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Archeological Survey of Undeveloped Portions of Eaker Air Force Base, Mississippi County, Arkansas

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In April and May 1990 Mid-Continental Research Associates (MCRA) conducted an archeological survey of approximately 865 acres of undeveloped lands on Eaker Air Force Base, in Blytheville, Mississippi County, Arkansas. The survey was conducted for Tetra Tech, Inc. of San Bernardino, California. Fifteen archeological sites were recorded during the survey. Two sites were historic (3MS547, 3MS554), 11 prehistoric (3MS548, 3MS550, 3MS551, 3MS552, 3MS553, 3MS555, 3MS556, 3MS557, 3MS559, 3MS560, 3MS561) and 2 contained both historic and prehistoric components, (3MS549, 3MS558). One site, 3MS547, is located outside of the base perimeter, south of Arkansas Highway 151. This site is not considered significant and no further work is recommended. Previous work at Eaker (Lafferty and Cande 1989a) documented the presence of an additional 4 prehistoric sites (3MS105, 3MS524, 3MS525, 3MS526) and one historic site (3MS531) on the base. The high density of late prehistoric and historic sites within the confines of Eaker Air Force Base displays an intensity of occupation and

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continuity of use of the alluvial environs of Pemiscot Bayou for the past 2000 years that is, without question, significant. We believe that all of the cultural resources on the base should be nominated as a district to the National Register of Historic Places. It is recommended therefore, that all sites within the boundaries of Eaker Air Force Base, excluding 3MS105, be tested to determine the depth and extent of the cultural deposits present, and provide sufficient data to make this nomination. Site 3MS105 has already been determined to be eligible for nomination to the National Register.

ARCHEOLOGICAL SURVEY OF UNDEVELOPED PORTIONS OF EAKER AIR FORCE BASE MISSISSIPPI COUNTY, ARKANSAS

by

Robert F. Cande

and

Robert H. Lafferty III

Mid-Continental Research Associates
P.O. Box 728
Springdale, Arkansas
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ABSTRACT

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CHAPTER 1

INTRODUCTION

by Robert F. Cande and Robert H. Lafferty III

Nature Of The Project

Eaker Air Force Base (EAFB) located in Blytheville, Mississippi County, Arkansas (Figure 1), is being considered as a candidate for closure. As part of an Environmental Impact Statement on the possible closure, a cultural resources survey of approximately 865 acres of undeveloped and previously unsurveyed portions of the base (Figure 2) was carried out by Mid-Continental Research Associates, Inc. (MCRA), of Lowell, Arkansas. The survey was conducted for Tetra Tech, Inc., of San Bernardino, California. Tetra Tech developed the research design which guided all phases of field work (Appendix A). The project archeologist was Robert F. Cande, who was assisted in the field by Walter Hatfield. Fieldwork was conducted from April 30 through May 7, 1990.

A large portion of the base was surveyed in 1988 and 1989 in connection with the then proposed Peacekeeper Rail Garrison Program. As a result of that study, site 3MS105, a large multi-component archeological site on the base, was professionally documented and was determined eligible for inclusion on the National Register of Historic Places (NRHP). The Air Force has submitted documentation nominating this site to the National Register of Historic Places. In addition, 480 acres of EAFB, as well as approximately 190 acres off base were surveyed. The results of that work are summarized and included where appropriate in this report.

Project Background

This study was conducted in partial fulfillment of Air Force responsibilities under the National Environmental Policy Act (NEPA) and the National Historic Preservation Act (NHPA), as implemented in Air Force Regulations (AFR) 19-2 and 126-7. The NEPA calls for environmental impact statements (EISs) to provide full and fair discussions of significant environmental impacts for use by decision-makers. Before one can discuss effects of a program on cultural resources, it is necessary to identify and evaluate the resources existing in the proposed project area. The present study is necessary for the preparation of the EIS for the proposed base closure.

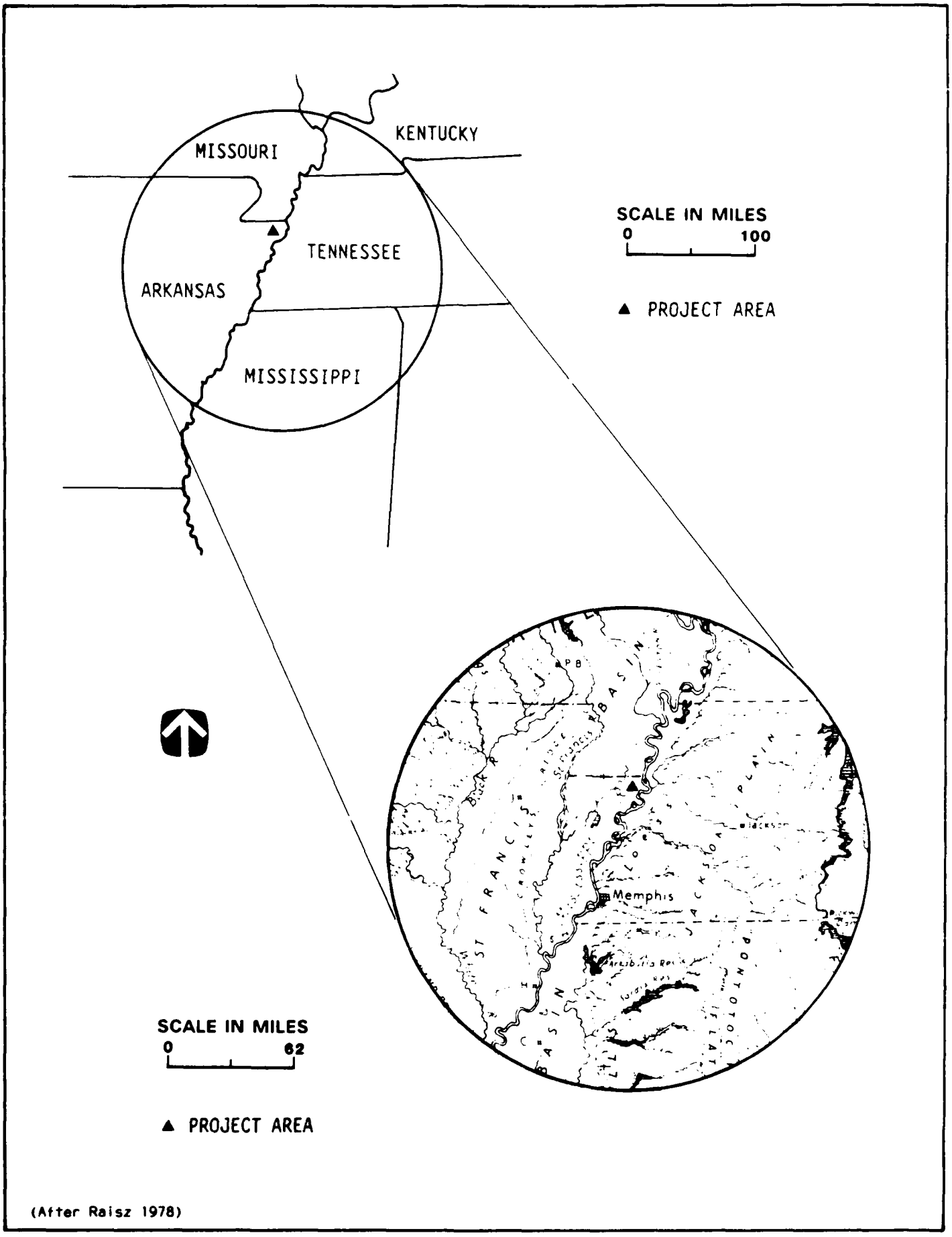


Figure 1 Project Area Location, Eaker AFB, Arkansas

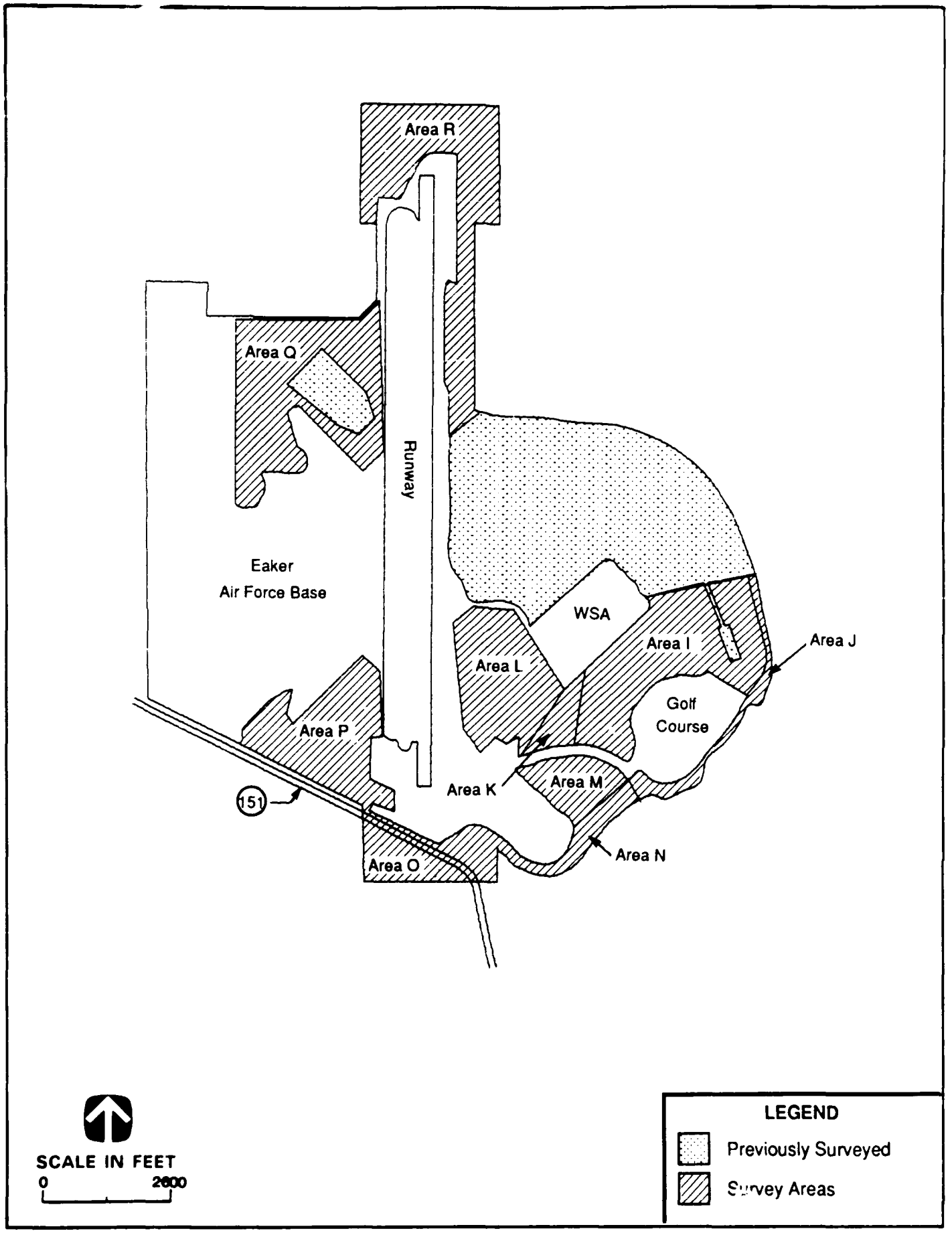


Figure 2 Areas Surveyed for Archeologial Resources at Eaker AFB, Arkansas

Section 110 of the NHPA requires federal agencies to identify historic properties under their jurisdiction and preserve them to the extent possible. Section 106 of the NHPA requires the agency to take into account the effects of its actions on historic properties. Additionally, the agency must afford the Advisory Council on Historic Preservation (ACHP) an opportunity to comment on any undertakings that could affect historic properties. The requirements are intended to structure project planning so agencies are properly informed about historic properties and have considered appropriate preservation options before a property is affected.

The Section 106 review process involves five steps: (1) identification and evaluation of historic properties, (2) assessment of project effects, (3) consultation to avoid, reduce, or minimize adverse effects, (4) ACHP and State Historic Preservation Officer (SHPO) comment, and (5) agency decision. The ACHP regulations (36 CFR 800) and related guidelines identify procedures for the identification of historic properties, and specific criteria for evaluating their importance or significance (36 CFR 60). Important properties are those which qualify for nomination to the NRHP. Only NRHP-eligible properties require further consideration. NRHP criteria are used to determine which sites are important and not all properties qualify under those criteria. In recognition of the regional variability in prehistoric and historic materials, the NRHP criteria are applied in consultation with the SHPO.

This report, along with previous work at EAFB, provides the data necessary for the completion of Step 1. Step 2 is accomplished in the EIS. The remaining steps are initiated with the filing of the EIS and related technical reports with the SHPO and ACHP, in coordination with the Base Historic Preservation Officer.

Background Research

Since a comprehensive records check had been made prior to the initial field investigations conducted by Cande in 1988 (Lafferty and Cande 1989a) this research was not duplicated for the present study. Mr. Jerry E. Hilliard the Arkansas Archeological Survey Registrar was consulted prior to the field investigation, and he indicated that only 3 sites have been recorded within a 10 km radius of Eaker AFB since that time. Sites 3MS532, 3MS533, and 3MS534 were recorded by MCRA during a survey of a proposed AT&T fiber optic cable transmission line. They are located in agricultural fields that border Eaker AFB on the west and south respectively. 3MS532 is a multicomponent site containing late Woodland Baytown phase and 20th century historic remains. 3MS534 also contained 20th century historic materials as well as an unidentified prehistoric component. 3MS533 yielded

primarily lithics but also contained some ceramic artifacts indicating a Baytown phase occupation. For convenience, a summary of the original records check is presented below. This information has been supplemented with data on sites 3MS532, 3MS533 and 3MS534.

Sources consulted include: site records at the Arkansas Archeological Survey (AAS), Fayetteville, and the Arkansas Historic Preservation Program (AHPP), Little Rock; the National Register of Historic Places (NRHP) listings for Mississippi County, Arkansas; selected property records in the Civil Engineering Office (CEO) at EAFB; and the General Land Office (GLO) and all other available early maps of the project area. Local informants were also interviewed. Dan Morse, AAS regional archeologist in Jonesboro was consulted concerning his personal knowledge of 3MS105, 3MS106 and other sites in the area. Local amateur archeologists and collectors, Mr. Marion Haynes and Mr. Charles Haynes were consulted about their knowledge of the local prehistory and history. Mr. Jack Lewis and Mr. Tom Talley provided valuable information of the construction of various base facilities and possible sources of site disturbance.

AAS Records Check

The records from all archeological sites within a 10 km radius of EAFB were reviewed. Information on the site forms varies greatly in quality and quantity. Many of the forms have been filed by collectors and amateur archeologists with little or no archeological training. In other instances the sites have been reported by professional archeologists. Table 1 summarizes the available data for each site, listing components present, site size, topographic location and pertinent comments. Table 2 is a cross-tabulation of the total number of components present.

A total of fifty-two sites are present within 10 km of the project area. Twenty-nine of the fifty-two (56%), contain evidence of multiple occupations. Of the remaining twenty-three single component sites, twelve are historic, and two are sites without any temporally diagnostic artifacts. If only prehistoric sites of known affiliation are considered, twenty-seven of the thirty-eight sites (71%) contain evidence of multiple occupations. Since it presents a more accurate picture of the settlement pattern in the project area Table 2 lists the occurrence of components within 10 km of the project area.

As can be seen in Table 2, nearly all of the sites and site components represent relatively late prehistoric occupation of the project area. Only four of ninety-two components (4%) represent Archaic occupations, while at the other end of the spectrum, fifteen of the ninety-two components

Table 1

Sites Within 10 km of Eaker AFB

Site #	Cultural Affiliation	Size (meters)	Landform	Comments
3MS5/12	MM	180 x 296		Chickasawba/ Blytheville Mounds
3MS18	PB,N	370 x 210		Hodge site badly potted
3MS22	PB?,N	135 x 300		Same Oxbow as 3MS18, Nodena Survey
3MS51	W?,M?			Discovered during construction of 7up Plant
3MS105	H,LW,N			
3MS106	H,LW,N			
3MS108	B,N			Mostly destroyed by I-55, Nodena Survey
3MS110	N	122 x 147	Natural levee	Brimm Place
3MS195	H			1847 GLO, field - not visited
3MS213	H			1847 GLO, field - not visited
3MS214	H			1847 GLO, house and field - not visited
3MS304	A,W,Y or BL	10 acres	Knoll	Charles Richard Site, land leveled
3MS305	S,D	10,000 sq m		
3MS306	S,BL,D?,Y?	300 x 300		

Table 1, Page 2 of 3

Site #	Cultural Affiliation	Size (meters)	Landform	Comments
3MS307	S,D?	2-3 acres	Knoll	
3MS308	A	5-10 acres	Ridge	
3MS309	S,D,N?	100' in diameter		House
3MS310	N?,H	30' in diameter		House
3MS311	S,D,N	150 x 20 yds	Ridge	
3MS312	S,D,Y?		Ridge	
3MS329	H	20 x 40	Stream Terrace	Trash Scatter
3MS332	H	60 x 20		Recent Trash Dump
3MS333	LA			Isolated Find
3MS334	H	15 x 10	Stream Terrace	Artifact Scatter
3MS337	H	60 x 60	Stream Terrace	Artifact Scatter
3MS338	H	30 x 50	Stream Terrace	Trash Dump
3MS356	LA	40 x 60	Broad Flats	
3MS357	UP		Broad Flats	Isolated Find
3MS358	UP		Broad Flats	Isolated Find
3MS359	N		Broad Flats	Isolated Find, Nodena point
3MS366	UP,H	240 x 40	Meander Belt	Light lithic/ historic scatter
3MS367	LW,EM,MM,EH	290 x 55	Meander Belt	Site Tested
3MS368	LW,EM,MM,EH	290 x 55	Meander Belt	Site Tested
3MS379	H	75 x 75		Site Destroyed
3MS380	H	20 x 120		Garbage Dump
3MS392	W,M,H	100 x 40	Slight Rise	19th Century Historic
3MS428	H	1400 x 30		Recent, several discrete scatters
3MS436	W,M?			

Table 1, Page 3 of 3

Site #	Cultural Affiliation	Size (meters)	Landform	Comments
3MS437	W?,M?			
3MS440	W?,M?			
3MS441	W	30 x 30	Low Rise	
3MS524	H,W	700 x 100	Natural Levee	Artifact Scatter
3MS525	W?	50 x 50	Natural Levee	Artifact Scatter
3MS526	W,M	50 x 200	Natural Levee	Artifact Scatter, Possibly buried
3MS527	W,M	200 x 300	Natural Levee	Artifact Scatter
3MS528	W	200 x 1000	Natural Levee	Artifact Scatter
3MS529	W,M	100 x 50	Natural Levee	Artifact Scatter
3MS530	W,H	600 x 300	Natural Levee	Artifact Scatter
3MS531	H	25 x 50	Natural Levee	Artifact Scatter
3MS532	LW,H	100 x 56	Natural Levee	Artifact Scatter
3MS533	LW		Natural Levee	Artifact Scatter
3MS534	UP,H		Natural Levee	Artifact Scatter

Key to Abbreviations

A - Archaic period
B - Baytown Phase
BL - Big Lake Phase
D - Dunklin Phase
EH - early Historic
EM - early Mississippi
H - Historic period
LA - late Archaic
LW - late Woodland
M - Mississippi period
MM - middle Mississippi
N - Nodena Phase
PB - Pemiscot Bayou
UP - unknown Prehistoric
W - Woodland period
? - affiliation uncertain

Table 2

Occupational Components within 10 km of Eaker Air Force Base

Phase/Time Period	Single Component Sites	Multiple Component Sites	Cultural Affiliation	Total
Archaic Period	1	1		2
Baytown Phase		3		2
Big Lake Phase		2		2
Dunklin Phase		7	2	8
Early Historic Period		2		2
Early Mississippi Period		2		2
Hayti Phase		1	2	3
Historic Period	12	9		21
Late Archaic Period	2	0		2
Late Woodland		2		2
Middle Mississippi Period		2		2
Mississippi		4		8
Nodena Phase	2	11	4	15
Pemiscot Bayou Phase		2	2	4
Unknown Prehistoric	2	2	2	3
Woodland Period	2	8	4	14
TOTAL	**21**	**58**	**16**	**92**

(16.3%) represent late prehistoric Nodena phase occupations. If the historic components are eliminated from the sample the percentages become even more striking, 5.8% and 21.7% respectively. This may be attributed to two main factors: (1) many Archaic period sites have been either destroyed or buried by meandering streams, and (2) the shift to increased exploitation of the meander belt environment through time.

AHPP Records

No architectural structures were listed within the project area.

NRHP Listings

Three archeological sites, ten historic buildings and one historic district are listed on the National Register in Mississippi County. None of these is within the project area. The three archeological sites include Zebree (3MS20), Nodena (3MS3) and Chickasawba Mound (3MS5). 3MS5 located approximately 3.5 km south of 3MS105 is the only one of these sites within 10 km. It is a large Nodena phase containing a mound, large village and cemetery areas. It has been extensively pot-hunted. 3MS105 the large multicomponent site investigated during MCRA's 1988 work at Eaker has been determined to be eligible, and its nomination is pending.

CEO Records

CEO records consulted included black and white aerial photographs taken of the base at various time periods, and records relating to the New Hope Church of the Episcopal Church, South Chickasawba Cemetery. These records included a complete listing of graves, a copy of the deed transfer, various letters and correspondence and a newspaper article relating to the cemetery. The cemetery is discussed in detail in Lafferty and Cande (1989a:50).

GLO Maps

The GLO maps of the project area date to 1848 and 1849 for Townships 15N and 16 N, Range 11E and Townships 15N and 16N, Range 10, respectively. No historic sites or features are shown for the project area. However, one site 3MS195, a GLO field is located just north of survey Area E. Part of the site extends into the air base grounds.

Other Maps

Two additional early maps were located and examined prior to the field work. These were the General Highway and Transportation Map of Mississippi County, dated 1936, and the USGS Blytheville, ARK.- MO., 15', 1944, quad map. These maps show that the main road from Blytheville to Gosnell used to run E-W along the township line between T15N and T16N, crossing what is now

the center of EAFB. Farm roads are also shown extending from this into the northern portions of these same areas. Numerous structures are shown distributed along these roads. Curiously, the 1936 Highway map shows the presence of two cemetery areas in the vicinity of the Chickasawba Methodist Church (Lafferty and Cande 1989a:49-50). No other evidence of the presence of two cemeteries was found. All of the structures indicated on the early maps have been removed, although a structure was present on 3MS105 as recently as 1980 (McNeil 1982:2).

CHAPTER 2

ENVIRONMENT

by Robert F. Cande and Robert H. Lafferty III

Physiographic Environment

The EAFB project area is located in the Eastern Lowland Physiographic region, which is part of the Central Mississippi River Valley (Figure 3; Morse and Morse 1983). This portion of the Mississippi River Valley is a deeply incised canyon, known as the Mississippian Embayment, which has alluviated since the beginning of the Holocene. The valley is 80 miles wide at the project area and is divided roughly in half by Crowley's Ridge (Medford 1972:69).

The Mississippi River has formed the structure of the environment first by carving this great valley and, more recently, by depositing nearly a mile of silt within its confining rock walls. The alluvium deposited is largely stone-free with the largest common sediment size being sands deposited in the relict braided surface and the alluvial levees. This has resulted in the formation of some of the best and most extensive agricultural land in the world, which has virtually no hard rocks or minerals. Prehistorically, and even today, rocks and minerals had to be imported from the surrounding regions.

The Mississippi River has also structured, and continues to structure, the transportational environment. The dominant direction of its movement from north to south has resulted in making resources upstream more accessible than those to the east or especially to the west. For example, to reach the Ozarks one must traverse three major rivers; the St. Francis, the Cache and the Black, all former channels of the Mississippi River in post-Pleistocene times. In pre-automobile times this was a tedious overland journey of 80 miles, which involved crossing many smaller bodies of water. This contrasts with 100 miles of floating downhill on the surface of the river. The river is still a major y transportation artery for the central part of the continent and in earlier times was the only way to traverse easily this lowland region. In the 1840-1843 period, when the General Land Office (GLO) maps were made, all of the mapped settlements in the project area were positioned along the river.

The Central Mississippi River Valley is incised into the Ozark and Cumberland Plateaus. These coordinate proveniences were uplifted from the south by a tectonic plate movement from the southeast which pushed up the Ouachita Mountains and split the lower part of the Ozark-Cumberland Plateau. At the time of this tectonic event, ca. 100 million years ago, these plateaus were inland seas

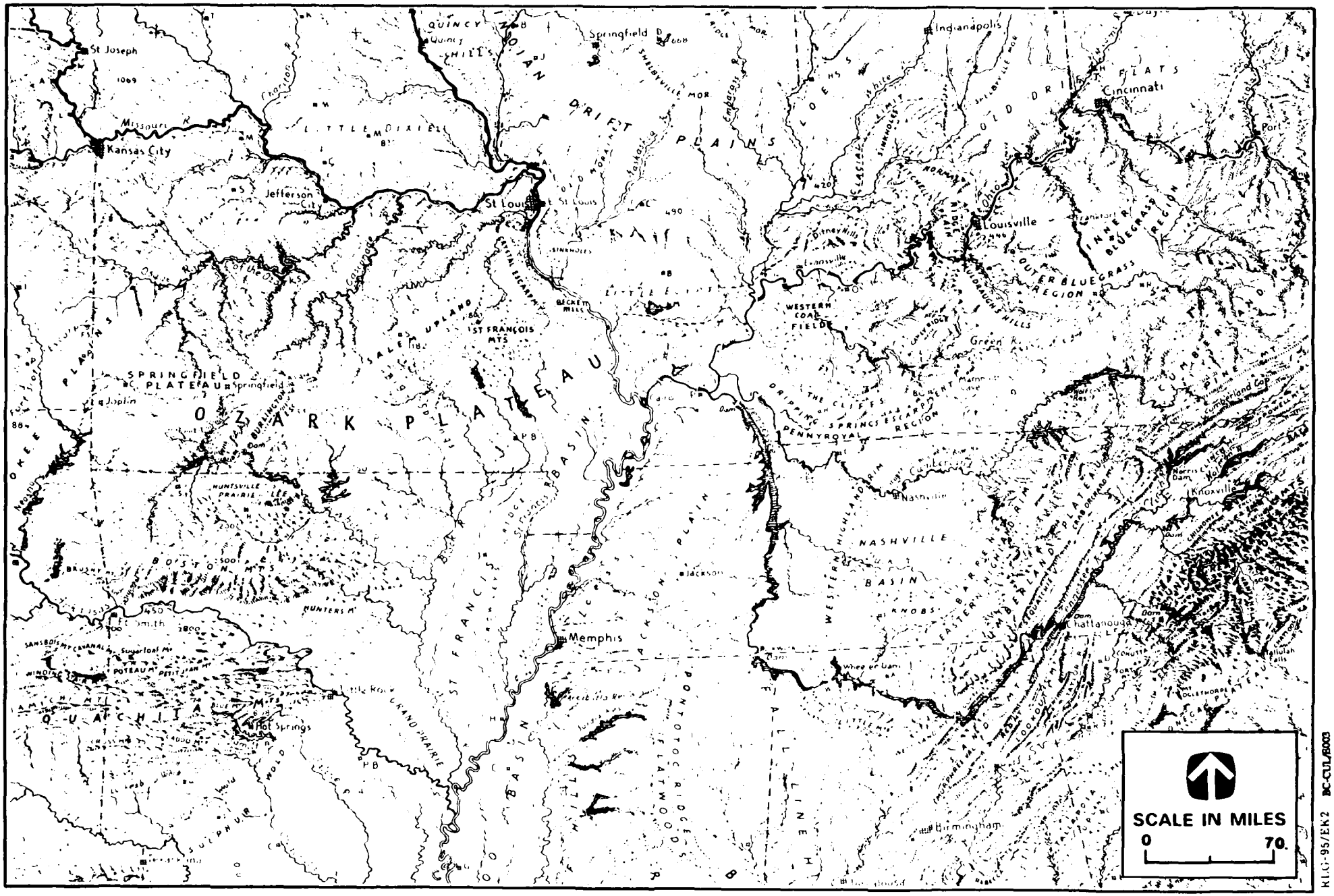


Figure 3 Central Mississippi River Valley Physiography (After Raisz 1978)

with beach lines along the present course of the Boston Mountains in Central Arkansas and Sand Mountain/Walden Ridge in Alabama and Tennessee. These ancient sea beds are today limestones filled with many different kinds of cherts. Identification of these cherts as coming from specific formations is difficult because there is a great deal of variation within formations. This is made more confusing by the tendency for these formations to have different names in different states. For example, the Boone, Burlington, and Ft. Payne "formations" are different names applied to the same formation in Arkansas, Missouri, and Tennessee, respectively. Figure 4 shows the source area of some of the more important lithic resources. Some of these have well-known point source such as Dover, Mill Creek, Crescent and Illinois Hornstone. Other lithic resources occur over large areas and do not have known quarries, though they may exist (Butler and May 1984).

Making the identification of these lithic resources more complex is the presence of Tertiary gravel beds around the edges of the Mississippian Embayment and on Crowley's Ridge. Crowley's Ridge is perhaps the most important of these because it occurs in the center of this otherwise stoneless plain. This deposit was laid down in Pliocene times when the river gradient was steeper than it is today. Crowley's Ridge has virtually every heavy, hard kind of mineral that occurs in the Mississippi River Basin. Prehistoric sites on the edge of the western lowlands, even those situated directly on the Grandglaise Terrace, show a marked preference for the lithics found in the Ozarks over those of the terrace (e.g. 3IN17, Lafferty *et al.* 1981). Most of the gravel deposits adjacent to the Mississippi Valley to the east are covered with loess deposits up to 200 feet thick.

Investigations have shown that as one approaches Crowley's Ridge from both the east and the west there is a marked increase in the occurrence of utilized cobbles (e.g. cores) on prehistoric sites (Shaw 1981). This is true even though, through time, there are documented changes in the prehistoric preferences for utilization of different lithic resources. The reason that Crowley's Ridge gravel is used throughout the prehistoric record in the Central Mississippi Valley is that it is the only locally available lithic resource, and because almost any kind of stone could be found there. Although the gravels were not of the best quality, they were adequate for most purposes. Even today, Crowley's Ridge is the main source of gravel for both the eastern and western lowlands. The rather intensive modern day use of gravel sometimes makes distinction among aboriginal tools (such as scrapers and flake knives), gravel crusher-produced "artifacts", and transported artifacts difficult.

One important class of lithic resources was volcanic materials, particularly the basalts, which were obtained in the St. Francis Mountains and used for axes, chisels, and celts. Rhyolite and orthoquartzite, likewise, were used for various tools.

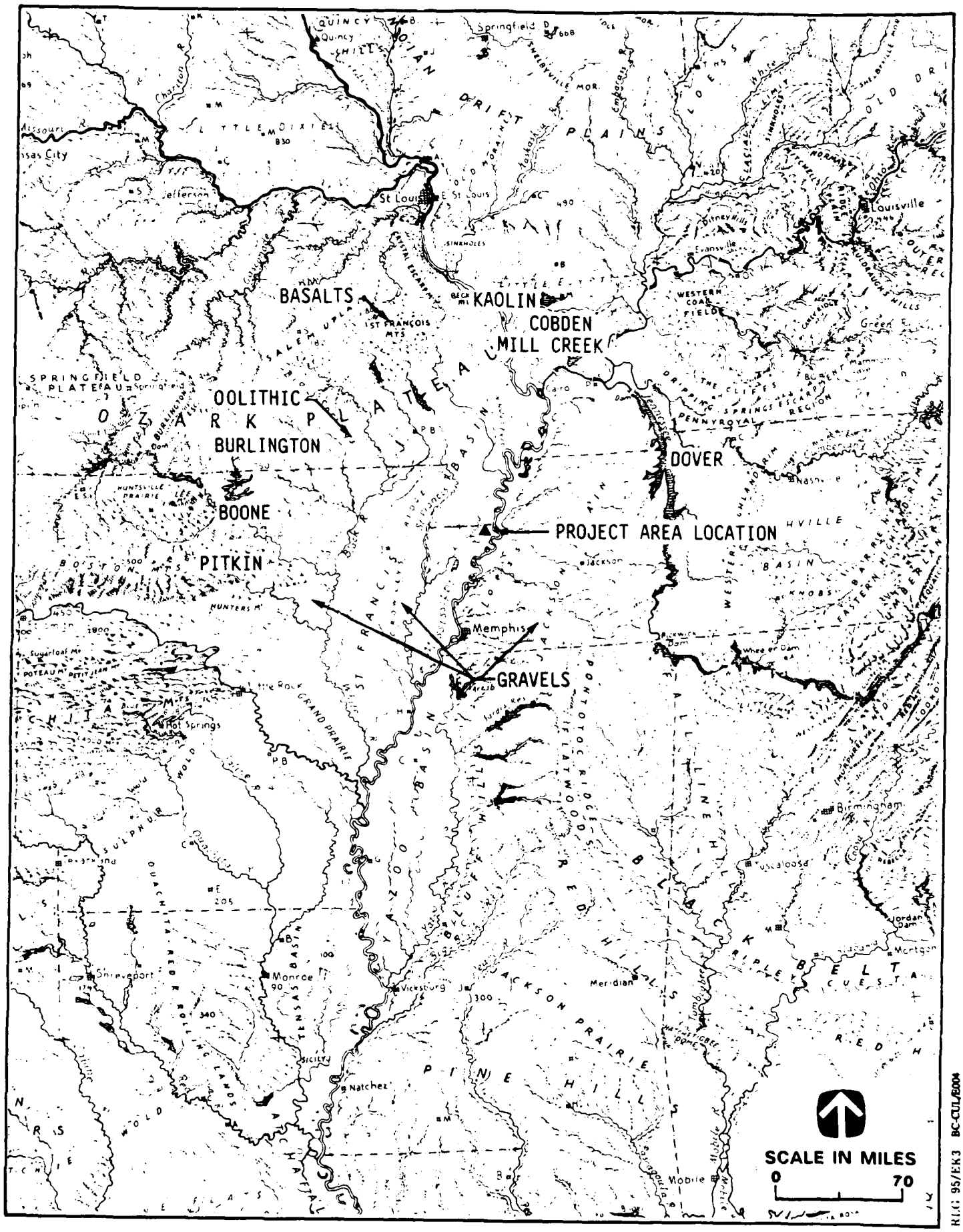


Figure 4 Major Lithic Sources in the Central Mississippi Valley Area (After Raisz 1978)

The Mississippi River has been the sole agent in structuring its valley. Valley structure has greatly influenced the development of transportation routes. When De Soto and his men reached the Great River in 1541, they looked on a transportation artery that stretched from the Gulf of Mexico (and beyond) into the heart of the continent. It was, however, navigated and controlled by fleets of dugout canoes that were both to harass and assist the Spanish over the next several years. As the conquistadors looked from the bluffs over the virgin forest-covered swamps, they never suspected that they were gazing upon both the graveyard and the salvation of their expedition. Most of the next two months the Spaniards spent slogging through one of the most difficult swamps encountered in the entire expedition, the St. Francis Sunk Lands (Morse 1981; Hudson 1984). The expedition was continually drawn back to the Great River and the high chiefdom cultures, which they dominated using the techniques learned against the Aztecs and the Inca. The swampy lowlands impeded the expedition, especially when traversing from east to west. As they reached the Grand Grandglaise terraces on the Ozark Escarpment, they encountered the great Toltec-Cahokia Road (which would later be known as the Natchitoches Trace, then the southwest Military Road, and currently US 67). This important road was on tractable ground with the swampy lowlands to the east and the more dissected plateau to the west. The expedition's speed doubled once they were on it (Hudson 1984, Akridge 1986). In the end, after many side trips and high adventures, the hard-pressed expedition made its escape down the Great River in boats constructed with nails forged from their weapons. They were harassed by Indians in large fleets of canoes all the way to the Gulf of Mexico.

In summary, the physiography of the Central Mississippi River has greatly circumscribed life in this environment. Transportation was much easier, though sometimes longer, on the rivers, particularly the Mississippi. Overland travel was easiest going around the lowlands or down Crowley's Ridge. People did not penetrate or live in this environment unless they were equipped with boats, lines, and other tools necessary in an aquatic environment. This lowland forest with some of the most productive soils on the continent was rich in plants and animals. A profusion of mineral resources was to be had in the nearby uplands. These minerals are known to have been widely traded from prehistoric times to the present.

Project Area Physiography

The project area has been in existence less than 10,000 years. During this time it has undergone some rather substantial changes. Such changes are documented for the Ditch 29 project, located 200 m north of the project area (Guccione 1987; Guccione et al. 1988). The oldest surface in the project region is the relict braided surface located west of Big Lake. This was laid down in Pleistocene times by meltwater from the Wisconsin glaciation.

In early Holocene times (ca. 9,000 BP) the Mississippi River began its meandering regime with natural levee building near the western edge of the project area (Core #16, Figure 5) and with a massive backswamp forming between the natural levee and Big Lake. A Mississippi River channel that was active during this period is buried under the eastern part of the project area (Figure 5, Core #20). These conditions lasted until approximately 5,400 BP when at the end of the dry Hypsithermal period moisture increased. During the Hypsithermal the backswamp had aggraded as much as 6 m.

Beginning approximately 5,000 years ago a drainage system began to develop on the backwater swamp surface. The drainage included the Right Hand Chute of Little River at Big Lake. Pemiscot Bayou developed later. Pemiscot Bayou is a crevasse channel. Crevasse channels form after a period of aggregadation raises the river above the surrounding landscape. A break in the natural levee then occurs, diverting part of the river's flow to lower ground. The most recent occurrence of crevasse channel formation was during the New Madrid earthquake of 1811-1812. At New Madrid an upriver break in the channel siphoned water to the lower backswamps. Other processes such as flooding can cause crevasse channels. It has only been during the last 5000 years that the project area landscape first began to approximate its modern form. In this period of time, Pemiscot Bayou incised its channel two to three meters into the backswamp and began building the levees and point bars which dominate the current landscape in the project area. During this and subsequent time a thin veneer of courser sediments has been laid over the backwater swamp.

During the past 1,000 years the Mississippi River moved about 3 km east of the project area and deposited the levee in the eastern part of the project area. Periodically during this time Pemiscot Bayou has been a course of part of the Mississippi River. In the latter part of the last 1,000 years Pemiscot Bayou has eroded the edge of the levee in the southeastern part of the project area, as the point bar on which 3MS105 sits has been extended eastward.

These events have created the modern landscape and have influenced expectations about the possible age of deposits on the different surfaces. The central project area is dominated by point bar deposits of Pemiscot Bayou, which is not more than 5,000 years old (Figure 6). To the west is a poorly drained backswamp with a thin veneer of more recent silts and sands. The east part of the project area is dominated by a well drained levee of the Mississippi River which was laid down some time in the past 1,000 years.

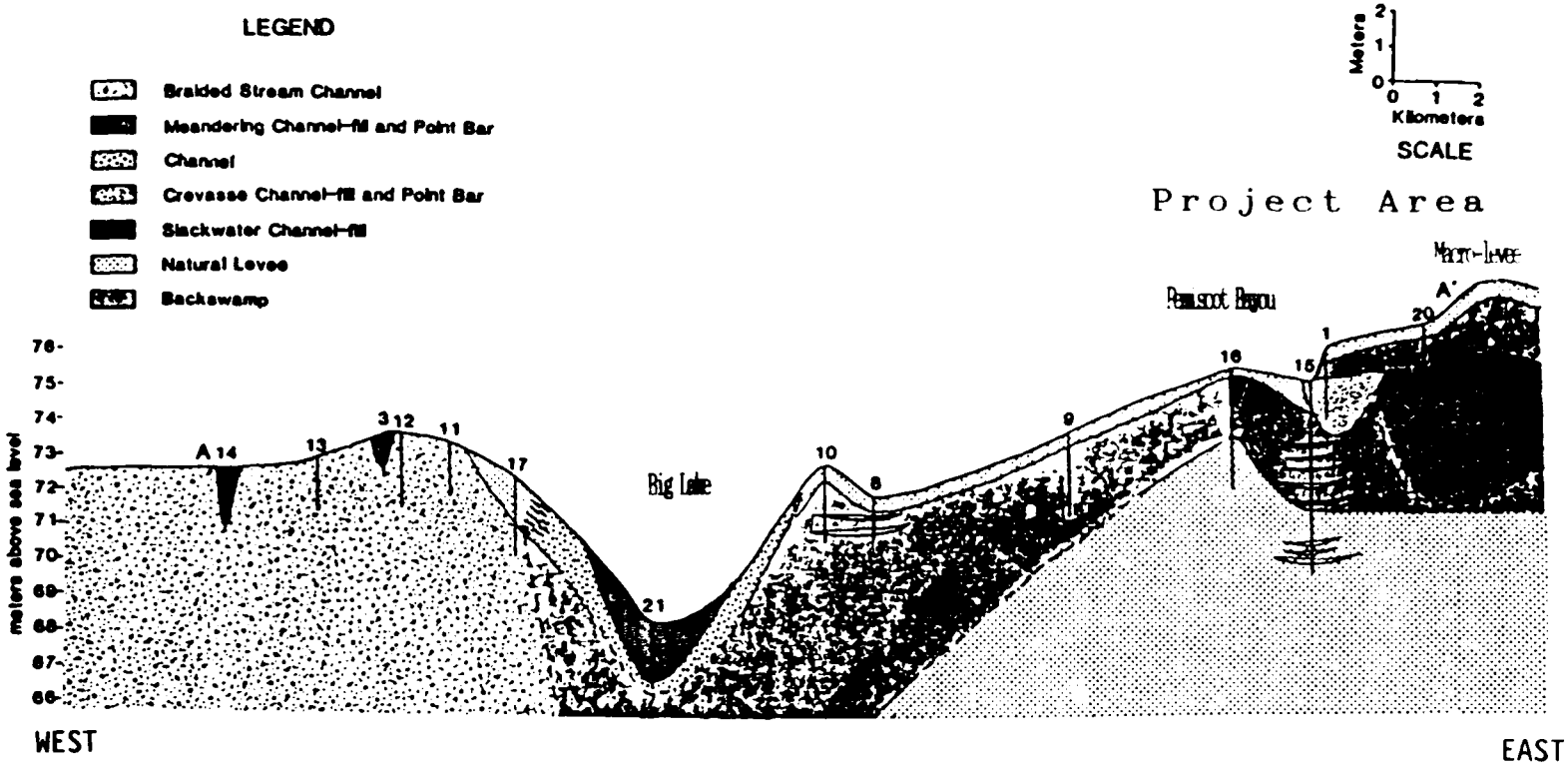


Figure 5 Cross Section of Project Area Geomorphology (After Guccione 1988:83)

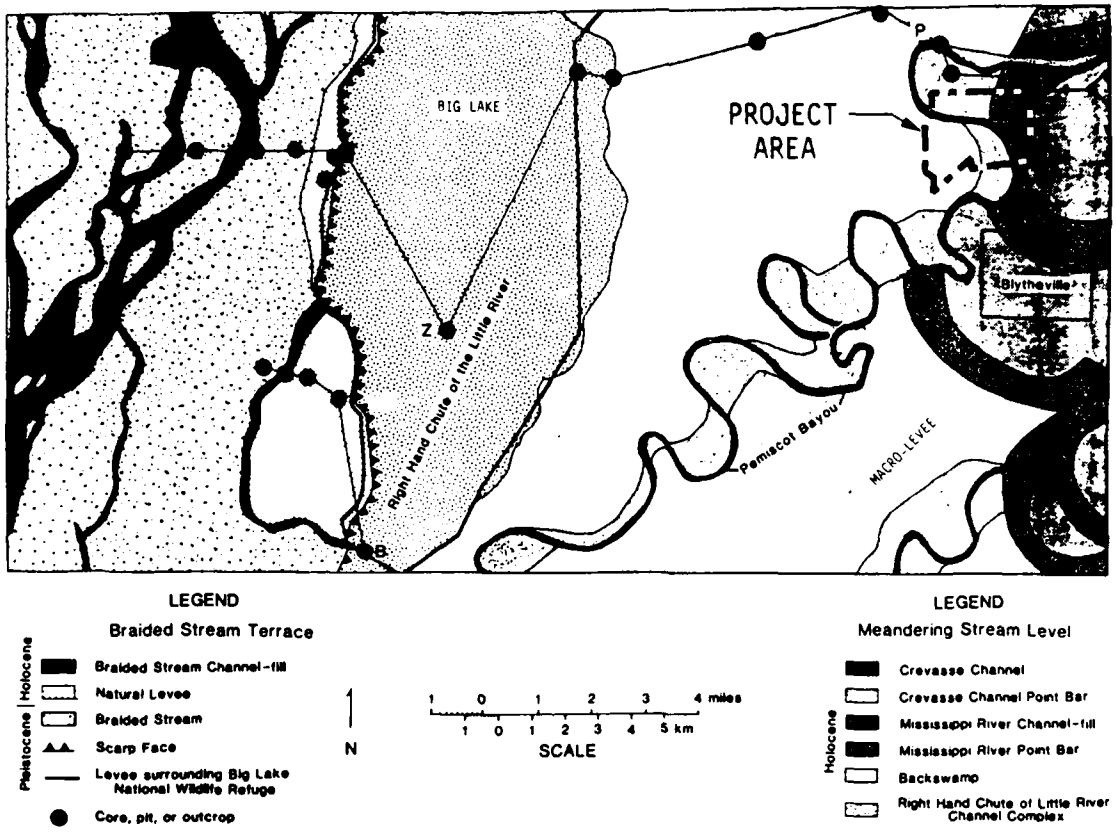


Figure 6 Major Landforms in the Project Area (After Guccione 1988:71)

Soils

Soils are the best indicators of past environments. This is due to two characteristics of riverine bottom land: (1) the manner of deposition effectively sorts different sized particles by elevation, and (2) relative elevation and the water table determine the kinds of biota which may inhabit a particular econiche. These relationships are well established by archeological, geological, and ecological research in the Lower Mississippi Valley (Lewis 1974; Beadles 1976; Harris 1980; Delcourt et al. 1980; King 1980).

Figure 7 presents a diagrammatic cross section of a riverine deposit. The river moves in the channel to the left. When it floods, the load capacity of the river is increased. When the river spills over its bank its velocity is immediately reduced. This lowers its load capacity and the largest particles it is carrying are deposited. Repeated flooding gradually will build up a natural levee composed of the largest particles available, sands and silts under the current gradient. This process may be fairly rapid. For example, there are documented instances of as much as 2 m of sand being deposited in one flood (Trubowitz 1984). As the levee builds up, a backswamp forms away from the river and smaller particles, clays, are deposited under more slowly flowing slackwater conditions. Under a meandering regime, the river channel will eventually be cut off, forming an oxbow lake. This will eventually fill with a clay plug. Many of these features are still directly observable on soil maps (Ferguson and Gray 1971) and in a few instances, on topographic maps. Table 3 presents the depositional environments of the soils found in Mississippi County as described by Ferguson and Gray (1971:5-22).

Six soils are associated with levee tops. These are the best drained soils in the project area. The levee soils in the western part of the county (predominantly Tunica) are not as well drained as those in the east. About 19.5% of the soils in the county are classified as levee top soils, and were the best soils for agriculture in the predrainage landscape (Table 3). Ten soils are found on the lower parts of the natural levees which formed an ecotone (Table 3). This environment was often seasonally flooded and as the levee built up, the particle sizes increased, resulting in silts overlying clays. These are more poorly drained than the levee soils but better drained than the swamp soils. These soils cover about 24.8% of the county. Five soils were formed in slackwater conditions found in swamps and oxbow lakes. These are clays that cover about 52% of the county. These soils were inundated and not tillable in the predrainage landscape. This contrasts with 2.4% of the county, classified in 1971 as water areas (Table 3). About 3.7% of the county is classified as non-soil areas. Alluvial lands consist of areas along the Mississippi River that are still undergoing alluviation. None of these are found in the project area. About 0.4 percent of the county consists of the Mississippi River Levee, which is the eastern watershed boundary. Borrow pits and lakes comprise the other non-soil areas.

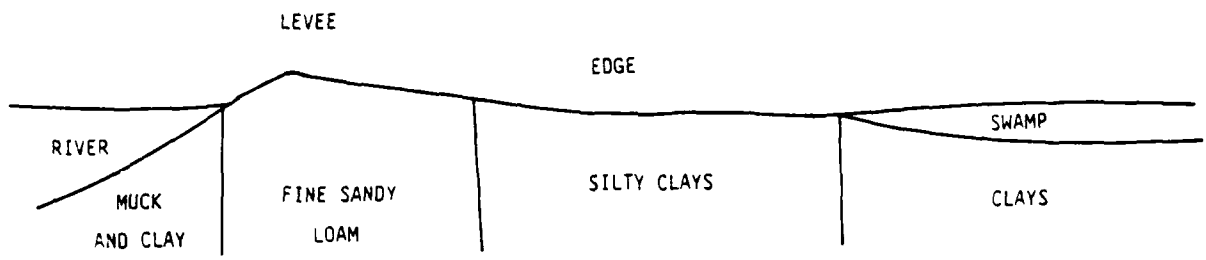


Figure 7 Generalized Depositional Environments of Different Soil Particle Sizes (After Lewis 1974)

Table 3

Mississippi County Soils and Origins

Code	Soil Type	Percent	Levee	Ecotone	Water
Aa	Alligator Clay	1.9			x
Ad	Alluvial Land	0.1			
An	Amagon Sandy Loam	2.1		x	
Bp	Borrow Pit	0.8			
Br	Bowdre Silt Clay Loam	3.7	x		
Bv	Bruno-Crevasse	0.9	x		
Cm	Commerce Silt Loam	0.7		x	
Cn	Convent Fine Sandy Loam	2.4		x	
Cr	Crevasse Loamy Sand	1.6	x		
Cw	Crowley Silt Loam	0.3		x	
Du	Dundee Silt Loam	6.6		x	
Ec	Earle Clay	0.9			x
Fr	Forestdale Silt Loam	0.2		x	
Fo	Forestdale Silty Clay Loam	0.8		x	
Ha	Hayti Fine Sandy Loam	1.9		x	
Ib	Iberia Clay	0.2			x
Je	Jeanerette Silt Loam	1.3	x		
Mo	Morganfield Fine Sandy loam	0.8	x		
Rd	Routon	8.5		x	
Sk,Sm	Sharkey Clays	40.4			x
St	Steele	8.6			x
Td	Tiptonville Silt Loam	1.3		x	
Tu	Tunica Silty Clay	11.2	x		
	Mississippi Levee	0.4			
	Water Areas	2.4	—	—	—
Totals (percent of Mississippi County)		100.0	19.5	24.8	52.0[1]
Total acres represented		596,480	116,313	147,927	310,169

Note: [1]Total percent does not include 3.7% of modern disturbances (Borrow pits, and Levee), recent deposits (Alluvial lands), and areas of standing water (after Ferguson and Gray 1971).

Project Area Soils

The following section presents a brief description of the soil types, soil series, complexes, and mapping units located within the project area. Important characteristics discussed include: depositional history, soil color and texture and drainage capabilities. The soils data are derived from the USDA Soil Survey of Mississippi County, Arkansas (Ferguson and Gray 1971:7-22). The distribution of specific soil types is shown in Figure 8.

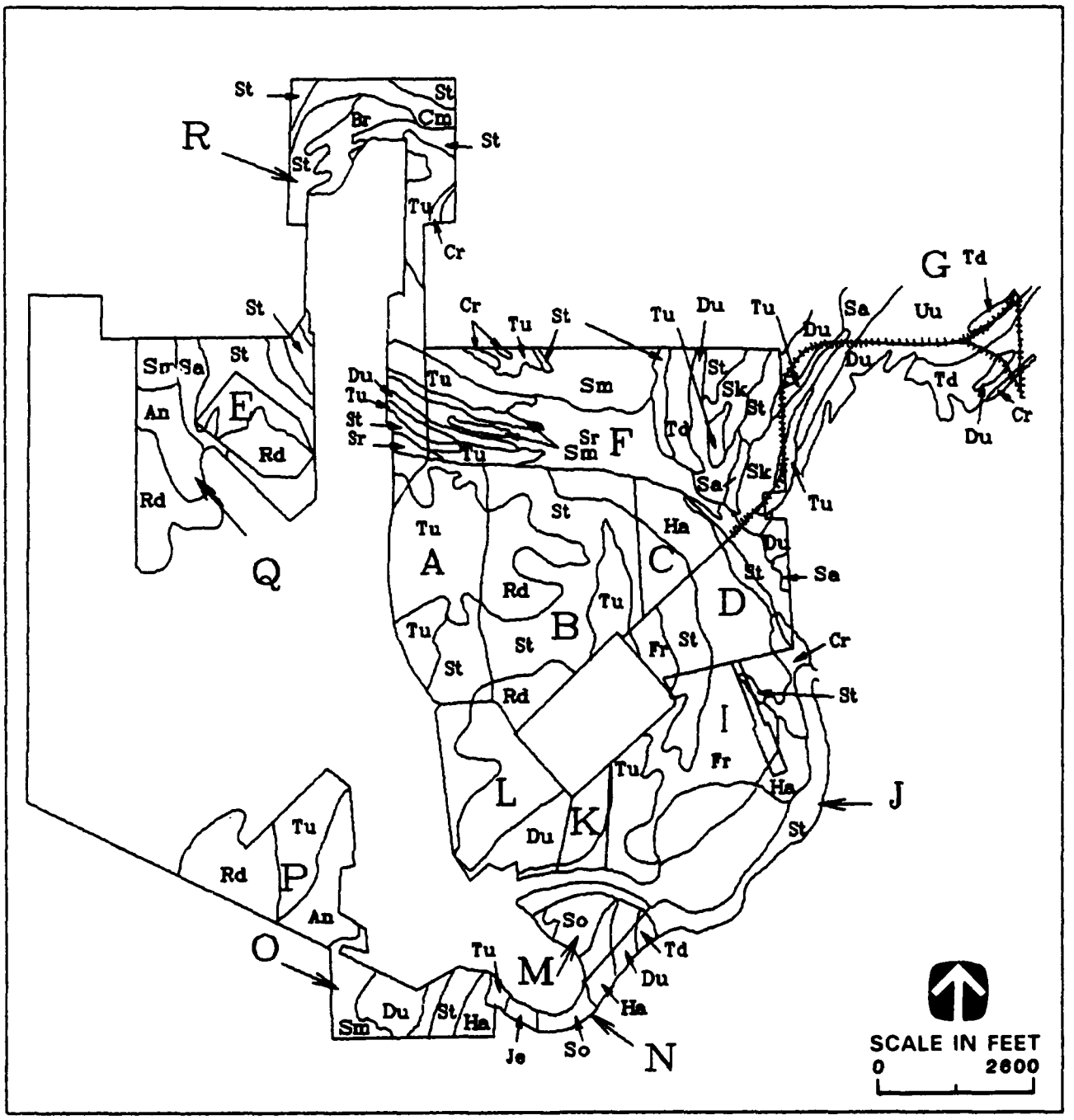
Bowdre Silty Clay Loam. Bowdre soils formed in clayey sediments deposited in slackwater. They are found on the higher elevations and are moderately well drained. Bowdre silty clay loam has a very dark brown silty clay loam surface 10 cm to 18 cm deep, over very dark grayish-brown silty clay mottled with yellowish brown.

Bruno Series. Bruno soils formed in coarse textured sediments on the higher parts of levees bordering stream channels. They consist of dark-brown loamy sand overlying dark yellowish-brown and brown loamy sand, sandy loam and sand. They are excessively drained.

Crevasse Loamy Sand. Crevasse soils formed in sandy alluvium on natural levees bordering stream channels. They are excessively drained. Crevasse loamy sand has a surface layer of dark grayish brown to pale brown 12 cm to 25 cm thick. It overlies brown and dark grayish-brown loamy sand and sand.

Dubbs Sandy Loam. Dubbs soils formed in loamy alluvium on the lower parts of natural levees bordering stream channels. They consist of pale-brown or brown sandy loam overlying dark grayish-brown, yellowish-brown, and dark yellowish-brown silt loam and sandy clay loam. They are well drained to moderately well drained.

Forestdale Series. Forestdale soils formed in stratified loamy and clayey alluvium on the lower parts of natural levees bordering stream channels. They consist of dark grayish-brown silt loams or silty clay loams that overlie dark-gray, gray or light brownish-gray silty clay or silty clay loam mottled with yellowish brown, dark brown or strong brown.



Note: Area I through Area R are discussed in Chapter 4. Soil type codes are discussed in Table 3 and in the accompanying text. Areas A through H are discussed by Lafferty and Cande (1989).

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Figure 8 Soils in the Project Area, Eaker AFB, Arkansas

Hayti Fine Sandy Loam. Hayti soils formed in loamy alluvium on the lower part of natural levees that border stream channels. They are poorly drained. Hayti fine sandy loam has a very dark grayish-brown fine sandy loam surface layer 12 cm to 25 cm thick. The subsoil is gray and grayish-brown silt loam or silty clay loam, loam, and sandy clay loam mottled with brown and red.

Routon Soils. Routon soils formed in loamy alluvium on the middle and lower parts of natural levees bordering stream channels. They consist of dark grayish-brown sandy loam overlying gray sandy loam and grayish-brown silt loam and silty clay loam mottled with yellowish brown, grayish brown, and yellowish red. They are poorly drained.

Sharkey Series. Sharkey soils developed in thick beds of clayey sediments on broad flats where they were deposited by slack water. They consist of very dark grayish-brown or dark grayish-brown silty clay or silty clay loam overlying dark gray clay mottled with dark brown and dark yellowish brown. Sharkey soils are poorly drained.

Steele Series. Steele soils formed in sandy, loamy and clayey sediments on broad flats. The subsoil is loamy sand overlying gray silt loam and dark gray clay mottled with yellowish brown. They are moderately well drained.

Steele Loamy Sand. This soil has a dark grayish-brown surface layer approximately 15 cm thick that overlies grayish-brown loamy sand or sand over gray silt loam and dark gray clay mottled with yellowish brown.

Steele Silty Clay Loam. This soil is a dark grayish-brown to brown silty clay that overlies grayish-brown loamy sand.

Tiptonville Series. Tiptonville soils formed in beds of loamy alluvium on the lower parts of natural levees. They consist of very dark grayish-brown or dark brown silt loam overlying dark brown and brown silt loam and loam. The lower portion of the subsoil is mottled with strong brown. Tiptonville soils are moderately well drained.

Tunica Silty Clay. Tunica soils formed in moderately thick beds of clayey material deposited by slackwater. They are on the higher elevations. Tunica silty clay consists of a very dark grayish-brown, dark-brown, or dark grayish-brown silty clay surface layer 12 cm to 23 cm thick. The subsoil is dark gray and gray clay or silty clay and silty clay loam.

The following groups of soils occur within the project area but are so intermingled that it was not practical to map them separately. Descriptions of the individual soil types have been presented above and only the relevant characteristics of each group is discussed below.

Forestdale-Routon Complex. This complex consists of approximately 50% Forestdale and 40% Routon soils. The remaining 10% is made up of Crevasse and Steele soils.

Routon-Dundee-Crevasse Complex. This complex is about 35% Routon soils, 30% Dundee soils and 25% Crevasse soils. Dubbs and Bruno soils make up the rest. Crevasse soils occur as nearly circular patches of sand known as sand blows. The sand blows formed as extrusions of sand blown from fissures caused by the New Madrid earthquake of 1811. Typically, they are 8 ft to 15 ft across and 3 in to 6 in high, although they can be as large as 100 ft wide and 600 ft long. Routon and Dundee soils occupy areas around the sand blows.

Sharkey-Crevasse Complex. Sharkey soils make up approximately 50% of this complex and Crevasse 30%. Steele and Tunica make up the rest. The crevasse soils occur as sand blows (see Routon-Dundee-Crevasse complex).

Sharkey and Steele Soils. Sharkey soils comprise about 70% and Steele soils 30% of this mapping unit. The Steele soils occur as sand blows (see Crevasse soils in Routon-Dundee-Crevasse complex above).

Tiptonville and Dubbs Silt Loams. In this unit Tiptonville soils generally make up about 50% of the area and Dubbs soils 40%, although they occur in irregular pattern and proportion. The remainder of the unit is made up of Dundee soils.

Soils And Biotic Communities

The relationship of biota to riverine features in the Lower Mississippi Valley is well known (Lewis 1974; Lafferty 1977; Butler 1978; Morse 1981). Because of the radical changes in the environment in the past century, all of these are reconstructions based on named witness trees in the GLO survey notes. These studies have consistently identified plant communities associated with particular soil types which are diagrammatically presented in Figure 7.

There are two plant communities associated with the levees, the Sweetgum-Elm Cane Ridge forest and the Cottonwood-Sycamore Natural Levee forest. These plant communities were the driest

environments in the natural landscape and had a high potential for human settlement. These two plant communities are in fact successional stages, with the Cottonwood-Sycamore forest being found along active river channel, while the Cane Ridge Forest is found on the levees of abandoned courses.

There are four aquatic biotic communities: river, lake, marsh and swamp. These low lying areas are unsuitable for human occupation. Several of these are involved in successional sequences; however, since about the Middle Woodland period all were present at any given time prior to drainage.

Between these two extremes are the river edge communities and the seasonal swamps. In drier times the latter contained areas suitable for occupation. The former is a line-like interface with a steep slope and little substantial flat area.

The correlation between soils and plant communities is not complete. Riverine deposits are building up, and what was at one time a swamp may in a few decades become a dry levee. This process brings about biotic successional changes. There is, however, a high correlation between soils and last successional stage plant communities.

Research using soils and plant communities to model prehistoric occupation in northeast Arkansas (Dekin et al. 1978; Morse 1981; Lafferty et al. 1984), in the adjacent portions of the Missouri Bootheel (Lewis 1974; Price and Price 1981), and in the lower Ohio Valley (Muller 1978; Lafferty 1977; Butler 1978) have all suggested that sites are preferentially located on levee soils and are not found in aquatic deposits.

Macrobiotic Communities

The three "macrobiotic" communities characteristic of the study area - levee, ecotone, and swamp, are composed of different species of plants and animals. Table 4 presents an arboreal species composition reconstructed in Mississippi County, Missouri (Lewis 1974:19-28).

Levee

The Levee macrobiotic community includes two plant communities: (1) the Cottonwood-Sycamore community found along the active river channel and (2) the Sweetgum-Elm Cane Ridge forest on abandoned water courses. The arboreal species found in the Sweetgum-Elm community include all of the species found along the natural levee; however, their mix is considerably different. These two communities are in the highest topographic position in the county and these areas also supported a

Table 4

Arboreal Species Composition of Three Biotic Communities in Mississippi County, Missouri

Species	Levee	Edge	Swamp
American Elm (*Ulmus* sp.)	23	19	
Ash (*Fraxinus* sp.)	11	14	2
Bald Cypress (*Taxodium distichum*)		7	50
Black Gum (*Nyssa sylvatica*	T	1	
Blackhaw (*Viburnum* sp.)	T		
Black Walnut (*Juglans nigra*)	2		
Box Elder (*Acer negundo*)	2		
Cherry (*Prunus* sp.)	T		
Cottonwood (*Populus* sp.)	1	3	
Dogwood (*Cornus* sp.)	1		
Hackberry (*Celtus occidentalis*)	12	9	
Hickory, (*Carya* sp.)	5	4	
Shellbark (*Carya laciniosa*)	T		
Hornbeam (*Ostrya virginiana*)	2		
Kentucky Coffee Tree(*Gymnocladus dioica*)	T		
Locust, ?	T		
Black (*Robinia pseudoacacia*)	T		
Honey (Gleditsia triancanthos)	T	1	14
Maple, (*Acer* sp.)	3	8	
Sugar (*Acer saccharum*)	1		
Oak, Black (*Quercus velutina*)	5	2	
Burr (*Quercus macrocarpa*)	1	3	2
Overcup (*Quercus lyrata*)	1		
Post (*Quercus stellata*)	T		
Red (*Quercus rubra*)	1	1	
Spanish (*Quercus falcata*)	1		
Swamp (*Quercus bicolor*)	T	1	
White (*Quercus alba*)	1	1	
Pecan (*Carya illinoensis*)	1	1	
Persimmon (*Diospyros virginiana*)	T	2	2
Plum (*Prunus* sp.)	T		
Red Haw (*Crataegus* sp.)	T	1	11
Red Mulberry (*Morus rubra*)	T		
Sassafras (*Sassafras albidum*)	T		
Sweetgum (*Liquidamber styraciflua*)	20	18	
Sycamore (*Platanus occidentalis*)	1		
Willow (*Silix* sp.)	1	2	18

Notes: T = Trace (i.e. <1%)

Data based on Lewis (1974:18-28).

dense understory of plants including cane (*Arundinaria gigantea*), spice bush (*Lindera benzoin*), pawpaw (*Asimina triloba*), trumpet creeper (*Campsis radicans*), red bud (*Cercis canadensis*), greenbrier (*Smilax* sp.), poison ivy (*Rhus radicans*) and a number of less frequent herbaceous plants. The most common of these was cane, which often formed nearly impenetrable canebrakes. Canebrakes provided cover for many of the larger species of land animals and were an important source of weaving and construction material.

The major mammals included in this biotic community (Lewis 1974) included white-tailed deer (*Odocoileus virginianus*), cougar (*Felis concolor*), black bear (*Ursus americanus*), elk (*Cervis canadensis*), skunk (*Mephitis mephitis*), opossum (*Didelphus marsupialis*), raccoon (*Procyon lotor*), eastern cottontail rabbit (*Sylvilagus floridanus*), gray fox (*Urocyon cinereoargenteus*), and gray squirrel (*Sciurus carolinensis*). Important avian species included the wild turkey (*Meleagris gallopavo*), the prairie chicken (*Tympanuchus cupido*), ruffed grouse (*Bonasa umbellus*), passenger pigeon (*Ectopistis migratorius*) and carolina paroquet (*Conuropsis carolinensis*).

Prior to artificial levee construction the natural levees were the best farmland in this environment. This is due to their location at the highest elevations from which the spring floods rapidly receded and drained. This environment provided for a large number of useful species of plants and animals, making it an attractive place for settlement at virtually all times (except during major floods) since they were laid down.

Levee/Swamp Ecotone

This modeled macrobiotic community is what Lewis (1974:24-25) has called the Sweetgum-Elm-Cypress seasonal swamp. This ecotone (Figure 9) had fewer species present at any one time and a noticeably clear understory. The arboreal species composition (Table 4) includes more water-tolerant species (Cypress, Willow, and Red Haw) and at times had aquatic animal species. These areas were flooded regularly every year for several weeks to several months, and the soils retained the moisture longer than levee soils. These locations were clearly much less desirable for occupation than were the levees but were easy to traverse in dry periods.

Diverse fauna, drawn from the adjacent swamps and levees, occupied the area at different seasons. In addition, the giant swamp rabbit (*Sylvilagus aquaticus*) and crayfish preferred this ecotone as a habitat. It is probable that many aquatic species, such as fish, were stranded and were scavenged by

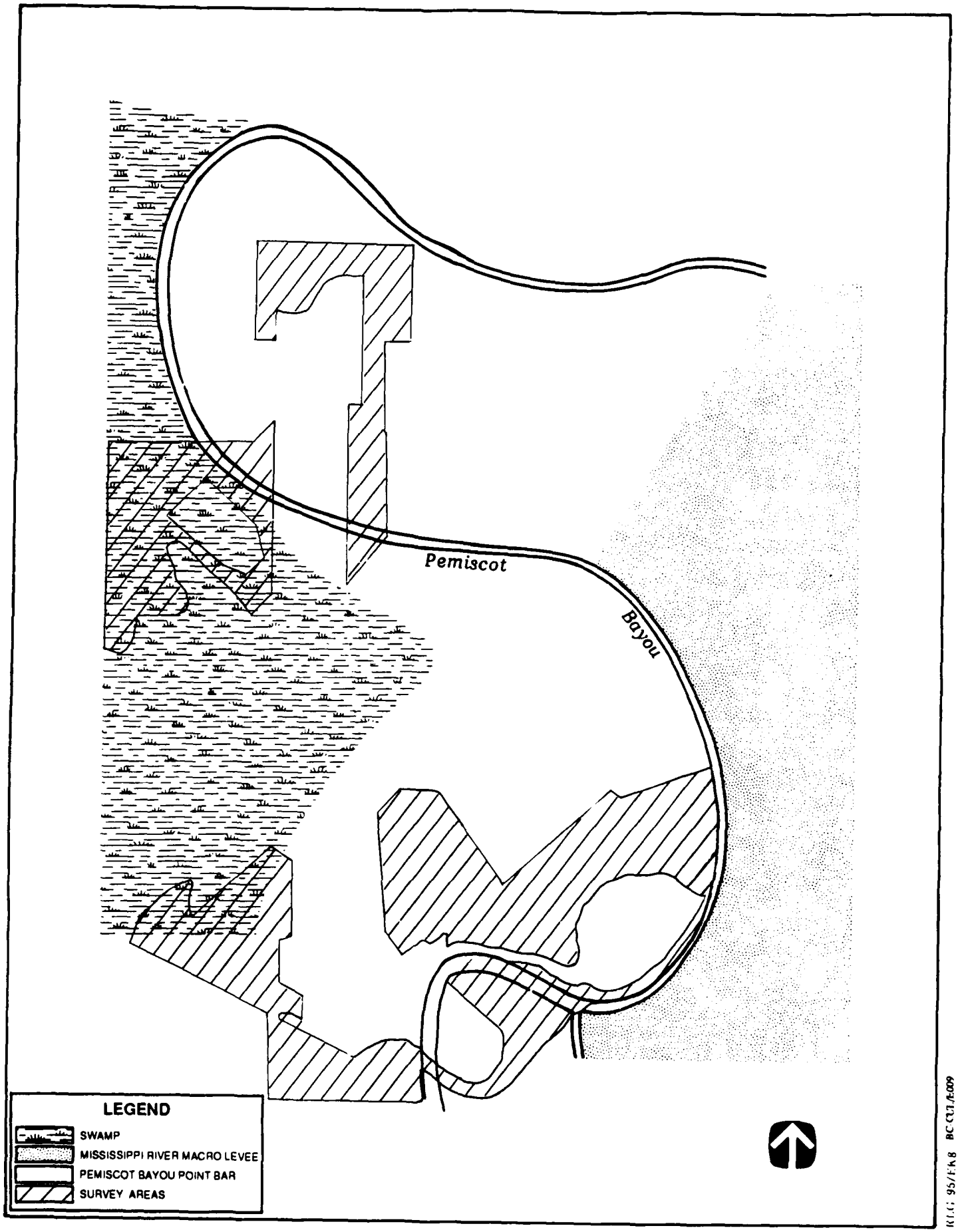

Figure 9 Reconstructed Macrobiotic Plant Communities in the Project Area

the omnivores of the forest when this environment changed from a wetland to a dry open swampscape. Characteristically, the soils are poorly drained due to the presence of clays in the upper horizons. Normally aquatic trees, especially cypress, would have been exploitable in this environment with land-based technology.

Swamp

Included in this modeled stratum are the different environments that were under water prior to drainage, as defined by the soils deposited in slackwater conditions. These soils occur at the lowest elevation in the project area. Before drainage the following ecozones were included under this rubric: river channels, lakes, marsh and Cypress deep swamp. These ecozones are successional stages in this environment, but all are aquatic. The Cypress deep swamp (Table 4) is only one of the three having arboreal species.

Several important herbaceous species were found in these aquatic environments. These included cattails (*Typa latifolia*), various grape vines (*Vitis* sp.), button bush (*Cephalanthus occidentalis*), and hibiscus (*Hibiscus* sp.). The latter were an important source of salt (Morse and Morse 1980).

The fauna of the aquatic environments were quite different from the terrestrial species, which mostly penetrated only the edge of the swamp. Beaver, mink, and otter were important swamp mammals. Of special interest were fish and waterfowl, which were in large quantities in this great riverine flyway. A means of water transportation is necessary to exploit these resources. Dugout canoes have been dated to at least 1,000 B.C. and it is likely that they occurred a great deal earlier.

In summary, this has been a rich environment for a long period of time. The project area contained, at different times, all of the major environments found in the Lower Mississippi Valley. During much of late prehistoric times it was on a major interface between a very large backwater swamp to the west and the well drained Mississippi River levees. Cutting through these large scale formations is Pemiscot Bayou, whose fluviality has created smaller scale levees and swamps.

CHAPTER 3

PROJECT AREA PREHISTORY AND HISTORY

by Robert F. Cande and Robert H. Lafferty III

In order to assess the significance of archeological and historic properties it is necessary that they be able to contribute to our knowledge of prehistory or be associated with historically important personages, events, or architecture. In order to assess which sites have these qualities and to critique our evaluations we present below a brief sketch of what is known of the prehistory of the region as well as a brief history of the region.

Archeological Background

Archeological research has been carried out in northeast Arkansas and southeast Missouri for nearly a century (Table 5). As with much of the Mississippi Valley, the earliest work was done by the Smithsonian Mound Exploration Project (Thomas 1894), which recorded the first sites in the region. Most of these were the large mound groups. Since that time a great deal of work has been done in the Central Mississippi Valley area (cf. Willey and Phillips 1958 for definitions of technical terms) which has resulted in several extensive syntheses of the region's prehistory (Morse and Morse 1983; Chapman 1975, 1980). In this section we summarize the archeological research that has taken place, what is known of the prehistory of the region, and the limits of these data as they apply to the project area.

The earliest professional archeological work in the region was the work carried out by the mound exploration project of the Smithsonian Institution (Table 5). Thomas (1894) and his associates excavated at three sites near the project area: Pecan Point, a Nodena phase site, Sherman mounds and the Jackson mounds. These Mississippi period sites were located outside of the project area. The work, principally excavation in large mound sites, identified the American Indians as the authors of the great earthworks of the eastern United States.

Most of the early work was concerned with the collection of specimens for museums (e.g., Potter 1880; Moore 1910; Fowke 1910). Some of these data were used to define the great ceramic traditions, including the Mississippian tradition, in the eastern United States (Holmes 1903). Many of these original conceptualizations remain the basis up on which our current chronologies are structured (e.g. Ford and Willey 1941; Griffin 1952; Chapman 1952, 1980).

Table 5

Previous Archeological Investigations in Northeast Arkansas and Southeast Missouri

Investigator	Location and Contribution
Potter 1880	Archeological investigations in southeast Missouri.
Evers 1880	Study of pottery of southeast Missouri.
Thomas 1894	Mound exploration in many of the large mound sites in southeast Missouri and northeast Arkansas.
Fowke 1910	Mound excavation in the Morehouse Lowlands.
Moore 1910, 1911	Excavation of large sites along the 1916 Mississippi, St. Francis, White, and Black Rivers.
Adams and Walker 1942	Survey of New Madrid County.
Walker and Adams 1946	Excavation of houses and palisade at the Mathews site.
Phillips, Ford, and Griffin 1951; Phillips 1970	Mapped and sampled selected sites in southeast Missouri, and northeast Arkansas, Lower Mississippi Valley Survey (LMVS), proposed ceramic chronology.
S. Williams 1954	Survey and excavation at several major sites in southeast Missouri, original definition of several Woodland and Mississippi phases.
Chapman and Anderson 1955	Excavation at the Campbell site, a large Late Mississippian Village in southeast Missouri.
Moselage 1962	Excavation at the Lawhorn site, a large Middle Mississippian Village in northeast Arkansas.
J. Williams 1964	Synthesis of fortified Indian villages in southeast Missouri.
Marshall 1965	Survey along I-55 route, located and tested many sites north of the project area.
Morse 1968	Initial testing of Zebree and Buckeye Landing Sites.
J. Williams 1968	Salvage of sites in connection with land leveling, Little River Lowlands.
Redfield 1971	Dalton survey in Arkansas and Missouri Morehouse Lowlands.
Schiffer & House 1975	Cache River survey.
Price et al. 1975	Little Black River survey.
Morse and Morse 1976	Preliminary report on Zebree excavations.
Chapman et al. 1977	Investigations at Lilbourn, Sikeston Ridge.

Table 5, Page 2 of 3

Investigator	Location and Contribution
Harris 1977	Survey along Ditch 19, Dunklin County, Missouri.
Klinger and Mathis 1978	St. Francis II cultural resource survey in Craighead and Poinsett Counties, Arkansas.
LeeDecker 1978	Cultural resources survey, Wappallo to Crowley's Ridge.
Padgett 1978	Initial cultural resource survey of the Arkansas Power and Light Company transmission line from Keo to Dell, Arkansas.
I. R. I. 1978	Cultural resources survey and testing, Castor River enlargement project.
Dekin et al. 1978	Cultural resources overview and predictive model, St. Francis Basin.
LeeDecker 1979	Cultural resources survey, Ditch 29, Dunklin County, Missouri.
Morse 1979	Cultural resource survey inside Big Lake National Wildlife Refuge.
LeeDecker 1980a	Cultural resource survey, Ditch 81 control structure repairs.
LeeDecker 1980b	Cultural resources survey, Upper Buffalo Creek Ditch, Dunklin County, Missouri, and Mississippi County, Arkansas.
Morse and Morse 1980	Final report to COE on Zebree project.
J.Price 1980	Archeological investigations at 23DU244, limited activity Barnes site,Dunklin County, Missouri.
Price and Price 1980	A predictive model of archeological site frequency, transmission line, Dunklin County, Missouri.
Lafferty 1981	Cultural resource survey of route changes in AP&L Keo-Dell transmission line.
Klinger 1982	Mitigation of Mangrum site.
Santeford 1982	Testing of 3CG713.
Bennett and Higginbotham 1983	Mitigation at 23DU227, Late Archaic through Mississippi period site.
Keller 1983	Cultural resources survey and literature review of Belle Fountain Ditch and tributaries.
Price and Price 1984	Testing Shell Lake Site, Lake Wappapello.
Chapman 1975, 1980	Synthesis of Archeology of Missouri.
Morse and Morse 1983	Synthesis of Central Mississippi Valley prehistory.

Table 5, Page 3 of 3

Investigator	Location and Contribution
Lafferty *et.al.* 1984, 1985	Cultural resource survey, testing and predictive model, Tyronza Watershed, Mississippi County, Arkansas.
Lafferty *et.al.* 1987	Cultural resources survey and testing, pollen cores and geomorphic reconstruction, Ditch 29, Mississippi County, Arkansas.
Lafferty and Cande 1989a	Cultural Resources Investigations, Peacekeeper Rail Garrison, EAFB, Mississippi County, Arkansas.
Lafferty and Cande 1989b	Cultural Resources Survey, Evaluation and Archeological Monitoring of AT&T's Lightguide Cable, Mississippi and Craighead Counties, Arkansas.
Cande *et.al.* 1990	Cultural resources survey and testing, Steele, New Franklin and Main Ditches, Pemiscott County, Missouri.
Lafferty and Sierzchula 1990	Controlled Surface Collection, 23SO496, Stoddard County, Missouri.

There was a hiatus in the archeological work in the region until the 1940s, when Adams and Walker began the first modern archeological work for the University of Missouri (Adams and Walker 1942; Walker and Adams 1946). Beginning in 1939 the Lower Mississippi Valley Survey (LMVS) conducted a number of test excavations at many of the large sites in the region (Phillips, Ford, and Griffin 1951; S. Williams 1954). This work has continued to the present in different parts of the valley (e.g., Phillips 1970; S. Williams 1984). The LMVS has resulted in the description of numerous ceramic types in the Lower Mississippi Valley area and produced the first phase definitions for many of the archeological manifestations known in the latter part of the archeological record, particularly the Barnes, Baytown, and Mississippian traditions of the north (S. Williams 1954).

Beginning in the 1960s the tempo and scope of archeological work increased in the region. Numerous survey and testing projects were carried out with respect to proposed federally funded projects (Marshall 1965; Williams 1968; Hopgood 1969; Krakker 1977; Gilmore 1979; IRI 1978; Dekin *et al.* 1978; Lafferty 1981; Morse and Morse 1976, 1980; Morse 1979; Klinger and Mathis 1978; Klinger 1982; Padgett 1978; C. Price 1976, 1979,, 1980; J. Price 1976a, 1976b, 1978; Greer 1978; LeeDecker 1979; Price, Morrow and Price 1978; Price and Price 1980; Santeford 1982; Sjoberg 1976; McNeil 1982, 1984; Klinger *et al.* 1981). Generally referred to as Cultural Resources Management studies, these projects have greatly expanded the number of known sites from all periods of time. An extensive body of data on the variation present on a range of different sites has accumulated.

Along with these small-scale archeological projects there was a continuation of the large-scale excavation projects carried out in the region. Major excavations at the Campbell site (Chapman and Anderson 1955), Lawhorn (Moselage 1962), Snodgrass site (Price 1973; Price and Griffin 1979), Lilbourn (Chapman *et al.* 1977; Cottier 1977a, 1977b; Cottier and Southard 1977), and Zebree (Morse and Morse 1976, 1980) have greatly expanded our understanding of the Mississippian cultures. This understanding has resulted in the definition of the temporal/spatial borders between different Woodland and Mississippian manifestations and has resulted in definitions of assemblages. Several major syntheses have resulted (Chapman 1975, 1980; Morse 1982a, 1982b; Morse and Morse 1983) which provide up-to-date summaries and interpretations of the work that has been carried out in the region.

The Zebree archeological project was one of the largest excavation projects conducted in Arkansas. Over a period of 8 years large parts of this site were excavated. The excavations resulted in (among other things) the definition of the Big Lake phase and produced much data on the Barnes culture (see below for more discussion of these archeological manifestations).

In 1983 New World Research, Inc., conducted a cultural resources survey and literature review of the Belle Fountain Ditch in southeast Missouri and northeast Arkansas located just north of EAFB. Part of this project involved survey of transects parallel to and between the project area surveyed later by MCRA (Lafferty and Sierzchula 1987) and the ditch (Keller 1983). Keller found no archeological sites in this segment of Belle Fountain Ditch, which he attributed to the older surface being buried by more recent backwater swamp clays. These results were duplicated in the MCRA project (Sierzchula and Lafferty 1987).

Between 1986 and 1989 the University of Washington made controlled surface collection and conducted limited testing at several sites in Dunklin County. Results and analyses of several assemblages have recently been published in Teltser's (1989) dissertation. Thermoluminescence dating suggests that the Vacant Quarter Hypothesis may be vacuous. This hypothesis postulates the abandonment of southeast Missouri in the 15th Century due to soil depletion.

In 1987 MCRA completed a survey and testing project on Ditch 29 located just north of EAFB on the Missouri and Arkansas Border (Lafferty *et al.* 1987). That work included the analysis of a deep pollen core from Pemiscot Bayou and a geomorphic reconstruction which happened to include the present project area (Guccione, Lafferty and Cummings 1988:71), which is discussed in Chapter 2.

In 1988 and 1989 MCRA conducted a cultural resources survey, evaluation and archeological monitoring for the American Telephone and Telegraph's Lightguide cable from Blytheville to Bay, Arkansas. This bordered the southern boundary of EAFB and four sites were discovered along Pemiscot Bayou, south of the base (Lafferty and Cande 1989b).

Also in 1988 and 1989 MCRA conducted survey and testing on and adjacent to EAFB in connection with the proposed Peacekeeper Rail Garrison program. Four new sites were discovered on the base and four were discovered off base. Site 3MS105, a 75 acre multicomponent prehistoric site was tested and determined to be significant in terms of the NRHP's criteria. Artifacts from this site and 3MS106 across the bayou were documented by photography (Lafferty and Cande 1989a).

In 1989 and 1990 archeological survey and testing was conducted along Steele Bypass, New Franklin and Main Ditches in Pemiscott county, 5 miles north of EAFB. Five archeological sites were discovered, tested and found to be not significant (Cande *et al.* 1990).

In 1989 MCRA conducted data recovery by controlled surface collection on site 23SO496 which was to be adversely affected by the Castor River enlargement project. This collection documented the nature of a Crowley's Ridge Gravel exploitation assemblage (Lafferty and Sierzchula 1990).

Regional Prehistory

The studies described above and the work in adjacent regions have resulted in definition of the broad pattern of cultural history and prehistory in the region, however, knowledge of the region is still sketchy, with few Archaic and Woodland period sites having been excavated. This status has seriously constrained our understanding of settlement systems. Therefore, while this region may be fairly well known with respect to the Mississippi period, much more work needs to be done before the basic contents and definitions of many archeological units in space and time are adequate (cf. Morse 1982a). Presently we have a few key diagnostic types associated with some cultural units; however, the range of artifact assemblage variation across chronological and spatial boundaries is not yet defined, nor are the ranges of site types known for any of the defined units. The adequate definition and resolution of these fundamental questions and problems are necessary before we can begin to reconstruct and use the data for understanding more abstract cultural processes, as is possible in better known archeological areas such as the American Southwest.

The Paleo-Indian Period

The Paleo-Indian period (10,000-8,500 B.C.) is known in the region from scattered projectile point finds over most of the area. These include nine Clovis and Clovis-like points from the Bootheel of Missouri (Chapman 1975:93). No intact sites have yet been identified from this period, and the basal deposits of the major bluff shelters thus far excavated in the nearby Ozark Mountains have contained Dalton period assemblages. Lanceolate points are known from bluff shelters and high terraces (Sabo et al. 1982:54), which may represent different kinds of activities or extractive sites, as they have been shown to have been in other parts of the country. For the present any Paleo-Indian site in the region is probably significant.

The Dalton Period

The Dalton period (8,500-7,500 B.C.) is fairly well known in the Lower Mississippi Valley which has produced some of the better known Dalton components and sites in the central continent. These include the Sloan site (Morse 1973) and the Brand site (Goodyear 1974). These and other more limited or specialized excavations and analyses have resulted in the identification of a number of important

Dalton tools (i.e., Dalton points with a number of resharpening stages, a distinctive adze, spokeshaves, and several varieties of unifacial scrapers, stone abraders, bone awls and needles, mortars, grinding stones and pestles). At least three different site types have been excavated: the bluff shelters, which were seasonal habitation sites, a butchering station (the Brand site) and a cemetery (Sloan site). Presently we do not have the other part(s) of the seasonal pattern which should be present in the region, nor have any other specialized activity sites been excavated. Dalton sites are known in a number of locations, especially on the edge of the relict braided surface, on Crowley's Ridge, and the edge of the Ozark Escarpment. Given the present resource base, a number of important questions have been posed concerning the early widespread adaptation to this environment (Price and Krakker 1975; Morse 1982a, 1976). Adjacent areas of the Ozarks have had modern controlled excavations from Rogers, Albertson, Tom's Brook, and Breckenridge shelters (McMillan 1971; Kay 1980; Dickson 1982; Logan 1952; Bartlett 1963, 1964; Wood 1963; Thomas 1969).

The Early to Middle Archaic Periods

The Early to Middle Archaic periods (7,500 - 3,000 B.C.) are best known from bluff shelter excavations in the Ozarks (Rogers, Jakie's, Calf Creek, Albertson, Breckenridge and Tom's Brook shelters). During this long period a large number of different projectile point types were produced (i.e., Rice Lobed, Big Sandy, White River Archaic, Hidden Valley Stemmed, Hardin Barbed, Searcy, Rice Lanceolate, Jakie Stemmed, and Johnson). No controlled excavations have been done at any Early or Middle Archaic site in southeast Missouri or northeast Arkansas (Chapman 1975:152). There are no radiocarbon dates for any of the Archaic period from southeast Missouri (Dekin *et al.* 1978:78-79; Chapman 1980:234-238). The Middle Archaic archeological components are rare to absent in the Central Mississippi Valley leading the Morses to propose that the region was abandoned during this dry period (Morse and Morse 1983). Therefore, much of what we know of the archeological manifestations of this period is based upon work in other regions that has been extrapolated to the Mississippi Valley based up on surface finds of similar artifacts. At present, phases have not been defined.

The Late Archaic Period

The Late Archaic period (3,000 B.C. - ca.500 B.C.) appears to be a continuing adaptation to the wetter conditions following the dry Hypsithermal. This corresponds to the sub-Boreal climatic episode (Sabo *et al.* 1982). The lithic technologies appear to run without interruption through these periods, with ceramics added about the beginning of the present era. Major excavations of these components

have taken place at Poverty Point and Jaketown in Louisiana and Mississippi (Ford, Phillips and Haag 1955; Webb 1968). A fairly large number of Late Archaic sites are known in eastern Arkansas and Missouri (Chapman 1975:177-179,224; Morse and Morse 1983:114-135). Major point types include Big Creek, Delhi, Pandale, Gary and Uvalde points. Other tools include triangular bifaces, manos, grinding basins, grooved axes, atlatl parts and a variety of tools carried over from the earlier periods such as scrapers, perforators, drills, knives, and spokeshaves. Excavations at the Phillips Spring site have documented the presence of tropical cultigens (squash and gourd) by about 2,200 B.C. (Kay *et al.* 1980). The assemblages recovered in the bluff shelters from this time period indicate that there was a change in the use from general occupation to specialized hunting/butchering stations (Sabo *et al.* 1982:63). There are some indications of increasing sedentism in this period; however, the range of site types have not been defined. Late Archaic artifacts are well known from the region, with artifacts usually present on any large multicomponent site. Our understanding of this period is limited to excavations from a few sites (Morse and Morse 1983; Lafferty 1981). At present we do not know the spatial limits of any phases (which have not been defined), nor do we have any control over variation in site types and assemblages.

Early Woodland Period

Early Woodland period (500 B.C.(?) - 150 B.C.). During this period there appears to have been a continuation of the lithic traditions from the previous period with an addition of pottery. As with the previous period, the Early Woodland is poorly represented, with no radiocarbon dates for the early or beginning portions of the sequence. The beginning of the period is not firmly established and the termination is based on the appearance of Middle Woodland ceramics dated at the Burkett site (Williams 1974:21). The original definition of the Tchula period was made by Phillips, Ford, and Griffin (1951:431-436). In the intervening time a fair amount of work has been done on Woodland sites. Chapman concludes that we are not yet able to separate the Early Woodland assemblages from the components preceding and following. At present there is considerable question if there is an Early Woodland period in southeast Missouri (Chapman 1980:16-18). Recent work in northeast Arkansas, however, has identified ceramics which appear to be stylistically from this time period (Morse and Morse 1983; Lafferty et al. 1985 a). J. Price (personal communication) has identified a similar series of artifacts in the southeast Missouri Bootheel. Artifacts include biconical "Poverty Point objects," cordmarked pottery with noded rims similar to Crab Orchard pottery in southern Illinois and the Alexander series pottery in the Lower Tennessee Valley, and Hickory Ridge points. MCRA has recently tested several sites (3MS21, 3MS119, 3MS199 and 3MS471) near the current survey area that contain Early Woodland components.

Middle and Late Woodland Periods

Middle and Late Woodland periods (150 B.C.- A.D. 850) were a period of change. Participation in the "Hopewell Interaction Sphere" (dentate and zone-stamped pottery, exotic shell; Ford 1963) and increase in horticulture (corn, hoe chips, and farmsteads) become evident. Mound construction, notably the Helena mounds at the south end of Crowley's Ridge (Ford 1963) indicates greater social complexity. Typical artifacts include Snyder, Steuben, Dickson, and Waubesa projectile points, and an increasing number of pottery types (cf. Rolingson 1984; Phillips 1970; Morse and Morse 1983). In the Late Woodland period there is an apparent population explosion as evidenced by a great number of sites with plain grog-tempered pottery in the east and Barnes sand-tempered pottery in the west of the Central Valley (Morse and Morse 1983: 180; Chapman 1980). There is some evidence of architecture (cf. Morse and Morse 1983; Spears 1978) in this period as well as mound center construction (Rolingson 1984). A number of large open sites have not been excavated. There appears, therefore, to be a rather large bias in what we know about this important period toward the spectacular mound centers. A great deal is not understood about the cultural sequence and changes that occurred during this important period. The Late Woodland period in this area has been suggested as the underlying precursor to the Mississippi period, identified by the introduction (invention ?; cf. Price and Price 1981) of shell-tempered pottery and the bow and arrow around A. D. 850.

The Mississippi Period

The Mississippi period (A.D. 850-1673) is known from the earliest investigations in the region (Thomas 1894; Holmes 1903; Moore 1916), and has been the most intensively investigated portion of the prehistoric record in northeast Arkansas and southeast Missouri (Chapman 1980; Morse and Morse 1983; Morse 1982 b; Morse 1981; House 1982). Enough work has been done to define the spatial limits of phases (cf.Chapman 1980; Morse and Morse 1983; Morse 1981). During this period the native societies reached their height of development with fortified towns, organized warfare, more highly developed social organization, corn, bean, and squash agriculture, and extensive trade networks. The bow and arrow is common and there is a highly developed ceramic technology (cf. Lafferty 1977; Morse and Morse 1980; Smith 1978). This effervescence was abruptly terminated by the De Soto entrada in the mid-16th century (Hudson 1984, 1985; Morse and Morse 1983) which probably passed through the project area.

Protohistoric Period

The De Soto entrada resulted in the first recorded descriptions of Mississippi County, Arkansas, and the Mississippian Climax (Varner and Varner 1951; Hernandez de Biedma 1851; Elvas 1851; Ranjel 1922). My interpretation of places follows Morse (1981) and Hudson's (1985) interpretations. In the summer of 1541 De Soto was allied with the Casquians in a military expedition against the province of Pacaha. According to Morse:

> The large swamp up the Tyronza [between Tyronza Junction and Victoria in the southwest corner of the county] is a suitable candidate for the boundary between Casqui and Pacaha. Pecan Point, a Nodena phase village near the Mississippi River [southeast of Wilson], could probably be the location of the capital of Pacaha. It was an impressive site producing numerous fine pottery specimens, and is located an appropriate distance from Parkin. An expedition left Pacaha for an area "40 leagues distance" to get salt and yellow metal (Varner and Varner 1951:449). The only area where both salt and copper occur together in large amounts is in southeast Missouri, within easy reach of the Nodena phase [which occupied most of Mississippi County east of Big Lake]. Mountains also occur here as observed by the Spanish (Morse 1981:68).

As the Spanish crossed the swamp of the Tyronza Sunk Lands Mississippi County passed from prehistory into the annals of history. The expedition pushed north from Parkin covering about 15 km per day. After three days of march the Spaniards:

> ... came to a swamp that was very difficult to cross; for there were great morasses at its entrances and exits, and, in its center, water which though clean was so deep that for a distance of twenty feet it had to be swum. This swamp formed the boundary between the two enemy provinces of Casqui and Capaha. The men crossed it on some very unstable wooden bridges discovered there, and the horses swam, but with great difficulty because of the pools of stagnant water lying near the banks on both sides. The whole of the fourth day was occupied in making this crossing, and then both the Indians and Spaniards camped in some beautiful and very peaceful pasture lands a half-league distant [near Joiner] (Varner and Varner 1951:436).

At this time, as was alluded to above, the province of Pacaha (Capaha in Varner and Varner 1951, the different provinces have different spellings in the various accounts) was one of the most powerful polities in North America. Archeological evidence suggests that it controlled the eastern half of Mississippi County as well as the Mississippi River trade. The "Capitol" was probably at the former site of Pecan Point which the Spanish describe as follows:

> It consisted of five hundred large and good houses, which were located on a site somewhat loftier and more eminent than its surroundings, and it had been turned into almost an island by means of a man-made ditch or moat ten or twelve fathoms deep and in places fifty feet wide, but never less than forty. The moat was filled from the

> previously mentioned Great River, which flowed three leagues above the town; and the water was drawn into it by human effort through an open canal connecting it with the river, a canal which was three fathoms deep and so wide that two large canoes went down and came up it side-by- side without the oars of the one touching those of the other. Now this moat, of the width we have said, lay on only three sides of the town, for it was as yet incomplete. But the fourth side was fenced off by a very strong wall of thick wooden boards that were thrust into the ground, wedged together, crossed, tied and then plastered with mud tamped with straw in the manner we have described farther back. The great moat and its canal contained such a quantity of fish that all the Spaniards and Indians who accompanied the Governor [almost 9000 all together] ate them until they were surfeited, and still it appeared as if they had not taken out a single fish (Varner and Varner 1951:436).

Therefore, at the height of the Mississippi period the natives of Mississippi County were already engaged in the construction of hydraulic works, which in the present century have come to dominate the landscape. After this brief glimpse of the fully adapted Mississippians at the height of their power and glory in the 16th century, the area is not mentioned for over a hundred years.

Historic Period

Following the De Soto expedition the area was not visited until the French opened the Mississippi Valley in the last quarter of the 17th century. The Indian societies were a mere skeleton of their former glory and the population a fraction of those described by the De Soto chronicles. Marquette in his rediscovery of the Mississippi for the French did not encounter any Indians between the Ohio and the Arkansas rivers. He described this section of his journey south of the Ohio River as follows:

> Here we Began to see Canes, or large reeds, which grow on the banks of the river; their color is a very pleasing green; all the nodes are marked by a Crown of Long, narrow, pointed leaves. They are very high, and grow so thickly that The wild cattle have some difficulty in forcing their way through them.
>
> Hitherto, we had not suffered any inconvenience from the mosquitoes; but we were entering their home, as it were. . .
>
> We thus push forward, and no longer see so many prairies, because both shores of The river are bordered with lofty trees. The cottonwood, elm, and basswood trees there are admirable for Their height and thickness. The great numbers of wild cattle, which we heard bellowing, lead us to believe that The Prairies are near. We also saw Quail on the water's edge. We killed a little parroquet, one half of whose head was red, The other half and The Neck was yellow, and The whole body green (Marquette 1954:360-361; strange capitalization in the French original).

During the French occupation most of the settlements were restricted to the major river courses with trappers and hunters living isolated lives in the headwaters of the many smaller creeks and rivers.

Early American Settlement

In 1803 the French sold the Louisiana Territory to the United States, including what would someday be Arkansas. The territory was administered from the territorial capital in St. Louis. In 1819 Arkansas Territory was established with its capital at Arkansas Post, the most ancient French settlement in the state (Ross 1969:8). The seat of government was moved to Little Rock in 1821, and in 1836 Arkansas was admitted to the union as a slave state.

Mississippi County is about 865 miles square and derives its name from the Mississippi River, which forms its eastern border (Goodspeed 1889: 445; Edrington 1962: 21). The county was once part of Arkansas County, subsequently became part of Phillips, and later Crittenden County. It was designated as a separate county by the Territorial Legislature on November 1, 1833 (Goodspeed 1889: 445). During the legislative session of 1901 Mississippi County was divided by special act into two judicial districts, with Blytheville and Osceola as court seats to expedite land transactions during the wet seasons (Fox 1902: 45).

The first representative of Mississippi County, after the admission of Arkansas into the union in 1836, was P.H. Swain, from whom Swain township received its name (Goodspeed 1889: 451, 457). There were no post offices in Mississippi County before 1836. In Crittenden County, Buford's Landing was established as a post office on April 1, 1836 (Wade 1974: 12).

The passage of the stern-wheel steamboat, "Orleans", from Pittsburgh to New Orleans in 1812 was to presage great changes coming to the Louisiana Territory. This boat and the many others to follow used wood to power their steam engines and thus created a demand for cordwood. The early settlers along the river chopped and sold wood to such steamboats (Edrington 1962: 49). Perhaps more important, it made two-way transportation on the great river roads of the interior much faster and more reliable, when the rivers were up.

At first the only settlers in this part of the country lived in cabins surrounded by clearings along the river. In 1834, according to Joseph Hearn, there were no more than half a dozen clearings, all on the river from the lower end of the county to Mill Bayou. At the present site of Osceola lived a man named Hudgens, up river was Thomas J. Mills, and on what later became Fletcher's Landing was a Mr. Penny (Goodspeed 1889: 451, 452). As early as 1823, however, General Land Office maps show that there were settlers near Frenchman's Bayou. A survey of that area shows 12 separate fields whose owners were named (Morse 1976: 19). Thomas Nuttall, traveling in this area in 1819 reported that he came to within fourteen miles of the mouth of the St. Francis River and saw a few log cabins along

the bank (Thwaites 1905: 89). In 1815 Lorenzo Dow, the famous itinerant Methodist preacher, traveled through Mississippi County on a government boat. He said that the country was "...inhabited by Indians, and white people degenerated to their level..." (Goodspeed 1889: 452; Gillespie 1978: 100). Carson's Lake Township and Kellum's Ridge were named for settlers in Mississippi County named Carsons and William Kellums, here as early as 1812.

The Euro-American occupation of the Central Mississippi Valley proceeded overland down Crowley's Ridge and slowly spread out from the rivers. Ports were established at Piggott on the high ground of Crowley's Ridge in the St. Francis Gap in 1835. It was located on the Helena-Wittsburg road which ran down Crowley's Ridge (Dekin et al. 1978:358). All of the settlements in the 1830s between Piggott and Helena in the St. Francis Basin were either along the rivers or on Crowley's Ridge. Towns continued to be founded in these environments into the early 1900s. Settlements away from the rivers along overland roads began in the 1850s and greatly accelerated with the construction of the railroads, levees, and drainage ditches in the late nineteenth century.

In 1836 Arkansas was admitted to the Union as a slave state. Additional settlers in Mississippi County were planters from older slave states who came looking for fresh land and brought their slaves with them. The institution of slavery was economically profitable and it tied this part of Arkansas to the South socially, politically and economically (Herndon 1938: 18). There was no census for Arkansas for the years 1790, 1800, 1810, or 1820. The first federal census taken for Mississippi County was in 1840. Residents who were in the same place in 1830 are listed in the Crittenden County federal census for 1830 (Wade 1974: 12, 38). In 1840 there were 1,410 people, 900 whites and 510 slaves, and a school with 25 students near the Elizabeth Carnell house. In 1854 the population was 2,266 with 541 slaves. By 1860, the population had increased to 3,895 (Wade 1974: 38; Goodspeed: 458, 459). In 1860 , for all townships in Mississippi County the number of slave houses was 235, the number of male slaves, 766, and the number of female slaves was 715, the number of owners was 78 (Wade 1974: 69).

One of the earliest settlements in this territory was Osceola on the edge of the Mississippi River. It was founded in 1833, and its population was 250 in 1840. J. W. DeWitt, the postmaster and first schoolteacher in the county, used a crackerbox for the mail (Fox 1902: 29; Goodspeed 1889: 453).

Settlement and enterprise were still concentrated in areas near and along the Mississippi River and accessible tributaries. Swamplands in the north (Big Lake) and southwest (Tyronza) parts of the county and flooding from the river presented a formidable obstacle to further settlement of much of this land. The Mississippi River flood plain was almost wilderness and practically uninhabited.

Streams and bayous were the only arteries for travel through this swampscape more than half the size of New Jersey. Settlement in the interior of the county took place on drier areas near streams. Manila was founded in 1952 as the port of access to Buffalo Island on the Little River. Blytheville was founded in 1853 on Pemiscot Bayou (Dekin et al. 1978:358). Low-lying areas in the interior were often flooded and were unsuitable for agriculture. These areas were dominated by vast virgin Southern Floodplain forests. Mississippi County was cut off by these to the north, west, and south for the last half of the 19th century (Goodspeed 1889: 446).

Levee Construction

In 1850 the U. S. Congress passed the Arkansas Swamp Land Act, in which overflowed lands in southeast Arkansas were given to the state to sell. The proceeds would pay for levees and drains to reclaim the land (Harrison and Kollmorgen 1948: 20-52). In 1852, sixteen miles of levee in the southeastern part of the county were built from the sale of these lands. During the Civil War the levees were not maintained; in fact, they were sabotaged (Morse 1976: 20). In 1879 Congress created a seven-man Mississippi River Commission, the president to be from the Army Corps of Engineers, and in 1881, it made the first appropriation of $1,000,000 under the Rivers and Harbors Act to start building levees. The levees would make hundreds of thousands of acres of rich and fertile land available for cultivation; they would increase the taxable property of the county and open up large areas for settlement (Goodspeed 1889: 459, 460). Levee work started in 1882 (Edrington 1962: 63) but floods in 1882, 1883 and 1884 were disastrous and curtailed all growth, development, and prosperity. Many farms and new clearings were abandoned (Goodspeed 1889: 459).

From 1865 to 1890 thousands of Irish laborers were brought in to supplement the Black manpower for the purpose of building levees. The Irish sublet 100-foot stretches of levee from the levee contractor. Their construction work was known as the "...'three M' method...Men, Mules, and Mud". Later the Irish helped to build the railroads in northeast Arkansas. "Their unknown and unmarked graves dot the right-of-way of all our early railroads and levee lines" (Edrington 1962: 63; Sartain n.d.: 30). In 1893 the St. Francis Levee Board was organized and empowered by the Legislature to issue bonds and collect taxes to build a levee along the entire front of the St. Francis Basin to protect it from overflow (Fox 1902: 16).

The late 1800s saw men with few resources settle here who would make themselves prosperous and Mississippi County the world's biggest producer of cotton. John B. Driver from Americus, Georgia, began by buying 160 acres. He later bought land in all parts of the county. He was elected state senator and employed and provided for sixteen families. W. H. Grider used advanced farming and

stock raising techniques, and became a substantial community figure. By 1889 Major Ferguson and Colonel Craighead had large plantations south of Osceola. Colonel Craighead had liberal and far-seeing ideas about land ownership and tenant farming. Robert E. Lee Wilson began with a small amount of land and timber and became a millionaire and a world-renowned planter. Probably, more than anyone else, he was responsible for getting the swamps drained, clearing the timber and bringing in the railroad, which transformed the landscape and brought commerce and development to the backwoods (Dew 1968: 39; *Memphis Commercial Appeal*, April 22, 1973; Goodspeed 1889: 454-489).

Railroad

In 1893, with the establishment of the levee districts, people began to come back to Mississippi County believing that flooding would soon end. Transportation was still mainly by water (Dew 1968: 23). Steamboats floated crops, furs, bear oil and timber down to Marked Tree for shipment to Memphis and New Orleans (Edrington 1962: 49). There were few roads in the eastern part of the county and these were impassable in wet weather. There were no roads in the Sunk Lands, where ox teams were used to bring logs out. The Cotton Belt, the Iron Mountain, and the Frisco railroads all went around the western and southern borders of the Sunk Lands at Paragould, Jonesboro, and Marked Tree. R. E. L. Wilson, who had bought a sawmill, began hauling his timber by a short line railway that he built. In 1889 his mill at Idaho Landing (near Wilson) had a capacity of 14,000 feet a day, and he was shipping large quantities of lumber to Chicago annually (Goodspeed 1889: 568, 569). In 1896 the Railroad Commission of Arkansas issued a charter to the Jonesboro, Lake City and Eastern (J.L.C.&E.) Railroad Company to bring out timber from the Sunk Lands. The *Craighead County Sun* said in 1897 " ...it is opening up one of the most alluvial sections of the South and a timber belt that is unsurpassed anywhere" (Dew 1968:25). The wooded area of Arkansas was greater than that of any other state in the union (Fox 1902: 18).

The coming of the railroad caused a population boom in the Sunk Lands. By 1902 the railroad had crossed Big Lake and had reached Blytheville, making millions of acres of timberland available and creating new towns all along the railroad line. Roads, wagon trails, and narrow gauge train railways came out from the logging settlements like spokes, encouraging trade and more settlement. Logging became the main industry and created associated industries: box plants, barrel stave factories, a planing mill, a shingle mill, and a wagon and buggy manufactory (Dew 1968: 27; Goodspeed 1889: 489; Fox 1902: 29-30). Railroad crossties used throughout the nation came from Buffalo Island (Dew 1968: 27). In 1902 there were 35 sawmills producing from 3,000 to 70,000 feet

of lumber a day. The largest sawmill operator in the county was the Chicago Mill and Lumber Company owned by Governor Frank Lowden of Illinois (Fox 1902:18).

In 1911 Lee Wilson bought controlling interest in the J. L.C. & E. Railroad and merged it with the 10-mile-long Wilson and Northern Railroad which he had built, resulting in 96.4 miles of J. L. C. & E. mainline track. Both the *Craighead County Sun* (1900) and the *Jonesboro Tribune* (1906) hailed him as a progressive businessman.

Swamp Drainage and its Effects

Efforts begun in 1902 to establish drainage districts failed again and again, hampered by actions of big lumber interests. Lumbermen weren't concerned with it and farmers didn't want to pay the tax, although small, that would be levied for such an undertaking. Otherwise sane and upstanding citizens engaged in fist fights and brandished knives. Ultimately, over a period of years the violent objections led to an attempted lynching of Judge Logan D. Rozelle and Lee Wilson. In spite of the violence and the obstacles, drainage districts were finally established. The Office of Drainage Investigation in Washington, D. C., called it the "largest and best planned and most economically constructed drainage district in the United States" (Sartain n.d.: 6, 7).

In 1918 the J. L. C. & E. advertised that the final work in draining was being done, and by 1919 there was a land boom. Land sales were of no more than 80 acres each (Dew 1968: 15, 31), however; the land was cheap and fertile and it brought people who were anxious to farm it. Insisting that "...the plow should follow the saw" (*Lee Wilson and Company* n.d.), Lee Wilson acted on this belief and planted cotton on the deep alluvial soil. Other planters followed suit and by December of 1916, after World War I in Europe began to cause agricultural prices in the United States to rise, the railroad shipped 38 carloads of cotton valued at $238,000 on a single train--a record for a shipment from the Sunk Lands. Still later, in 1919, the all-time record for a single J. L. C. & E. freight lading was set when R. E. L. Wilson shipped 6500 bales of cotton valued at one million dollars on a special train. It took 600 pickers two months to pick the crop (Dew 1968:31). A framed photograph of this train with its load of cotton is proudly displayed in the offices of the Delta Valley & Southern, affiliate of the Lee Wilson Company in Wilson, Arkansas. The caption reads:" J. L. C. & E. 1919 MILLION DOLLAR TRAIN" (Hope Gillespie personal observation). By the end of World War I logging was outdistanced by agriculture. Part of the reason was that timbering was a finite process, and railroads hastened the cutting and the disappearance of the great hardwood forest (Dew 1968: 31).

When cotton prices dropped in 1920, Lee Wilson led the farmers in experimenting with other crops. Wheat, soybeans, corn, cantaloupes, sweet potatoes, hay, and alfalfa became only some of the valuable alternatives to cotton. Planters used tenant farmers to plant and harvest. James Craighead's opinions on tenants and land ownership were quoted widely by authors at the turn of the century. He believed that large land holdings were a "drawback to prosperity" and that when owners divided their land and financed it on a long term basis to permanent settlers, everyone profited. People became responsible when they owned the land (Goodspeed 1889:485; Fox 1902:47-50). Most of the farming in eastern Mississippi County in the early 20th century was done by Black tenants. On Buffalo Island farming did not really begin until the timber companies began to sell off their holdings after exploiting the timber.

Project Area History

Blytheville

Blytheville was founded in 1853 with access to the Mississippi River through Pemiscot Bayou. In 1901 Blytheville was made co-county seat with Osceola. This unusual action was undertaken to facilitate land transfers because the north part of the county was inaccessible to Osceola for much of the year (Fox 1902:45). Blytheville is located on the major Mississippi River macro levee, which has the major land transportation route on the west bank and paralleling the Mississippi River between Memphis, Cape Girardeau and St. Louis. This "highland" has U.S. 61, Interstate Highway 55, and the St. Louis - San Francisco Railroad through its transportation corridor. The railroad and U. S. 61 are on the eastern edge of the project area. Perhaps more important for the growth of Blytheville was the geographic fact that west of town was Big Lake and to the south were the Tyronza Sunk Lands. The easiest way around this sunken morass was down a highland spit to a narrow in the Lake, across the Right and Left Hand Chutes of Little River, and then across Buffalo Island. South of Blytheville, access to the Mississippi River was barred by a much wider swamp, the Tyronza Sunk Lands and the Little River complex. Consequently, by 1910 Blytheville was a railroad hub, with the St. Louis - San Francisco railroad coming in a classic central place theory hexagonal pattern. The project area was almost geometrically centered in between Blytheville, U.S. 61, and the St. Louis - San Francisco railroad. The project area was an early part of the immediate sustaining center of Blytheville.

The community of North Sobie (Sawba), centering on the New Hope Episcopal Church, was established in the 1890s. Earliest occupation was prior to this. North Sobie along with Gosnell and Yarbro, were the closest first order centers out from Blytheville. In 1939, the towns on the major

overland transportation routes (Gosnell and Yarbro) had schools. North Sobie had lost its church, although the cemetery was still in use.

CHAPTER 4

RESULTS OF THE SURVEY

by Robert F. Cande

Constraints On The Investigation

Two major problems were encountered during the field work: partially flooded fields and poor ground surface visibility. Following an unusually wet spring, the project area was already quite wet prior to the commencement of the survey. Between the afternoon of May 1 and the morning of May 3, approximately 1.5 inches of additional rain fell, resulting in the loss of one field day. Intermittent light rain also fell on May 4 and May 6 but no additional field time was lost. Lower lying sections of may fields remained flooded and extremely wet throughout the field work.

Generally speaking, ground surface visibility ranged from good to excellent, since large portions of the survey area had been disced at least once prior to spring planting. The one major exception was a relatively large tract located north and west of the base golf course which was planted in winter wheat. The wheat was 18 to 24 inches high and very dense, resulting in 0 to 5 percent surface visibility. The only areas within the wheat field with adequate surface visibility were along the headlands and in tractor tracks which crossed the field in a random manner. These latter areas were invariably flooded. As a result of the poor visibility no sites were recorded within the wheat field. 3MS531, previously recorded within the field, was not relocated.

The discussion below details the field and laboratory methods employed during the execution of this project. The methods used during the cultural resources survey portion of the project are discussed first. This is followed by a discussion of the laboratory methods used during the processing and analysis of the artifacts recovered from the various project locations.

Field Methods

All of the areas investigated during the survey portion of the project were located in agricultural fields. With one major exception, the areas surveyed had been disced and rained on prior to the field work, providing excellent ground surface visibility and ideal conditions for locating cultural remains. Under these favorable conditions survey methods were simple and straightforward. Each survey tract was traversed on foot by two crew members spaced at 20 m intervals. Whenever cultural resources

were encountered the transect interval was reduced to 5 m. Since none of the survey areas, with the exception of the wheat field, had yet been planted, survey transects were oriented down the long axis of the field. In most instances this coincided with the direction of plowing. Specific descriptions of each survey area are presented below.

Site Recording Procedures

When an archeological site was recorded within the project area it was immediately assigned a temporary site number, and its location plotted on the Blytheville, Ark. - Mo., USGS Quadrangle map. The temporary number consisted of the prefix BAFB (Blytheville Air Force Base) which identified the project, and its appropriate number (for example BAFB-1, BAFB-2, etc.). An Arkansas Archeological Survey site form was then initiated and relevant site information recorded. Previous work at Eaker had identified 10 archeological sites (Lafferty and Cande 1989a). In order to avoid confusion, sites located during the current field work were assigned temporary numbers beginning with 11.

Site Definition

For purposes of this investigation a prehistoric site was defined as any accumulation of two or more artifacts recovered from an area no greater than 10 m in diameter. Due to the great amount of disturbance to surface features associated with the construction of the air base, the presence of historic trash dumps, and the presence of historic debris in the spoil piles along Pemiscot Bayou, historic sites were approached in a somewhat different manner. Historic sites were recorded when 19th century artifacts were recovered or when structural evidence such as brick, mortar, or pane glass, was recovered with at least one other class of artifact, for example ceramics or bottle glass. The 1939 USGS Blytheville 15 minute quadrangle map was also used to help identify historic site loci.

Site boundaries were determined on the basis of artifact distribution and topographic circumscription. In places where artifact distributions merged slightly, topographic circumscription was the main determinant. In some instances, surface features such as roads were factors in determining site boundaries.

Surface Collection

On each site an attempt was made to collect the complete range of artifact variation present. Due to the great diversity of site size and artifact density encountered during the field work, collection

strategies were adjusted to suit the situation. On low density sites such as 3MS548 and 3MS558 every visible artifact was collected, while on larger sites such as 3MS549 and 3MS561 only representative samples were collected. Sites having artifact distributions of less than 100 m in diameter and artifact densities greater than 3 artifacts per m^2 were collected in quadrants. On the larger sites where clustering was apparent, each cluster was sampled. If no obvious clustering was observed, uniform collection units of 20 m x 20 m or 30 m x 30 m were taken at selected locations.

Collection procedures were as follows: (1) Collected artifacts were placed in plasticized sample bags and marked with the project name, site number, appropriate provenance, date and collectors name; and (2) A Field Serial Number (FSN) log, assigning a sequential FSN number to each collected provenance was generated. Data recorded for each provenance included site number, vertical and horizontal location, date, number of bags, collector and remarks. The FSN log served as a inventory and control mechanism during both the field work and laboratory processing.

Laboratory And Curation Methods

The FSN log is used in the laboratory for inventory and processing control. The FSN follows all collections through the analysis and is permanently assigned as a part of the catalog number. After the artifact collections are checked against the FSN log they are carefully washed and dried. Fragile samples, such as leached pottery, bone, or carbon, receive special attention. When the artifacts are dry they are boxed sequentially by FSN into standard acid free museum boxes used by the Arkansas Archeological Survey and the University of Arkansas Museum.

During analysis the artifacts are sorted into analytical categories that vary depending on the nature of the project. Each separate category is then numbered with the accession number (obtained from the curating institution), which identifies the site, the FSN, which identifies the provenance and an Analytical Serial Number (ASN), which identifies the artifact. Numbering is done with indelible ink. An ASN log is made for each provenance.

Artifact categories are identified using the DELOS (Rolingson and Kaczor 1987) artifact inventory for most categories, supplemented by other published information on projectile points and pottery appropriate to the region of the project.

After the report is complete the artifacts are packaged for curation according to the specifications of the curating institution. This usually involves packaging each ASN in polyethylene bags and each FSN in separate trays organized sequentially by FSN. Originals of all generated paperwork, required

forms, photograph logs, and photograph negatives are filed with the collections. On most projects copies of forms are filed with the Arkansas Archeological Survey as a separate backup repository as required in the State Plan (Davis 1982).

For purposes of discussion, the survey area has been divided into ten separate areas lettered I to R, respectively. Areas A to H were surveyed during earlier work performed by MCRA at Eaker in 1988 (Lafferty and Cande 1989a). Each area will be briefly described in terms of location and survey conditions.

Survey Area I was located in the northeastern portion of the project area, north and west of the base golf course (Figure 2). The entire area was planted in winter wheat, which was 18" to 24" high, and ground surface visibility was negligible. The area was surveyed but no sites were recorded. 3MS531, a previously recorded site, was not relocated.

Survey Area J consisted of a narrow strip of cultivated fields along the eastern perimeter of the base (Figure 2). The fields had been disced and surface visibility was excellent, ranging between 80 and 100 percent. The northernmost portion of this area contained abundant amounts of concrete, asphalt, glass, ceramics, metal fragments, plastic etc. suggesting a dump area. No structures are shown for this location on the 1939 Blytheville USGS 15 minute quadrangle map. The dump was not recorded as a site.

Survey Area K was a triangular shaped area located west of Area I and east of the main access road (Figure 2). This area had not been disced but surface visibility ranged between 50 and 80 percent. 3MS556 and 3MS557 were located in Area K.

Survey Area L included all of the remaining survey lands north of the abandoned meander loop of Pemiscot Bayou, east of the runway (Figure 2). All of the fields in this area had been disced and surface visibility was excellent, ranging between 80 and 100 percent over most of the area. Some of the lower lying sections did contain standing water. 3MS549, 3MS550, 3MS551, 3MS552, 3MS553, 3MS554 and 3MS555 were found in Area L.

Survey Area M was the low lying agricultural field south of Razorback Lake, inside the perimeter road (Figure 2). This area had not been disced and was extremely wet. Some rows were flooded. Surface visibility was good, however, ranging between 50 and 70 percent. 3MS558 was recorded in this area. In addition, two isolated artifacts were located. A potsherd was found approximately 75 m west and 20 m north of the southeast corner of the field, and a chert flake was found approximatcly

125 m south and 30 m west of the northeast corner of the field. In both instances, close scrutiny of the areas adjacent to these finds failed to locate additional artifacts.

Survey Area N was another narrow strip of agricultural land bordering the perimeter fence south of Area J (Figure 2). The fields had been disced and surface visibility was excellent, 80 to 100 percent. No sites were recorded in Area N.

Survey Area O consists of the agricultural land south of the air base proper (Figure 2). South of Arkansas Highway 151 the fields were disced and surface visibility was excellent, 80 to 100 percent. 3MS547 was in this portion of Area O. North of the highway the fields had not been disced and visibility ranged from 50 to 70 percent. No sites were in this area.

Survey Area P included all of the survey land southwest of the runway (Figure 2). These fields had been disced and surface visibility was excellent, 80 to 100 percent. 3MS559, 3MS560, and 3MS561 were located in Area P.

Survey Area Q included all of the survey land bordering the east side and north end of the runway (Figure 2). The fields had been disced and surface visibility was excellent, 80 to 100 percent. 3MS548 was located in Area Q.

Survey Area R was located in the northwest corner of the air base (Figure 2). All of the fields in this area had been disced and surface visibility was excellent, 80 to 100 percent. There was some minor flooding in the northwest corner of this area and it was necessary to wade through waist high water to complete the survey. No sites were recorded in Area R.

Fifteen archeological sites were identified during the survey. These included 2 historic, 11 prehistoric and 2 sites with both historic and prehistoric components (Table 6).

The high density of sites was expected and is consistent with the results of earlier work conducted at Eaker (Lafferty and Cande 1989a). A large portion of the undeveloped lands at Eaker AFB occupy high terraces adjacent to Pemiscot Bayou. For the last 2,000 years, as now, these have been prime agricultural lands and as a result, a high density of late prehistoric and historic sites are present.

Table 6

List of Recorded Sites

Site #	Cultural Affiliation	Location
3MS547	Historic	Area O
3MS548	Late Woodland	Area Q
3MS549	Historic, Late Woodland	Area L
3MS550	Late Woodland	Area L
3MS551	Late Woodland	Area L
3MS552	Late Woodland	Area L
3MS553	Late Woodland	Area L
3MS554	Historic	Area L
3MS555	Late Woodland	Area L
3MS556	Middle Woodland	Area K
3MS557	Late Woodland	Area K
3MS558	Historic, Late Woodland	Area M
3MS559	Late Woodland	Area P
3MS560	Late Woodland	Area P
3MS561	Late Woodland, Mississippian	Area P

Site Descriptions

3MS547 is a historic site situated on the northernmost tip of a high terrace bordering the west bank of Pemiscot Bayou. This location is south of the air base perimeter, just south of Arkansas Highway 151. A building is shown in this location on the 1972 Blytheville USGS 7.5 minute quadrangle map. A building is also shown very close to this area on the 1939 Blytheville USGS 15 minute quadrangle map.

Cultural debris was scattered over an area approximately 90 m E-W x 60 m N-S. The surface collection was taken in quadrants oriented to the cardinal directions (Table 7). Temporarily diagnostic

Table 7

Artifacts Recovered From Site 3MS547

Artifact Class	Northwest Quadrant		Northeast Quadrant		Southwest Quadrant		Southeast Quadrant		Site Total	
Bottle Glass - Clear			1	6.6	2	59.1			3	65.7
Bottle Glass - Blue			1	0.9					1	0.9
Bottle Glass - Amber			1	9.0					1	9.0
Whiteware - Plain	1	16.5	1	4.2					2	20.07
Milk Glass - lid liner					1	5.0			1	5.0
Milk Glass							1	55.0	1	55.0
Carnival Glass							1	9.8	1	9.8
Ceramic Tile	2	26.1							2	26.1
Stoneware - Albany Slip					1	56.1			1	56.1
Button - brass					1	1.8			1	1.8
Button - shell							1	1.0	1	1.0
Door Knob - metal							1	9.1	1	9.1
Plastic							1	0.7	1	0.7
Rubber							1	22.2	1	22.2
Insulator - glass							1	152.8	1	152.8
Insulator - ceramic	1	9.8							1	9.8
Brick				13.2				12.7	0	25.9
Totals	4	52.4	4	33.9	5	122.0	7	263.3	20	471.6

artifacts consist of whiteware (>1870), a one pole electrical insulator (ca. 1920-1940), clear bottle glass(>1902), a brass military button with an eagle that is slightly smaller than the modern U.S. Army dress uniform buttons (mid-20th century ?), a rubber sink stopper (post ca. 1920), one piece of carnival glass (ca. 1902), and a milk glass lid liner (1840- ca. 1940). The assemblage recovered suggests the presence of a domestic dwelling dating to the early to mid-twentieth century (cf. Lafferty *et al.* 1987:154).

3MS548 is located in the northern portion of the project area east of the runway. Two grog and shell tempered sherds were recovered from an area 3 m E-W x 8 m N-S. The ground surface in the immediate site area is relatively flat, but appears to be somewhat higher to the southeast, outside of air base perimeter. Despite close inspection of the surrounding area, we failed to locate any additional artifacts. The Mississippi County soil survey map of the area shows that site is located on the inside of an abandoned meander loop of Pemiscot Bayou. A natural levee represented by a narrow curvilinear band of Crevasse loamy sand crosses the site area. Crevasse soils formed in sandy alluvium on natural levees bordering stream channels (Ferguson and Gray 1971:10, sheet 5).

Although it is possible that the main site area is outside of the survey boundary to the southeast, no sites have been previously recorded in this area. It appears to be more likely that the recovered artifacts indicate the presence of buried cultural deposits. The mixture of shell and grog as tempering agents in the two sherds suggests a sophisticated ceramic industry and at least an early Mississippian occupation.

3MS549 is one of a complex of several large late prehistoric sites located on the alluvial terraces north of an abandoned meander loop of Pemiscot Bayou in the central portion of Section 5, Township 15N, Range 11E. The site extends for approximately 300 m EW x 120 m NS along a low ridge that trends in a slightly northeast to southwest direction. The site is bordered on the north end by a gravel road and on the east by a paved access road.

Surface collections were taken in three areas from north to south, labeled A, B and C respectively. Each collection area was 40 m EW x 30 m NS. The first collection area was located approximately 120 m west of the junction of the gravel access road and the perimeter road, along the eastern edge of the field. There was a spacing of 25 m between collection units. Both historic and prehistoric components are present. Historic materials are concentrated mainly in the northernmost portion of the site area. Prehistoric materials are present in moderate to high density across the entire terrace. The bulk of the prehistoric material consisted of potsherds (Table 8).

Table 8

Aboriginal Ceramics Recovered From Site 3MS549

Area	Temper and Decoration	Body		Rim		Total		
		Ct.	Wt.[1]	Ct.	Wt.	Ct.	Wt.	
Area A	sand - plain	18	39.0			18	39.0	
	grog - plain	31	109.0			31	109.0	
	miscellaneous	22	29.3			22	29.3	
Totals		71	177.3	0	0.0	71	177.3	
Area B	sand - plain	46	39.0	1	2.4	47	41.4	
	sand - incised	1	2.9			1	2.9	
	sand - decorated	14	51.3	1	2.1	15	53.4	
	grog - plain	19	69.8			19	69.8	
	grog - cordmarked			1	20.6	1	20.6	
	grog - decorated							
	grog and sand - plain	13	52.8			13	52.8	
	grog and sand - decorated	3	11.8	1	4.3	4	16.1	
	miscellaneous	90	132.4			90	132.4	
Totals		192	393.3	4	29.4	196	422.7	
Area C	sand - plain	29	79.3	1	6.1	30	85.4	
	sand - decorated	7	30.5			7	30.5	
	grog - plain	17	60.2			17	60.2	
	shell - incised			1	2.0	1	2.0	
	miscellaneous	43	63.2			43	63.2	
Totals		96	233.2	2	8.1	98	241.3	
Site Totals	sand - plain	93	157.3	2	8.5	95	165.8	26.5%
	sand - incised	1	2.9	0	0.0	1	2.9	0.3%
	sand - decorated	21	81.8	1	2.1	22	83.9	6.1%
	grog - plain	67	239.0	0	0.0	67	239.0	18.7%
	grog - cordmarked	0	0.0	1	20.6	1	20.6	0.3%
	grog - decorated	6	33.3	0	0.0	6	33.3	1.7%
	grog and sand - plain	13	52.8	0	0.0	13	52.8	3.6%
	grog and sand - decorated	3	11.8	1	4.3	4	16.1	1.1%
	shell - incised	0	0.0	1	2.0	2.0	2.0	0.0%
	miscellaneous	155	224.9	.	0.0	155	224.9	43.2%
Totals		359	803.8	6	37.5	365	841.3	

Note: [1]Weight in grams.

Before proceeding with further discussion of the artifact assemblage, a few comments on the analysis and condition of the collections are necessary. During the analysis, all of the ceramic artifacts from a particular provenance were placed in a 1/2 inch mesh screen. Any sherds that passed through the screen were considered too small for meaningful analysis. They were classified as miscellaneous and not analyzed further. The majority of the sherds recovered were badly weathered. In many cases, it is obvious that the surface of a specimen was decorated in some fashion, but a positive identification of the surface treatment was not possible. All such sherds were classified by temper and identified as decorated. It is highly likely that most of these specimens were cordmarked and have been considered as such for purposes of the following discussions.

Lithic artifacts were relatively scarce. A single chert interior flake was recovered from Collection Area A. The highest densities of artifacts occurred in the central portion of the site, the location on Collection Area A. Densities fell off sharply to the north and south. Although historic materials were observed on the site, none were found within the collection units.

The ceramic assemblage indicates a long and varied occupation of the site area. Sand tempering is characteristic of the Barnes ceramic type, one of the two pottery traditions prevalent in the Baytown period (A.D. 400-700). The presence of Barnes Plain and Barnes Cordmarked pottery suggests a Dunklin phase occupation. Two primary site types are known for this phase. The majority of sites are small, low density lithic and ceramic scatters that are thought to represent mainly single structure sites occupied by a single family group or extended family. Larger sites containing higher artifact densities, and in some cases extensive midden deposits, are though to represent seasonal occupations by larger aggregates of people. Both site types are thought to be part of a dispersed seasonal occupation in which the population was cyclically dispersed and nucleated on a seasonal basis along minor watersheds.

Grog-tempered pottery, both plain and cordmarked is also characteristic of the Baytown period. Mulberry Creek Cordmarked pottery is most indicative of the early Hoecake phase of the Baytown period, but is also present in the Baytown phase. The settlement subsistence pattern of the Baytown phase is thought to be similar in most respects to the Dunklin phase with a difference in ceramic technology.

The shell-tempered sherd indicates the presence of a Mississippian component as well. In the Mississippi period the ceramic technology was improved through the introduction of burned crushed shell as a tempering agent. This innovation made the clay base more malleable, allowing for a more varied and elaborate ceramic industry. The recovered sherd is a rim with an incised line paralleling

the lip. It is too small to reliably classify or to indicate a specific phase of occupation. The Mississippi period was a time of great cultural change and innovation. Sites of this period are located within areas of good agricultural soil, often adjacent to seasonally flooded areas and lakes. Reliance on tropical cultigens (i.e., corn, squash) increased, ceramic technology improved, and the bow and arrow was introduced. Sites tend to be larger and more intensively occupied, often containing midden deposits. The presence of mounds, earthworks and palisades at many sites indicates a highly structured society, as does an elaborate mortuary complex associated with high status burials.

No evidence of midden deposits were observed during the work at 3MS549, although the high artifact density in Collection Area B would tend to suggest that such deposits are present.

3MS550 is located just to the northwest of 3MS549, occupying a low southwest to northeast trending ridge. The two sites actually overlap slightly at their respective north ends. The main loci are separated, however, by a swale that gradually widens from northeast to southwest. The site is bordered on the north by a gravel access road and on the west by the grassy area adjacent to the main runway. Two main clusters of artifacts were observed and collected. The first cluster (Collection Area A) was located in the southwestern end of the ridge, beginning approximately 8 m east of the edge of the field and 15 m south of the access road. It measured approximately 40 m in diameter. The second cluster began approximately 145 m east of the edge of the field and extended eastward to the point where it overlapped with 3MS549. The site narrows from north to south as you move to the east. The maximum site depth NS is 110 m. A few artifacts were present between the two clusters but the density was sparse. The artifact density in the second cluster was moderate to light, with the lightest density at the north end of the site in the overlap area. Two collections were taken from the second concentration. Collection Area B began 100 m east of the edge of the field and measured 70 m NS x 45 m EW. It was collected in 3 m transects. Collection Area C began approximately 245 m east of the edge of the field and was 30 m EW x 40 m NS.

The artifact assemblage recovered from 3MS550 is similar in every respect to that from 3MS549 (Table 9). Single flakes were recovered from each collection unit. Two are typical Crowley's Ridge chert, the primary lithic resource of the project area. The third flake is Mill Creek chert from southern Illinois. Mill Creek chert was extensively used during the Mississippi period for hoe production. The presence of this material at 3MS550 indicates that long distance trade networks were operative during some period of site occupation. As at 3MS549 the main occupation of the site appears to have occurred during the Baytown period with both Dunklin and early Hoecake phases indicated.

Table 9

Aboriginal Ceramics Recovered From Site 3MS550

Area	Temper and Decoration	Body Ct.	Body Wt.[1]	Rim Ct.	Rim Wt.	Total Ct.	Total Wt.	
Area A	sand - plain	7	16.0			7	16.0	
	sand - decorated	4	14.8			4	14.8	
	grog - plain	10	37.0			10	37.0	
	grog and sand - plain	1	2.8			1	2.8	
	grog and sand - cordmarked	1	4.8			1	4.8	
	miscellaneous	27	36.7			27	36.7	
Totals		50	112.1	0	0.0	50	112.1	
Area B	sand - plain	9	22.0			9	22.0	
	grog - plain	6	26.2			6	26.2	
	grog - decorated	1	8.4			1	8.4	
	grog and sand - plain	3	7.0			3	7.0	
	shell - plain	1	1.6			1	1.6	
	miscellaneous	14	17.0			14	17.0	
Totals		34	82.2	0	0.0	34	82.2	
Area C	sand - plain	10	28.8			10	28.8	
	sand - cordmarked			1	5.0	1	5.0	
	grog - plain	9	23.0			9	23.0	
	grog and sand - plain	4	11.0			4	11.0	
	miscellaneous	37	43.0			37	43.0	
Totals		60	105.8	1	5.0	61	110.8	
Site Totals	sand - plain	26	66.8	0	0.0	26	66.8	18.1%
	sand - cordmarked	0	0.0	1	5.0	1	5.0	0.7%
	sand - decorated	4	14.8	0	0.0	4	14.8	2.8%
	grog - plain	25	86.2	0	0.0	25	86.2	17.4%
	grog - decorated	1	8.4	0	0.06	1	8.5	0.7%
	grog and sand - plain	8	20.8	0	0.0	83	20.8	5.6%
	grog and sand - cordmarked	1	4.8	0	0.0	1	4.8	0.7%
	shell - plain	1	1.6	0	0.0	1	1.6	0.7%
	miscellaneous	78	96.7	0	0.0	78	96.7	54.2%
Totals		144	300.1	1	5.05	145	305.1	

Note: [1]Weight in grams.

3MS551 is located north of 3MS550 on a low east to west trending ridge. Elevations on the ridge decrease slightly from east to west. The site is bordered on the south and east by gravel access roads. The western boundary of the site is marked by the grassy area bordering the main runway. To the north a different soil type seems to mark the site boundary. Although elevations to the north and east are actually higher, no cultural material was recovered from this area. The soils in this area were much harder and of a finer, crustier texture. This same association of artifacts and sandy soils was observed to a lesser extent on 3MS549 and 3MS550. It was not as pronounced, however, since less fine textured soil was present. Soils throughout the area, including all three site loci, are classified as Routon-Dundee-Crevasse complex (Ferguson and Gray 1971:17, sheet 12). The crevasse soils occur as low mounds or patches of sand that are classified as extrusions of occupy areas around the sand blows. Routon and Dundee soils developed in loamy alluvium on the lower parts of natural levees bordering stream channels. They are finer textured and less friable than Crevasse soils and have high natural fertility.

Recent research within the meander belt in eastern Missouri (Price personal communication, Lafferty *et al.* under preparation) has documented the existence of prehistoric sand blows. There appears to be a high correlation between late prehistoric site location and sand blow location, suggesting that the presence of well drained sandy soils adjacent to naturally fertile loamy soils was a key factor in late prehistoric site choice. It would be premature at this point to suggest that 3MS548 is located on a prehistoric sandblow, although that possibility must be recognized.

Cultural materials were scattered over an area approximately 250 m EW x 100 m NS. Three distinct clusters were observed and collected separately. Collection Area A was located approximately 80 m E of the west edge of the field and 50 m N of the access road. It measured 40 m NS x 20 m EW. Collection Area B was 130 m E and 65 m N of the field edge and access road respectively. It was 40 m NS x 20 m EW. Collection Area C actually covered the entire central and northern portions of the site area, beginning approximately 100 m E of the field edge and extending approximately 230 m to the east. The maximum north to south artifact dispersion was approximately 100 m. Collection Areas A and B were separated by an area of very low artifact density. The overall artifact density on 3MS551 was lower than on 3MS549 and 3MS550, although the assemblage was similar in content (Table 10).

Table 10

Aboriginal Ceramics Recovered From Site 3MS551

		Body		Rim		Total		
Area	**Temper and Decoration**	**Ct.**	**Wt.[1]**	**Ct.**	**Wt.**	**Ct.**	**Wt.**	
Area A	sand - plain	5	11.5			5	11 5	
	grog - plain	4	9.1			10	37.0	
	grog and sand - plain	1	2.3			1	2.3	
	shell - plain	1	0.8			1	0.8	
	miscellaneous	8	5.3			8	5.3	
Totals		19	27.4	0	0.0	19	27.4	
Area B	sand - plain	21	54.7			21	54.7	
	sand - decorated	3	11.7			3	11.7	
	grog - plain	4	9.1			4	9.1	
	grog and sand - plain	4	7.5			4	7.5	
	grog and sand - decorated	1	3.5			1	3.5	
	miscellaneous	16	12.8			16	12.8	
Totals		49	99.3	0	0.0	49	99.3	
Area C	sand - plain	54	138.4	1	3.7	55	142.1	
	sand - decorated	4	24.6			4	24.6	
	grog and sand - plain	4	8.6			4	8.6	
	miscellaneous	38	43.4			38	43.4	
Totals		134	323.4	3	10.0	137	333.4	
Site Totals	sand - plain	80	204.6	1	3.7	81	208.3	40.1%
	sand - decorated	20	75.7	0	0.0	20	75.7	9.9%
	grog - plain	25	61.0	2	6.3	27	67.3	13.4%
	grog - decorated	4	24.6	0	0.0	4	24.6	2.0%
	grog and sand - plain	9	18.4	0	0.0	93	18.4	4.5%
	grog and sand - decorated	1	3.5	0	0.0	1	3.5	0.5%
	shell - plain	1	0.8	0	0.0	1	0.8	0.5%
	miscellaneous	62	61.5	0	0.0	62	61.5	30.7%
Totals		202	450.1	3	10.0	205	460.1	

Note: [1]Weight in grams.

Once again, Dunklin and early Hoecake phase occupations as well as an unknown Mississippi period occupation are indicated. The lithic assemblage consisted of a chert flake, a piece of chert shatter, a biface tip and a crude side notched biface. This latter specimen was unfinished and could not be assigned to a recognized type.

3MS552 is located toward the southern end of a triangular field south of the radar building (No. 1242). The site is bordered on the west by the cemetery road and on the east and north by paved roads. The site area is relatively flat and has Routon-Dundee-Crevasse complex soils. The site consists of a light scattering of ceramic artifacts covering an area 70 m NS x 30 m EW. The site may extend farther to the north, but the exact northern boundary could not be determined due to the abundant gravel and building debris (brick, concrete, asphalt) present over the central and northern portions of the field. The gravel is undoubtedly attributable to the gravel used as a substrate for the runway. Several structures are shown in the general site vicinity on the 1939 Blytheville 15 minute USGS quadrangle which may account for the building debris, although no definite site locus was discernable. A single sherd was found in the northwest corner of the field suggesting the possibility that the site extends beneath the gravel deposits. The site was divided into surface collection quadrants aligned with the cardinal axes. Cultural material was sparse, consisting entirely of ceramics (Table 11). The assemblage includes both sand and grog tempered sherds indicating both Dunklin and early Hoecake phase occupations.

3MS553 is a large dispersed site located on top of the terrace south of the WSA. It is bordered on the west and north by a chain link fence and on the east and south by paved roads. Artifacts are widely scattered over an area approximately 500 m NS x 200m EW. The topography is relatively flat, falling slightly from north to south. The southern boundary of the site is actually marked by a steep drop in elevation to the south. Four concentrations were observed and collected. Collection Area A was located in the extreme northwest corner of the field on an elevated sandy knoll. An area 20 m NS x 15 m EW was collected. Immediately to the southeast of Area A the field was flooded. Extensive gravel deposits covered the northeastern end of the field. This gravel seems to have come from material used to line access surrounding the WSA. Collection Area B was located in the northeastern portion of the field north of the gravel deposit, 35 m east of the chain link fence. It measured 15 m NS x 8 m EW. Collection areas C and D were located in the south central portion of the site north and south of a low flooded area approximately 175 m north of the terrace edge. They were 35 m NS x 48 m EW and 20 m NS x 15 m EW respectively. The highest artifact densities were in clusters A and C (Table 12).

Table 11

Aboriginal Ceramics Recovered From Site 3MS552

Area	Temper and Decoration	Body Ct.	Body Wt.	
NW Quad	sand - plain	2	3.0	
	grog - plain	3	5.2	
	grog and sand - decorated	1	5.5	
Totals		6	13.7	
NE Quad	miscellaneous	3	2.5	
Totals		3	2.5	
SE Quad	grog - decorated	1	1.6	
	grog and sand - plain	5	12.3	
	miscellaneous	5	8.7	
Totals		11	22.6	
SW Quad	sand - plain	2	7.6	
	sand - decorated	1	2.4	
	grog - plain	1	4.6	
	grog - decorated	1	4.0	
	miscellaneous	3	3.6	
Totals		8	22.2	
Site Totals	sand - plain	4	10.6	14.3%
	sand - decorated	1	2.4	3.6%
	grog - plain	4	9.8	14.3%
	grog - decorated	2	5.6	7.2%
	grog and sand - plain	5	12.3	17.9%
	grog and sand - decorated	1	5.5	3.6%
	miscellaneous	11	14.8	39.3%
Totals		28	61.0	

Note: [1]Weight in grams.

Table 12

Aboriginal Ceramics Recovered From Site 3MS553

Area	Temper and Decoration	Body Ct.	Body Wt.[1]	Rim Ct.	Rim Wt.	Total Ct.	Total Wt.	
Area A	sand - plain	6	10.2	1	1.2	7	11.4	
	sand - decorated	2	4.7			2	4.7	
	grog - plain	9	13.2			90	13.2	
	grog - decorated	1	4.4			1	4.4	
	grog and sand - plain	10	16.6			10	16.6	
	grog and sand - incised	1	1.0			1	1.0	
Totals		29	50.1	1	1.2	30	51.3	
Area B	sand - plain	11	1.57	1	1.6	2	3.1	
	grog and sand - plain	1	1.5			1	1.5	
Totals		2	3.0	1	1.6	3	4.6	
Area C	sand - plain	21	53.9			21	53.9	
	sand - decorated	1	1.8			1	1.8	
	grog - plain	10	20.0	1	0.7	11	20.7	
	grog and sand - plain	4	8.1			4	8.1	
	miscellaneous	22	19.5			22	19.5	
	fired clay	1	10.0			1	10.0	
Totals		59	113.3	1	0.7	60	114.0	
Area D	sand - plain	1	2.1			1	2.1	
	grog - plain	4	7.9			4	7.9	
	miscellaneous	5	4.7			5	4.7	
	fired clay	1	1.9			1	1.9	
Totals		11	16.6	0	0.0	11	16.6	
Site Totals	sand - plain	29	67.7	2	2.8	31	70.5	30.7%
	sand - decorated	3	6.5	0	0.0	3	6.5	3.0%
	grog - plain	23	41.1	1	0.7	24	41.8	23.8%
	grog - decorated	1	4.4	0	0.00	1	4.4	1.0%
	grog and sand - plain	15	26.2	0	0.0	15	26.2	14.9%
	grog and sand - incised	1	1.0	0	0.0	1	1.0	1.0%
	miscellaneous	27	24.2	0	0.0	27	24.2	26.7%
	fired clay	2	11.9	0	0.0	22	11.9	2.0%
Totals		101	183.0	3	3.50	104	186.5	

Note: [1]Weight in grams.

The artifact assemblage is similar in all respects to the assemblages from 3MS549, 3MS550, 3MS551, and 3MS552. One addition to the cultural inventory is the presence of a flake of Burlington chert, which originates on the Ozark Plateau, once again indicating extensive trade or procurement networks. Some fired clay, possibly daub fragments, was also recovered. Dunklin and early Hoecake phase occupations are indicated by the ceramic assemblage.

3MS554 is a historic site located on the terrace edge south of 3MS553. Cultural materials were concentrated in an area approximately 40 m in diameter. The main septic drain pipe was visible and still in place in the ground. A powerline pole has been placed in the center of the site area. Abundant brick, whiteware, glass etc. was present, only a small sample of which was collected (Table 13). Two structures are shown in the general vicinity of the site on the 1939 USGS Blytheville 15 minute quadrangle map.

Temporally diagnostic artifacts include whiteware (>1870), a milk glass lid liner (1840- ca. 1940), a Bristol slipped (interior and exterior) crock base (1835- ca. 1890), an Albany slipped (interior and exterior) crock base (1870- ca. 1930), blue solarized windowpane glass (<1902), clear crown cap bottle with the seam through the lip (>1902), and a Bristol churn top (1835- ca. 1890). The assemblage begins a bit earlier than that on 3MS547, perhaps the late 19th century but does extend into the early 20th century.

3MS555 is located in a triangular field bordered on the east by the cemetery road, on the south by a paved road and on the west by a chain link fence. It occupies the southernmost tip of the large terrace containing 3MS549, 3MS550, 3MS551, 3MS552 and 3MS553. It is southwest of 3MS553 and southeast of 3MS549. The site extends approximately 300 m NS x 100 m EW at its maximum extent. The topography falls gently from northeast to southwest on top of the terrace and then drops off sharply to the south on to the flood plain of Pemiscot Bayou. Cultural materials are present in moderate to high densities on top of the terrace, dropping to light densities on the floodplain of Pemiscot Bayou. Soils are of the Routon-Dundee-Crevasse complex. Two separate areas were collected, both on the terrace. Collection Area A, 30 m EW x 40 m NS, was placed 25 m from the north end of the site. Collection Area B was located approximately 147 m from the north end of the site. Measuring 20 m EW x 40 m NS, it was placed across a dark linear stain that is present in the southern portion of the site north of the terrace edge. It was felt that the dark area indicated the presence of midden deposits. The surface collection tends to support this suggestion (Table 14).

Table 13

Artifacts From Site 3MS554

Artifact - General Surface	Ct.	Wt.[1]
Bottle Glass - Clear	1	40.5
Bottle Glass - Amethyst	1	17.2
Whiteware - Plain	4	28.1
Whiteware - Decorative Mold	1	1.2
Whiteware - Yellow	1	3.4
Milk Glass - lid liner	1	7.7
Milk Glass	1	16.0
Milk Glass - blue	1	6.2
Stoneware - Bristol	2	165.2
Stoneware - Blue Bristol	1	4.1
Stoneware - Albany	1	31.0
Stoneware	1	181.6
Totals	16	502.2

Note: [1]Weight in grams.

Table 14

Aboriginal Ceramics Recovered From Site 3MS555

Area	Temper and Decoration	Body Ct.	Body Wt.[1]	Rim Ct.	Rim Wt.	Total Ct.	Total Wt.	
Area A	sand - plain	8	20.8			8	20.8	
	sand - decorated	1	4.6			1	4.6	
	grog - plain	15	49.0			15	49.0	
	grog - cordmarked	1	5.8			1	5.8	
	grog and sand - plain	7	21.2			7	21.2	
	grog and sand - cordmarked	1	4.1			1	4.1	
	miscellaneous	26	31.4			26	31.4	
Totals		59	136.9	0	0.0	59	136.9	
Area B	sand - plain	47	98.7			47	98.7	
	sand - cordmarked	1	15.2			1	15.2	
	sand - decorated	5	23.8			5	23.8	
	grog - plain	63	131.0	1	6.5	64	137.5	
	grog - decorated	14	43.5			14	43.5	
	grog and sand - plain	134	254.5			134	254.5	
	grog and sand - decorated	8	29.5			8	29.5	
	miscellaneous	135	107.5			135	107.5	
	fired clay	12	17.2			12	17.2	
Totals		419	720.9	1	6.5	420	727.4	
Site Totals	sand - plain	55	119.5	0	0.0	55	119.5	11.5%
	sand - cordmarked	1	5.2	0	0.0	1	15.2	0.2%
	sand - decorated	6	28.4	0	0.0	60	28.4	1.3%
	grog - plain	78	180.0	1	6.5	79	186.5	16.5%
	grog - cordmarked	1	5.8	0	0.0	1	5.8	0.2%
	grog - decorated	14	43.5	0	0.0	14	43.5	2.9%
	grog and sand - plain	141	275.7	0	0.0	141	275.7	29.5%
	grog and sand - cordmarked	1	4.1	0	0.0	1	4.1	0.2%
	grog and sand - decorated	8	29.5	0	0.0	8	29.5	1.7%
	miscellaneous	161	138.9	0	0.0	161	138.9	33.7%
	fired clay	12	17.2	0	0.0	12	17.2	2.5%
Totals		478	857.8	1	6.5	479	864.3	

Note: [1]Weight in grams.

Collection Area B has the highest artifact density of any site on the base other than 3MS105. Roughly eight times as many artifacts were recovered from Collection Area B as Collection Area A, although they are only about 100 m apart. Extensive experience in the region indicates that midden deposits, containing numerous features, including structures, storage and refuse pits, and human burials are present in this area. Floral and faunal remains are likely to be present as well. Once again, the ceramic assemblage indicates Dunklin and early Hoecake phase occupations. A single chert flake was also collected.

3MS556 is located east of 3MS553, east of the main access road and north of the perimeter road. It is also situated on the large alluvial terrace north of the abandoned meander loop of Pemiscot Bayou at the base of the 255' contour. The topography in the site area falls gently to the south southeast. The soil type on the site is Dundee silt loam (Ferguson and Gray 1971:12, sheet 12). Dundee soils formed in loamy sediments on the lower portions of natural levees. It is a naturally fertile soil. The site area had not been disced prior to the survey and ground surface visibility ranged from 50 to 80 percent. Cultural material consisting of both lithic and ceramic artifacts was thinly scattered over an area approximately 110 m NS x 120 m EW. Many of the artifacts were recovered from deep erosional gullies which cut through the terrace. The artifact assemblage contains several artifacts which distinguish it from other sites recorded at Eaker (Tables 15 and 16).

The presence of a biconical Poverty Point Object (PPO) and a Burkett point (Figure 10) suggest an earlier occupation for 3MS556 than on other sites recorded on Eaker. Unfortunately the most diagnostic artifact from the site was not recovered. The site was discovered during a heavy rainstorm. Under the conditions it was not practical to collect artifacts, they were simply flagged for collection when the weather cleared. During the initial survey a noded rim sherd was flagged. This artifact could not be relocated despite an intensive search. Exterior embossing, accomplished by pressing a dowel into the interior surface just below the lip, is a decorative characteristic of the early Woodland Tchula Period (500 B.C. - 0) (Morse and Morse 1983:153). The PPO and Burkett point are also diagnostic of a Tchula Period occupation. Although the sample is small, there appears to be a higher percentage of lithic artifacts in the assemblage. Dunklin and early Hoecake phase occupations are also indicated.

3MS557 is located higher on the terrace northwest of 3MS556. It is immediately south of the southeast corner of the WSA. The site area had not been disced prior to the survey and ground surface visibility ranged from 20 to 50 percent. Initial investigations indicated that artifacts were thinly scattered over an area 150 m EW x 110 m NS. Fifteen sherds and 1 chert flake were recovered from this area. However, in an attempt to obtain better surface visibility a deep erosional gully in

Table 15

Aboriginal Ceramics Recovered From Site 3MS556

	Body		Rim		Total		
Temper and Decoration	**Ct.**	**Wt.[1]**	**Ct.**	**Wt.**	**Ct.**	**Wt.**	
sand - plain	9	28.1			9	28.1	24.3%
sand - decorated	3	13.7			3	13.7	8.1%
grog - plain	1	2.5	1	4.5	2	7.0	5.4%
grog and sand - plain	1	3.1			1	3.1	2.7%
grog and shell - plain	2	3.3			2	3.3	5.4%
miscellaneous	20	19.8			20	19.8	54.1%
Poverty Point Object - biconical	1	6.8			1	6.8	2.7%
Totals	37	77.3	1	4.5	38	81.8	

Note: [1]Weight in grams.

Table 16

Lithic Artifacts From Site 3MS556

Artifact Type - General Surface	**Ct.**	**Wt.[1]**
Decortication Flakes - Crowley's	1	0.2
Interior Flakes - chert	2	10.5
Modified Flakes - chert	1	2.0
Hoe Chip - Mill Creek	1	0.9
Dart Points - Burkett	1	15.2
Totals	6	28.8

Note: [1]Weight in grams.

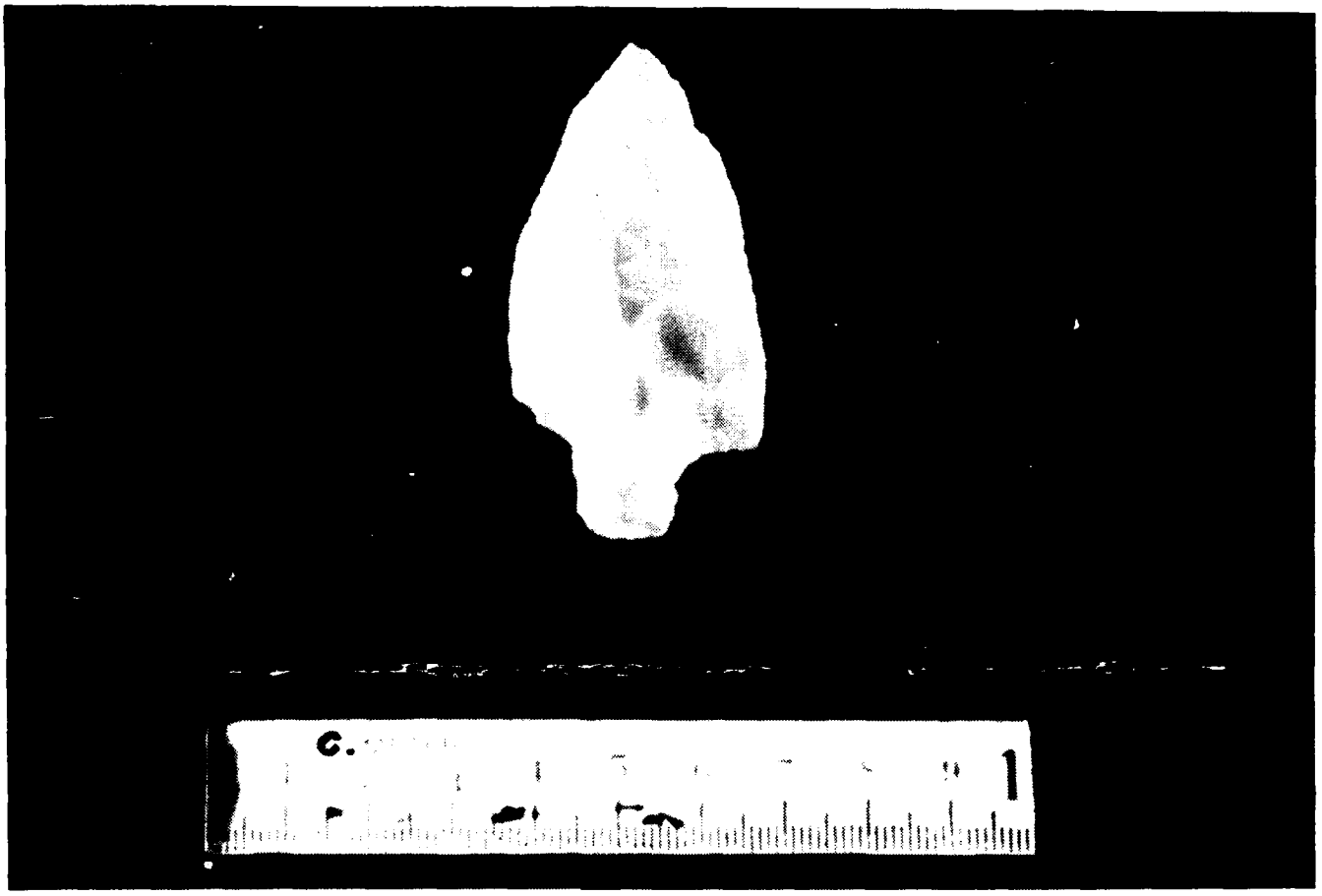

Figure 10 Burkett Projectile Point Recovered From Site 3MS556 (90-935-1-1)

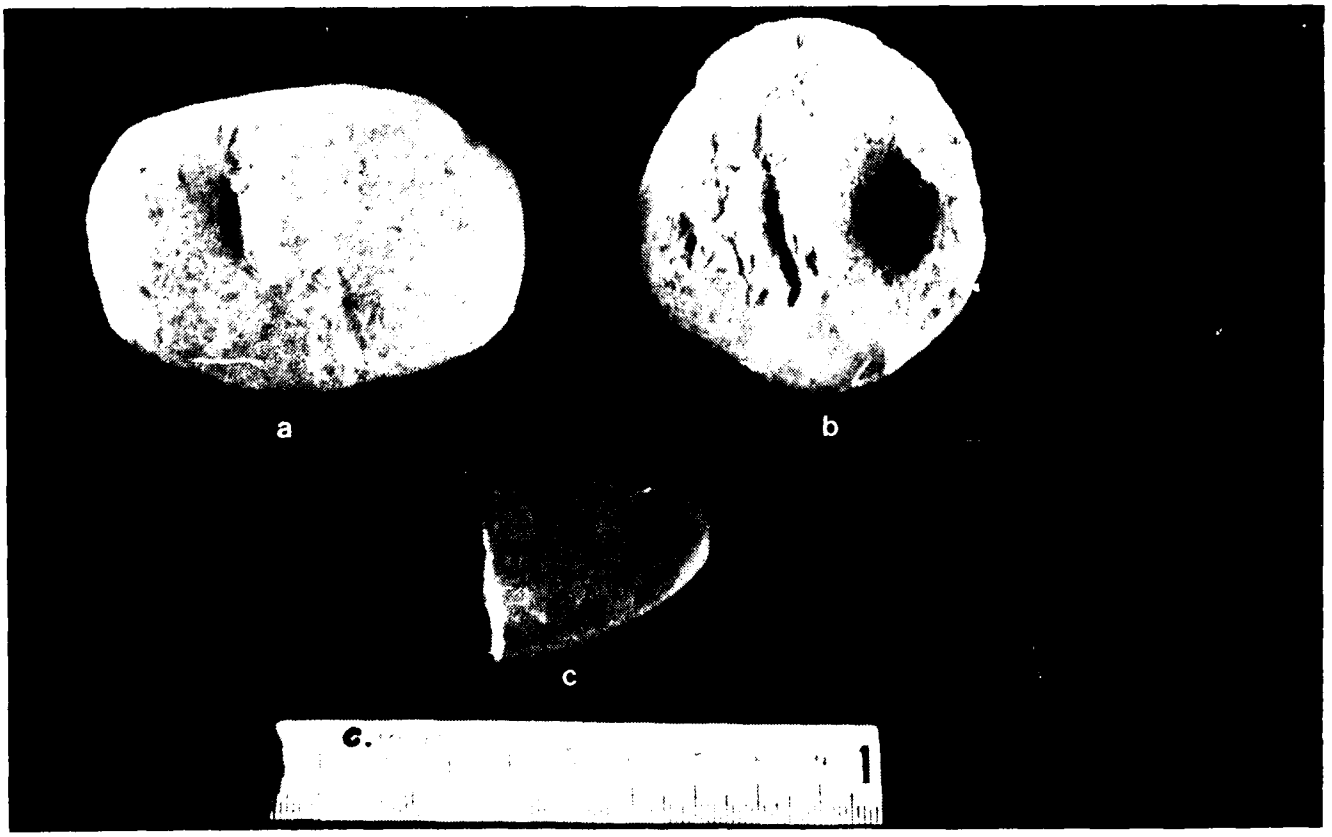

Figure 11 Artifacts From Site 3MS561: a. Hammerstone (90-940-2); b. Chunky Stone (90-940-1); c. Gorget (90-940-3)

the wheat field to the east was subsequently examined. The gully, which traversed the dropoff from the 255' to the 250' contour, produced numerous sherds and several chert flakes (Table 17).

Once again the ceramic assemblage indicates both Dunklin and Early Hoecake phase occupations at 3MS557. The Varney Red Filmed and Mississippi plain shell tempered pottery suggests an early Mississippian Big Lake occupation (A.D. 700 - 1000) as well.

Dark soil discolorations located in the bottom of the erosional gully suggest the presence of midden deposits similar to those encountered at 3MS555. The density of artifacts in the gully, which was 50 cm deep in places was much higher than on the surface of terrace. This suggests the presence of buried cultural deposits. The presence of temporally earlier components lower on the terrace also suggests the presence of buried and possibly stratified deposits.

3MS558 is located in an agricultural field south of the abandoned meander loop of Pemiscot Bayou. It occupies a small natural levee approximately 0.5 m higher than the surrounding fields. Soils in this area are Steele loamy sand (Ferguson and Gray 1971:19, sheet 12). Steele soils developed in sandy, loamy, and clayey sediments on broad flats. Cultural material was thinly scattered over an area 50 m EW x 20 m. The majority of the artifacts were historic (Table 18) but also included 2 chert flakes, a grog tempered decorated sherd and two sherds too small for analysis.

A building is shown in the general vicinity of the site on the 1939 Blytheville USGS 15 minute quadrangle map. 3MS558 had a much more limited range of diagnostic artifacts than sites 3MS547 and 3MS554. The assemblage included whiteware (1870-present), milk glass lid liners (1840- ca. 1940) and clear glass. This suggests a late 19th to early 20th century occupation.

Although evidence is slim, the grog-tempered sherd suggests an early Hoecake phase occupation of the site. The scarcity of cultural material on the surface tends to suggest that buried deposits may be present.

3MS559 is located south of the runway, in a low probability location. The site area is neither highly elevated nor close to water. Nevertheless, several sherds were found scattered over an area 30 m in diameter (Table 19). The site area was low and quite wet at the time of the survey. Soils are of the Sharkey-Steele complex (Ferguson and Gray 1971:19, sheet 12), which consists of intermixed poorly drained Sharkey and moderately drained Steele soils. The Steele soils occur as sand blows. Sharkey soils formed on broad flats in thick beds of clayey alluvium.

Table 17

Aboriginal Ceramics Recovered From Site 3MS557

Area	Temper and Decoration	Body Ct.	Body Wt.	Rim Ct.	Rim Wt.	Total Ct.	Total Wt.	
General	sand - plain	4	15.0			4	15.0	
	sand - decorated	1	4.6			1	4.6	
	grog - plain	4	9.6			4	9.6	
	miscellaneous	6	6.4			6	6.4	
Totals		15	35.6	0	0.0	15	35.6	
Gully 1	sand - plain	15	67.5			15	67.5	
	sand - cordmarked	1	6.4			1	6.4	
	grog - plain	10	38.4			10	38.4	
	grog and sand - plain	2	11.3			2	11.3	
	grog and sand - decorated	1	4.6	1	2.0	2	6.6	
	miscellaneous	15	24.8			15	24.8	
Totals		44	153.0	1	2.0	45	155.0	
Gully 2	sand - plain	9	26.2	1	3.3	10	29.5	
	sand - decorated	9	34.2			9	34.2	
	grog - plain	9	32.5			91	32.5	
	grog - cordmarked	1	5.5			1	5.5	
	grog and sand - plain	1	3.4			1	3.4	
	grog and sand - decorated	3	11.8			3	11.8	
	shell - plain	2	5.1			2	5.1	
	shell - red slipped	1	0.7			1	0.7	
	miscellaneous	18	22.5			18	22.5	
Totals		53	141.9	1	3.3	54	145.2	
Site Totals	sand - plain	28	108.7	1	3.3	29	112.0	25.9%
	sand - cordmarked	1	6.4	0	0.0	1	6.4	25.9%
	sand - decorated	10	38.8	0	0.0	10	38.8	8.9%
	grog - plain	23	80.5	0	0.0	10	38.8	8.9%
	grog - cordmarked	1	5.5	0	0.0	1	5.5	0.9%
	grog and sand - plain	35	14.7	0	0.0	3	14.7	2.7%
	grog and sand - decorated	4	16.4	1	2.0	5	18.4	4.5%
	shell - plain	2	5.1	0	0.0	2	5.1	1.8%
	shell - red slipped	1	0.7	0	0.0	2	5.1	1.8%
	miscellaneous	39	53.7	0	0.0	39	53.7	34.8%
Totals		112	330.5	2	5.3	114	335.8	

Note: [1]Weight in grams

Table 18

Historic Artifacts From Site 3MS558

Artifact Type - General Surface	Ct.	Wt.[1]
Bottle Glass - Clear	1	3.0
Bottle Glass - Green	1	14.3
Whiteware - Plain	3	8.5
Milk Glass - Lid Liner	1	1.4
Window Glass - Green	1	2.5
Stoneware - Bristol/Bristol	1	17.2
Totals	8	46.9

Note: [1]Weight in grams.

Table 19

Aboriginal Ceramics Recovered From Site 3MS559

Body Temper and Decoration	Ct.	Wt.[1]
sand - plain	1	2.3
grog - plain	2	3.5
grog - decorated	1	2.2
miscellaneous	2	2.1
Totals	6	10.1

Note: [1]Weight in grams.

Although the assemblage only numbers six artifacts, both Dunklin and early Hoecake phase occupations are indicated for the site. Although it is tempting to consider 3MS559 some type of secondary deposit, currently there is no likely source area for this material, unless it is under the runway. The presence of sand blows in the local soils may hold the key to the site being located in this area.

3MS560 is located 500 m northwest of 3MS559. It is approximately 85 m north of the restricted area fence and 70 m east of the access road. The site occupies an area 30 m NS x 45 m EW. Soils in the area are Tunica silty clay (Ferguson and Gray 1971:21,sheet 12). Tunica soils formed in moderately thick beds of sediments deposited by slack water and are underlain by loamy sediments. They are found on higher elevations.

The site was collected in quadrants oriented with the cardinal directions. The artifact density was fairly uniform across the site (Table 20).

The ceramic assemblage indicates both Dunklin and early Hoecake phase occupations. The isolated nature of the site and the concentrated artifact distribution suggest that the site represents a farmstead occupation, probably a singe house. In addition, an isolated historic artifact was recovered. This was a bottle neck with the seam 3/4 of the way up the neck. Bottles of this type were produced between 1810 and about 1913.

3MS561 is located north of 3MS560 in the triangular field defined by the runway to the east and the main taxiway on the southwest of the runway. Cultural material is thinly scattered over an area approximately 500 m NS x 300 m EW. Topography in the site area is relatively flat. The soil type is Dundee silt loam (Ferguson and Gray 1971:12, sheet 12).

No heavy clustering of artifacts was observed on the site, although densities appeared to be somewhat higher in the central portion of the site. Two 30 m x 30 m areas were surface collected. Collection Area A was located in the extreme northwest portion of the site, east of a shallow drainage ditch that bisects the site north to south. Collection Area B was located in the center of the site east of the drainage ditch. In addition, a few diagnostic artifacts were collected from the general site surface (Tables 21 and 22).

Table 20

Aboriginal Ceramics Recovered From Site 3MS560

Area	Temper and Decoration	Body Ct.	Body Wt.[1]	
NW Quad	sand - plain	2	4.3	
	sand - decorated	2	12.0	
	grog - plain	1	3.5	
	miscellaneous	11	10.0	
Totals		16	29.8	
NE Quad	sand - plain	5	14.9	
	sand - decorated	3	7.7	
	miscellaneous	4	4.5	
Totals		12	27.1	
SW Quad	sand - plain	1	2.1	
	grog and sand - plain	1	1.4	
	miscellaneous	10	8.6	
	fired clay	2	8.7	
Totals		14	20.8	
SE Quad	sand - plain	4	15.3	
	sand - decorated	2	12.5	
	grog and sand - plain	1	3.4	
	miscellaneous	5	4.7	
Totals		12	35.9	
Site Totals	sand - plain	12	36.6	22.2%
	sand - decorated	7	32.2	13.0%
	grog - plain	1	3.5	1.9%
	grog and sand - plain	2	4.8	3.7%
	miscellaneous	30	27.8	55.6%
	fired clay	2	8.7	3.7%
Totals		54	113.6	

Note: [1]Weight in grams.

Table 21

Aboriginal Ceramics Recovered From Site 3MS561

		Body		Rim		Total		
Area	**Temper and Decoration**	**Ct.**	**Wt.[1]**	**Ct.**	**Wt.**	**Ct.**	**Wt.**	
Area A	sand - cordmarked	2	12.4			2	12.4	
	grog - plain	2	6.7			2	6.7	
	shell - plain	5	20.3			5	20.3	
	shell - red lipped	2	6.6	1	1.2	3	7.8	
	miscellaneous	8	8.4			8	8.4	
Totals		19	54.4	1	1.2	20	55.6	
Area B	sand - plain	2	8.0			2	8.0	
	sand - decorated	3	9.5			3	9.5	
	grog - plain	1	3.9			1	3.9	
	grog and sand - plain	1	10.0			1	10.0	
	shell - plain	3	5.0			3	5.0	
	grog and shell - plain	5	17.6			5	17.6	
Totals		15	54.0	0	0.0	15	54.0	
Site Totals	sand - plain	2	8.0	0	0.0	2	8.0	5.9%
	sand - cordmarked	2	12.4	0	0.0	2	12.4	5.9%
	sand - decorated	3	9.5	0	0.0	3	9.5	8.8%
	grog - plain	3	10.6	0	0.0	3	10.6	8.8%
	grog and sand - plain	1	10.0	0	0.0	1	10.0	2.9%
	shell - plain	8	25.3	0	0.0	8	25.3	23.5%
	shell - red slipped	2	6.6	1	1.2	3	7.8	8.8%
	grog and shell - plain	5	17.6	0	0.0	5	17.6	14.7%
	miscellaneous	8	8.4	0	0.0	8	8.4	23.5%
Totals		34	108.4	1	1.2	35		

Note: [1]Weight in grams.

Table 22

Lithic Artifacts From Site 3MS561

Artifact Type	Area A		Area B		General		Site Total	
	Ct.	Wt.[1]	Ct.	Wt.	Ct.	Wt.	Ct.	Wt.
Interior Flakes - Crowley's Ridge	1	0.8	2	5.8			3	6.6
Interior Flakes - Burlington			1	0.5			1	0.5
Hoe Fragment - Mill Creek			1	103.0			1	103.0
Pitted Stone/Hammer					1	169.3	1	169.3
Discoidal					1	82.0	1	82.0
Gorget Fragment					1	16.8	1	16.8
Total	1	0.8	4	109.3	3	268.1	8	378.2

Note: [1]Weight in grams.

As on all of the other sites recorded in the project area, sand tempered Barnes and grog tempered Baytown and Mulberry Creek Cordmarked ceramics indicate Dunklin and early Hoecake phase occupations at 3MS561. In contrast to the other sites recorded during the survey, however, shell tempered Mississippi Plain and Varney Red Filmed constitute over 32 percent of the ceramic assemblage. This figure is 47 percent if the grog and shell tempered sherds are included. This indicates a much more substantial early Mississippian Big Lake phase occupation than on any other site at Eaker except for 3MS105. In addition to the shell tempered ceramics, a crude discoidal or chunky stone was also recovered (Figure 11). It is most similar to the type typical for the period A.D. 750 - 1050 (Morse and Morse 1983:211). Other functionally diagnostic artifacts recovered include a gorget fragment and a pitted stone (Figure 11). The location of 3MS561 is in the general vicinity of the "Joy Mounds", a group of mounds rumored to have been destroyed during construction of the air base in the 1940s. It is unknown whether the cultural material present represents secondary deposits from the destroyed mounds, an associated village, or an entirely different site. The presence of a Big Lake phase occupation does suggest, however, that the rumors may be based on fact.

Summary And Recommendations

Fifteen archeological sites were recorded during MCRA's survey of approximately 865 acres of undeveloped land at Eaker Air Force Base. Two sites were historic (3MS547, 3MS554), 11 prehistoric (3MS548, 3MS550, 3MS551, 3MS552, 3MS553, 3MS555, 3MS556, 3MS557, 3MS559, 3MS560, 3MS561) and 2 contained both historic and prehistoric components (3MS549, 3MS558). One site, 3MS547, is located outside of the base perimeter, south of Arkansas Highway 151. This site is not considered significant and no further work is recommended.

Previous work at Eaker AFB (Lafferty and Cande 1989a) documented the presence of an additional 4 prehistoric sites (3MS105, 3MS524, 3MS525, 3MS526) and one historic site (3MS531) on the base. MCRA investigations conducted in 1988 and 1990 have documented a total of 19 archeological sites on the undeveloped lands within the boundary of EAFB (Table 23). To date, only the Eaker site (3MS105) has been determined eligible and nominated to the National Register of Historic Places. The research potential exhibited by the sites on EAFB is enormous. The site types range from sparse artifact scatters, to isolated house places to dispersed villages to a fortified town. The entire span of the late prehistoric occupation of the Mississippi River meander belt is encapsulated within the confines of the base. Sites representing the historic occupation of the area are present as well. The research potential of the area is also greatly enhanced by the high probability of buried, intact deposits. Site 3MS526 was only located through the examination of spoil piles along Ditch 75. Other sites with indications of buried deposits include 3MS105, 3MS556, BAFB-20, 3MS557, 3MS558, and 3MS559.

The high density of late prehistoric and historic sites within the confines of Eaker Air Force Base displays an intensity of occupation and continuity of use of the alluvial environs of Pemiscot Bayou for the past 2000 years that is, without question, significant. We believe that all of the cultural resources on the base should be nominated as a district to the National Register of Historic Places. It is recommended therefore, that all sites within the boundaries of Eaker Air Force Base, excluding 3MS105, be tested to determine the depth and extent of the cultural deposits present, and provide sufficient data to make this nomination. Site 3MS105 has already been determined eligible for nomination to the National Register.

This testing should include, but not be limited to: use of a proton magnetometer to determine the presence and location of subsurface features; hand excavation of a minimum of 2 cubic meters of fill from each site, with flotation processing of all feature fill; and comprehensive backhoe trenching of

Table 23

Cultural Resources Located on Eaker Air Force Base

Site #	Cultural Affiliation
3MS105	Late Woodland, Late Mississippian
3MS524	Historic, Late Woodland
3MS525	Late Woodland
3MS526	Late Woodland, Mississippian
3MS531	Historic
3MS547	Historic (outside of EAFB boundary)
3MS548	Late Woodland
3MS549	Historic, Late Woodland
3MS550	Late Woodland
3MS551	Late Woodland
3MS552	Late Woodland
3MS553	Late Woodland
3MS554	Historic
3MS555	Late Woodland
3MS556	Middle Woodland
3MS557	Late Woodland
3MS558	Historic, Late Woodland
3MS559	Late Woodland
3MS560	Late Woodland
3MS561	Late Woodland, Mississippian

both the terrace edge and the flat plains adjacent to Pemiscot Bayou. Backhoe trenching is necessary to determine the nature and extent of buried deposits. In addition, Survey Area I should be reexamined under conditions of improved ground visibility, and any cultural resources identified at that time should also be tested.

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APPENDIX A

ATTACHMENT 1

Scope of Work

Archaeological Survey

at

Eaker Air Force Base, Arkansas

Background

On January 29, 1990, the Secretary of Defense announced a proposal to close or realign a number of military bases. Eaker Air Force Base (AFB), Arkansas was identified as a candidate for closure. In accordance with the National Environmental Policy Act (NEPA), the Air Force will prepare an Environmental Impact Statement (EIS) to assess the potential environmental impacts of the proposed base closure. If a decision is made to close the base, a second EIS will be completed to address the final disposition/reuse of the excess property. As part of assessing the impacts of possible base closure, the Air Force Regional Civil Engineer, Norton AFB, California has asked that an archaeological survey be conducted on those undeveloped portions of the base not studied for the Peacekeeper Rail Garrison program.

Research Design

This study is intended to provide preliminary data on archaeological site distributions on the undeveloped portions of Eaker AFB. The data will be used to estimate the potential impacts of the proposed base closure on cultural resources. Although it may be necessary to use shovel probes in some heavily vegetated areas, the study is designed to be a surface survey; test excavations are beyond this scope of work. As a result, the study will not fully meet the requirements of Section 106. Nevertheless, it is expected that preliminary assessments of site significance will be offered on the basis of the survey effort. Full site testing and evaluation will be conducted at a later date, in the context of more detailed reuse studies or the base's comprehensive planning program.

The survey area consists of approximately 865 acres distributed in parcels throughout Eaker AFB (Figure 1). The survey will be conducted in accordance with established guidelines presented in A State Plan for the Conservation of Archaeological Resources in Arkansas (1982). Other specific methods and procedures are listed below.

General Requirements

1. Scheduling is a key concern, as the draft EIS is due June 22, 1990. Sufficient time and personnel will be allocated to assure that all work will proceed on schedule. Unless otherwise directed by Tetra Tech,Inc., the methods indicated herein will guide the fieldwork.

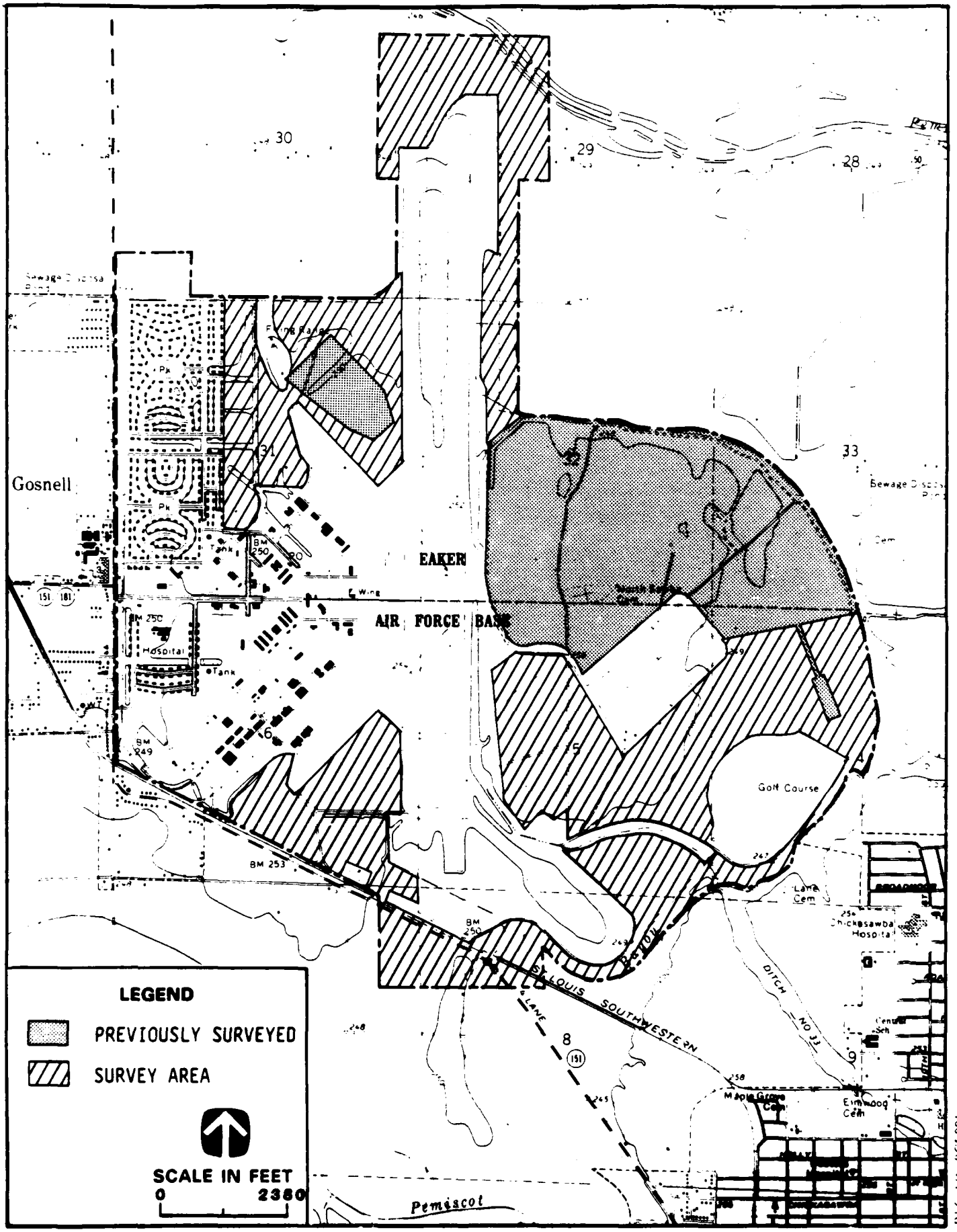

FIGURE 1 CULTURAL RESOURCES STUDY AREA, EAKER AFB

2. Either the Principal Investigator (PI) or a Project Archaeologist (PA) will be in the field at all times. If a PA is designated, the PI will monitor the progress of fieldwork at least twice weekly to identify necessary changes in schedules and security clearances.

3. A daily log of activities will be kept by each crew chief. The log will include a summary of crew membership, areas surveyed, sites recorded, travel mileage, and weather conditions. These data will be synthesized by the PI into a brief progress report and communicated to Tetra Tech, Inc., by telephone, on a weekly basis. Copies of progress reports will be submitted with the final report.

Field Survey

1. Intensive pedestrian survey will use 20-meter maximum spacing between crew members (State Plan; B-7d). During intensive field survey, the onbase spoil piles from dredging Ditch 75 by the U.S. Army Corps of Engineers in 1982 will be examined for the presence of cultural materials.

2. The locations of sites and isolated artifacts will be marked on 7.5-minute topographic maps, and sites will be recorded on State of Arkansas survey forms, or other forms acceptable to the SHPO. Sites are defined as any identifiable feature, or a minimum of ten artifacts in a 30-meter-diameter area.

3. Temporally or functionally diagnostic artifacts will be drawn and photographed, and their location noted on the topographic map.

4. Survey notes will indicate specific areas examined each day and contain brief descriptions of soils, ground cover, and the visibility and extent of observed artifacts and features.

5. A review of artifacts collected by nearby landowners will be made and recorded. The contractor is responsible for identifying and contacting these individuals in consultation with Tetra Tech.

6. During the intensive survey, historic structures which appear to be old enough for inclusion in the NRHP and which meet one or more of the criteria for eligibility will be recorded, plotted on maps, and, if appropriate, photographed.

Surface Collection

1. Surface collection should be limited to the minimum required by the state plan (Appendix B-8). Samples of all temporally or functionally diagnostic artifacts and a sample of other artifact types will be collected during survey.

2. Permanent datum points will be established and collected items will be mapped in relation to the datum points. Samples may be mapped by grid provenience.

3. Collected artifacts will be classified according to appropriate morphological and functional categories during laboratory analysis to identify temporal and functional variability in the assemblage.

4. The contractor will arrange for collections to be curated at the Arkansas Archaeological Survey Repository, Fayetteville.

Analysis

All artifactual material will be analyzed, dated, placed into proper context to respond to research priorities, and evaluated for relevance to research goals. The information obtained from the analysis will be used to make preliminary suggestions regarding the significance of sites and their eligibility for the NRHP. Specialized analyses such as chronometric dating and palynology are not scheduled at this time.

Reporting

1. The contractor will prepare a final report for Tetra Tech, Inc. following the format suggested in the State Plan (Standards for Fieldwork and Reports).

2. Any sites located during the survey will be recorded, mapped, and evaluated for significance. Results will be included in the draft final report.

3. Site locations and characteristics will be compared with the forms and records obtained during an earlier files search conducted for the area surrounding the base. If any sites were previously recorded, the site forms will be updated.

4. Preliminary results will be communicated by letter 14 days after the beginning of fieldwork. Five copies of the draft report will be submitted within 30 days of the date of completion

of fieldwork. Two paper copies and one disk copy of the final report will be due within 30 days of receipt of review comments from Tetra Tech. The text should be in WordPerfect, or standard ASCII format.

5. Maps, aerial photographs, and other materials provided by the Air Force or Tetra Tech will be returned to Tetra Tech upon completion of the final report.