

PHASE III ARCHAEOLOGICAL EXCAVATIONS AT THE WOODLYN SITE
(22DS517): A PRELIMINARY REPORT ON AMS DATES AND ASSOCIATED
MATERIALS

by

Amanda Brock

A Thesis

Submitted in Partial Fulfillment of the

Requirements for the Degree of

Master of Science

Major: Earth Sciences

The University of Memphis

December 2012

Acknowledgements

C.H Nash Museum

University of Memphis Department of Earth Sciences

Mississippi Department of Archives and History

The University of Arizona AMS Laboratory

David H. Dye

Daniel C. Swan

Jerry Bartholomew

George Swihart

Roy Van Arsdale

Paul Bowden

Judson Finley

Charles McNutt

John Hesse

Jay D. Franklin

Danya Pase

Steve Sharp

Todd McCurdy

John Connaway

Chris Collins

Ross Bell

ABSTRACT

Brock, Amanda L. M.S. The University of Memphis, December, 2012. Phase III Archaeological Excavations at the Woodlyn Site (22DS517): A Preliminary Report on AMS Dates and Associated Materials. Major Professor: David H. Dye, Ph. D.

The University of Memphis conducted field school excavations at the Woodlyn archaeological site (22DS517) during the summers of 1997 and 1998. Seventeen units were excavated yielding a multitude of artifacts, data, and features. AMS dates were obtained from radiocarbon samples collected during the excavations. To better understand the extent of the temporal occupation at Woodlyn and to further refine the age range and cultural markers of the Walls Phase, I examined the artifacts and features associated with the dated radiocarbon samples. During the mid-sixteenth century, Woodlyn was a town included in the polity known as Quizquiz based on the Hernando De Soto narratives. Archaeologists have suggested that the Woodlyn site was abandoned prior to De Soto's arrival in the southeast, while others speculate that the De Soto expedition may have encountered Woodlyn before crossing the Mississippi River. The radiometric age range distributions suggest that Woodlyn was still active shortly before the arrival of the De Soto expedition. The new AMS dates provide an important data set for the interpretation of the Walls phase and its association with the De Soto expedition.

Table of Contents

Chapter	Page
List of Tables	vi
List of Figures	vii
1 Introduction	1
Project Background	1
Physiography	2
Paleoenvironment	5
Current Environment and Climate	5
Site Description	7
Field Methods	10
Lab Methods	10
2 Culture History	12
Paleoindian Period	12
Archaic Period	14
Gulf Formational Period	17
Woodland Period	19
Mississippian Period	22
Protohistoric Period	25
Historic Period	26
3 Previous Archaeological Investigations	28
Dr. Julius Augustus Davies	28
Dr. Calvin Brown and the Mississippi Geological Survey	28
Investigation of the Lower Mississippi Valley Survey	29
Archeological Survey in the Lower Yazoo Basin	29
University of Memphis 1989 Surface Collection	30
University of Memphis Phase II Testing	30
University of Memphis: Site Reconnaissance 1999	31
4 Results	33
Conclusions	52
References	56

Appendix	61
A. AMS Radiometric Calibration Curves	61

LIST OF TABLES

Table		Page
1	New Woodlyn Radiocarbon Assays	34
2	Summary of ceramic artifacts associated with Unit D, 20-30cm	37
3	Summary of ceramic artifacts associated with Unit D, 30-40cm	39
4	Summary of ceramic artifacts associated with Unit D, 40-50cm	40
5	Summary of ceramic artifacts associated with Unit H, 20-30cm	42
6	Summary of ceramic artifacts associated with Unit H, 30-40cm	43
7	Summary of ceramic artifacts associated with Unit C, Feature 33	44
8	Summary of ceramic artifacts associated with Unit B, 20-30cm	45
9	Summary of ceramic artifacts associated with Unit B, Feature 5	50
10	Summary of ceramic artifacts associated with Unit G, 20-30cm	52

LIST OF FIGURES

Figure		Page
1	The Mississippi alluvial valley and distribution of Quaternary deposits	4
2	View of Woodlyn looking northwest	8
3	Digitized version of the 1999 Site Reconnaissance Map	32
4	Unit D Celts	36
5	Unit D at 40cm	38
6	Unit H Plan View at 35cm below datum	41
7	Unit B East wall profile	47
8	Overlay of Plan View map of Unit B Features	48
9	Feature 5 Ranch Incised jar fragment	49

Chapter 1. Introduction

Project Background

The Woodlyn archaeological site (22DS517) is located near Walls, Mississippi in De Soto County and was first professionally documented by Calvin Brown in 1926 (Brown 1926). Later, Woodlyn was included in Phillips et al. (1951) 1940-1947 survey of the Lower Mississippi alluvial valley. The site sits along a natural levee forming the western bank of Norfolk Bayou and is currently bisected by Thomas Road, a gravel drive.

Archaeological excavations were conducted by the University of Memphis as a field school during the 1997 and 1998 summer sessions. The fieldwork conducted during the 1997 field season was directed by Susan Hahn and Tina Logston. Fieldwork during the 1998 field season was directed by Jane Hill and Pam Jones. Dr. David Dye acted in a supervisory capacity and as the principal investigator. Enrollment in the field school and volunteer labor provided a crew ranging from twenty to thirty people.

Field and preliminary laboratory work took place over an approximate forty-five day period each summer. Excavations were restricted to the west side of Thomas Road just off Old Highway 61, where a small portion of the site, often referred to as a mound remnant, remains protected by a wooded area. Prior to Phase III fieldwork, Phase I investigations took place at the Woodlyn site consisting of random sampling methods; systematic, controlled surface collections; and shovel tests. The intention of the Phase I project was to determine site limits and ascertain the probable location of a palisade structure. Artifact assemblages from the Phase I investigations, compiled with a controlled surface collection, were analyzed and reported by Tina Logston (1997). In

addition to artifacts obtained through field work conducted by students at the University of Memphis, private artifact donations have been accessioned by the Chucalissa Museum.

Physiography

The Woodlyn (22DS517) archaeological site is located in the Lower Mississippi Valley (LMV) portion of the Gulf Coastal Plain, an area of low relief with well developed drainage systems that flow south in a general seaward direction. The LMV contains “alluvial deposits of late Pleistocene and Holocene age and are flanked by fluvial terraces of earlier Quaternary age and coastal plain formations of Tertiary age” (Saucier and Snead 1989). The project area is bound on the east by Oligocene and Eocene formations topped with Pleistocene and Holocene deposits. The LMV was formed as part of the Mississippi embayment.

The LMV includes six lowland areas begin at the mouth of the Ohio and extend some 965 km south to the Gulf of Mexico (Saucier 1999). The Yazoo Basin is one of six lowland areas that comprise the LMV. Woodlyn is located on the north-east edge of the Yazoo Basin, the largest lowland section of the LMV (Figure 1). The Yazoo Basin stretches 320 km from Memphis to Vicksburg (Saucier 1999). The basin is bordered on the west by the Mississippi River and by loess bluffs or terraces of early Quaternary and Tertiary age on the east (Saucier and Snead 1989). To interpret the nature of local archaeological deposits, it is important to understand the dynamic geomorphic processes at work within the study area. The dynamic nature of the Mississippi River alluvial plain has had a great impact on archaeological deposits and the settlement patterns of contemporary cultural occupations. Near the Woodlyn site, the floodplain is composed

of Holocene age deposits. The floodplain is characterized by relatively low relief and poor drainage. The morphology of a floodplain environment is interspersed with meandering streams, trough-like depressions, swampy areas, and low ridges, all formed by abandoned river channels.

The near-surface alluvium within the Yazoo Basin mainly consist of fine sand, silt, and clay. The alluvium was deposited “by lateral accretion along meandering channels, incrementally as vertical accretion during times of major overbank flooding, or as fill in abandoned channels or swales” (Saucier 1999). The substratum, 20 to 30 meters deep, consists of channel lag and point bar deposits of sand and a mixture of gravel at deeper levels (Saucier 1999). Older strata consist of similar material that was deposited by glacial outwash of braided stream during the Pleistocene (Saucier 1999). The braided stream runoff from glacial outwash that formed the sediments of the Yazoo Basin flowed from the Ohio, Missouri, and Mississippi River drainage basins (Saucier 1974).

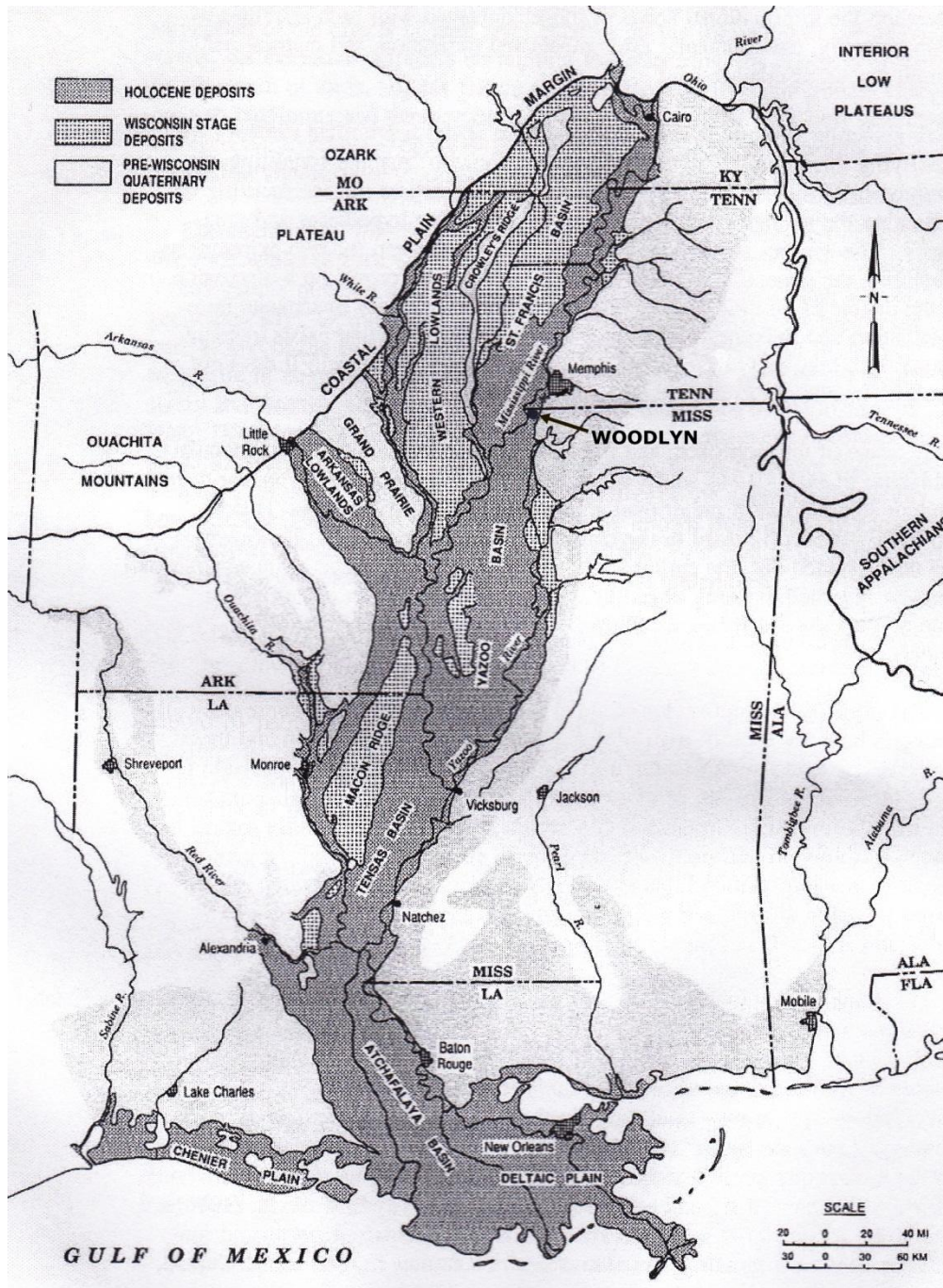


Figure 1: The Mississippi alluvial valley, distribution of Quaternary deposits, and location of the Woodlyn site (adapted from Delcourt et al 1997).

Paleoenvironment

By 14,000 B.C., vegetation in the LMV was dominated by a spruce forest that extended south to the Gulf of Mexico; while mixed hardwood forests flanked the valley (Jeter and Williams 1989). A minor warming trend had begun by about 12,500 B.C. and by 10,500 B.C. a significant climatic change was taking place. The Laurentide ice sheet retreated north to the Great Lakes area around 12,000 B.C. (Delcourt 1979). Sea level in the Gulf of Mexico was near its present level by 4000 B.C. The spruce forest of the Lower Mississippi Valley was gradually replaced by a cypress-gum complex around 8500 B.C. (Jeter and Williams 1989; Delcourt 1979). A typical eastern deciduous forest with stretches of grassland had developed by the beginning of the Holocene (Thorne and Curry 1983). The Oak-Hickory-Southern pine forests began shifting north out of the coastal plain after 10,500 B.C. During the Hypsithermal (7000 to 3000 B.C.), prairies expanded at the expense of lowland mixed oak forests, but around 4000 B.C. a significant expansion of southern pine began across the Coastal Plain. The close of the Hypsithermal is characterized by replacement of the extensive prairies of the east with woodlands.

Current Environment and Climate

The Woodlyn site, located in northwest De Soto County approximately 1.5 km east of the Mississippi River's present course, sits at the extreme north end of the Yazoo Basin in the current (Stage I) meander belt of the Mississippi River (Saucier 1994). Woodlyn was built atop a natural levee formed by the confluence of Norfolk Bayou and Dead Negro Slough [sic].

The Mississippi River alluvial valley within the Yazoo Basin physiographic area, is a low relief floodplain dominated by agricultural fields. Within De Soto County, the Mississippi River ranges from 170 to 165 feet above sea level. The town of Walls occupies an area approximately 210 feet above sea level (USDA 1959). After a series of disastrous floods during the eighteenth and early nineteenth centuries, the Flood Control Act of 1928 authorized construction of levees and floodways. Farms and residential areas are now protected from flood waters by a system of levees. Drainage was redirected from residential areas and farm land to Lake Cormorant Bayou. As a result of flood control projects, streams and abandoned channel tributaries rarely reconnect with the Mississippi River. These waterways generally flow parallel to the river in a southerly direction (Saucier 1994).

The rich alluvial sediments of the LMV provide a productive environment for agricultural industry. As modern agriculture developed in the southeast, the vast majority of De Soto County was clear-cut, leveled, and plowed for cultivation; a process that has had a significant impact on archaeological sites in the area. Deforestation has made the area more susceptible to erosion. Edible floral resources include acorns, black walnuts, pecans, and a variety of hickories. Faunal resources include wild turkey, fish, white-tailed deer, waterfowl, turtle, squirrel, raccoon, opossum, and rabbit (Chapman and Walling 1999). The climate in De Soto County is humid, winters are mild, and summers are hot. The average growing season lasts 222 days. Average frost kill begins around November 4 and ends by March 26. There are generally dry periods during the summer and fall that can potentially damage pastures and crops. A majority of the average

rainfall occurs from December through May, with an average of 49 inches per annum (USDA 1959).

Site Description

The Mississippi River Alluvial Plain comprises approximately 15 percent of De Soto County. Woodlyn lies within the North West ¼ of Section 36, Township 72 North, Range 54 East on the Lake Cormorant 7.5 minute quadrangle map. The site is approximately 6.5 kilometers west of Walls, Mississippi. Woodlyn (22DS517) is bisected by Thomas Road on a north/south axis. The northern limit of Woodlyn is provided by a drainage ditch, referred to on current maps as Dead Negro Slough. The site “measures approximately 250 meters x 150 meters and consists of heavy concentrations of prehistoric habitation debris (daub, ceramic sherds, and lithic artifacts and debitage)” (Ezell and Keeney 1997). A small portion of the mound remains intact at the northern portion of the site. The mound remnant measures approximately 30 meters by 15 meters and is covered and somewhat protected by a thicket of trees and underbrush (Figure 2). The remainder of the site lies in pasture grasses and agricultural fields.

In interviews with the landowner, Mr. Robert Sayle, conducted during 1997, he indicated that the mound area had been previously utilized as a historic period cemetery (Ezell and Keeney 1997; Logston 1997). Mr. Sayle was unsure of the number of years that the mound functioned as a historic period cemetery; however, he did indicate that the mound remnant had been undisturbed by agricultural activities for at least 25 years (Ezell and Keeney 1997). Informal interviews with another local resident corroborated Mr. Sayle’s information. The resident also indicated “that at least one nineteenth century

historic period coffin burial does exist within the confines of the cemetery (mound remnant) area” (sited in Ezell and Keeney 1997). The Mississippi Department of Archives and History site files indicate that the Woodlyn site did include a neglected graveyard covered by brush.



Figure 2: View of the Woodlyn archaeological site looking northwest.

The Woodlyn site is situated on the northeastern edge of the Yazoo Basin, a lowland area within the Mississippi River alluvial valley. Woodlyn is located in the current (Stage 1) meander belt of the Mississippi River (Saucier 1994). Saucier (1994) indicates

that the Stage 1 meander belt achieved its full flow, between Memphis and Vicksburg, at approximately 1000 B.C.

The Woodlyn site was recorded in the state site files by Phillips (et al., 1951). They note that the site is located at the junction of Norfolk Bayou and Dead Negro Slough. Cultural material listed includes the following ceramic types: Barton Incised, Baytown Plain, Bell Polished Plain, Hull Engraved, Kent Incised, Mulberry Creek Cordmarked, Neeley's Ferry Plain, Old Town Red, Ranch Incised, Rhodes Incised, and Walls Engraved (Phillips et al. 1951). A majority of the ceramic material recovered from Woodlyn has been designated as Late Mississippian. Material occurring along Norfolk Bayou is reported as being rich in pottery and daub. The Mississippi Department of Archives and History lists Woodlyn as eligible for the National Register of Historic Places (NRHP). Woodlyn is designated as a Walls Phase site by Phillips (1970). The Walls Phase dates range between A.D. 1400 and 1600. Contemporaneous Walls Phase sites within the immediate area include: the sites of Cheatam, Irby, Norfolk, and Walls.

Woodlyn and the surrounding area has been impacted by a variety of factors. A large portion of the platform mound has been destroyed by agricultural activities. As the area provides soils favorable for large scale farming, approximately 80 percent of the site has been leveled and plowed. The site has also been impacted by looting. During the 1997 field season, one small hole, at one half meter in diameter and a depth of 10 to 15 cm was found and appears to have been the result of looters. Field notes indicate that it was not deep enough to disturb high artifact density stratigraphic layers. The extent of looting is not limited to this particular excavation. Private collections are known to exist and the

site is actively surface collected. Given the effect of various impacts to the settlement, it is encouraging that there is still a heavily forested portion of the site that remains intact.

Field Methods

Phase III archaeological excavations at the Woodlyn site (22DS517) were conducted by the University of Memphis as a field school during the 1997 and 1998 summer sessions. Field and lab work took place over an approximate forty-five day period each summer. Excavations were restricted to the west side of Thomas Road (an unimproved gravel drive) just off of Old Highway 61, where a small portion of the site remains intact. To confirm horizontal site limits and interpret past collections, a surface collection radiating out from the wooded area of the site along the plowed fields was conducted utilizing a random-sampling method. A total of seventeen 2x2m units were excavated. Two 1x3m units were excavated in an attempt to locate remains of a palisade wall. Excavated soil was processed through 1/4" mesh screens.

Many features at the site were marked by a dark fill against the lighter subsoil. Exposed features were assigned numbers, mapped, photographed, and troweled to determine definition and measure disturbance. Large or fragile artifacts were removed and bagged by provenience. Munsell color charts were used to determine soil color and feature profiles were sketched and mapped.

Lab Methods

Artifacts collected during the 1997-1998 field school at Woodlyn were washed, analyzed, and catalogued at the C.H. Nash Museum. Sorting criteria for the plain

ceramic wares were based on Lumb and McNutt's analysis of ceramics at Chucalissa (1988). Decorated wares were sorted based on criteria outlined in Phillips (1970) work in the Yazoo Basin. Ceramics measuring less than 1/2" were weighed and categorized as residual sherds. Lithic debitage were size sorted into categories of flakes greater than 1", 1/2", 1/4", and 1/8" in preparation for lithic mass analysis at a later date. Lithic tools categories include: retouched/ utilized/ modified flakes, spoke shaves, scrapers, drills, projectile points/ knives, biface and uniface tools. Chunkey stones, hammer stones, and burnishing stones were separated and categorized under ground stone tools. Each sorted group of artifacts was counted and weighed in grams.

Chapter 2. Cultural History

The archaeological record is separated into various periods that are defined by temporal cultural developments and patterns of cultural behavior represented by types and styles of artifacts with broad distributions. The LMV has a well-documented cultural history. Early culture periods are categorized by phases defined by lithic tool manufacturing. After 800 B.C., with the development of ceramic manufacturing, cultural diagnostics focus on the style and technique attributed to ceramic wares. The development of stages, periods, and sub-periods is a useful tool; however, they must not be viewed as mutually exclusive categories, particularly with regards to transitional phases.

Paleoindian Period, 10,000 B.C. to 6500 B.C.

Dating the entrance of early cultures into North America is a heavily debated issue. The entry locations, nature of their transportation, and tool typologies are also the subject of research and debate. The time range for the Paleoindian Period in the Upper Yazoo Basin varies according to differing sources. Artifacts and sites attributed to early culture date to at least 10,000 B.C. Jeter and Williams (1989) place an ending date at 6,500 B.C.

Paleoindian subsistence strategies focused on hunting and gathering. LMV Paleoindians may have hunted mega fauna, large extinct mammals, which roamed North America during the Pleistocene, but there is no direct evidence. Consequently these foragers were highly mobile. As warming trends caused environmental changes, Paleoindians began to develop foraging strategies.

Paleoindian sites are most frequently found in the north-central portion of the LMV. Paleoindian occupations within the LMV have been located near the edge of old braided stream surfaces, for example at the western edge Mississippi between Cleveland and Greenville and at the eastern edge of the Yazoo Basin north of Greenwood. Old braided stream surfaces are characterized by flat bottom lands, bayous, and small rivers that indicate old stream channels of the Mississippi River. Surveys conducted on the eastern braided stream surface (on the eastern edge of the Yazoo Basin north of Greenwood) revealed fifteen Paleoindian cultural deposits. (Connaway 1988) A survey of the western braided stream surface (at the western edge of the state between Cleveland and Greenville) yielded the discovery of only one Paleoindian site (Connaway and McGahey 1996). This discrepancy may be related to a number of problems including modern agriculture and land development (Connaway and McGahey 1996).

Brain (1979) proposed four periods (I-IV) of cultural development for the Paleoindian stages in the Lower Mississippi Valley. Period I (16,000 B.C. to 10,000 B.C.) marks the migration of Paleoindian hunters into North America. Period II dates range from 10,000 B.C. to 9000 B.C. (Brain 1979). Period III (9000 B.C. to 7500 B.C.) diagnostic artifacts include: Folsom, Quad, Midland, Scottsbluff, and Plainview points (Brain 1979). Period IV (7,500 B.C. to 6,500 B.C.) includes Big Sandy, San Patrice, Geneill, Cache River, and Dalton points (Brain 1979). Paleoindian studies within the Yazoo Basin are a limited and somewhat recent occurrence. Brain pioneered the first culture sequence for the Paleoindian period within the basin; however his efforts were based on limited data and plagued by issues with provenience and identification (Buchner et al. 1996; McGahey 1996).

With the acquisition of recent Yazoo Basin data (McNutt 1996), McGahey (1996) proposes five culture periods that include a continuance between Paleoindian and Early Archaic diagnostics. The lithic artifacts recovered at Period 1 and 2 sites are largely derived from non-local materials. Early Paleoindian (Period 1) includes straight-side fluted points such as Cumberland, Redstone, and Clovis. Middle Paleoindian (Period 2) includes unfluted points such as Coldwater, Hinds, Quad, Beaver Lake, and Arkabutla. Local lithic material began to predominate in Periods 2 and 3, with a shift from Fort Payne chert to more locally available material including citronelle and tan gravel (McGahey 1996). The shift may indicate a new adaptation to the local environment and a lessening dependence on imported, exotic materials (Chapman and Walling 2000; Weinstein 1999). Late Paleoindian (Period 3) includes San Patrice and Hardaway side-notched, and Dalton points (McGahey 1996). McGahey's Periods 4 and 5, which are Early Archaic, will be addressed in the following section. McGahey (1996) does not provide dates for these periods.

Archaic Period (8,500 B.P. to 3,000 B.P.)

The Archaic period is designated by a diversification in tool types and projectile points. McGahey (1996) suggests a continuance between Paleoindian and Early Archaic diagnostics. As warming trends caused environmental changes, large Pleistocene mammals became extinct. Late Paleoindian inhabitants began to develop different foraging strategies. Archaic populations increased and developed mobile hunting-and-gathering strategies that relied upon the exploitation of smaller game. New artifacts

include abraders, celts, drills, grinding stones, manos, nutting stones, pitted cobbles, and unifacial tools (Morse and Morse 1983).

Early Archaic Period

In the Yazoo Basin, the early Archaic Period ranges from 6,500 B.C. to 5000 B.C. McGahey's (1996) Period 4 includes Big Sandy I, Cache River, Dalton, and Greenbrier points. A distinct decrease in Dalton types for the period is noted, with a shift towards side-notched ground forms (McGahey 1996). Period 5 point types include corner-notched Pine Tree, Stillwell, Hardin, Decatur, Jude, and Lost Lake forms (McGahey 1996). The marked increase and development of new stone tool technologies in the Early Archaic was demonstrated by a survey of valley alluvial landforms on the eastern perimeter of the Yazoo Basin conducted by Connaway (1988) and Stallings (1997).

Middle Archaic Period

The Middle Archaic period dates between 5500 B.C. to 3000 B.C. The Middle Archaic roughly coincides with a warming and drying trend termed the Alithermal or Hypsithermal. The trend spurred an increase in aridity causing the Great Plains to expand eastward by converting forests to grasslands and prairie (Morse 1981). In some parts of the LMV, climate change caused a shift in subsistence and settlement patterns (Morse and Morse 1983). The shift involves a longer duration in site occupancy and an increase in shellfish exploitation as indicated by the occurrence of shell middens. Foraging strategies intensified during the Middle Archaic, which coincides with a shift towards the settlement and exploitation of river valleys (Smith 1992). Benton, Cache River, Denton, Eva, and Opossum Bayou points are indicative of the Middle Archaic period (Connaway 1988). New sumptuary-type items begin to appear including

bannerstones, bowls, carved bone, pendants, and stone beads (Connaway 1988). Two intact Middle Archaic sites located in the Yazoo Basin, Longstreet (22QU523) and Denton (22QU522), were excavated by Connaway (1977, 1981). Two Middle Archaic mound structures are thought to have been constructed at the Denton site (22QU522) (Connaway 1977). However McNutt (1996) places the Denton site in the Late Archaic period.

Late Archaic Period

The Late Archaic period dates between 3050 B.C. to 1500 B.C. There is some degree of controversy involving Late Archaic dates. Most of the debate stems from the temporal placement of the Poverty Point Culture. Late Archaic artifact assemblages that include Poverty Point items are difficult to date. Late Archaic projectile points may include Bartlett, Big Creek, Denton, and Opossum Bayou (Connaway 1977). McGahey (2000) lumps Poverty Point and the Gulf Formational Periods together and offers a date range from 3000 B.C to 500 B.C. McGahey's (2000) figures indicate that Late Archaic projectile points may include Archaic Barbed, Gary, Ledbetter, Little Bear Creek, McIntire, and Pickwick.

The Late Archaic period was a time of increased population density and specialized strategies that enabled the exploitation of a variety of ecological zones. Regional exchange networks also began to emerge. Subsistence focused on large mammals such as turkey and deer, and foraging for wild nuts such as acorn, hickory, and walnut. The beginning of plant domestication may have occurred during this period.

Gulf Formational Period (2000 B.C. to 100 B.C)

The Gulf Formational period occurred in the Yazoo Basin as the Poverty Point culture flourished. The Poverty Point culture is also referred to as the Archaic climax or Formative Archaic period (McNutt 1996, Webb 1977). McNutt includes this stage within the Poverty Point or Terminal Late Archaic Period (McNutt 1996). The Middle Gulf Formational period includes the Poverty Point aspect. Tchula is synonymous with the Late Gulf Formational.

Middle Gulf Formational

An extensive long-distance trade network began to emerge with the advent of the Poverty Point culture. Non-local lithic materials begin to reoccur in site assemblages as well as new artifacts such as ceramics, exotic materials, and tabular pipes. It is unknown whether ceramics were imported or locally manufactured (Sassaman 1993). Lithic assemblages include a majority of the tools produced during the Late Archaic Period. Projectile points diagnostic of the Middle Gulf Formational include Delhi, Motley, and Wade (McGahey 2000).

By 4000 B.P. construction began at the Poverty Point site (16WC5) in West Carroll Parrish, Louisiana (Webb 1977, 1982). The artifact assemblages discovered at the site, as well as the widespread presence of the Poverty Point variant at sites throughout the region, indicates that the site was a sort of operation hub for exchange. Hematite, magnetite, novaculite, and quartz were imported from Arkansas and Missouri.

Three Poverty Point-related sites have been intensively documented within the Yazoo Basin: Jaketown (22HU505), Slate (22HU655), and Teoc Creek (22CR504). The only phase suggested for the Poverty Point variant within the Yazoo Basin is Jaketown, named

for the Jaketown site (22HU505), in Humphreys County (Phillips 1970). Two circular structural features were excavated at the site that have been linked with the Poverty Point variant. Jaketown may have represented a regional exchange center (Webb 1982).

Ceramic manufacturing of the Gulf Formational period within the Yazoo Basin is poorly documented. Fiber-tempered sherds were used throughout a large portion of the Southeast and over a long period of time. Some fiber-tempered sherds found in the region date to 4,500 B.P. (Sassaman 1993).

Late Gulf Formational Period

The Late Gulf Formational is synonymous with the Tchula period, and is characterized by the widespread use of ceramics. Otherwise, Late Gulf Formational artifact assemblages are relatively homogenous with the Late Archaic and Middle Gulf Formational. Dates suggested for this period range from A.D. 950 to 100 B.C. Burial mounds are generally conical, with bundle and flexed burials (Ford 1990). Two different cultures appear in the Upper Yazoo Basin during the Late Gulf Formational Period. The Lake Cormorant culture (Phillips 1970) extends to about Memphis and south to the Coahoma/ Bolivar County line. The Lake Cormorant culture also extends into parts of Arkansas. Lake Cormorant ceramic forms are somewhat soft and chalky wares that are generally tempered sparingly with grog (Toth 1988). Suggested diagnostics for Lake Cormorant (Toth 1988; Chapman and Walling 1999) include:

Twin Lakes Punctated, *var. Twin lakes* and *Crowder*
Mabin Stamped, *var. Deadwate, Mabin, Point Lake,* and *Cassidy Bayou*
Cormorant Cord Impressed, *var. Cormorant*
Churupa Punctated, *var. Boyd*
Withers Fabric Marked, *var. Withers.*

The Tchefuncte culture is found in the southern end of the Yazoo Basin and a majority of the LMV south of the basin (Ford and Quinby 1945). Tchefuncte wares are chalky and soft with a laminated texture and little evidence of grog tempering. Suggested diagnostics for the Tchefuncte culture (Phillips 1970, Ford 1955) include:

Tammany Punctated, *var. Fisk Bayou*
Tchefuncte Stamped, *var. Shell Brake*
Jaketown Simple Stamped, *var. Jacketown*
Tchefuncte Plain, *var. Sky Lake*
Lake Borgne Incised, *var. Tenhut*
Alexander Incised, *var. Green Point*
Alexander Pinched, *var. Castine Bayou.*

Woodland Period

The Woodland Period is commonly separated into three sub-periods: Early, Middle, and Late Woodland. By including Tchula into the Late Gulf Formational stage, there will be no discussion of the Early Woodland stage (Chapman and Walling 1999). The Middle and Late Woodland combined dates range from 150 B.C. to A.D. 900. The stages are distinguished by diversity in ceramic wares, ritual developments, and burial mound construction.

Middle Woodland Period

The Middle Woodland is characterized by a period of interregional contact known as the Hopewellian Interaction Sphere. Hopewell sites in Ohio and Illinois date from 100 B.C. to A.D. 500. Contemporaneous sites in the Southeast include Pinson (40MD1), Pharr (22PS500), and Savannah (40HR29) (Mainfort 1988).

The Middle Woodland culture within the LMV is designated as Marksville, named after the Marksville site (16AV1) in Louisiana. Distinguished traits include galena and

copper objects, platform pipes, and ceramic motifs. There was a continuation of conical mound construction. Elite burials were often contained in log tombs placed in the earthen platforms of the early mound construction. Other burials were placed in village sites. Economies were based on hunting-and-gathering strategies. Two Marksville phases, Dorr and Prairie, are recognized in north west Mississippi for the Middle Woodland period. The Dorr phase dates range from 100 B.C. to A.D. 200. (Phillips 1970; Toth 1988). The Dorr phase ceramic set (Toth 1988) includes:

Indian Bay Stamped, *var. Indian Bay*
Mabin Stamped, *var. Mabin, Point Lake, and Cypress Bayou*
Marksville Incised, *var. Sunflower and Old River*
Marksville Stamped, *var. Marksville*
Mulberry Creek Cord Marked, *var. Sevier, Porter Bayou, and Blue Lake*
Withers Fabric Marked, *var. Withers*

Red filming occurs on many of the Dorr phase ceramics.

The Prairie phase dates range from A.D. 200 to 400. The proposed Prairie phase ceramic set (Brookes 1980) is as follows:

Marksville Incised, *var. Steele Bayou and Yokena*
Marksville Stamped, *var. Troyville, Manny, and Newsome*
Baytown Plain, *var. Satartia*
Indian Bay Stamped, *var. Indian Bay*
Evansville Punctated, *var. Evansville*
Churupa Punctated, *var. Churupa*
Larto Red, *var. Larto*
Mulberry Creek Cord Marked, *var. Porter Bayou*
Withers Fabric Impressed, *var. Withers.*

There is a virtual absence of red filmed ceramics during the Prairie Phase (Brookes 1980). Hopewell related material is absent from this phase as is mound construction (Chapman and Walling 1999).

Late Woodland Period

Late Woodland settlements in the region are marked by changes in ceramic typologies. The Late Woodland period is synonymous with the Baytown variant. Late Woodland was a period of population growth and a continuation of mound construction. Ceramic typologies include many of the types employed during the Middle Woodland period with the addition of painted wares. The painted wares are thought to be influences from eastern populations along the Gulf Coast (Phillips 1970). The bow and arrow was a major development that occurred during the Late Woodland period as well as the first construction of large flat-topped mounds (Weinstein 1995).

The Plum Bayou culture developed in central Arkansas during the Late Woodland period with the primary mound center at the Toltec mounds from A.D. 600 to 1100. Nineteen mounds were constructed at the Toltec ceremonial center between A.D. 600 and 700. Toltec is the largest Late Woodland mound center in the Southeast. There is no evidence that the Plum Bayou culture cultivated plants. The areas surrounding the site were rich in wild food resources. The Plum Bayou culture collapsed around A.D. 1100.

The Peabody phase (Phillips 1970) is the only designated Late Woodland construct for the Upper Yazoo Basin. Brookes arranged the Peabody phase ceramic set as follows:

Alligator Incised, *var. Oxbow* and *Alligator*
Baytown Plain, *var. Reed*
Coles Creek Incised, *var. Barner, Hunt, and Keo*
French Fork Incised, *var. Larkin*
Hollyknowe Pinched, *var. unsp.*
Larto Red, *var. Larto*
Mulberry Creek Cordmarked, *var. Edwards*
Officer Punctated, *var. unsp.*
Shellwood Cord Impressed, *var. Shellwood* and *Big Creek*.

Faunal remains indicate a reliance on fish and white-tailed deer. Evidence for the bow and arrow is indicated by Collins points (Brookes 1980; McNutt 1996). McNutt (1996) and Phillips (1970) conclude that maize cultivation and mound construction is not associated with Peabody phase sites. Settlements largely exhibit hierarchical patterns and consist of permanent villages constructed of wattle and daub supported by wood posts.

Mississippi Period (A.D. 900 to 1550)

Mississippi period sites are marked by an intensive maize agricultural complex, supplemented by beans, squash, acorn, hickory, sumpweed, sunflower and persimmon (Brain 1989). Large flat-top mound and plaza construction is evident with a ranked, hierarchical political structure characteristic of a chiefdom level society. The advent of ground shell as a tempering agent allowed Mississippi period ceramic forms to flourish. The new ceramic technology enabled large storage vessels to be fashioned, necessary to sustain large populations. Vessel forms include bottles, jars, bowls, pans, plates, and effigy forms. Nodena, Scallorn, and Madison points are the typical projectile point types.

Early Mississippi Period

The Mississippi culture spread throughout major river valleys of the southeast from the LMV beginning around A.D. 1000. (Morse and Morse 1976, 1980).

Contemporaneous with the Coles Creek culture in the south, the earliest emergent Mississippian evidence, in the form of ground shell-tempered Varney sherds, is found in the Big Lake phase of northeastern Arkansas (McNutt 1996). Mississippian culture filtered south, either by migration or exchange.

Middle Mississippian Period

During the Middle Mississippi period, hallmark Mississippian characteristics became more entrenched. Chiefdom level political structure became widespread; population increasingly relied on large-scale maize agriculture, and monumental architecture of mound building flourished. The Hushpuckena, Parchman, Kent and Oliver phases were designated by Phillips (1970). Modifications have been suggested by Brain (1979, 1988), Williams and Brain (1983), and McNutt (1996). Hushpuckena I is marked by Winterville Incised, *var. Ranch*; Owens Punctated, *var. Owens, Poor Joe, and Window Creek*; and Avenue Polychrome/Nodena Red and White (Brain 1988). Hushpuckena II is marked by Owens Incised, *var. Manly and Menard*; Winterville Incised, *var. Broutin and Wailes*; Old Town Red; Barton Incised; and Parkin Punctated (Brain 1988 and Weinstein 2005).

McNutt's (1996) Hollywood phase replaces Phillips (1970) Kent phase components east of the Mississippi River. Components are recognized by Mississippi Plain; Parkin Punctated; Old Town Red; Barton Incised, *var. Kent*; and Rhodes Incised. Ceramic types that occur less frequently at Hollywood phase sites include: Fortune Noded; Owens Punctated; Winterville Incised, *var. Ranch*; and Walls Engraved, *var. Walls and Hull* (McNutt 1996).

East of the Mississippi River, the Boxtown phase is characterized by ceramics tempered with coarsely ground shell. Mississippi Plain, *var. Chucalissa and Boxtown* are the predominant wares. Decorated Boxtown phase ceramics include Parkin Punctated; Barton Incised; Owens Punctated; and Old Town Red (Lumb and McNutt 1988). Low rimmed jars are the most common vessel form. Boxtown houses range from

approximately 3 to 4.8 meters in across (Smith 1990). Open corner, square, wall-trench architecture style is common throughout Boxtown phase components.

Late Mississippi Period

Sites containing Walls phase components are confined to a tight geographical context in northwest Mississippi. Walls phase sites include: Walls, Cheatham, Lake Cormorant, Irby, Norfolk, Dogwood Ridge, and the focus of this study, Woodlyn. Although Chucalissa has a Walls phase component, its major occupation was during the “pre-Walls Boxtown phase” (Smith 1990). The Walls phase sites mentioned previously, excluding Chucalissa, are in the lowlands of Mississippi approximately eight kilometers south of the Mississippi-Tennessee state line.

The mound structures at a majority of the Walls phase sites seem to be oriented north of the plazas. Each of the sites, with the exception of Chucalissa, Walls, and Cheatham, are single mound constructions. Walls phase ceramic components include Bell Plain; Parkin Punctated; Baytown Plain; Neely’s Ferry Plain; Barton Incised; Kent Incised; Old Town Red; Mulberry Creek Cordmarked; Hull Engraved; Walls Engraved; and Ranch Incised (Phillips, Ford, and Griffin 1951). There was a shift in architectural styles from wall-trench houses of the Boxtown phase to wall post houses during the Walls phase. Also, Walls phase houses were larger than their Boxtown predecessors. Structures ranged from 4.5 to 6.7 meters across (Smith 1990). Walls phase houses were typically square with circular fire basins. The nature and orientation of individual houses are often difficult to delineate with the absence of wall-trench features as houses were typically built atop one another.

Protohistoric (1541-1673)

The Protohistoric period emerges as indigenous communities throughout the Southeast came into contact with Europeans. Villages encountered by the De Soto expedition became the earliest Protohistoric archaeological sites. The De Soto expedition encountered a vassal polity of Pacaha called Quizquiz on May 8, 1541 (Dye 1993). Most archaeologists agree that the province of Quizquiz corresponds to the archaeological Wall phase (Hudson 1985), a chiefdom estimated to have extended from the Coahoma Bolivar county line north to Memphis (Brain 1988).

The De Soto expedition attacked the first village of Quizquiz they encountered while the men of the village were away working in the fields. Many captives were taken, but later released. The next day many warriors and several chiefs confronted the expedition to present gifts. The first Quizquiz village encountered by DeSoto may be the Irby site (22DS516). The next town encountered by the entrada might have been the Lake Cormorant site (22DS501). Here DeSoto's men found an abundant supply of maize to replenish their provisions. The expedition spotted the Mississippi River half a league (2.4 km) from the third town they encountered in Quizquiz.

The Woodlyn site is a good candidate for the third village visited by De Soto. The expedition set up a temporary camp nearby while the men raided surrounding towns for supplies. The remnants of two abandoned river channels formed two oxbow lakes flanking Woodlyn, making the village strategically easy to defend. The entrada traveled a short distance to the southwest and set up camp probably near the Norfolk site (22DS517). It was here that De Soto's men built a number of barges before crossing the Mississippi River. (Dye 1993)

The Parchman phase (Brain 1988) occurs within the Protohistoric period, from 1550 A.D. to 1650 A.D. McNutt (1996) suggests the Parchman phase is contemporaneous with the Hushpuckena and Hollywood phases. Suggested diagnostics for the Parchman phase (Brain 1988) include Barton Incised, *var. Davion* and *Portland*; Winterville Incised, *var. Tunica*; and Owens Punctated, *var. Redwood*. Parchman phase ceramics also include Old Town Red and Wallace Incised (Brain 1988).

The Oliver phase (A.D. 1650 to 1730) represents aboriginal groups in contact with French explorers (Brain 1988). Brain (1988) suggests this phase may be tied to Quapaw or another related group that moved into the area. These chiefdom level societies fell into a rapid decline throughout the Protohistoric period. The Natchez culture (south of the project area) represented the only remaining chiefdom level society when the French entered the area in the seventeenth century.

Historic Period

Migration rapidly increased with the influx of European settlement. Push-pull dynamics motivated Native American population movements. Many cultures fled from the disease and technology imported by the Europeans, while others were attracted to trade goods. The Tunica migrated south throughout the Protohistoric and Historic periods. By the mid seventeenth century the Tunica occupied lands in central Louisiana. By the late eighteenth and early nineteenth centuries, the Chickasaw inhabited southwest Tennessee and northwest Mississippi while the Choctaw inhabited lands further south.

A series of Treaties and land claims opened the area to European settlement by whites in the 1820's and 1830's. The Chickasaw treaties of 1818, 1832, and 1837 preempted

their removal to reservations. With the Treaty of Doakes Stand in 1820, the Treaty of 1825, and the Treaty of Dancing Rabbit Creek in 1830, the Choctaw relinquished their lands in Mississippi. The population of Mississippi doubled during the 1830's (Walling and Chapman 1999). The development of a levee system in the 1850's opened lands to intensive agriculture (namely cotton production).

Chapter 3. Previous Investigations at Woodlyn

Dr. Julius Augustus Davies

Dr. Julius A. Davies was an amateur archaeologist who ran a medical practice in Walls, Mississippi from the late eighteenth to the early nineteenth century. He collected material primarily from the Walls site (22DS500). Davies amassed an extensive collection of artifacts from the Walls area. His endeavors were encouraged by his friend Calvin Brown who would later publish *Archaeology of Mississippi* (Brown 1929). Davies did not catalogue the artifacts he collected or keep notes and records (McNutt 1991). However, it is likely that he visited and collected material at other Walls phase sites in the area. Although Davies' procedures might be criticized by today's standards, they were common methods during his time. Davies donated his extensive collection of artifacts to the University of Mississippi before his death in 1924 (McNutt 1991).

Calvin Brown and the Mississippi Geological Survey

Calvin Brown was a professor at the University of Mississippi and archaeologist for the Mississippi Geological Survey. Brown's archaeological investigations of the state continued for more than ten years. He published the first systematic study of the prehistoric cultural remains of Mississippi. Brown focused heavily on the Davies collection as he described the prehistoric material culture of northwest Mississippi. Brown describes the Cheatham site as "a group of mounds on the largest of which stands the residence of Mr. Richard Cheatham" (Brown 1926). Brown visited another site in the northwest corner of the state that had two mounds (Brown 1926). The field surrounding

the site was heavily laden with artifacts and areas of ash. He described the site as a large cemetery that had been heavily collected. The burials were approximately two to one and a half feet below the surface with ceramic vessels interred near the heads (Brown, 1926). Brown described the Walls area as “a most interesting archeological field...{with}...numerous mounds and extensive burial grounds” (Brown 1926).

The Lower Mississippi Survey

The Lower Mississippi Archaeological Survey began in 1939 to investigate the river valley from Vicksburg, Mississippi to the mouth of the Ohio (Phillips et. al 1951). In March of 1941, Philip Phillips visited and recorded Woodlyn as site 13-P-11. The site was described as a large village site, a single mound that was less than one meter high, and a neglected graveyard covered in brush. The site file notes that the fields west of the road were heavily laden with cultural material. Several cord-marked and clay-tempered sherds were found. Phillips speculated that late components of the site may have been cultivated or washed off.

Archeological Survey in the Lower Yazoo Basin, Mississippi, 1949-1955

In 1951, Harvard University and the American Museum of Natural History sponsored a project aimed at further investigating the archaeology of the Yazoo Basin. A number of Walls phase sites were studied through pedestrian survey and surface collection. Two test units were excavated at the Walls site proper. Phillips (1970) describes Walls phase ceramics as having an: “overwhelming dominance of Bell Plain: Mississippi Plain, var. *Neely’s Ferry*, Parkin Punctated, Barton Incised, Old Town Red,.....Barton Incised, var.

Kent, Ranch Incised,....Rhodes Incised, Walls Engraved, *var. Walls*; Nodena Red and White and Avenue Polychrome,....Fortune Noded, Tyrone Punctated, Walls Engraved *var. Hull*, Mound Place Incised, and Carson Red on Buff.”.

University of Memphis 1989 Surface Collection

A systematic surface collection was conducted over approximately 2.84 acres at the Woodlyn site in 1989. A total of 2,016 prehistoric artifacts were collected. Christina Logston analyzed the material and reported the survey findings as a practicum report (Logston 1997). Bell Plain varieties account for 74% of the shell-tempered ceramics recovered. A significant amount of grog-tempered sherds were recovered as well. The frequency of Baytown Plain and Mulberry Creek Cord Marked ceramics indicate a Late Woodland component. Logston (1997) concluded that Woodlyn had an earlier Late Woodland, Baytown phase component, characterized by a small hamlet and Late Mississippian, Walls phase occupation characterized by a village and small mound.

University of Memphis Phase II Testing

Phase II testing was conducted in March of 1997 as part of an archaeological site reconnaissance class conducted by Dr. David Dye. Four 1x1 meter test units were excavated. Unit 1 was placed in the wooded area referred to as the “mound remnant” in much of the literature. Unit 2 was located approximately 20 meters from the southeast corner of the mound remnant in a pasture area (Ezell and Keeney 1997). Unit 3 was placed 15 meters southwest of Unit 2, which yielded no artifacts beyond the plow zone. Unit 4 was located east of the mound remnant (Ezell and Keeney 1997). Unit 4 yielded

the only feature described as an oval shaped shallow pit feature (Ezell and Kenney 1997). The feature matrix was a black silt loam that contained a few ceramic, wood charcoals, and burned clay. The ratio of Bell Plain to Mississippi Plain was approximately 70:30 (Ezell and Keeney 1997).

University of Memphis: Site Reconnaissance 1999

A collaborative mapping project was conducted at Woodlyn in 1999 as part of an archaeological site reconnaissance supervised by Jane Hill, who also supervised Phase III excavations during the 1998 field season. The report provides a map of the Phase III excavation units, although a number of units excavated during the 97-98 field season are unfortunately missing from the map (Figure 3). The grid markers represent meters units.

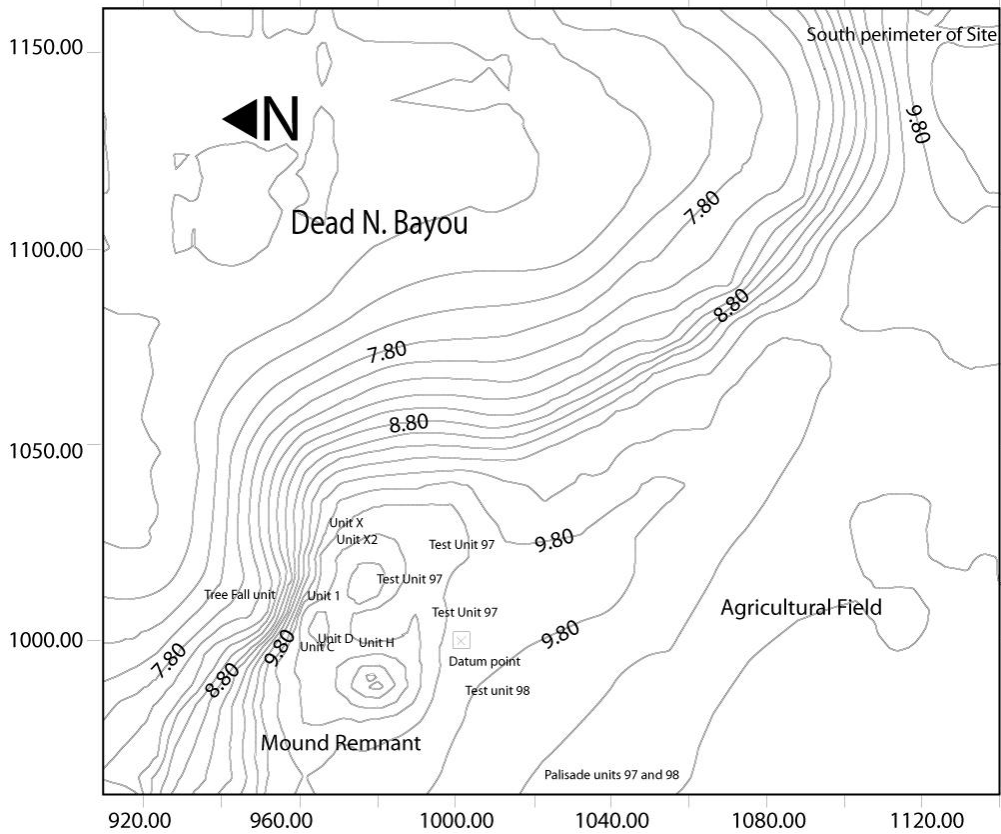


Figure 3: Topographic map of the of the Woodlyn 1999 Site Reconnaissance.

Chapter 4. Results

The University of Arizona (Tucson) AMS laboratory processed eight radiocarbon age assays from the Woodlyn site excavations. The dates have been calibrated with OxCal v 4.1.7 based on atmospheric data from Reimer et al. (2009). As AMS dating minimizes error margins and achieves a more accurate date estimate than older conventional radiocarbon dating, the radiocarbon assays should aid in refining the dates not only for the Woodlyn site, but also for the Walls Phase. Information provided by these new dates provide the basis for a more accurate interpretation of the temporal extent of the Walls Phase occupations at Woodlyn. Radiocarbon samples were dated from five of the units excavated during the 1997-1998 school. Table 1 presents the calibrated age ranges skewed within the 95.4% probability range. Calibrated radiocarbon dates are presented using 2-sigma values. All dates have been corrected for isotopic fractionation. Each of the radiocarbon age assays will be discussed by provenience and context, as well as a summary of the associated ceramic assemblage and finished/diagnostic stone tools.

Many of the radiocarbon samples were obtained from the upper stratum, which contained the remains of a habitation midden below the plow zone. Portions of historic burials were discovered in a large number of excavation units. Fortunately, in most cases, the field personnel initially mistook the historic intrusions for hearth or house floor features, so the historic fill was often collected and screened separately.

Table 1: Woodlyn (22DS517) Radiocarbon Assays

Sample ID	FS #	Provenience	Material	d13C	14C age BP	+ - 14C age	Calibrated age range
AA74263	32	Unit D - PPM 1	wood charcoal	-26	410	32	1430 – 1624 AD
AA74264	28	Unit H - PPM 2	wood charcoal	-24.1	523	32	1320 - 1444 AD
AA74265	175	Unit C - Feat. 33	wood charcoal	-24.1	386	31	1442 - 1632 AD
AA74266	12	Unit D - Level 3	wood charcoal	-24.2	381	31	1444 - 1632 AD
AA74267	28	Unit H - PPM 2	wood charcoal	-24	567	33	1304 - 1426 AD
AA74268	13	Unit B - Level 3	burned seed	-24.4	402	31	1435 - 1627 AD
AA74270	103	Unit B - Feat. 5	wood charcoal	-24	456	33	1410 - 1484 AD
AA74272	199	Unit G - Level 3	wood charcoal	-25.7	407	31	1432 - 1625 AD
AA74264/67	28	Unit H - PPM 2	wood charcoal		545	32	1313 - 1436 AD

Note: Dates calibrated with Oxcal v. 4.1.7, atmospheric data from Reimer et. al. (2009).

Unit D Samples

Two radiocarbon samples from Unit D were processed. Sample AA74266, a wood charcoal (Field Specimen 12) collected from the 20-30 cm general level, yielded a date of 381 ± 31 B.P. with a calibrated mean date of A.D.1537 based on values skewed within the 95.4% probability range. For sample AA74266 the two possible calibrated age ranges were assigned beyond the 95.4% probability range: cal A.D. 1444 to 1525 ($p = 0.617$) and A.D. cal 1557 to 1632 ($p = 0.337$). Near the area where the radiocarbon sample was taken, a small cache of two celts (Figure 4) was discovered at approximately 25.5 cm to 26.5 cm below datum lying side by side at a slight angle in the matrix and oriented pointing north. The lateral edges of each specimen show evidence of flaking

while the distal edges appear to be ground and polished. Each celt retains a significant amount of cortex (reddish in color) on its surface. They were likely made with locally available flat pebbles or river cobbles.



Figure 4: Unit D Celts

Bell Plain sherds account for 71.2% of the ceramics recovered within the 20-30 cm level (Table 2). Mississippi Plain varieties account for 21.8 % of the sherd assemblage. Parkin Punctate was the dominant decorated ware and accounts for 3.4% of the total ceramic assemblage. Other decorated varieties associated with this level include: Ranch Incised (1.2%, Barton Incised (1.2%), and Walls Engraved (1.2%).

Table 2: Summary of ceramic artifacts associated with Unit D, 20-30cm.

Type-Variety	Body	Rim	Total	Percentage
Bell Plain <i>var. Bell</i>	28	2	30	34.4%
Bell Plain <i>var. Nickel</i>	29	3	32	36.8%
Mississippi Plain <i>var. Boxtown</i>	2		2	2.3%
Mississippi Plain <i>var. Mitchell</i>	11		11	12.6%
Mississippi Plain <i>var. Chucalissa</i>	6		6	6.9%
Parkin Punctate <i>var. unspecified</i>	3		3	3.4%
Ranch Incised	1		1	1.2%
Barton Incised <i>var. unspecified</i>	1		1	1.2%
Walls Engraved <i>var. Walls</i>	1		1	1.2%
Totals	82	5	87	100.0%

Sample AA74263 was taken from a burned post at 40 cm below datum (Figure 5). The sample yielded a date of 410 ± 32 B.P. with a calibrated mean date of A.D. 1527 based on values skewed within the 95.4% probability range. For sample AA74263 three possible calibrated age ranges were assigned beyond the 95.4% probability: cal A.D. 1430 to 1522 ($p = 0.809$), A.D. 1575 to 1584 ($p = 0.012$), and A.D. 1590-1624 ($p = 0.131$). Artifacts recovered from levels three and four were examined in association with the sample. A discoidal or chunky stone was also recovered at 40cm below datum lying a short distance away from the burned post. The discoidal is convex on both faces and

has rounded sides with a thickness of approximately 2.5 cm to 3.5 cm and a diameter of 7.5 cm.



Figure 5: Unit D at 40cm below datum. The burned post in the southwest quadrant corresponds to radiocarbon sample AA74263. The chunky stone is lying approximately 1 meter away in the northeast quadrant.

Bell Plain varieties account for 41.8% of the ceramic assemblage recovered in the 30-40 cm level (Table 3). Mississippi Plain varieties account for 35.2% of the ceramic artifacts with Mississippi Plain *var. Chucalissa* occurring at a frequency of 16.5%. Rhodes Incised comprised the most common decorated variety at 8.8%. Parkin Punctate (4.4%), Nodena Red on White (2.2%), Barton Incised (3.3%), and Avenue Polychrome (3.3%) were also represented to a lesser degree.

Table 3: Summary of ceramic artifacts associated with Unit D, 30-40cm.

Type-Variety	Body	Rim	Total	Percentage
Bell Plain <i>var. Bell</i>	20		20	22.0%
Bell Plain <i>var. Nickel</i>	17	1	18	19.8%
Mississippi Plain <i>var. Bxotown</i>	5		5	5.5%
Mississippi Plain <i>var. Mitchell</i>	12		12	13.2%
Mississippi Plain <i>var. Chucalissa</i>	15		15	16.5%
Parkin Punctate <i>var. unspecified</i>	4		4	4.4%
Nodena Red/White <i>var. Nodena</i>	2		2	2.2%
Rhodes Incised <i>var. Rhodes</i>	3		3	3.3%
Rhodes Incised <i>var. Horn Lake</i>	3		3	3.3%
Rhodes Incised <i>var. unspecified</i>	2		2	2.2%
Barton Incised <i>var. Barton</i>	3		3	3.3%
Avenue Polychrome	3		3	3.3%
Effigy Fragment	1		1	1.0%
Totals	90	1	91	100.0%

Bell Plain ceramics account for 62% of the ceramics recovered in the 40-50cm level (Table 4). Mississippi Plain varieties account for 17.4% with Mississippi Plain *var. Bxotown* occurring at a frequency of 6.8%. Parkin Punctate varieties comprised the most common decorated variety at 9.1%. Other decorated varieties associated with the 40 to 50 cm level include: Parkin Punctate (4.4%), Rhodes Incised (5.4%), and Barton Incised (4.6%).

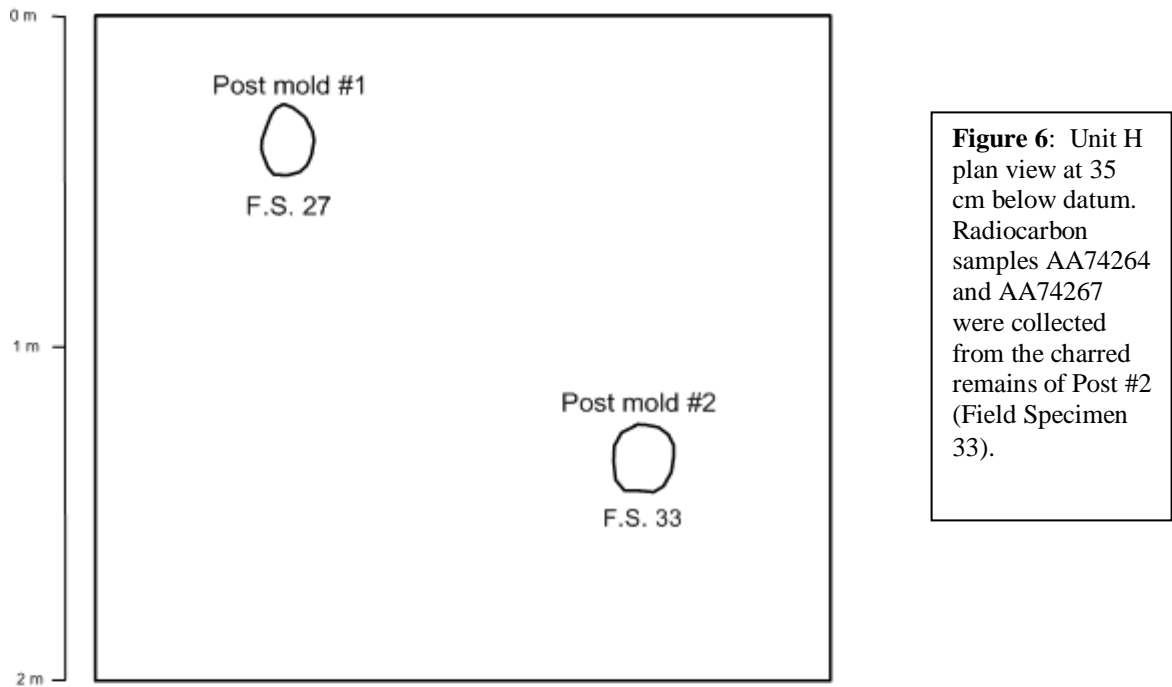
No diagnostic stone tools were recovered in the 20 to 50 cm levels of Unit D. However, seven flake tools were catalogued and categorized as r.u.m (retouched/ utilized/ modified) flakes in the laboratory. A spoke shave and biface fragment were also recovered.

Table 4: Summary of ceramic artifacts associated with Unit D, 40-50 cm.

Type-Variety	Body	Rim	Total	Percentage
Bell Plain <i>var. Bell</i>	32	5	37	28.0%
Bell Plain <i>var. Nickel</i>	37	8	45	34.0%
Mississippi Plain <i>var. Boxtown</i>	9		9	6.8%
Mississippi Plain <i>var. Mitchell</i>	6	1	7	5.3%
Mississippi Plain <i>var. Chucalissa</i>	7		7	5.3%
Baytown Plain <i>var. Baytown</i>	2		2	1.5%
Parkin Punctate <i>var. Castile</i>	1		1	0.8%
Parkin Punctate <i>var. Transylvania</i>	2		2	1.5%
Parkin Punctate <i>var. unspecified</i>	9		9	6.8%
Rhodes Incised <i>var. Rhodes</i>	1		1	0.8%
Rhodes Incised <i>var. Horn Lake</i>	6		6	4.6%
Barton Incised <i>var. Barton</i>	6		6	4.6%
Totals	118	14	132	100.0%

Unit H Samples

Two structural features (Figure 6) were revealed during the excavation of levels 3 and 4 in Unit H. Samples AA74264 and AA74267 represent radiocarbon samples taken from a charred post in the southeast quadrant of Unit H. The feature (F.S. # 33) was noted at 28.5 cm below datum and the post extended down just over 11 cm. An adjacent post mold (FS # 27) was noted at 33 cm below datum in the northwest quadrant, however its contents yielded no radiocarbon samples. No wall trench or other feature was noted or recorded at this level. Field notes indicate that the matrix of these particular levels was characterized by a dark grey/brown midden, which could have made the appearance and interpretation of other structural features difficult to pinpoint.



Sample AA74264 yielded a date of 523 ± 32 B.P. with a calibrated mean date of A.D. 1382 based on the 95.4% probability range. Sample AA74264 was assigned two possible calibrated age ranges beyond the 95.4% range. The two calibrated age ranges are cal A.D. 1320 to 1350 ($p = 0.157$) and A.D. cal 1391 to 1444 ($p = 0.797$). Sample AA74267 yielded a date of 567 ± 33 B.P. with a calibrated mean date of A.D. 1365 based on values skewed within the 95.4% probability range. Two calibrated age ranges were assigned beyond the 95.4% range: cal A.D. 1304 to 1365 ($p = 0.556$) and A.D. cal 1383 to 1426 ($p = 0.398$). An average of the two radiocarbon assays indicates an age of 545 ± 32 B.P. with a calibrated mean date of A.D. 1374. Artifact distributions from the 20 to 40 cm levels were examined in conjunction with the radiocarbon assays associated with Unit H. Bell Plain varieties account for 46.1% of the ceramics recovered within the 20 to 30 cm level. Mississippi Plain varieties comprise 25%, with Mississippi Plain, *var. Chucalissa*

occurring at a frequency of 10.2%. A variety of decorated wares were recovered (Tables 5 and 6), while Parkin Punctate varieties constitute the most frequent decorated ware (20.3%). Rhodes Incised (2.3%), Barton Incised (1.6%), Walls Engraved (2.3%), and Marksville Stamped (0.8%) were also represented to a lesser degree.

Table 5: Summary of ceramic artifacts recovered from the 20-30cm level of Unit H.

Type-Variety	Body	Rim	Total	Percentage
Bell Plain <i>var. Bell</i>	31	2	33	25.8%
Bell Plain <i>var. Nickel</i>	23	3	26	20.3%
Mississippi Plain <i>var. Boxtown</i>	9		9	7.0%
Mississippi Plain <i>var. Mitchel</i>	10		10	7.8%
Mississippi Plain <i>var. Chucalissa</i>	13		13	10.2%
Parkin Punctate <i>var. Parkin</i>	10		10	7.8%
Parkin Punctate <i>var. Castile</i>	4		4	3.1%
Parkin Punctate <i>var. Harris</i>	3		3	2.3%
Parkin Punctate <i>var. Transylvania</i>	1		1	0.8%
Parkin Punctate <i>var. unspecified</i>	8		8	6.3%
Nodena Red/White <i>var. Nodena</i>	2		2	1.6%
Rhodes Incised <i>var. Rhodes</i>	3		3	2.3%
Barton Incised <i>var. unspecified</i>	2		2	1.6%
Walls Engraved <i>var. Walls</i>	3		3	2.3%
Marksville Stamped <i>var. unspecified</i>	1		1	0.8%
Totals	123	5	128	100.0%

Level 4 ceramic artifacts were similar to the previous level. The Bell Plain varieties account for 50.5% of the ceramics recovered at the 30-40 cm level (Table 6). Mississippi Plain varieties account for 18.6%, while Mississippi Plain, *var. Mitchell* occurs at a frequency of 12.4%. Parkin Punctate varieties constitute the majority of decorated ceramic artifacts (21.2%). Other decorated varieties associated with this level include:

Nodena Red on White (3.1%), Rhodes Incised (3.1%), Mound Place Incised (2.1%), Fortune Noded (1%), and Mulberry Creek Cordmarked (1%).

Table 6: Summary of artifacts recovered from the 30-40cm level of Unit H.

Type-Variety	Body	Rims	Total	Percentage
Bell Plain <i>var. Bell</i>	25		25	25.8%
Bell Plain <i>var. Nickel</i>	18	5	23	24.7%
Mississippi Plain <i>var. Boxtown</i>	3		3	3.1%
Mississippi Plain <i>var. Mitchel</i>	12		12	12.4%
Mississippi Plain <i>var. Chucalissa</i>	3		3	3.1%
Parkin Punctate <i>var. Parkin</i>	14		14	14.4%
Parkin Punctate <i>var. Castile</i>	1		1	1.0%
Parkin Punctate <i>var. unspecified</i>	6		6	6.2%
Nodena Red/White <i>var. Nodena</i>	3		3	3.1%
Rhodes Incised <i>var. Rhodes</i>	2		2	2.1%
Rhodes Incised <i>var. Horn Lake</i>	1		1	1.0%
Mound Place Incised <i>var. unspecified</i>	2		2	2.1%
Fortune Noded	1		1	1.0%
Mulberry Creek Cordmarked <i>var. Kordana</i>	1		1	1.0%
Totals	92	5	97	100.0%

Unit C Sample

Sample AA74265 was collected at 37cm below datum near a high concentration of large sherds recovered at the center of the west wall. The vessel fragments (Field Specimen 175, Feature 33) were first noted at 22 cm below datum. The feature extended down to approximately 63 cm below datum. Two large Bell Plain *var. Nickel* bowl fragments and a Ranch Incised rim section with strap handles were recovered. Other ceramic artifacts associated with the feature are listed in Table 7. Radiocarbon sample AA74265, charred wood collected near the feature yielded a date of 386 ± 31 B.P. with a

calibrated mean date of A.D. 1537 based on values skewed with the 95.4% probability range. Sample AA74265 was assigned two possible calibrated age ranges beyond the 95.4 % range. The two possible calibrated age ranges are cal A.D. 1444 to 1525 (p = 0.617) and A.D. cal 1557 to 1632 (p = 0.337). The stratum yielded several other large vessel sections. A Bell Plain var. Nickel bowl fragment was recovered in the southeast quadrant at the 10-20 cm level. Approximately 75% of the vessel was recovered and partially reassembled. Another Bell Plain, var. *Nickel* vessel section was recovered in the northeast quadrant within the same general level. Field notes indicate that approximately 50% of the vessel was recovered. A Madison point was catalogued at the 20-30 cm general level.

Table 7: Summary of ceramic artifacts associated with Unit C, Feature 33.

Type-Variety	Body	Rim	Total	Percentage
Bell Plain var. <i>Bell</i>	1		1	4.8%
Bell Plain var. <i>Nickel</i>	8		8	38.1%
Mississippi Plain var. <i>Boxtown</i>	1		1	4.8%
Parkin Punctate var. <i>unspecified</i>	1		1	4.8%
Ranch Incised		2	2	9.5%
Rhodes Incised var. <i>Horn Lake</i>	8		8	38.1%
Totals	19	2	21	100.1%

Unit B Samples

Sample AA74268 was a burned seed collected along the northern quadrant of the east wall near several large Bell Plain sherds in the 20-30 cm general level. Soil descriptions indicate that this level contained the remains of a habitation midden beneath the plow zone. Several pieces of hematite were collected near the sample as well. The sample

yielded a date of 402 ± 31 B.P. with a calibrated mean date of A.D. 1531 based on values skewed within the 95.4% probability range. However two possible calibrated age ranges were assigned beyond the 95.4% probability range: cal A.D. 1435 to 1523 ($p = .765$) and cal A.D. 1574 to 1627 ($p = 0.189$). Several large rim and body sherds were recovered from a feature in the southeast corner. The field crew realized sometime later that the feature represented the intrusion of a historic grave. Material recovered from the pit was collected separately and will not be addressed here.

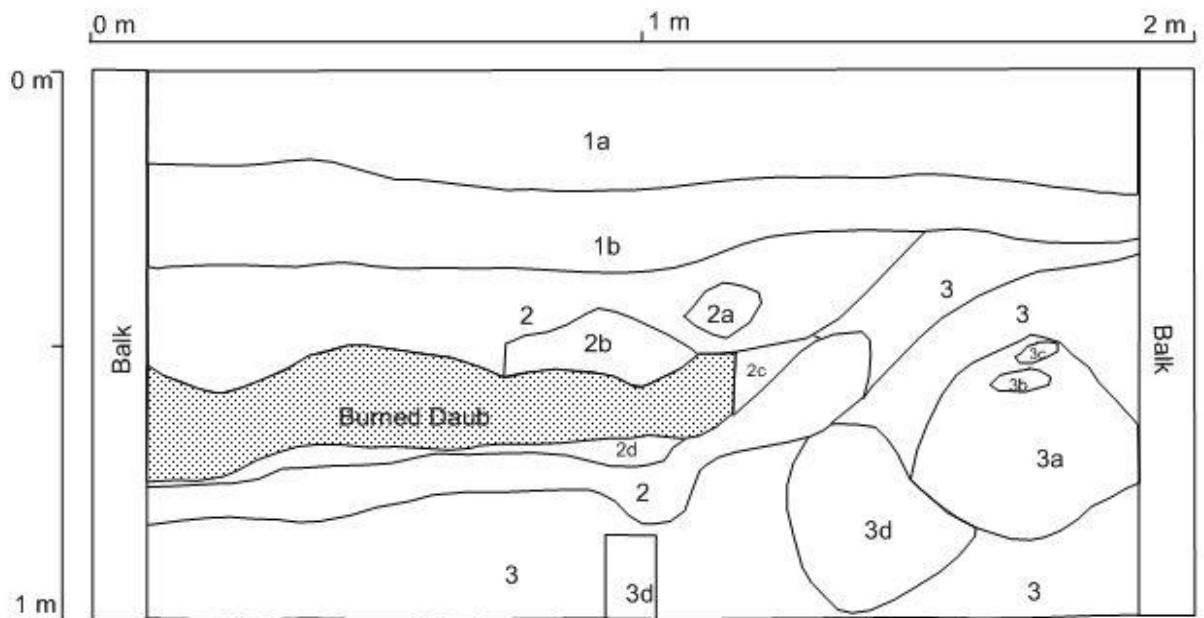
The Bell Plain varieties account for 64.2% of the ceramics recovered from the 20-30 cm general level (Table 8). Mississippi Plain varieties account for 24.9%, while Mississippi Plain, *var. Chucalissa* occurs at a frequency of 14%. Parkin Punctated varieties constitute the most common decorated ceramic artifacts (9.8%). One old town rim sherd was recovered as well. No diagnostic lithics were associated with this level, although a scraper and four flake tools were recovered.

Table 8: Summary of ceramic artifacts recovered from the 20-30cm level of Unit B

Type-Variety	Body	Rim	Total	Percentage
Bell Plain <i>var. Bell</i>	21	4	25	27.2%
Bell Plain <i>var. Nickel</i>	30	4	34	37.0%
Mississippi Plain <i>var. Bostown</i>	3		3	3.3%
Mississippi Plain <i>var. Mitchel</i>	7		7	7.6%
Mississippi Plain <i>var. Chucalissa</i>	12	1	13	14.0%
Parkin Punctate <i>var. Parkin</i>	2		2	2.2%
Parkin Punctate <i>var. Harris</i>	1		1	1.1%
Parkin Punctate <i>var. Transylvania</i>	2		2	2.2%
Parkin Punctate <i>var. unspecified</i>	4		4	4.3%
Old Town Red	1		1	1.1%
Totals	83	9	92	100.0%

Radiocarbon Sample AA74270 was collected from a burned house feature. Massive quantities of burned daub were noted at approximately 60 cm below datum. The burned house rubble (Feature 5) covered the northern half of the unit. Figure 7 illustrates the extent of the daub rubble in the east profile of Unit B. Field personnel noted that the burned and melted daub seemed almost solid and contiguous as they began pulling sections out to reveal the features beneath. A study of the 1997-1998 field notes revealed cane impressions closest to the north wall were oriented in a north-south direction. Cane impressions from 46 to 81cm south of the north wall were oriented in an east-west direction. Cane impressions on the southern end of the feature, at 81 to 107 cm from the north wall were oriented north-south. The appearance and orientation of cane impressions seem to indicate that the structure collapsed inward as it burned. A number of field note accounts mention the presence of a significant amount of red ochre

Figure 7: Unit B East wall profile.



Stratum	Description
1a	Dark brown (10 yr 3/3) plow zone.
1b	Dark brown (10 yr 3/3) mixed with daub.
2	Very dark grayish brown (10 yr 3/2).
2a	Black (7.5 yr 2/0).
2b	Black (10 yr 2/1).
2c	Dark brown (10 yr 3/3).
2d	Black (10 yr 2/1).
3	Brown (10 yr 5/3).
3a	Very dark gray (10 yr 3/1).
3b	Black to very dark gray (5 yr 2.5/1).
3c	Gray (10 yr 5/1).
3d	Dark brown (10 yr 3/3).

throughout the excavation of Feature 5. An artifact described as a solid clay dome was excavated within the house rubble. The clay object is approximately 17 cm tall and 15 cm wide. The object may have been a stand or prop used in the manufacture of ceramic vessels.

Radiocarbon sample AA74270 corresponds to a burned structural support beam under the northwest section of the burned wall. The sample yielded a date of 456 ± 33 B.P. with a calibrated mean date of A.D. 1447 based on values skewed within the 95.4% probability range. Removal of large quantities of burned daub revealed two possible wall trench features and a line of three post molds running along a northeast-southwest axis and into the north wall of the unit (Figure 8). The first trench likely represents a burned post fall. The feature began to disappear around 90 cm below datum. Southwest of the post fall, trench 2 appeared at 90 cm and extended across the entire unit.

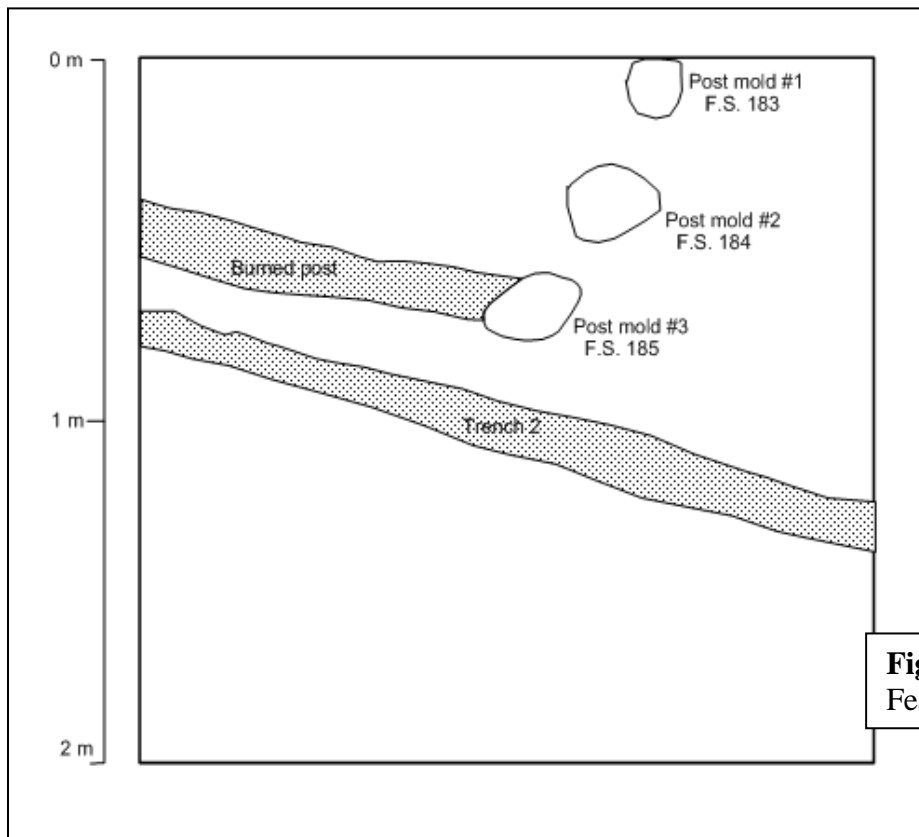


Figure 8: Map of Unit B Features.



Figure 9:
Feature 5 Ranch
Incised jar
fragment.

A large section of a Ranch Incised jar (Figure 9) with triangular handles was recovered beneath the zone of burned rubble near the center of the unit. Other ceramic artifacts associated with Feature 5 are listed in Table 9. A small hammerstone, a flake tool (r.u.m.), and a distal drill fragment were also recovered in association with Feature 5.

Table 9: Summary of ceramic artifacts associated with Unit B, Feature 5.

Type-Variety	Body	Rim	Total	Percentage
Bell Plain var. Bell	10		10	26.3%
Bell Plain var. <i>unspecified</i>	7		7	18.4%
Bell Plain var. <i>Nickel</i>	4		4	10.5%
Mississippi Plain var. <i>Boxtown</i>	1		1	2.6%
Mississippi Plain var. <i>Mitchell</i>	4		4	10.5%
Mississippi Plain var. <i>Chucalissa</i>	2		2	5.3%
Baytown Plain var. <i>Baytown</i>	2		2	5.3%
Parkin Punctate var. <i>Parkin</i>	1		1	2.6%
Parkin Punctate var. <i>unspecified</i>	3		3	7.9%
Rhodes Incised var. <i>Rhodes</i>	2		2	5.3%
Rhodes Incised var. <i>unspecified</i>	2		2	5.3%
Totals	38		38	100.0%

A significant amount of burned wood was collected from historic grave fill south of Feature 5. There is a high probability that the historic grave disturbed a portion of the prehistoric structural remains. The grave itself did not extend to the east wall. The intrusion appeared to terminate approximately 15 to 20 cm west of the east wall. However, the soil matrix south of the house rubble in the east profile of Unit B may represent soil re-deposited as historic grave fill (Figure 7). Artifacts associated with the historic grave will not be addressed at this time. The integrity of trench 2 as a wall

trench or burned post feature is questionable due to its proximity to the historic grave. The feature could represent the edge of the historic disturbance.

Unit G Sample

Sample AA74272 was collected from a concentration of daub and charcoal in the 20-30 cm general level of the northwest quadrant. The radiocarbon sample yielded a date of 407 ± 31 with a calibrated mean date of A.D. 1529 based on values skewed within the 95.4% probability range. Sample AA74272 was assigned three possible calibrated age ranges beyond the 95.4% probability range: cal A.D. 1432 to 1522 ($p = 0.799$), A.D. 1574 to 1584 ($p = 0.013$), and A.D. 1590 to 1625 ($p = 0.141$). Bell Plain varieties comprised 30% of the total sherd assemblage, while Mississippi Plain represented 55%. Bell Plain varieties are not well represented at this level (Table 10). The remains of two broken vessels were recovered, which account for the high concentration of Mississippi Plain variety sherds. Barton Incised appeared as the most frequently occurring decorated ware, constituting 7.9% of the total sherd assemblage. Parkin Punctate, Rhodes Incised, Mound Place Incised, and Fortune Noded were also present to a lesser degree. No diagnostic lithics were recovered at the 20-30 cm level, however ten flake tools were recovered.

Table 10: Summary of artifacts recovered from the 20-30cm level of Unit G

Type-Variety	Body	Rims	Total	Percentage
Bell Plain <i>var. Bell</i>	16	3	19	15.0%
Bell Plain <i>var. Nickel</i>	19		19	15.0%
Mississippi Plain <i>var. Boxtown</i>	2		2	1.6%
Mississippi Plain <i>var. Mitchel</i>	24		24	18.8%
Mississippi Plain <i>var. Chucalissa</i>	44		44	34.6%
Parkin Punctate <i>var. unspecified</i>	2		2	1.6%
Barton Incised <i>var. Barton</i>	2		2	1.6%
Barton Incised <i>var. unspecified</i>	8		8	6.3%
Rhodes Incised <i>var. Rhodes</i>	5		5	3.9%
Mound Place Incised <i>var. unspecified</i>	1		1	0.8%
Fortune Noded	1		1	0.8%
Totals	124	3	127	100.0%

Conclusions

The Walls phase is represented by a predominance of Bell Plain ceramics versus Mississippi Plain and other ceramic varieties. Smith (1990) marks the Walls phase by the occurrence of Bell Plain (55 to 75 percent) and Mississippi Plain, Parkin Punctate, Barton Incised, Old Town Red, Kent, Rhodes, and Ranch Incised to lesser degrees. The majority of samples examined during this study displayed a frequency of Bell Plain ranging from 41.8% to 71.2%. Bell Plain varieties outweighed Mississippi Plain varieties in each of the artifact samples with one exception. The 20-30 cm level of Unit G associated with radiocarbon sample AA74272 showed a predominance of Mississippi Plain (55%) to Bell Plain (30%). As two broken Mississippi Plain vessels were recovered at this level, Bell Plain varieties are not well represented. With the exclusion of the anomalous sample associated with the recovery of two fractured Mississippi plain vessels, each of the artifact samples examined in conjunction with the radiocarbon assays

fits approximately within the parameters of Smith's (1990) Walls phase cultural markers. The absence or presence of certain decorated varieties will not be significant in the refinement of Woodlyn or the Walls phase chronology due to the small sample size examined in conjunction with this particular study.

The Unit H samples appear to represent the earliest dates yet obtained for the Woodlyn site. Sample AA74264 yielded a date of 523 ± 32 B.P. with a calibrated mean date of 1382 A.D. Sample AA74267 yielded a date of 567 ± 33 B.P. with a calibrated mean date of 1365 A.D. An average of the two radiocarbon assays indicates an age of 545 ± 32 B.P. with a calibrated mean date of 1374 A.D. These dates are based on results skewed within the 95.4% probability range. Artifacts from the 20-40 cm levels were examined in association with the radiocarbon assays. The frequency of Bell Plain ceramics ranged from 46.1% to 50.5 %, outnumbering Mississippi plain varieties nearly two to one. The sample was collected from a burned post feature. Another post mold feature was noted at this level as well. The absence of any wall-trench features and the predominance of Bell Plain ceramics associated with the sample indicate that the feature represents an early Walls phase component.

Radiocarbon sample AA74270 collected from the burned house feature yielded a calibrated mean date of 1447 A.D. The periodic burning of structures was common as aging Mississippian homes became infested with insects and began to fall into disrepair. Burned structures were often recapped with earth and built anew. Artifacts are generally absent from structures burned during these periodic destruction episodes indicating that homes were cleaned out prior to being burned. The presence of the clay dome object and the Ranch Incised jar fragment may indicate that the Feature 5 structure was not burned

intentionally. The destruction of the house may have been accidental or the result of warfare.

Samples AA74266, AA74268, and AA74272 were collected from the uppermost intact portions of the habitation midden in an attempt to determine the temporal extent of Woodlyn's occupation. This stratum produced calibrated mean dates of A.D. 1537, 1531, and 1529 based on values skewed within the 95.4% probability range. However each of the samples yielded two to three possible calibrated age ranges beyond the 95.4% probability range. For sample AA74266 the two possible calibrated age ranges are cal A.D. 1444 to 1525 ($p = 0.617$) and A.D. cal 1557 to 1632 ($p = 0.337$). For sample AA74268 the two possible calibrated age ranges are cal A.D. 1435 to 1523 ($p = .765$) and cal A.D. 1574 to 1627 ($p = 0.189$). For sample AA74272 three possible calibrated age ranges were assigned: cal A.D. 1432 to 1522 ($p = 0.799$), A.D. 1574 to 1584 ($p = 0.013$), and A.D. 1590 to 1625 ($p = 0.141$). The probabilities assigned to each of the age range distributions indicate that Woodlyn was still active shortly before De Soto arrived in May of 1541. The evidence of any later occupations at Woodlyn would be difficult to discern and have likely been erased or disturbed by land grading and plowing activities.

The new Woodlyn dates provide an important data set for the interpretation of the Walls phase and its association with the De Soto expedition. An in depth analysis of the De Soto accounts compared with reconstructions of sixteenth century landforms and physiography place De Soto's route within the tight cluster of Walls phase sites near the Mississippi River. The expedition narrative's description of Quizquiz villages indicate that De Soto's entrada did visit the Walls area. The new Woodlyn AMS dates provide one more piece of the puzzle. Additional data on the Walls phase cluster is necessary to

further interpret the nature of the Walls construct and its relation to the earliest and most impressive European expedition throughout the Southeast.

References

- Brain, Jeffrey P.
1979 *The Lower Mississippi Valley in North American Prehistory*. Peabody Museum, Harvard University. Submitted to Southeast Region, National Park Service, U.S. Department of the Interior, Tallahassee.
1988 *Tunica Archaeology*. Peabody Museum of Archaeology and Ethnology. Harvard University, Cambridge, Massachusetts.
1989 *Winterville: Late Prehistoric Culture Contact in the Lower Mississippi Valley*. Mississippi Department of Archives and History. Jackson.
- Brookes, S. O.
1980 The Prairie Phase: Late Marksville in the Upper Sunflower Region. *Mississippi Archaeology* 15(1):30-37
- Brown, Calvin S.
1929 *Archaeology of the Mississippi*. Mississippi Geological Survey, University of Mississippi, Oxford.
- Buckner, C. A., R. Walling, and T. Lolley
1996 *A Cultural Resources Inventory (Phase V Survey) of a Portion of Bogue Phalia, Bolivar and Washington Counties, Mississippi*. Intensive Archaeological Survey within the Big Sunflower River watershed, Report of Investigations 42-20. Panamerican Consultants, Inc. Submitted to Vicksburg District, U.S. Army Corps of Engineers.
- Cole, Daniel, Jamie Peeler, and Debbie Shaw
1999 Cultural Resource Report in Reference to Woodlyn (22DS517), University of Memphis. Unpublished Site Reconnaissance Report, Department of Anthropology, University of Memphis.
- Connaway, John M.
1977 *The Denton Site: A Middle Archaic Occupation in the Northern Yazoo Basin Mississippi*. Archaeological Report No. 4. Mississippi Department of Archives and History, Jackson.
1981 *Archaeological Investigations in Mississippi, 1969-1977*. Archaeological Report No. 6. Mississippi Department of Archives and History, Jackson.
1988 Remanant Braided Stream Surfaces in the Northern Yazoo Basin: Preliminary Observations. *Mississippi Archaeology* 23(1):43-69.

- Connaway, John M. and S. O. McGahey
 1970 Archaeological Reconnaissance Survey of Remnant Braided Stream Surfaces in the Western Central Yazoo Basin, Mississippi. *Mississippi Archaeology* 31(2):23-50.
 1979 *Archaeological Investigations in Mississippi, 1969-1977*. Archaeological Report No. 6. Mississippi Department of Archives and History, Jackson.
- Delcourt, Hazel R.,
 1979 Late-Quaternary Vegetation History of the Eastern Highland Rim and Adjacent Cumberland Plateau of Tennessee. *Ecological Monographs* 49:244-280.
- Delcourt, Hazel R., Paul A. Delcourt, and P. Daniel Royall
 1997 Late Quaternary Vegetational History of the Western Lowlands. *Sloan: A Paleoindian Dalton Cemetery in Arkansas*. Smithsonian Institution Press, Washington.
- Dye, David H.,
 1993 *Reconstruction of the de Soto Expedition Route in Arkansas: The Mississippi Alluvial Plain*. The Expedition of Hernando de Soto West of the Mississippi, 1541-1543. Proceedings of the De Soto Syposia 1988 and 1990, edited by Gloria A. Young and Michael P. Hoffman. The University of Arkansas Press, Fayetteville.
- Ezell, Ray and Keith Keeney
 1997 A Report of the Archaeological Investigations Conducted at the Woodlyn Site (22DS517) in DeSoto County, Mississippi. Unpublished Report, Department of Anthropology, University of Memphis.
- Ford, J.L.
 1989 The Tchula Connection: Early Woodland Culture and Burial Mounds in North Mississippi. *Southeastern Archaeology* 9(2):103-115.
- Ford, J.L. and G.I. Quimby, Jr.
 1945 The Tchefuncte Culture, an Early Occupation of the Lower Mississippi Valley. Memoir No. 2. Society for American Archaeology, Menasha, Wisconsin.
- Jeter, M.D., and G.I. Williams, Jr.
 1989 Ceramic-Using Cultures, 600 B.C.-A.D. 700. In *Archeology and Biology of the Lower Mississippi Valley and Trans-Mississippi South in Arkansas and Louisiana*, by M.D. Jeter, J.C. Rose, G.I. Williams, Jr., and A. M. Harmon, pp. 111-170. Research Series No. 37. Arkansas Archeological Survey, Fayetteville

- Logston, Christina M.
 1997 A Cultural Resources Survey of the Woodlyn Site (22DS517) DeSoto County, Mississippi. Unpublished Practicum Report, Department of Anthropology, University of Memphis.
- Lumb, Lisa C., and Charles H. McNutt
 1988 *Chucalissa: Excavations in Units 2 and 6, 1959-1967*. Memphis State University, Anthropological Research Center, Occasional Papers No.15, Memphis, Tennessee.
- Mainfort, Robert C.
 1988 Middle Woodland Ceremonialism at Pinson Mounds, Tennessee. *American Antiquity* 53.1(1988):158-73.
- McGahey, S.O.
 1996 Paleoindian and Early Archaic Data from Mississippi. In *The Paleoindian and Early Archaic Southeast*, edited by D. G. Anderson and K. E. Sassaman, pp. 354-387. University of Alabama Press, Tuscaloosa.
 2000 *Mississippi Projectile Point Guide*. Archaeological Report No. 31. Mississippi Department of Archives and History, Jackson.
- McNutt, Charles H.
 1996 *Preshistory of the Central Mississippi Valley*. University of Alabama Press, Tuscaloosa.
- McNutt, Charles H. and Timothy Pugh
 1991 Julius Augustus Davies, M.D., An Early Contributor to Mississippi Archaeology. *Mississippi Archaeology* 26(2):1-6.
- Morse, Dan F., and Phyllis A. Morse
 1983 *Archaeology of the Central Mississippi Valley*. Academic Press, New York.
- Morse, Phyllis A.
 1981 *Parkin: The 1978-1979 Archaeological Investigations of a Cross Country, Arkansas, Site*. Research Series No. 13. Arkansas Archeological Survey, Fayetteville.
- Phillips, Phillip
 1970 *Archaeological Survey in the Lower Yazoo Basin, Mississippi, 1949-1955, Papers of the Peabody Museum of American Archaeology and Ethnology Vol. 60*. Harvard University, Cambridge.

- Phillips, Phillip, James A. Ford and James B. Griffin
 1951 *Archaeological Survey in the Lower Mississippi Alluvial Valley, 1940-1947*. Papers of the Peabody Museum of American Archaeology and Ethnology, Harvard: v. 25.
- Sassaman, K.E.
 1993 *Early Pottery in the Southeast: Tradition and Innovation in Cooking Technology*. University of Alabama Press, Tuscaloosa.
- Saucier, R.T.
 1974 *Quarternary Geology of the Lower Mississippi Alluvial Valley*. Research Series No. 6. Arkansas Archaeological Survey, Fayetteville.
 1994 *Geomorphology and Quaternary Geologic History of the Lower Mississippi Valley*. Mississippi River Commission, U.S. Army Corps of Engineers, Vicksburg.
 1999 Archaeological Significance of Large Ephemeral Lakes and Lake Outlets of the Mississippi River Deltaic Plain. *Louisiana Archaeology* 1996(23):1-36.
- Saucier, R.T. and J.I. Snead
 1989 *Quaternary Geology of the Lower Mississippi Valley*. Geological Society of America. Scale 1:1,000,000.
- Smith, B. D.
 1992 *Rivers of Change: Essays on Early Agriculture in Eastern North America*. Smithsonian Press, Washington D.C.
- Smith, Gerald P.
 1990 The Walls Phase and its Neighbors: In *Towns and Temples Along the Mississippi*. Edited by David H. Dye and Cheryl Anne Cox, pp. 135-169 The University of Alabama Press, Tuscaloosa.
- Stallings, R.J.
 1997 Archaeological Predictive Modeling in the Northeastern Yazoo Basin. In *Results of Recent Archaeological Investigations in the Greater Mid-South: Proceedings of the 17th Mid-South Archaeological Conference, Memphis, Tennessee, June 29-30, 1996*, edited by C. H. McNutt, pp. 123-149. Occasional Paper No. 18. Anthropological Research Center, University of Memphis, Memphis.

Thorne, R.M., and H.K. Curry

1983 *Cultural Resources Survey, Yazoo River, Items 3 and 4, and a Paleoenvironmental Model of the Lower Yazoo Basin*. Archaeological Papers of the Center for Archaeological Research No. 3. Center for archaeological Research, University of Mississippi. Submitted to Vicksburg District, U.S. Army Corps of Engineers.

Toth, E.A.

1988 *Early Marksville Phases in the Lower Mississippi Valley: A Study of Culture Contact Dynamics*. Anthropological Report No. 21. Mississippi Department of Archives and History, Jackson.

U.S. Department of Agriculture

1959 Soil Survey of DeSoto County Mississippi. U.S. Department of Agriculture Soil Conservation Service.

Walling, R., and J.S. Chapman

1998 *Archaeological Data Recovery at the McNight Site (22CO560), Coahoma County, Mississippi*. Panamerican Consultants, Inc. Submitted to Environmental Division, Mississippi Department of Transportation, Jackson.

Webb, Clarence H.

1977 *The Poverty Point Culture*. Geoscience and Man No. 17. Museum of Geoscience, Louisiana State University, Baton Rouge.

1982 *Stone Points and Tools of Northwestern Louisiana*. Special Publication No. 1. Louisiana Archaeological Society, Lafayette.

Weinstein, R.A.

1995 The Tchula Period in the Lower Mississippi Valley and Adjacent Coastal Zone: A Brief Summary. In "*And Stuff Like That There:*" *In Appreciation of William G. Haag*, edited by J.L. Gibson, R.W. Neuman, and R.A. Weinstein, Louisiana Archaeology No. 18. Louisiana Archaeological Society, Lafayette.

Appendix A

