (Shingleton 1971:5-6). Bottomland vegetation consisted of oak, hickory, ash, gum, red cedar, pine, water and pignut hickory, water elm, slippery elm, green ash, hackberry, silver maple, river birch, and various species of willow (Woosley 1982:6.1). Shingleton (1971:36-45) discusses modern vegetation by classifying range sites according to each soil type. Enders-Hector is associated with sandy and shallow savannah range sites. Ennis and Verdigris soils are typically associated with the loamy bottomland range sites. Table 2.1 presents a listing of recent vegetation patterns by different range sites.

Table 2.1 Distribution of Vegetation by Range Site

Range Site	Woody Plants	Grasses and Forbes
Loamy Bottomland	45%; Walnut, Pecan, American elm, Green ash, Red oak, Persimmon, Hackberry, Sycamore, Osage orange, Box elder, Honey locust, Post oak*, Blackjack oak*, Winged elm*, Indigobush, Trumpet vine, and Greenbrier*, Hawthorn*	55%; Prairie cordgrass, Eastern gamagrass, Big bluestem, Swichgrass, Broadleaf uniola, Switch cane, Wild rye, Sumpweed*, Ragweed*, Broomsedge*, and Johnson grass*
Sandy Savannah	35%; Post oak, Blackjack oak, Red oak, Hickory, and Pine	65%; Big bluestem, Little bluestem, Indiangrass, Switchgrass, Canada wildrye, Low panicum, and Carex
Shallow Savannah	30%; Post oak, Blackjack oak, Hickory, and Winged elm*	70%; Big bluestem, Little bluestem, Indiangrass, Swichgrass, Tephrosia, Slender lespedeza, Prairie clover, Back sampson, Purbletop*, Tall dropseed*, Scribner panicum*, Sunflower*, and Heath aster*

*Secondary growth resulting from cultivation or other types of disturbances

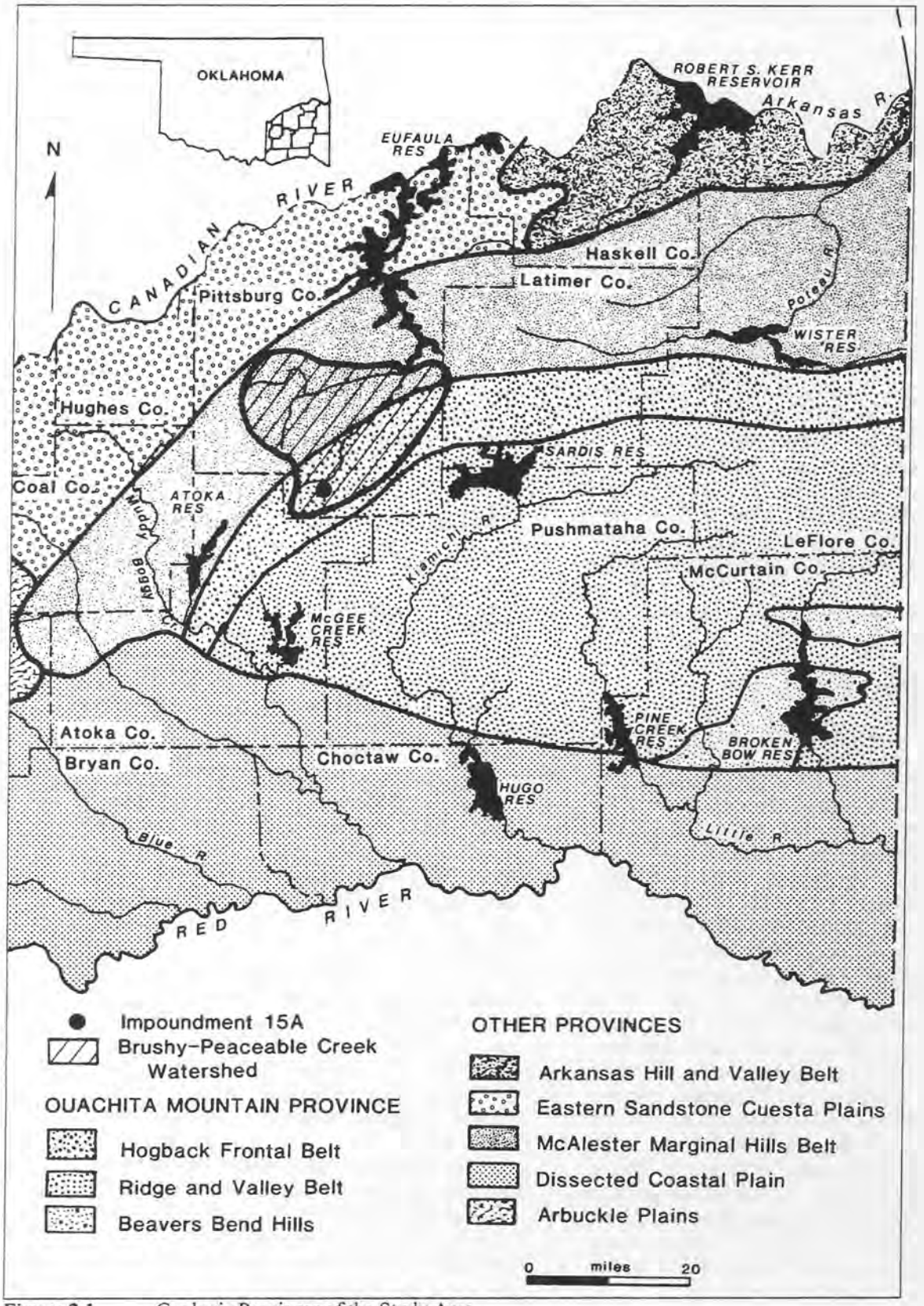

Figure 2.1 Geologic Provinces of the Study Area

FAUNA

A wide variety of fauna is present in the impoundment area (Shingleton 1971). These consist of deer, fox and gray squirrel, raccoon, mink, opossum, skunk, muskrat, beaver, coyote, bobcat, and red and gray fox. Waterfowl, bobwhite quail, mourning dove, wild turkey, and several species of hawks, owls, and songbirds are common. Snakes, lizards, and turtles are also present. Deer, turkey, fur–bearing animals, and songbirds are most prevalent in the bottomland range sites.

CULTURAL BACKGROUND

Detailed summaries of previous archaeological investigations in southeast and eastern Oklahoma have been presented by numerous authors. Of note, is the work by Bell (1980), Bobalik and Svec (1979), Galm (1981), Galm and Flynn (1978), Sabo et al. (1986), Wyckoff (1980), and Wyckoff and Brooks (1983) to list a few. The results of these works are briefly summarized here to provide an overview of the prehistoric chronology and adaptations for the project area.

PALEOINDIAN PERIOD

The Paleoindian period represents the earliest cultural manifestations in North America. This period is generally believed to extend from 12,000-8000 BP (10,000-6000 BC). Evidence for Paleoindian occupation for the eastern part of the state is based largely on the recovery of Clovis, Folsom, and Plainview type projectile points in surface collections or associated with materials from later time periods (Bobalik and Svec 1979:39). Although these projectile points are most commonly found in the western part of the state, isolated Clovis, Folsom, and Plainview points have been recovered from Murray, Bryan, Love, Seminole, Latimer, Pittsburg, Pushmataha, Adair, Sequoyah, LeFlore, and Marshall counties (Hofman 1986, Hofman and Wyckoff 1991). No sites from this period have been excavated in the eastern part of Oklahoma and much of what is known is extrapolated from information acquired on the Plains where they were first recognized. Research from the Plains suggests that Paleoindian groups were highly mobile hunter-gatherers that focused on large herbivores.

ARCHAIC PERIOD

Throughout the eastern United States, cultures associated with the Archaic period (8000-2000 BP or 6000 BC-1 AD) are believed to represent a gradual shift toward more intensive and efficient exploitation of seasonally available local resources. Adaptations for this period appear to have focused upon deer, small mammals, and various plant resources, particularly acorns and nuts.

The Archaic is usually divided into Early (8000-5000 BP), Middle (5000-3000 BP), and Late (3000-2000 BP) subdivisions. These subdivisions are somewhat arbitrary and are based largely on changing projectile point styles. Wyckoff (1984) provides an overview of adaptations for the Archaic period for Oklahoma: included is the distribution of 80 Archaic sites in southeast Oklahoma (Wyckoff 1984:122).

EARLY ARCHAIC

Although evidence for Early Archaic occupations in eastern Oklahoma is better represented than the preceding Paleoindian period, our knowledge is still very limited. The technological change most commonly attributed with the beginning of the Archaic is the appearance of notched or stemmed projectile points. Lanceolate projectile points similar to those used during the Paleoindian period continue to have been used into the Early Archaic, and include Dalton or Meserve types. Early Archaic components have been excavated at sites in the Broken Bow, Pine Creek, Hugo, and Sardis Lake areas in McCurtain, Choctaw, and Pushmataha counties (Barr 1965; Bobalik and Svec 1979; Lintz 1979a; Perttula et al. 1983; Rohrbaugh 1972; Wyckoff 1967, 1968). For the most part, these materials were recovered from shallow, unstratified deposits. In some cases, it is likely that these materials were reused by later site inhabitants (Lintz 1979a). Surface finds of these types of points have been reported from Murray, Love, McCurtain, Atoka, Bryan, Latimer, Seminole, Oklahoma, Pontotoc, and Mayes counties.

The Packard site in northeast Oklahoma is the only radiocarbon dated component for this time period (7465 BC ± 193) (Wyckoff 1984:127-130; 1985). Materials from this site are designated as the Packard complex (Wyckoff 1985) and appear to be related to sites in Tulsa, Haskell, and Muskogee counties. Other sites

similar to these are found along the Red River in Bryan and Marshall counties (Wyckoff 1984).

More recently work in the McGee Creek reservoir area in Atoka County suggests that Late Paleoindian or Early Archaic occupations are as extensive as later ones in the area (Perttula et al. 1983:49). Intensive testing of at least two sites has revealed substantial deposits related to this period (Perttula et al. 1983:35-51). Material from one site, Green Snake (34AT106), includes lanceolate projectile points, cores, scrapers, bifaces, and other retouch tools. This is believed to represent a single component occupation. At another site, Quince (34AT134), the Early Archaic horizon was 1.2-1.4 m below the ground surface. The assemblage contained scrapers and lanceolate points made of nonlocal lithic materials, but the other tool categories (gravers, bifaces, retouched pieces, cores, and side scrapers) are made from locally available material. Burned rock concentrations were also associated with this horizon. The recovered assemblage indicates that hunting, stone tool production and maintenance, and plant and meat processing were the major cultural activities that took place.

MIDDLE ARCHAIC

The Middle Archaic dates from about 5000-3000 BP (3000-1000 BC) and is associated with a warm, dry climate and prairie or savannah type conditions along the southwest margins of the Ouachita Mountains. It is characterized by expanding and straight stemmed projectile points and a wide variety of other chipped stone tools. Scrapers and knives are often manufactured from resharpened and reworked projectile points. Other possible Middle Archaic components are located at sites in Pushmataha, Pittsburg, and LeFlore counties. Two radiocarbon dates from the lowermost assemblages at the Scott site (34LF11) suggest an age of about 4500-3555 BP (2500-1555 BC) for this Middle Archaic component (Galm and Flynn 1978:118). Subsistence data for this period is virtually nonexistent. However, site settlement patterns suggest that forest and riverine resources were heavily exploited. This is supported by materials from the Scott site, which contains evidence for use of deer, hickory nuts, small mammals, and freshwater mollusks (Galm and Flynn 1978).

LATE ARCHAIC

The Late Archaic is well represented throughout most of southeast Oklahoma. This period lasted from approximately 3000-2000 BP (1000 BC-0 AD), and is usually characterized as an intensification of Middle Archaic subsistence strategies. The primary difference between these two periods, technologically speaking, is a shift to the use of expanding stem projectile points during the Late Archaic. However, contracting stem points (Gary points) also appear to have been used both as projectiles and knives. Other common items recovered at sites of this period include grinding stones, gorgets, pecked stone implements, stemmed hoes, numerous unifacial and bifacial tools, and bone tools. The overall subsistence pattern consists of a continuation of exploiting forest and riverine resources. There also appears to be an increase in ceremonial related activities as reflected by an increase in human interments and associated mortuary objects.

Late Archaic components are well represented in the northern, central, and western Ouachita Mountains of Oklahoma. In Atoka County, Late Archaic components are documented at Estep Shelter (Hofman 1977) and 34AT90 (Duncan and Cheek 1976). More recently, excavations at the Dyer site (34PS96) indicate an Archaic/Woodland occupation between 2370-1780 BP (370 BC-AD 220) (Ferring and Peter 1982). Investigations in the McGee Creek project area in Atoka county have yielded abundant data on Late Archaic occupations of this region (Perttula et al. 1983a:23-54; Perttula et al. 1983b:2-6).

Although Late Archaic components in the northern and central Ouachitas occur in a variety of different environmental settings, the most distinctive characteristic of these sites is the presence of dark midden mounds, particularly along Fourche Maline Creek in the Wister Lake area, Gaines Creek in Latimer county, and in the Sardis Lake area along Jackfork Creek. In these areas, Late Archaic occupations are collectively designated as the Wister phase. A series of radiocarbon dates provides a general time frame of about 3500-1750 BP (1500 BC-AD 250) for this phase (Altschul 1983; Baugh 1982; Galm 1978, 1981; Galm and Flynn 1978; Vehik 1982a). The artifact assemblages at these sites are similar to those discussed earlier. However, the composition of these midden sites has better preserved bone and shell leading to more complete recovery of materials. The occurrence

of nonlocal goods, such as marine shell beads and copper implements indicates increased ceremonialism and contact and/or trade with other Late Archaic populations (Galm 1981; Vehik 1982a).

WOODLAND PERIOD

The primary differences between this period and the Late Archaic is the addition of thick, usually undecorated pottery. A suite of radiocarbon dates from Lake Wister (Galm 1978, 1981; Galm and Flynn 1978) and Sardis Lake sites (Altschul 1983; Vehik 1982a, 1982b; Vehik and Galm 1979) indicate a time frame possibly as early as 2150-1950 BP (150 BC-AD 50) to about 1150-950 BP (AD 850-1050). A radiocarbon date (2305 BP ± 50) from the Quince site (34AT134) in the western Ouachitas supports this framework (Perttula et al. 1983:39-40). Collectively, these components are placed in the Fourche Maline phase. Subsistence and settlement patterns appear to remain unchanged from the previous Late Archaic period, with forest edge and riverine resources continuing to be heavily exploited. Data from Buffalo Bend (34PU111) suggest that arbor-like structures may have been used (Vehik 1982b:390-391, 400). Additionally, although deposits at 34PS355 were heavily disturbed, evidence for a house structure constructed of wattle and possibly daub was preserved (Shaeffer 1965:97-102). This structure appears to have been approximately 6 meters long and contained a fire place. Dark midden sites, also occupied by Wister Phase populations, continue to be utilized at this time, possibly as seasonal base camps. In the western Ouachitas, groups may have begun to exploit resources outside the area (Perttula and McGuff 1985:227).

In addition to the thick, largely plainware ceramics, large contracting stem stemmed points (Gary) are very common. The composition of these assemblages are similar to those seen during the Wister phase, but also include ground stone implements, double bitted axes, a wide variety of bone tools, and occasionally stemmed hoes.

Wyckoff and Fisher (1985:8-9) indicate that occupation of the Ouachitas is fairly intense at this time. By 1400-1300 BP (AD 600-700) groups appear to have been influenced by mound building populations associated with the Coles Creek complex. Finally, the period between 1200 and 1000 BP (AD 800 and AD 1000) is considered transitional for the development of subsequent Caddoan Cultures (Wyckoff and Fisher 1985).

LATE PREHISTORIC PERIOD

This period (ca AD 1000-1750) refers to Caddoan and/or Mississippian occupations in eastern Oklahoma. It is divided into the Arkansas River Caddo and Red River Caddo. Three phases comprise the Arkansas River Caddo: 1) Harlan, 1000 to 800-750 BP (AD 1000 to AD 1200-1250); 2) Spiro, 800-750 to 650 BP (AD 1200-1250 to AD 1350); and 3) Fort Coffee, post-600 BP (post-AD 1400) (Bell 1984; Brown 1984:241-264, Brown et al. 1978). Four similar subdivisions of the Red River Caddo are defined by Wyckoff and Fisher (1985:8-18). Brown (1996), as well as Perttula and McGuff (1985) discuss Caddoan and Woodland settlements in the Western Oachita Mountains.

The Late Prehistoric period is complex in terms of the cultural interactions that lead to increased social, ritual, and economic differentiation. Although evidence is limited, subsistence strategies appear to have consisted of a combination of both agriculture and hunting and gathering. The cultural units defined for the Arkansas and Red River basins are believed to represent a similar cultural-temporal sequence. The earliest units (AD 800-1000 to AD 1200-1250) represent the development of ceremonial complexes and exchange networks, as well as distinctive mortuary practices. These are elaborated upon between 800-750 to 600-550 BP (AD 1200-1250 to AD 1400-1450). More variation exists between the two areas after 600-550 BP (AD 1400-1450). During the Fort Coffee phase increased interaction with groups to the west is suggested by the presence of tools commonly associated with Plains assemblages, and a greater emphasis on bison hunting and agriculture. Mound construction ceases, exotic items are rare, and shell tempered pottery becomes the dominant form. The Red River basin during this time is characterized by continued reliance on horticulture, mound construction, elaborate mortuary practices, and nonlocal, exotic trade items.

Even though mound construction appears to cease in the Arkansas River area during the Fort Coffee phase, there is evidence for its continuation at the Huntsville site in the Ozark Highlands of northwest Arkansas after 650 BP (AD 1350) (Sabo 1986:72). This is not the case for the Ouachita Mountains. Initially, it appears as though the western Ouachitas were more

intensively occupied during the early Caddoan (800-1350 AD), while, settlements appear to decrease following 650 BP (AD 1350) (Perttula and McGuff 1985:229).

HISTORIC PERIOD

Lintz (1979b:50-66) documents historic developments in the Sardis Lake area, and this discussion briefly summarizes his work. The Historic period begins as early as 1719, and is divided into four eras. The first, Exploration era (1719-1820) represents the earliest European intrusions into the area. Expeditions by La Harpe in 1719, Long in 1817, and Nutall in 1819 recorded very few aboriginal inhabitants in this area. Along the Red River, the early part of this era overlaps slightly with Caddoan IV. The early Choctaw Settlement era (1821-1861) coincides with the Choctaw removal from Mississippi and eventual settlement in the Indian Territory. A lumbering industry was established by 1840, with major economic activity lasting nearly 50 years. The Late Choctaw Settlement era (1861-1907) documents hardships imposed by the Civil War, a decline in Choctaw self-determination, and increasing American control. The lumbering industry continues, and there is a population increase associated with construction of railways for the transportation of wood products. Creek refugees also entered the area during this era. The final era, Statehood (1907 to present) is characterized by a decrease in lumbering activities, an increase in ranching, and a migration from rural areas to larger towns.

Recently, Historic Preservation Associates completed work on two historic sites (34PS343 and 34PS352) within the Brushy-Peaceable Watershed (Klinger et al. 1994). Both of these sites represent farmsteads dating to the late 1800's and early 1900's. Additional information related to the early history of the project area (Pittsburg county in particular) may be found in Gilday and Salt (1925).

SUMMARY

This review of prehistoric cultural sequences for this part of Oklahoma, indicates that the earliest occupants (Paleoindians) are poorly understood, with most reconstructions being based largely on information from outside the region. Information for the Early and Middle Archaic periods is also limited. These gaps are most likely a result of limited investigation of deeply buried deposits that contain these materials, rather than their absence from the region. Subsequent occupations beginning with the Late Archaic and Woodland periods are more visible, and thus, studied to greater degree. Resulting reconstructions for these periods are more complete. Throughout the Late Prehistoric period, Caddoan settlements are common along the Arkansas and Red rivers, suggesting intense occupation of these large, riverine environments. In the western Ouachita Mountains, Caddoan groups appear to have occupied the project area most intensely prior to 650 BP (AD 1350). Although not directly applicable to the present study, the review of historic developments of the region relates to major activities that took place following AD 1719.

HISTORY OF ARCHAEOLOGICAL INVESTIGATIONS IN THE WATERSHED

Of the archaeological sites recorded for the region approximately 13% are from within the watershed boundaries. Several projects such as the construction of Highway 69, an Arkla gas line, Gulf Oil Company pipeline, and the Indian Nations Turnpike traverse the watershed (Figure 1.1). Although there was an archaeological survey of Highway 69, no sites were recorded within the watershed limits (Lopez and Keith 1976:31-40). Archaeological surveys along the Arkla gas line in the watershed area recorded 18 sites in the section crossing Pittsburg county (Saunders, Hofman, and Wyckoff 1972). Two of these sites near Hartshorne, Oklahoma, in eastern Pittsburg county were tested (Penman 1974:117-157). There is no information regarding archaeological surveys along the Gulf Oil Company pipeline, or the Indian Nations Turnpike.

Most recently, archaeological work in the region has been related to the survey and testing of sites to be impacted by various impoundments constructed within the watershed. Of the 44 floodwater retarding structures and two multipurpose structures, 23 (50%) have had some form of archaeological investigation (Ferring and Peter 1982; Gelburd et al. 1985; Harden 1975; Hughes 1978; Klinger et al. 1994a; 1994b; Saunders 1976; Wallis 1987; 1989). The majority of this has been surveying, but some test excavations have been conducted as well.

Hughes (1978) tested 34PS88 in Impoundment 9, 34PS86 in Impoundment 34, and 34PS96 in Impoundment 20. Neither

34PS88 nor 34PS86 were recommended for additional work. The investigations at 34PS96 (formerly designated as the Glasscock site but now called the Dyer site) revealed significant cultural remains in two areas of the site and a mitigation plan for more intensive fieldwork was developed. This fieldwork and a report were completed in 1982 (Ferring and Peter 1982). This work resulted in positing an Archaic/Woodland occupation (ca 370 BC-220 AD) and a Late Prehistoric occupation dating between AD 1310-1790 (Ferring and Peter 1982:10.7). The final site, 34PS99 (known as the Mote site) in Impoundment 13, was recommended for intensive testing on the basis of a 15 x 15 cm test and a variety of surface materials (Saunders 1976). In 1984, three 1 x 1 m test units were excavated in addition to an intensive survey of a one acre plowed area (Gelburd et al. 1985). This work resulted in documenting occupations which were related to campsite and lithic procurement activities beginning during the Archaic and continuing into the Woodland and perhaps the Late Prehistoric periods. Because various factors, such as shallow deposits, lack of discrete components and disturbed deposits, the site was removed from the eligibility list of the National Register of Historic Places (Gelburd et al. 1985:69).