

AD-A274 650



2

US ARMY CORPS
OF ENGINEERS
LITTLE ROCK DISTRICT

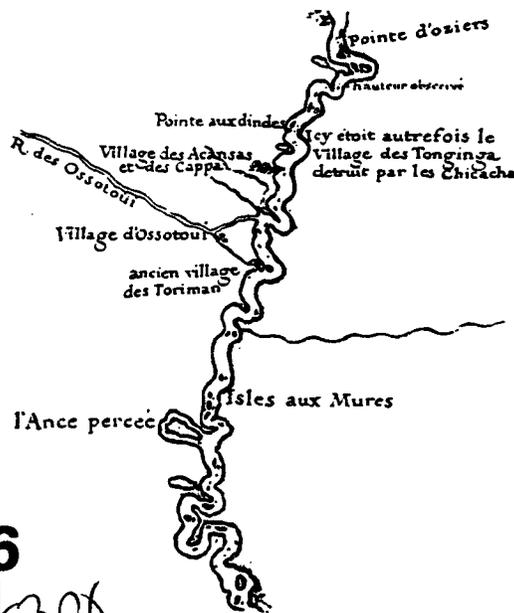
DACW03-89-D-0100
ORDER 1

ARCHEOLOGICAL INVESTIGATION AT MONTGOMERY POINT DESHA COUNTY, ARKANSAS

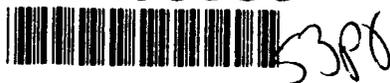
BY

W.J. BENNETT, Jr.
BEVERLY WATKINS
JOE DUNBAR
and
ROBERT BRINKMAN

DTIC
ELECTE
JAN 10 1994
S E D



94-00886



1989



94 1 7 327

REPORT DOCUMENTATION PAGE

Form Approved
GSA No. FPMR 101-11.6

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Services, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (2030-0188), Washington, DC 20503.

1. AGENCY USE ONLY (Leave blank) 2. REPORT DATE
1989

3. REPORT TYPE AND DATES COVERED
FINAL

4. TITLE AND SUBTITLE 5. FUNDING NUMBERS

**Archeological Investigations at Montgomery Point
Desha County, Arkansas**

6. AUTHOR(S) **Dr. W.J. Bennett, Jr. et. al.** **DACW03-89-D-0100, Order 1**

7. AUTHORING ORGANIZATION NAME(S) AND ADDRESS(ES) **Archeological Assessments, Inc
P.O. Box 1631
Nashville, Arkansas 71852** **AAI Report
No. 167**

8. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) **U. S. Army Engineer District, Little Rock
ATTN: CESWL-PL-A
P.O. Box 867
Little Rock, Arkansas 72201-0867**

Approved for public release; distribution is unlimited.

13. ABSTRACT (Maximum 300 words)
As part of its planning process to develop alternative methods of improving access to the McClellan-Kerr Arkansas River Navigation system through the White River Entrance channel the U.S. Army Engineer District, Little Rock, authorized an intensive cultural resource survey for the area known as Montgomery Point situated at the present confluence of the White and Mississippi Rivers in Desha County, Arkansas. This effort combined an extensive geomorphological reconstruction with cartographic and literature research. While the cartographic and literature research indicated that this region was the location of several Native American and Euro-American groups over the past several hundred years, the geomorphological investigations determined that the area had been extensively reworked by channel action during this same period. Literature review failed to locate specific cultural features within the project area although the presence of buried shipwrecks cannot be discounted. Field investigations were successful in documenting important aspects of this dynamic natural landscape but failed to note the presence of cultural resources. No further archeological investigations are recommended for the project area unless buried cultural remains are encountered during construction.

14. SUBJECT TERMS Archeology Geomorphological Historic Cultural Resources Arkansas River White River			15. NUMBER OF PAGES 54
			16. PRICE CODE
17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT UL

ARCHEOLOGICAL ASSESSMENTS REPORT No. 116

**Archeological Investigations at Montgomery Point
Desha County, Arkansas**

DTIC QUALITY INSPECTED 8

by
**W. J. Bennett, Jr., Beverly Watkins,
Joe Dunbar, and Robert Brinkmann**

Submitted to the
**U.S. Army Engineer District, Little Rock
Little Rock, Arkansas**

Accession For	
NTIS CRA&I	<input checked="" type="checkbox"/>
DTIC TAB	<input checked="" type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification _____	
By _____	
Distribution /	
Availability Codes	
Dist	Avail and/or Special
A-1	

Abstract

As part of its planning process to develop alternative methods of improving access to the McClellan-Kerr Arkansas River Navigation system through the White River Entrance channel the U.S. Army Engineer District, Little Rock, authorized an intensive cultural resource survey for the area known as Montgomery Point situated at the present confluence of the White and Mississippi Rivers in Desha County, Arkansas. This effort combined an extensive geomorphological reconstruction with cartographic and literature research. While the cartographic and literature research indicated that this region was the location of several Native American and Euro-American groups over the past several hundred years, the geomorphological investigations determined that the area had been extensively reworked by channel action during this same period. Literature review failed to locate specific cultural features within the project area although the presence of buried shipwrecks cannot be discounted. Field investigations were successful in documenting important aspects of this dynamic natural landscape but failed to note the presence of cultural resources. No further archeological investigations are recommended for the project area unless buried cultural remains are encountered during construction.

Table of Contents

Abstract	ii
List of Figures	iv
Chapter 1. Introduction	1
Project Area Location and Description	2
Project Goals and Orientation	6
Chapter 2. Summary of Investigations	7
The Literature Search	7
Geomorphic Reconstruction	7
Field Verification	8
Chapter 3. The Landscape	12
Geologic Setting	12
Thomas Nuttall's Description	12
Environments of Deposition	13
Mapping Conventions.	13
Point Bar and Chutes and Bars.	16
Abandoned channels.	16
Abandoned Course and Crevasse Channel.	17
Backswamp.	17
Natural Levee.	17
Terrace.	18
Geomorphic Development of the Project Area	18
Summary	24
Chapter 4. Historical Context	25
French and Spanish Occupation, 1680-1800	25
American Settlement, 1800-1840	27
The Civil War, 1861-1865	31
Steamboat Trade, 1865-1927	31
Montgomery Point Steamboat Wrecks	36
Chapter 5. Summary and Recommendations	37
Summary	37
American Settlement, 1800-1840.	40
The Civil War, 1861-1865.	40
Steamboat Trade, 1865-1927.	40
20th Century Developments.	42
Recommendations	43
References Cited	44

List of Figures

Figure 1. Study Area	1
Figure 2. Project Schematics	3
Figure 3. Project Area	4
Figure 4. South Bank of White River	5
Figure 5. Hardwood Forest; South Bank	5
Figure 6. Examination of Bankline Profile 1	8
Figure 7. Hand Augering on North Bank	8
Figure 8. Soil Core Extraction	9
Figure 9. Examination of Soil Cores	9
Figure 10. Location of Profiles, Cores, and Probes	10
Figure 11. Aerial View of the Project Area	14
Figure 12. Generalized Diagram of Floodplain Environments	15
Figure 13. Channel Changes	19
Figure 14. Landforms in the Study Area	20
Figure 15. Profile on North Bank	21
Figure 16. Portion of Delisle Map of 1702	26
Figure 17. White River Channel: 1811	28
Figure 18. Montgomery Point: 1830	30
Figure 19. White River Channel: 1864	32
Figure 20. Portion of Desha County: 1864	33
Figure 21. Montgomery Point: 1879-1880 to 1928	35
Figure 22. White River Channel: 1765	38
Figure 23. Landforms in the Study Area	39
Figure 24. White River Channels: 1765/1829-40	40
Figure 25. White River Channels: 1829-40/1880-81	41
Figure 26. White River Channels: 1880-81/1939	41
Figure 27. White River Channels: 1939/1977	42

Archeological Investigations at Montgomery Point Desha County, Arkansas

Chapter 1. Introduction

As part of its management of the McClellan-Kerr Arkansas River Navigation System the United States Army Engineer District, Little Rock (USAED,LR) has been considering alternative methods to improve access to the Navigation System from the Mississippi River. Of particular importance is the reduction of the impact of low water conditions in the White River Entrance Channel which constitutes the study area for this effort (Figure 1).

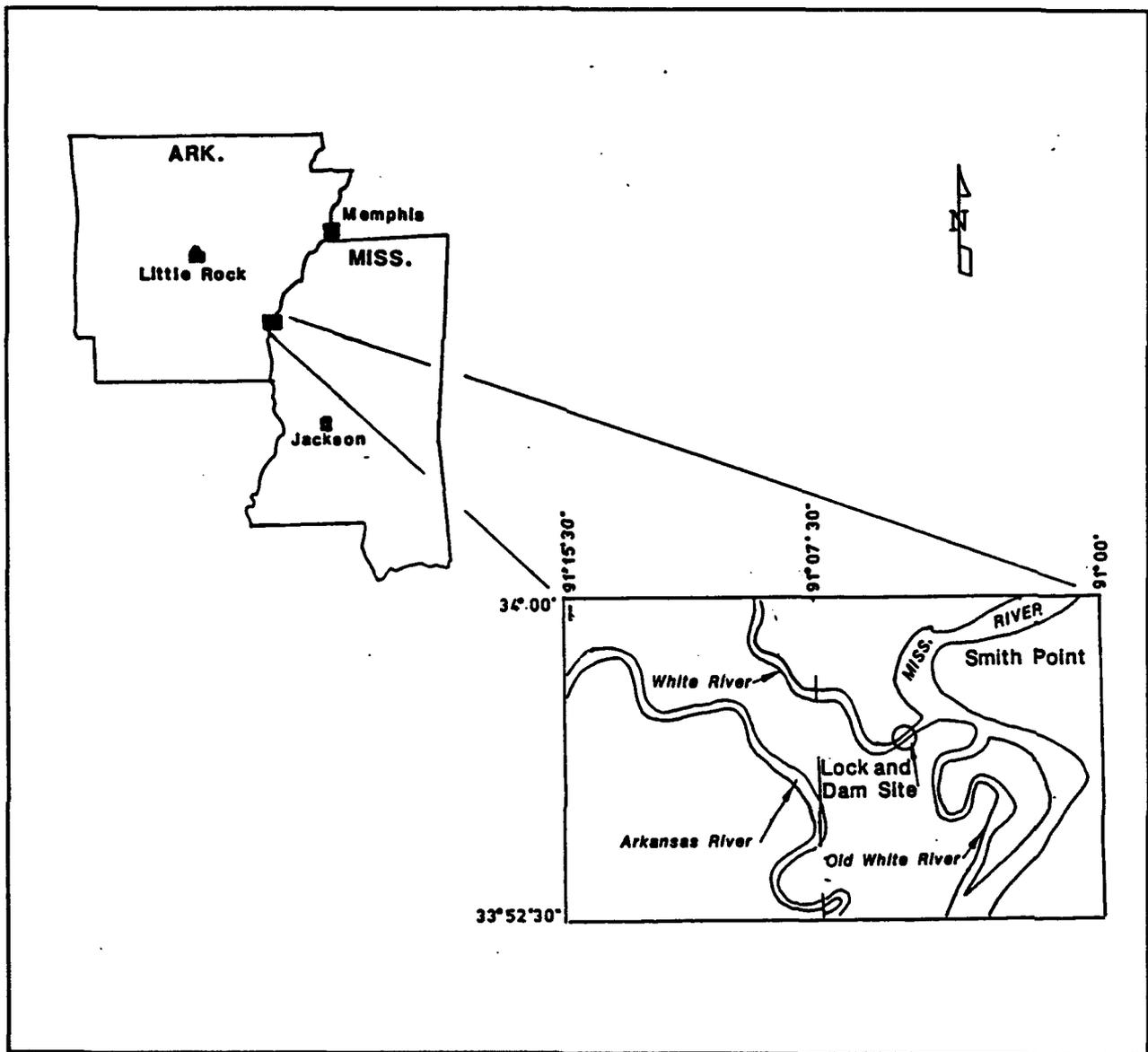


Figure 1. Study Area.

During the preliminary planning stages numerous structural alternatives were evaluated. These included (1) improvements to the Mississippi River; (2) modification of the lower Arkansas River for navigation; (3) a canal from the White River to the Mississippi River; (4) a lock and dam on the White River; (5) contraction works; (6) a sediment trap; and (7) diversion of the Arkansas River through the Arkansas Post Canal. Consideration of these various alternatives determined that the establishment of a lock and dam on the lower White River was the only viable solution to the low water problems on the White River Entrance Channel.

There are three alternative configurations for a lock and dam on the lower White River: Plan A (Lock and Dam with Sector Gates), Plan B (Lock and Dam with Miter Gates), and Plan C (Lock and Dam with Access Canal). A summary description of the alternative locks and dams is presented below. Figure 2 illustrates these alternatives.

Plan A - This plan consists of a lock and dam in the White River Entrance Channel at mile 0.6. The dam consists of a fixed weir at elevation 112.0 feet, NGVD. This weir would also serve as a navigation pass. The lock chamber is 840 feet x 110 feet and the lock is sector gated. The structure in this plan would be contained entirely within the channel of the White River.

Plan B - This plan consists of a lock and dam at the same location as Plan A. The lock chamber is a traditional 600 feet x 110 feet size with miter gates. The dam is a gated structure that has hinged crest gates for pool control. When Mississippi River stages are high enough, the gates would be down allowing navigation to pass over the dam. As Mississippi River stages fall, the gates would be raised to form a pool and the lock would be used.

Plan C - This plan consists of a dam similar to the dam in Plan B at mile 0.6 on the White River. This dam contains hinged crest gates. The lock would be located in a right bank man-made canal that connects the Mississippi River with the White River. The canal would be approximately 7,700 feet long with a bottom width of 300 feet and side slopes of 1 on 4.

Each of these alternatives will involve impacts to the landscape in the area known as Montgomery Point. As part of planning procedures the USAED,LR requested that Archeological Assessments, Inc. (AAI), Nashville, Arkansas, conduct an intensive cultural resources survey to determine if significant cultural resources presently exist in the area of possible project impact. This work was authorized under Contract No. DACW03-89-R-0011, Order No. 01. This effort was aided considerably by the participation of the Geotechnical Laboratory, U.S. Army Engineers, Waterways Experiment Station (WES), Vicksburg, Mississippi.

Project Area Location and Description

In this report a distinction is made between the study area which is the general region surrounding the confluences of the White and Arkansas Rivers with the Mississippi River (Figure 1) and the project area which is the principal area of possible impact. The project area is restricted to portions of the south and north banks of the White River upstream from its confluence with the Mississippi River (Figure 3). Impacts will include the excavation of portions of both banks as well as the construction of an access road.

The areas to be impacted are within the floodplains of the Arkansas, Mississippi, and White Rivers and are confined to landforms created by the dynamic action of these rivers. These landforms, as discussed at length below, are the result of both vertical and lateral accretion over the past several centuries. At the present time vegetation in the project area consists of a mature bottomland forest (Figures 4 and 5).

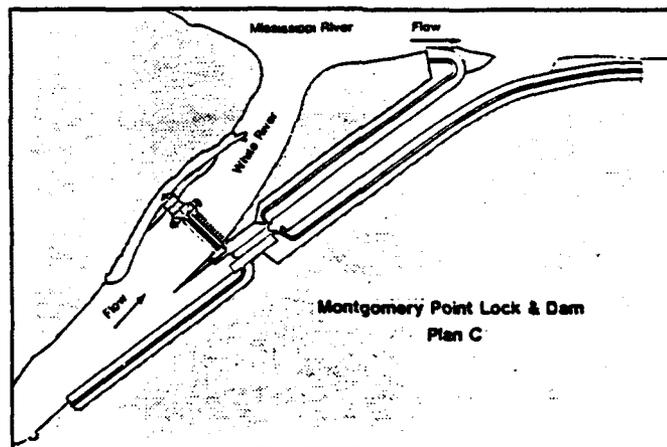
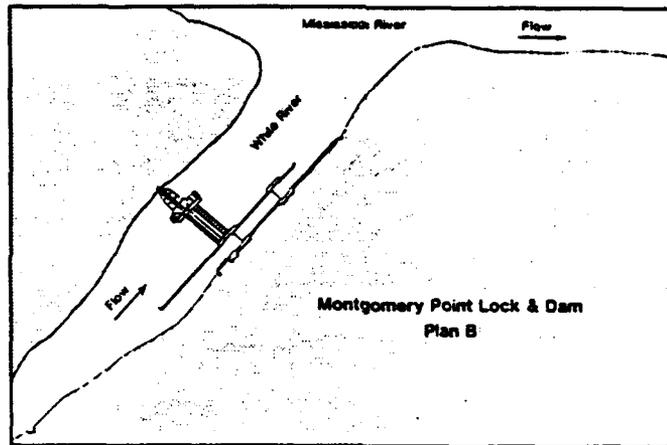
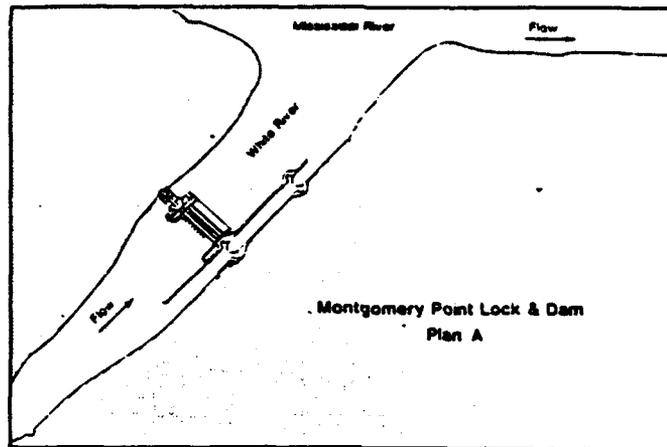


Figure 2. Project Alternatives.

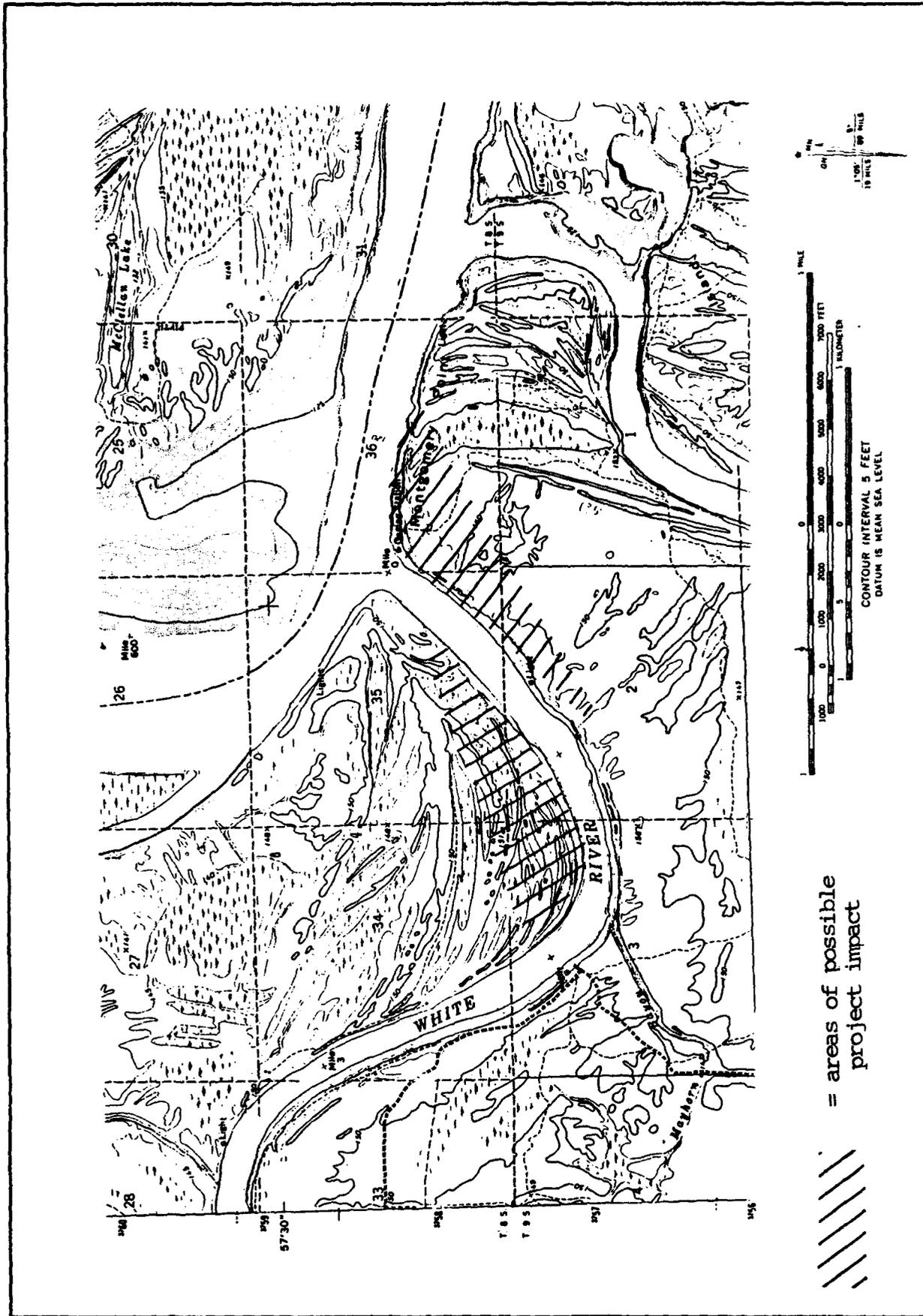


Figure 3. Project Area.



Figure 4. South Bank of White River.



Figure 5. Hardwood Forest; South Bank.

Project Goals and Orientation

The primary goal of the effort was to determine if significant cultural resources exist within the area of project impact. There were two factors of primary consideration in this effort. One was the knowledge that the study area had been subjected to extensive modification by the three dynamic fluvial systems in the region. Previous reconnaissance level geomorphological studies (Smith 1988; Smith and Breland 1989) had indicated that the landscape within the project area was extremely young. The second factor of importance was the knowledge that the region had been very important in the early European settlement of Arkansas and had been occupied by various Native American groups at the time of initial European exploration and settlement of the region.

Given these two factors it was determined that the effort should combine a geomorphological reconstruction of the project area using previously gathered cartographic and photographic data as well as field investigations with an extensive literature review to determine the location of previously recorded Native American and early Euro-American settlements which might be present in the project area.

Chapter 2. Summary of Investigations

Investigations consisted of a detailed literature and records search, a geomorphological reconstruction of the project area initially based on remotely sensed data, and field verification of the resultant geomorphic reconstruction.

The Literature Search

Previous archeological investigations in the area have concentrated on documenting the late prehistoric and early Euro-American occupation and use of the region. The extensive late prehistoric archeological record observable along the Arkansas River near and upstream from Arkansas Post drew comment from Thomas Nuttall during his travels in 1819 (Nuttall 1980). Nuttall did not, however, report evidence for such late prehistoric sites in the vicinity of our project area. Other early investigations include the Bureau of Ethnology Mound Exploration Project which mapped the Menard Mounds (Thomas 1985) and the work of Clarence B. Moore (Moore 1908) and Warren K. Moorehead (Moorehead 1931) in the early part of the 20th Century. Work in the mid-20th Century included studies done by S. C. Dellinger, Curator of the University of Arkansas Museum (Dickinson and Dellinger 1940), the extensive work of the Lower Mississippi Valley Survey (Phillips, Ford, and Griffin 1968; Phillips 1970), and James Ford's excavations at the Menard site (Ford 1961). The University of Arkansas conducted investigations related to the construction of the McClellan-Kerr Navigation system (Davis and Baker 1974; Scholtz 1971; Scholtz and Hoffman 1968). A number of projects have been undertaken at the site of Arkansas Post. These include Holder (1957a; 1957b), Wilson (1966), Walker (1971), Martin (1977), and Westbury (1976). A summary discussion of these investigations is provided in Bennett, Breland, and Smith (1989).

The only archeological investigations documented for the project area, however, relate to the reporting and subsequent search for a late prehistoric site registered as 3DE9 in the files of the Arkansas Archeological Survey. This site was reported by an avocational archeologist who donated a collection of ceramics to the Arkansas Archeological Survey from this site in 1967. No description of the site is given on the site form and only a vague locational reference is provided. The Arkansas Archeological Survey never verified the site location or description. The general area indicated as the possible location of 3DE9 was examined by John Riggs and Don Hubsch of the USAED,LR on 3 August 1988. Intensive surface examination failed to discover any cultural materials. Bankline examination was prevented by erosion resistant materials along the bank face. A phone discussion with Burney McClurken, the Arkansas Archeological Survey Station Archeologist with whom the 3DE9 was first recorded, confirmed that he had no information on the location of this site, other than the reference to the north end of Big Island. Attempts to locate Mr. Rush, who reported the site, have been unsuccessful.

A search of the cartographic resources for early European maps of the region at the Cammie G. Henry Research Center, Northwestern State University, Natchitoches, Louisiana, was undertaken by Aubra Lee. Lee reviewed over 500 maps and discovered over 40 large scale maps of the study area which were then examined to determine if cultural features which included Arkansas Post and major Native American villages depicted on these maps were located in our project area. The results of this search were negative.

Archival and historical research were done by Beverly Watkins. In addition to reviewing the published historical literature for the area, she also used county, state, and federal records, newspapers, and other manuscript collections available at the Arkansas History Commission in Little Rock, and documents from The Huntington Library in San Marino, California. The results of her research are given in Chapter 4.

Geomorphic Reconstruction

Background research involved in the delineation of the project area's landscape was undertaken by Joe Dunbar (WES). This involved the review of previous geomorphic investigations in the general area including (Kolb et al 1968; Saucier 1967, 1974; Smith 1979; Smith and Saucier 1971; Smith and Breland 1989). This activity also involved the analysis of aerial photographs taken during 1939, 1958, 1971, and 1988 as well as a variety of cartographic resources including the 1939 and 1977 1:62,500 Big Island Quadrangle sheets, and the 1:24,000 scale Montgomery

Point and Yancopin Quadrangles for 1977. Selection of the different time intervals for the comparison was based on the availability of historic maps and charts of the area. The identification of landforms and channel migration was concentrated on the northern half of the Big Island 15-Minute Quadrangle Sheet which includes the Montgomery Point and Yancopin 7.5-Minute Quadrangle Sheets.

Channel migration was mapped for the following time intervals: 1988 (U. S. Army Corps of Engineers 1988), 1977 (U. S. Army Corps of Engineers 1977), 1939 (U.S. Army Corps of Engineers 1939), 1904 (U.S. Army Corps of Engineers 1975), 1880-1881 (Fisk 1944; based on early maps in files of Mississippi River Commission), 1829-1830 (U.S. Army Corps of Engineers 1939), and 1765 (Fisk 1944).

From this review it was possible to develop a detailed identification of various landforms in the study area and to construct a set of maps at the scale of 1:24,000



Figure 7. Hand Augering on North Bank.



Figure 6. Examination of Bankline Profile 1.

depicting the location of the various channels at different time intervals since the middle of the 18th Century.

Field Verification

Field investigations were undertaken from 30 October through 3 November 1989. The Archeological Assessments' field team was led by W. J. Bennett, Jr., and included Aubra Lee, John Northrip, William Isenberger, and Robert Bennett. This team was joined by project geologist Joe Dunbar of WES, and Robert Brinkmann of the University of Wisconsin-Milwaukee who served as consulting soils scientist.

The intent of the effort was to determine whether surfaces existed in the area which could contain buried cultural deposits. Three tactics were employed; the cutting of bankline profiles (Figure 6), hand coring using a 1" Oakfield soil probe and a 4" hand bucket auger (Figure 7), and the extraction of solid soil cores using a truck-mounted Bull Soil Sampler which extracted soil cores 2" in diameter



Figure 8. Soil Core Extraction.



Figure 9. Examination of Soil Cores.

(Figures 8 and 9). Figure 10 illustrates the locations of the profiles, soil cores, and probes made with the 4" bucket auger.

Three profiles were dug at appropriate locations in order to document the various components of the landforms to a depth greater than was possible with the coring devices. The profiles, two along the south bank of the White River as close as possible to its confluence with the Mississippi River, and one along a point bar ridge in the north

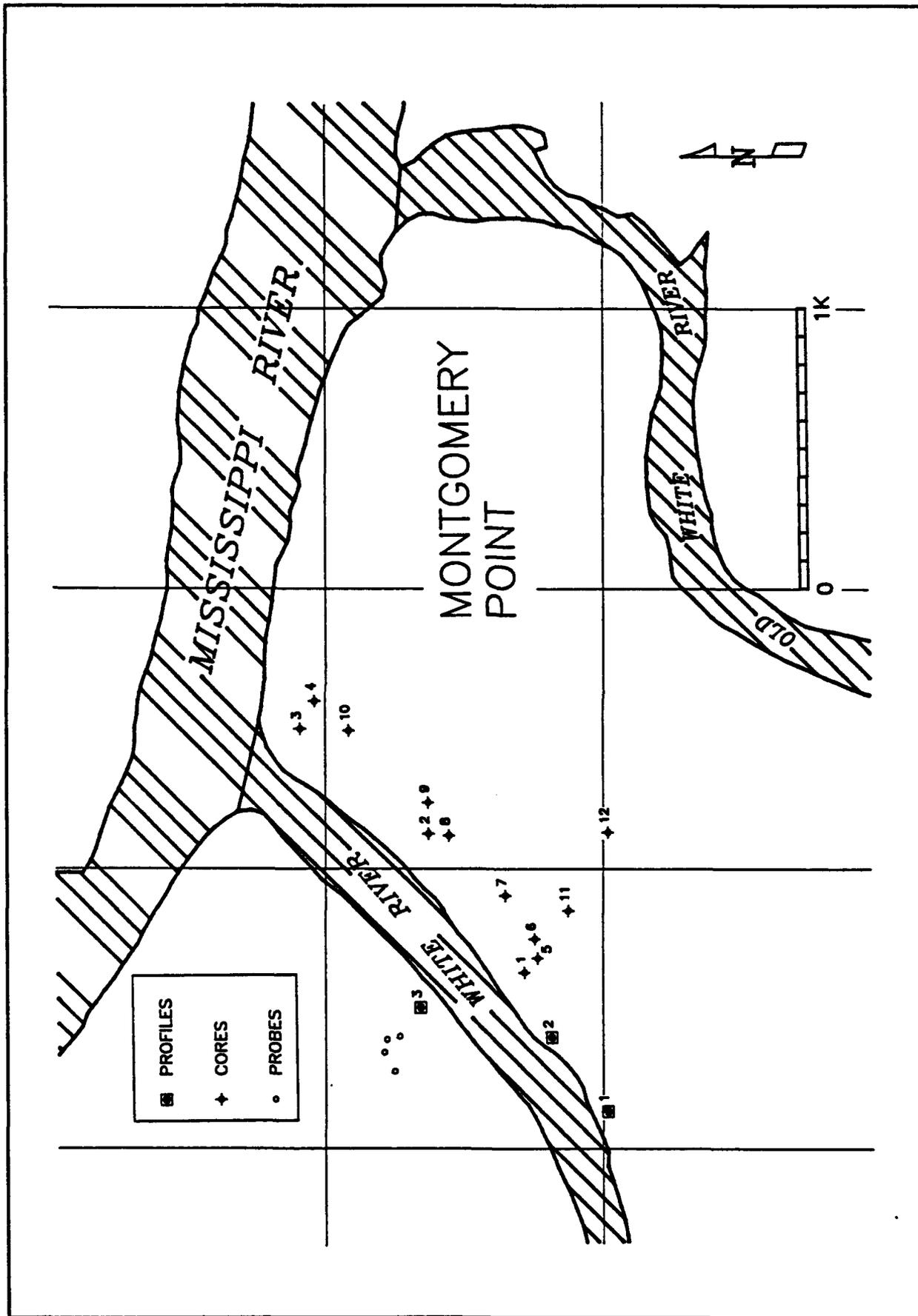


Figure 10. Location of Profiles, Cores, and Probes.

bank of the White River, provided a wider horizontal exposure of the various sediments than the cores could show. Because of the presence of riprap and woven concrete mattresses made it impossible to cut a bankline profile along the bank of the Mississippi River or at the confluence of the White and Mississippi Rivers.

Coring on the south side of the White River began by extending a transect of three cores parallel to the White River. A fourth core in this transect, Core 13 (not shown in Figure 10), was taken near Mayhorn Bayou. Together these four cores provided a measure of the variability of the deposits and soil development adjacent to the White River. These, plus Profiles 1 and 2, provided a basic understanding of the nature of the landform. Cores 4-12 were extracted to measure the variability of the landscape farther from the White River.

These cores were also carefully examined for evidence of surfaces of stability or buried A horizons which would indicate surfaces on which cultural materials might be found. This was particularly relevant in relation to the possible location of site 3DE9. No evidence whatsoever was recovered in the cores to suggest the presence of any sort of surface stability necessary to support such a site. Even with this negative evidence, we examined surface exposures within the mapped site area. This was augmented by placing numerous 1" probes to a depth of 1 meter within this same area. The results were negative. Finally, discussions with the participants of a local hunting club found that none of them had ever discovered or heard reports of any pre-European cultural artifacts in the area.

Chapter 3. The Landscape

Geologic Setting

As indicated above the study area is located within the floodplains of the Arkansas, Mississippi, and White Rivers. The study area contains the present courses of the Arkansas, Mississippi, and White Rivers, former courses and channels of these river systems, and the fluvial sediments deposited by these river systems as they have migrated across their respective floodplains. The migration of these different fluvial systems during the Holocene (10,000 years to present) has created a complex landscape which is marked by relict fluvial features and/or by abandoned floodplains or terraces.

Detailed engineering geological studies have determined that throughout the early and middle Holocene, the Arkansas and White Rivers emptied into the Mississippi River upstream and downstream of their present positions (Saucier 1967; Kolb et al 1968; Smith 1979). Beginning in the latter part of the Holocene, the present meander belts of the Arkansas, White, and Mississippi Rivers migrated to their present locations. As part of the most recent meander belts of the Arkansas, Mississippi, and White Rivers it is estimated that the study area is less than 2,500 years old (Saucier 1974). Geomorphic mapping, historic bankline comparisons, and soils data evaluated during the course of this study indicate that the fluvial systems and sediments within the immediate project area are even younger.

Thomas Nuttall's Description

The project area was visited by Thomas Nuttall in January, 1819, as part of his expedition sponsored by Academy of Natural Sciences, Philadelphia. His description of the lower White and Arkansas Rivers provides an eloquent introduction to the region. We pick up his narrative as he completes his journey down the Mississippi River and arrives at the mouth of the White River:

Coming along the bend of the 71st island, we struck upon an enormous planter, or immoveable log, but again escaped without accident. About noon we landed at Mr. M'Lane's, a house of entertainment. Here I was advised to proceed with my small cargo and flat-boat to the port of Osark, on the Arkansa, by the bayou, which communicates between the White and Arkansa rivers, in both of which it was now conjectured there was back-water from the Mississippi. (Nuttall 1980:71,72)

After two interesting days at McLane's Nuttall finally began his journey into the Arkansas Territory.

15th] We continued with hard labour ascending White river to the bayou, in a direction of west to north-west, the bayou or cut-off continuing to the south-west. In this distance, there are no settlements, the land being overflowed by the back water of the Mississippi. We passed nearly through the bayou, in which there are four points of land and a half; the current carrying us almost three miles an hour towards the Arkansa, which it entered nearly at right angles, with a rapid current, and a channel filled with snags. The length of the bayou appears to be about eight or nine miles.

16th] Leaving the bayou, we entered the Arkansas, which was very low, but still red and muddy from the freshets of the Canadian. Most of the larger streams which enter into it from the south, are charged with red and turbid water, while those of the north are clear. Every where I observed the chocolate or reddish brown clay of the salt formation, deposited by the southern freshets. The Arkansa had here a very gentle current, and was scarcely more than 200 yards wide, with its meanders on a small scale, similar to those of the Mississippi. In consequence of the unrestrained dominion of the inundation, no settlements yet appeared in this quarter. . . . (Nuttall 1980:76,77)

The three last bends of the river, like the four first, tending by half circles to the north-west, are each about two and three miles in circuit. As in the Mississippi, the current sets with the greatest force against the centre of the curves; the banks of which are nearly perpendicular, and subject to a perpetual

state of dislocation. In such situations we frequently see brakes of cane; while, on the opposite site, a naked beach of sand, thinly strewn with succulent and maritime plants, considerably wider than the river, appears to imitate the aridity of a desert, though contrasted at a little distance by skirting groves of willows and poplars.

No other kind of soil appears than a friable loam, and the beds of red clay, which so strongly tinge the water at particular periods of inundation. The sand of the river appears to be in perpetual motion, drifting along at the beck of the current; its instability is indeed often dangerous to the cattle that happen to venture into the river, either to drink or traverse the stream. . . .(Nuttall 1980:77, 78)

No change, that I can remark, yet exists in the vegetation, and the scenery is almost destitute of every thing which is agreeable to human nature; nothing yet appears but one vast trackless wilderness of trees, a dead solemnity, where the human voice is never heard to echo, where not even ruins of the humblest kind recall its history to mind, or prove the past dominion of man. All is rude nature as it sprang into existence, still preserving its primeval type, its unreclaimed exuberance. . . .(Nuttall 1980:78)

In any other direction from this settlement [Arkansas Post] the lands are totally overflowed in freshets as far as the Mississippi. On this side of the Arkansa, the floods cover the whole intermediate space to White river, a distance of 30 miles. Within this tract, cultivation can never take place without resource to the same industry, which has redeemed Holland from the ocean. The singular caprice of the river, as it accidentally seeks its way to the sea, meandering through its alluvial alley, is truly remarkable. The variation of its channel is almost incredible, and the action which it exercises over the destiny of the soil, can scarcely be conceived. After pursuing a given course for many ages, and slowly encroaching, it has, at length, in many instances cut through an isthmus, and thus abandoned perhaps a course of six or eight miles, in which the water stagnating, at length becomes totally insulated, and thus presents a lagoon or lake. . . .(Nuttall 1980:79,80)

After an eventful stay of nearly a year Nuttall returned down stream toward New Orleans and makes these final observations as he leaves the Arkansas River:

On the 19th, I bid farewell to Arkansas, and proceeded towards the Mississippi, in the barge of Mons. Notrebe, a merchant of this place, and the day following, without any material occurrence, arrived at the confluence of the Arkansa, a distance of about 60 miles. The bayou, through which I came in the spring, now ran with as much velocity towards White river, as it had done before into the Arkansa, its current and course depending entirely upon the relative elevation of the waters of the two rivers with which it communicates. The large island, thus produced, possesses extensive tracts of cane land, sufficiently elevated, as I am told, above inundation, as does also the opposite bank of the Arkansa. (Nuttall 1980:249)

To summarize, Nuttall depicts our area as an often flooded wilderness generally inhospitable to human settlement. The aerial photograph taken in 1987 (Figure 11) depicts a similar setting.

Environments of Deposition

The following paragraphs describe in some detail the various elements of the fluvially-constructed landscape within the study area. The locations of these elements within the study area have been mapped onto the accompanying 7.5 Minute Quadrangle Sheets (Montgomery Point and Yancopin). Many of these features are illustrated schematically in Figure 12.

Mapping Conventions. The fluvial features identified on the geomorphic maps were formed by the Arkansas, Mississippi, and White Rivers. An attempt was made to distinguish the fluvial system responsible for the mapped feature as shown by the legends on the quadrangle sheets. The fluvial system responsible is identified by a letter ("A" for Arkansas River, "M" for Mississippi River, and "W" for White) preceding the landform symbol. In addition, historic (which in this case means later than 1765) fluvial features and deposits are identified on the geomorphic maps by the letter "H" preceding the system and landform symbol. Mapping has identified eight



Figure 11. Aerial View of the Project Area.

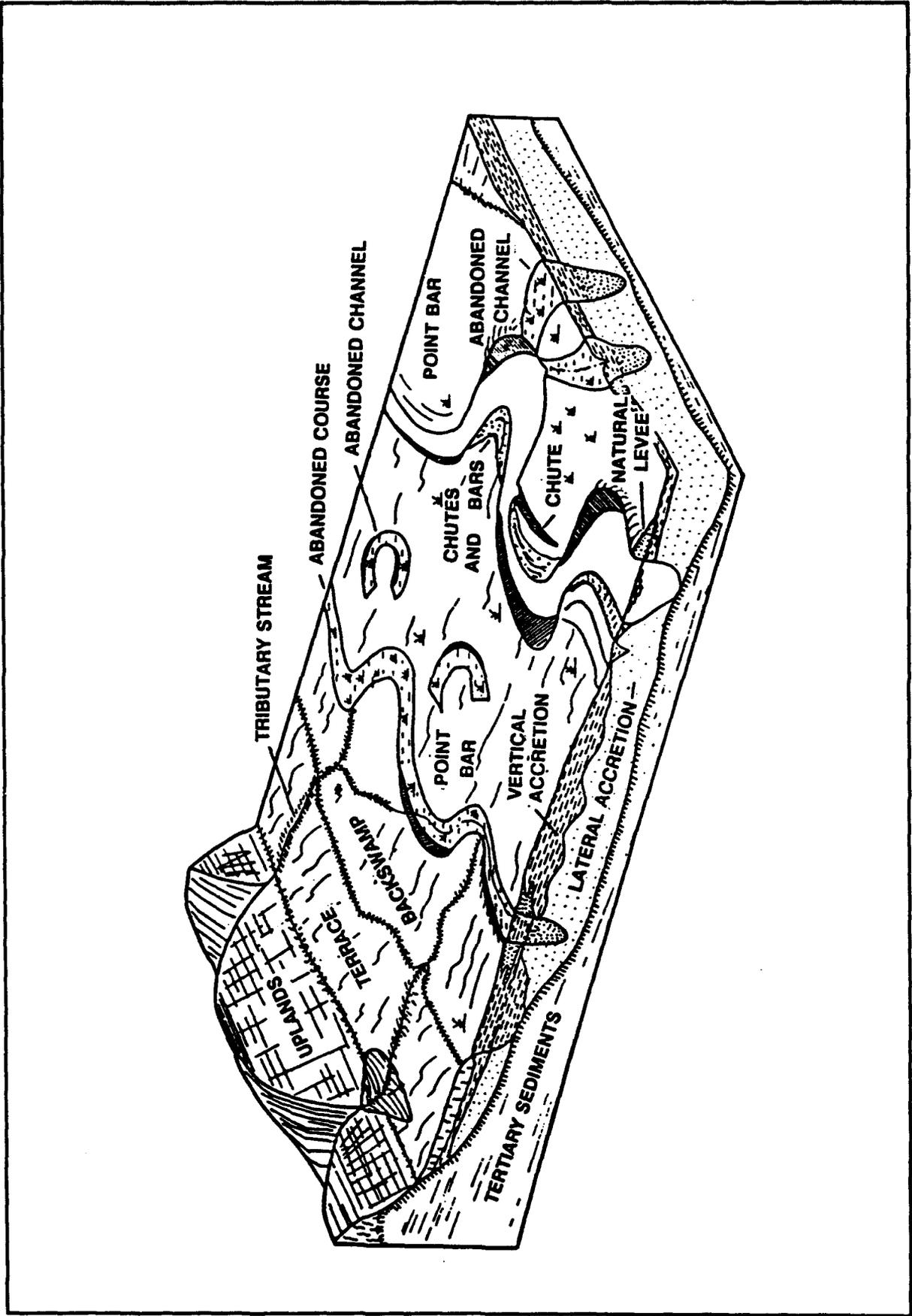


Figure 12. Generalized Diagram of Floodplain Environments.

different environments of deposition in the study area. These environments are identified on the geomorphic maps by a landform symbol ("PB" for point bar, "CH" for abandoned channel, "CO" for abandoned course, "CC" for crevasse channel, "BS" for backswamp, "CB" for chutes and bars, "T" for terrace, and "TE" for eroded terrace). The different geomorphic environments present in the study area are individually described in more detail below.

Point Bar and Chutes and Bars. Point bar deposits are by far the most common landscape elements in the study area. Point bar deposits are formed as a river migrates across its floodplain. River channels migrate across their floodplain by eroding the outside or concave bank and depositing a sandbar on the inside or convex bank. Commonly called lateral accretion, this is the process by which the stream reworks its valley, destroying previously constructed landforms and creating new ones. With time, the convex bar grows in size and the point bar is developed. Associated with the point bar are a series of arcuate ridges and swales. The ridges are formed by lateral channel movement and represent relict sandy lateral bars separated by low-lying swales. The swales are locations where fine grained sediments accumulate. Point bars are easily recognized by distinguishing characteristics shown on aerial photography and topographic maps. The primary characteristic that distinguishes the point bar environment from other environments is the well-developed ridge and swale topography as well as the numerous abandoned channels, most of which still receive stream flow during times of high water flow.

Other common landscape features within the study area are the well-developed sandy bars along the main channel. These sandy landforms are identified on the geomorphic maps as chutes and bars. The major characteristic that distinguishes chutes and bars from point bar is the absence of a fine-grained topstratum in the chutes and bars environment. The fine-grained topstratum is deposited by overbank deposition of sediment during high water flow periods. As the channel migrates away from the sandy bar and away from the high energy flow conditions that occur near the main channel, silts and clay are deposited upon the sandy bars forming topstratum deposits.

Point bar deposits are as thick as the total depth of the river that forms them. These deposits fine upward from the maximum size of the river's bedload (coarse sand and/or fine gravel) to fine grained soils (clay) at the surface. The basal or coarse grained portion of the point bar sequence, the substratum, is deposited by lateral accretion while the fine grained or upper portion of the point bar sequence, the topstratum, is deposited by overbank vertical accretion.

Point bar deposits are approximately 40 meters (130 ft) thick at the proposed lock and dam site as shown by the cross-section and borings logged by the USAED,LR. Sediments as described in these borings identify a typical point bar sequence as grading upward from sand and gravel at the base, to silty sand, silt, and clay near ground surface. These deposits are usually variable horizontally, especially where ridge and swale topography is well developed or relict chutes (high water channel across the point bar neck) are present.

Data recovered from borings also show that point bar deposits are separated into two distinct units based on grain sizes; a predominantly fine grained upper unit or point bar topstratum (silt and clay) deposited by vertical accretion, and a coarse grained lower unit or point bar substratum (silty sand and sand) deposited by lateral accretion.

The thickness of the point bar topstratum at the proposed lock and dam site is variable, ranging from less than 10 meters (30 ft) to approximately 19 meters (60 ft). The substratum in comparison with the topstratum is usually much thicker, generally greater than 15 meters (50 ft).

Abandoned channels. Abandoned Channels are relict channel loops that are abandoned when the river cuts across its point bar. The cutoff produces an oxbow lake. The process by which the river abandons the loop occurs either gradually over an extended period of time as a neck cutoff or during a single flood event as a chute cutoff. A chute is a high-water channel across the point bar neck.

Abandoned channels are abundant throughout the study area, especially on the floodplain of the Arkansas River. There are fewer abandoned channels on the Montgomery Island Quadrangle because the Mississippi River has

rapidly migrated laterally through this area in historic times rather than abandoning channel segments and/or courses.

Filling of an abandoned channel in the study area is a rapid process (about 200 years or less) that is dominated initially by lateral accretion infilling (coarse grained deposits) when the channel is still hydraulically connected to the main course. After the main channel has migrated away from the abandoned segment, vertical accretion dominates with the transport and deposition of fine-grained sediment to the abandoned channel during times of high water flow.

Abandoned channels and courses have different physical properties. Abandoned channels fill primarily by overbank deposition and vertical accretion. In general, abandoned channels generally contain more finer grained sediments than abandoned courses. Abandoned courses are usually filled by more coarse grained sediments.

Abandoned Course and Crevasse Channel. An abandoned course is a river channel that is abandoned in favor of a more hydraulically efficient course. An abandoned course forms when the river's flow path is diverted to a new position on the river's floodplain. This event usually is a gradual process and begins by a break or a "crevasse" in the river's natural levee during flood stage. The crevasse forms a temporary channel or a crevasse channel that may over time develop into a more permanent channel. Eventually, the new channel diverts the majority of flow and the old channel progressively fills. Final abandonment begins as coarse sediment fills the abandoned channel segment immediately down stream from the point of diversion. Complete filling of the abandoned course occurs by overbank deposition and may take approximately one thousand years to fill completely. Bank migration data evaluated for this study indicates that filling is a rapid process which may occur in less than 200 years. Abandoned courses in the project area are associated only with the Arkansas and White Rivers.

Only three abandoned crevasse channels were identified on the geomorphic maps. One of these channels is located on the Montgomery Island quadrangle a short distance upstream from the proposed lock and dam site and is identified as Mayhorn Bayou on the topographic map. This crevasse channel is fairly recent and is an active feature during high water. The other two crevasse channels are abandoned and are located on the Yancopin quadrangle. These two channels drain onto the backswamp deposits in the southwest corner of the project area, occurring as breaks in abandoned channels.

The abandoned courses in the study area are almost completely sediment filled; occurring as poorly drained swamps, as small underfit stream channels which eventually drain to the main channel, or as shallow lakes. Abandoned courses and abandoned crevasse channels are primarily sand filled, interbedded with clays and silts that grade into fine grained soils and organic sediments near the surface.

Backswamp. Backswamps receive sediment during times of high water flow, when the natural levees are crested and suspended sediment in the flood waters is deposited in areas well removed from the main channel. Backswamps are a minor environment in the study area, confined to the southwest corner of the Yancopin quadrangle. Backswamps are presently situated outside of the modern floodplain due to the construction of artificial levees.

The principal geomorphic processes associated with this environment are vertical accretion of new sediment from annual flooding (presently not possible with the construction of levees), pedogenesis (soil formation), and bioturbation. Bioturbation is the churning and stirring of the underlying sediment by vegetation and organisms (Bates and Jackson 1980).

Smith (1979) indicates that backswamp deposits in the study area overlie Pleistocene outwash plain deposits (coarse grained sediments deposited by glacial melt water) at a shallow depth. The backswamp deposits in the southwestern part of the Yancopin quadrangle were formed by Arkansas and Mississippi River flood flow.

Natural Levee. Natural levee deposits were not mapped as a separate environment on the geomorphic maps because these deposits are present throughout the entire study area to some extent and mapping these deposits would confuse and detract from the topographic information on the base maps and identification of the underlying geomorphic features. Instead, natural levee deposits were mapped in combination with other

environments as indicated on the geomorphic maps. However, natural levees are discussed separately in this report because they are the results of an important geomorphic process in the study area, especially as it affects cultural resources.

Natural levees are vertical accretion deposits formed when the river overtops its banks during flood stage and sediment suspended in the flood flow is deposited adjacent to the channel. The resulting landform is a low, wedge-shaped ridge decreasing in thickness away from the main channel. Natural levee thickness is greatest at the river bank and decreases with distance from the river. Eventually, natural levee deposits merge with other floodplain deposits, usually with point bar or backswamp sediments.

Silt and sand are the predominant sediments in natural levee deposits. Natural levee deposits generally contain few organic sediments because of oxidation. Soils are typically brown to reddish brown. Small calcareous nodules are frequently associated with the more developed natural levee deposits, formed as a result of ground water percolating through the permeable levee soils. Natural levee soils are generally well drained and have low water contents.

The natural levee deposits in the proposed lock and dam area are considered to be quite recent. Geomorphic, pedogenic, and historic evidence indicates the natural levee sediments were deposited within the last 50 years. At the proposed lock and dam site, the recent natural levee sediments are approximately 1.5m thick near the White River channel and generally are composed of fine-grained loose sand and silt. At approximately 300 meters from the White River channel, the coarse grained natural levee sediments merge with the surrounding point bar sediments. Geomorphic evidence and other subsurface data indicate that several different periods of active natural levee deposition have occurred within the study area as the various systems have migrated across their respective floodplains.

Terrace. A terrace is an abandoned floodplain that is elevated above the present river's floodplain. A terrace consists of a relatively flat or gently inclined surface that is bounded on one edge by a steeper descending slope and on the other edge by a steeper ascending slope (Bates and Jackson 1980). Terraces either border the modern floodplain or may be preserved as topographic islands or remnants within the modern floodplain.

A terrace is present in the northwest corner of the Yancopin quadrangle. Where the terrace has been eroded by surface run-off, it is noted on the Yancopin geomorphic map by the symbol "TE". The terrace mapped on the Yancopin quadrangle is a depositional terrace (i.e., composed of fluvial deposited sediments) formed by an ancestral Arkansas River. The mapped terrace is part of the Grand Prairie and is a Sangamon (300,000 to 80,000 years before present) age landform. The Grand Prairie is a large scale physiographic feature in central Arkansas which is significantly higher than the surrounding topography.

The formation of a depositional terrace occurs as a river downcuts into its floodplain and creates a new floodplain at a lower elevation. The reasons for the stream downcutting into its floodplain may be the result of the natural geomorphic evolution of the stream system or it may be related to a change in climate, a change in base level, or a tectonic event (i.e., faulting or uplift).

Geomorphic Development of the Project Area

It is clear from the preceding analysis that the various landscape features within the study area have been created by the interaction of the very dynamic fluvial systems present in the area throughout the late Holocene. While there are doubtless many factors involved in this interaction it seems likely that the dominant process in developing the landscape in our project area has been the meandering activity of the Mississippi River. Changes in the channel of the Mississippi have caused both the Arkansas and White Rivers to adjust, sometimes dramatically, as they have sought to enter the larger stream.

A comparison of the bankline changes for the Mississippi and White Rivers since the mid-18th Century illustrates how, for nearly two centuries (1765-1939), the White River has struggled to maintain an outlet to the Mississippi as the larger stream has meandered to the east (Figure 13). This process was largely responsible for the creation of the historic point bar deposits which dominate the landscape and was accompanied by the development of

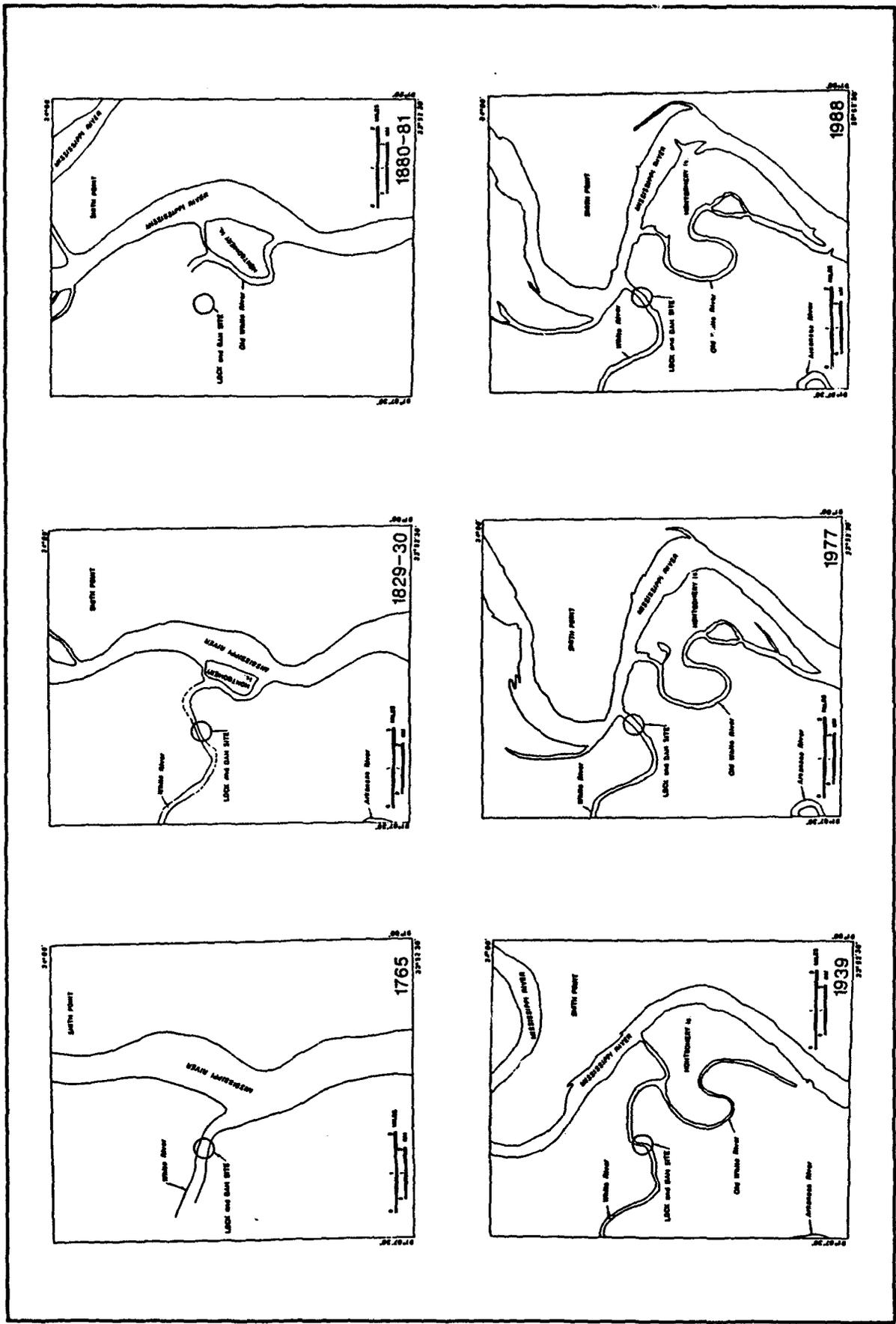


Figure 13. Channel Changes.

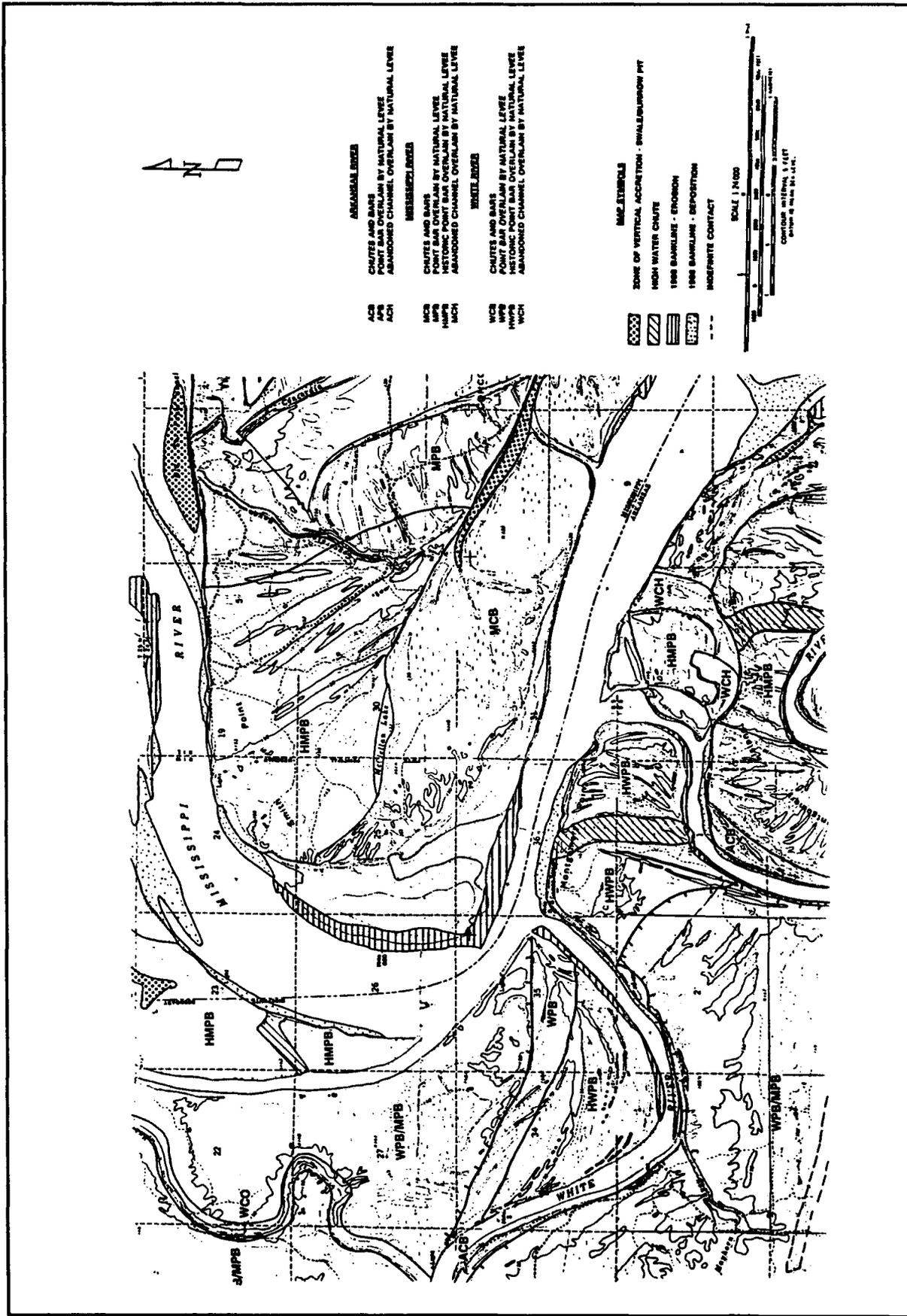


Figure 14. Landforms in the Study Area.

Montgomery Island itself. Natural levee and slackwater deposits from the Mississippi, White, and Arkansas Rivers were also a part of this landscape development. In 1953, however, the Mississippi meandering which created Smith Point cut southward to truncate the White and removed a large portion of the landscape created by the White's attempt to lengthen its channel.

Figure 13 illustrates a period of nearly 200 years (pre-1765 to post-1939) during which the confluence of the White and Mississippi Rivers moved progressively eastward. This process, involving the development of point bars covered by both fine and coarse grained vertical accretion deposits, was largely responsible for the creation of the landscape which has come to be called Montgomery Point. These are the deposits mapped as HWPB on Figure 14 and compose most of the area potentially affected by project construction. These deposits post-date 1765. South and west of the former bankline shown on Figure 14 the landscape is older although its age is in all likelihood still measured in centuries. During the middle of this century the Mississippi River channel, cutting down from the north, truncated the White River channel and established the confluence of these two streams several river miles to the west of its 19th and early 20th century position. Since that time the White River has continued to develop the point bar deposits which compose the north bank of the White River within our project area as well as to cut into older point bar and natural levee deposits on the south bank.

While natural levee deposits have continued to be built on the south side of the river there seems to have been very little absolute accretion over the past 50 years as both the 1939 and 1977 topographic maps list the elevation of the area as between 150 and 155 feet. Deposition and scouring activity associated with flooding and erosion have, however, continued to alter the micro-topography of the landform.

Field observation of soil profiles and cores reflect this dynamic situation. On the developing point bar north of the river the profiles and cores indicate almost no soil development whatsoever. In the core extracted from the bar adjacent to the current channel undecomposed leaves were recovered at a depth of 215cm. Figure 15 is a picture of a profile showing the multiplicity of coarse and fine grain lenses deposited.

South of the river a series of two bankline profiles and thirteen soil cores documented a complex history of landform development. The following is the log of core 13, profiles 1 and 2, and cores 1, 2, and 3 which taken together form an east-west transect from Mayhorn Bayou to the Mississippi River.



Figure 15. Profile on North Bank.

Core 13 (na)

- | | | |
|-----|-----------|--|
| I | 0-120cm | brownish yellow (10YR 6/6) sand; single grain structure; includes lenses of fine sand and silt; poorly developed A horizon at the surface (0-10cm) |
| II | 120-155cm | dark gray (10YR 4/1) clay; blocky structure; few (10YR 4/6) mottles; clay films; heavily bioturbated; has the characteristics of an AB horizon |
| III | 155-275cm | dark gray (10YR 4/1) clay, coarsening with depth to a grayish brown (10YR 5/2) silt; massive structure; abundant (10YR 5/6) mottles |

Profile 1 (47.229m; 154.95ft)

- | | | |
|------|-----------|---|
| I | 0-150cm | alternating dark yellowish brown (10YR 4/4) sand and dark brown (10YR 3/3) clay lenses and laminae; upper 80cm is sand; stratification lines visible; single grain structure |
| II | 150-200cm | dark brown (10YR 3/3) clay; some (7.5YR 5/6, 10YR 5/2) mottles; weak columnar structure; highly bioturbated; unit fines upward; has the characteristics of an AB horizon |
| III | 200-235cm | dark brown (10YR 3/3) clay with abundant (7.5YR 5/6, 10YR 5/2) mottles; massive structure; highly bioturbated; unit fines upward |
| IV | 235-335cm | grayish brown (10YR 5/2) silt; massive structure; common (5YR 4/4) mottles; highly bioturbated; charcoal films |
| V | 335-380cm | alternating bands of gray (10YR 5/1) and weak red (2.5YR 4/2) clay; weak blocky structure; unit fines downward to montmorillinitic clay; common mottles; common desiccation cracks increasing with depth; bands of platy structure are associated with silty sand lenses; some clay films at depth; has the characteristics of an A horizon |
| VI | 380-555cm | dark gray (10YR 4/1) clay; abundant mottles; weak blocky structure; weak desiccation cracks; abundant clay films; common slickensides; has the characteristics of an AB horizon |
| VII | 555-635cm | pale brown (10YR 6/3) silt; massive structure; abundant (7.5YR 4/4) mottles |
| VIII | 635-785cm | pale brown (10YR 6/3) medium sand; single grain structure; unit sample with bucket auger at base of profile |

Profile 2 (47.057m; 154.386ft)

- | | | |
|-----|-----------|--|
| I | 0-150cm | alternating dark yellowish brown (10YR 4/4) sand and dark brown (10YR 3/3) clay lenses and laminae; upper 80cm is sand; stratification lines visible; single grain structure |
| II | 150-215cm | dark brown (10YR 3/3) clay; blocky structure; common mottles; unit fines upward; has the characteristics of an AB horizon |
| III | 215-390cm | alternating bands of silt and fine sand with clay lenses (10YR 5/2); common (7.5YR 4/4) mottles; stratification lines present; weakly bioturbated |

- IV 390-480cm gray (10YR 5/1) clay; massive structure; (7.5YR 4/4) mottles
- V 480-500cm dark reddish brown (2.5YR 3/4) clay; possible Arkansas River deposit
- VI 500-535cm gray (10YR 5/1) clay; weak blocky structure; abundant mottles; translocation of clay from upper clay zone; common desiccation cracks; has the characteristics of an AB horizon

Core 1 (47.632m; 156.273 feet)

- I 0-120cm light brown (7.5YR 6/4) fine sand; single grain structure; weakly laminated; few clay lenses
- II 120-150cm dark brown (7.5YR 3/2) clay; blocky structure; common mottles; common clay films; has the characteristics of an AB horizon
- III 150-210cm dark yellowish brown (10YR 4/4) silty clay; abundant (7.5YR 4/6 and 5Y 5/1) mottles; massive structure; highly bioturbated
- IV 210-250cm dark brown (7.5YR 3/2) clay; strong blocky structure; common mottles; common clay skins; has the characteristics of an AB horizon
- V 250-290cm dark brown (7.5YR 3/2) clay; massive
- VI 290-360cm dark yellowish brown (10YR 4/4) sand; single grain structure; common (10YR 3/6) mottles; unit fines upward to a fine sand

Core 2 (46.510m; 152.592ft)

- I 0-30cm dark brown (7.5YR 4/4) fine sand; single grain structure; few mottles; some fine thin clay lenses
- II 30-40cm dark brown (7.5YR 3/2) clay; weak blocky/crumb structure; few mottles; has the characteristics of a buried A horizon
- III 40-85cm very dark grayish brown (10YR 3/2) clay; weak blocky structure; common (5YR 4/4) mottles; common clay films; highly bioturbated; has the characteristics of an AB horizon
- IV 85-350cm yellowish brown (10YR 5/4) silt with silty clay at the top and bottom; common (10YR 4/6) mottles; heavily bioturbated; manganese staining present near base of core

Core 3 (47.965m; 157.365ft)

- I 0-10cm very dark grayish brown (10YR 3/2) loam; crumb structure; A horizon
- II 10-40cm dark brown (10YR 3/3) silty clay; weak blocky structure; thin clay films; some bioturbation

III	40-85cm	dark yellowish brown (10YR 4/4) fine sand; single grain structure
IV	85-105cm	dark brown (10YR 3/3) clay; blocky structure; some clay films; has the characteristics of an AB horizon
V	105-205cm	brown (10YR 5/3) silt; few (7.5YR 4/4) mottles; common bioturbation
VI	205-225cm	grayish brown (10YR 5/2) clay with 2 red (2.5YR 5/6) clay laminae; possible Arkansas River deposit
VII	225-245cm	gray (10YR 5/1) clay; weak blocky structure; highly bioturbated; has the characteristics of an AB horizon
VIII	245-360cm	gray (10YR 5/1) clay; some silt lenses; massive structure; no clay films; few (7.5YR 4/4) mottles

These profiles reveal a natural levee deposit composed primarily of sand with some clay lenses and laminae along the edge to a maximum observed depth of 150cm. Stratification lines are prominent within this unit. As expected this natural levee deposit decreases in thickness with distance from the White River.

Below this natural levee deposit are a series of finer grained sediments which exhibit a fining upward sequence from silt to clay. Characteristically the profiles reveal a silty deposit capped by several tens of centimeters of clay. These deposits reflect the creation of point bars (the coarser sediments) which were subsequently covered by lower energy vertical accretion deposits as the stream channel moved farther away. Two cycles of this sort of deposition are shown in the upper portions of Profiles 1 and 2. Soil development within these deposits is generally very weak and they show signs of massive bioturbation.

At three locations (Profiles 1 and 2 and Core 3) we observed thin lenses of red clay. These distinctive sediments, observed elsewhere in the study area in eroded banklines, are interpreted as deposits from the Arkansas River. Such an interpretation is consistent with Nuttall's description of the reddish, turbid current of that stream.

In the deepest of the profiles, Profile 1, a massive sand deposit was detected below these finer grained sediments.

Summary

The observations reported above indicate that the landscape in the project area is of very recent age. On the north side of the river this age is doubtless measured in decades. Most of the landscape on the south side is less than 200 years old; created by the migration of the White River since the mid-18th Century and by overbank deposition from the White, Mississippi, and Arkansas Rivers. The most dramatic of these flooding episodes was undoubtedly the disastrous flood of 1927. At the height of the flood (April 1927) the gaging station at the mouth of the White River reported an elevation of over 170 feet. Our project area would have been at least 20 feet underwater. Based on the analysis of available cartographic data and field observations, our geomorphic reconstruction of the project area shows that any cultural resources present in the project area would have to be less than 200 years old.

Chapter 4. Historical Context

French and Spanish Occupation, 1680-1800

Although the lands near the mouths of the Arkansas and White Rivers may have been visited by the DeSoto expedition in 1541-1543 (Hudson 1985), by Marquette and Jolliet in 1673, and by La Salle in 1682, it was the founding of Arkansas Post by De Tonti in 1686 that marked the beginning of a permanent European presence in the area. For the next 120 years the establishments on the Arkansas River would be a center for trade with the Quapaw and other Indians in the interior of Arkansas, as well as a haven of safety for trading convoys traveling the Mississippi River.

De Tonti left men at the Quapaw village of Osotouy to establish a trading post. Given the proximity of this large Quapaw village, generally believed to have been on the edge of the Grand Prairie Terrace, and of three other villages nearby on the Mississippi River, the prospect for trade looked good (Figure 16). For a lengthy discussion of the possible locations of the Quapaw villages, see Phillips, Ford, and Griffin 1968:392-419; the possible relationship of the village of Tourima to the project area is discussed in Chapter 5.

De Tonti hoped to develop his trading post into a settlement, and offered two tracts of land to Canadian missionaries to settle there, but his plans were overly optimistic. The missionaries did not come until 1698, and were unable to establish a permanent mission. By that time a drop in the price of beaver had caused the King to place a moratorium on the beaver trade south of Canada and forced the closing of the post on the Arkansas (Coleman 1987:12-16).

The next enterprise in the area was the colony established in 1721 through the efforts of John Law. Law was a banker who formed a joint stock company in Paris to obtain a monopoly on trade in Louisiana with the intention of growing rich from the proceeds of locating trading colonies there. The Arkansas River was chosen as the location of the first colony because it was thought that it would provide a trading route to the mines of Spanish Mexico. Law went bankrupt at about the same time the colonists arrived in Arkansas. The location chosen for the colony was on Little Prairie near the former location of De Tonti's post. The colony did not prosper. By 1723 only 41 colonists remained, and by 1727 the number had dropped to 30 (Arnold 1985:7-10).

Even after the Law colony failed, settlers and traders remained in the area, although sometimes hardly enough to be called a settlement (Arnold 1985:222-224). In 1749 the population included 31 whites (men, women, and children), 14 slaves, three horses, 29 bulls and steers, 60 cows and 29 pigs. Also listed in the same census were the voyageurs trading on the Arkansas, White and St. Francis Rivers (Vaudreuil Papers, LO 200).

Life at the post settled into a routine of trading expeditions, providing hospitality for passing convoys, and maintaining friendship with the Indians. It was not an easy life, however. Unfriendly relations between the Quapaw and the Chickasaw kept tensions high, and in 1749 the post itself was attacked by the Chickasaw (Coleman 1987:33-40). Weather sometimes ruined crops of both the Indians and the French, leaving supplies short for the winter, and forcing the garrison to seek help from Natchez or New Orleans (Vaudreuil Papers, LO 410, LO 434). Reacting to pressures to provide better protection for convoys, and to defend itself better, the location of the post was changed several times, although it was always on the Arkansas River (Arnold 1985:4, 212-217; Coleman 1987:137-148).

As part of the treaty at the end of the French and Indian War, Louisiana was given to Spain in 1763. Life at the post of Arkansas continued much as always. The population was described by one visitor as " 'about 10 families in the neighborhood of the Indian Village, which has near 200 families,' " but by 1798 when the last Spanish census was taken the population had grown to 344 free persons and 56 slaves (Arnold 1985:224). The area was returned to French sovereignty in 1800, but came under French control only in 1803, just in time to be transferred to the United States.

Archives du Dépôt des Cartes et Plans de la Marine

Prof. — — 138^{tois}

Dir^m — — 3

Dir^m — — 2

Fenil — — 2

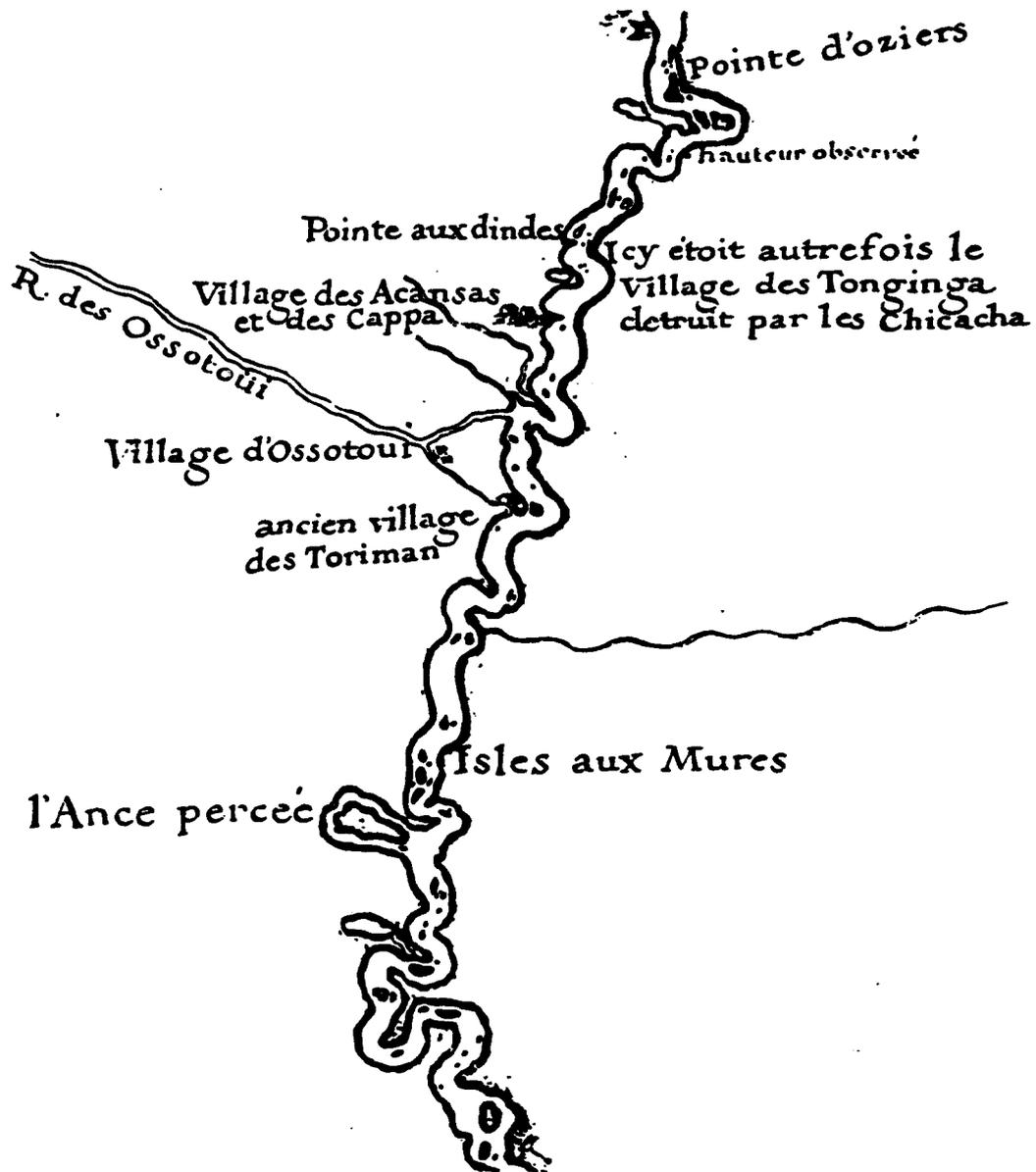


Figure 16. Portion of Delisle Map of 1702 (Northwestern Louisiana University, Map No. 1068, sheet 4 of 10).

One event may have taken place which had a direct bearing on Montgomery Point. Several sources state that Francis D'Armand, a French trader, established a post at the mouth of White River in 1766 on the location that later became known as Montgomery Point (Pope 1895:62; Shinn 1908:25; Halliburton 1978:103). Arnold (1985:226, n. 10) notes, however, that he found no mention of D'Armand in the Spanish records.

American Settlement, 1800-1840

By the time the United States took control of the study area in 1804 the population of the District of Arkansas was 368. These people lived at Arkansas Post, in the settlement at the mouth of the St. Francis River, and in a few other scattered settlements up the Arkansas River generally within about 50 miles of the Mississippi River (Halliburton 1978:57).

Zadoc Cramer in his 1811 edition of *The Navigator* (Figure 17) described the mouth of the White River as an excellent landing, but mentioned no facilities there (Cramer 1811:187). In fact the area along the Mississippi River from the St. Francis settlement to the mouth of the Yazoo River was known as such absolute wilderness that when the "New Orleans," the first steamboat on the Mississippi River, passed through the area in December 1811, she stopped at the St. Francis settlement and loaded up with all the wood she could carry and with all the supplies that were available. Two days after leaving the St. Francis, the "New Orleans" reached the mouth of the Arkansas River where she again took on wood (Dohan 1981:160).

At about the same time Robert Clary settled on the Mississippi River about 1 1/2 miles above the mouth of the White River. This property became a preemption right which he sold to Patrick Cassidy in 1812, who in turn sold the property to John McLean in 1821 (Arkansas County Deed Record D:28-29).

Thomas Nuttall visited McLean's settlement, which he described as a house of entertainment, in January 1819. It took him two days to reach the cutoff to the Arkansas River, and he remarked that there were no settlements in that area because the land was subject to overflow (Nuttall 1980:71-76).

Arkansas was also visited in 1819 by Timothy Flint, a Presbyterian missionary who wandered the lower Mississippi River valley for ten years. Flint gave this description of the area:

We were swept round by the strong current of the Mississippi in our keel-boat between two green islands covered with rushes and cottonwood trees, into a small bay which receives the waters of White River. This is all a region of deep and universal inundation. There was from six to ten feet of water over all the bottoms; and we had a wide display of that spectacle so common in the spring on the Mississippi—a dense forest of the largest trees, vocal with the song of birds, matted with every species of tangled vegetation, and harbouring [sic] in great numbers the turkey-buzzard, and some species of eagles; and all this vegetation apparently rising from the bosom of dark and discoloured [sic] waters. I have never seen a deeper forest except of evergreens. The channel of White River was distinguished by its current, the green colour of its waters, compared with the white waters of the Mississippi, and by an open channel, marked by willows in full foliage, which so nearly resembled the leaves of the peach-tree, that I asked one of the boatmen who was familiar with the country, what kind of tree it was, who answered with much solemnity, that it was the wild peach. . . . The current came down the river at the rate of three miles an hour. It seemed about three hundred and fifty yards in width, and at this time had fifty feet of water in depth. In ascending we were struck with the grandeur of the forest, the immense size of the trees, and their dark green foliage. The inundation extends itself almost indefinitely on all sides. It is late in the season before the floods recede; and fever, mosquitoes [sic], alligators, serpents, bears, and now and then parties of hunting Indians, are the only tenants of these woods.

The river received its name from the Indians, on account of its pellucid waters. They are in appearance rather green than white; and we could see the huge cat-fish gamboling in the waters, among multitudes of fishes of all classes. We eagerly threw them the hook and line; but the flooded streams and swamps offered them such an abundance of food, that we tried to tempt them with our bait in vain. We made our way up this opening in the dark forest between five and six miles, when we discovered a lateral opening to the left. We rowed into it, and at its mouth were whirled round by an eddy. Presently, to

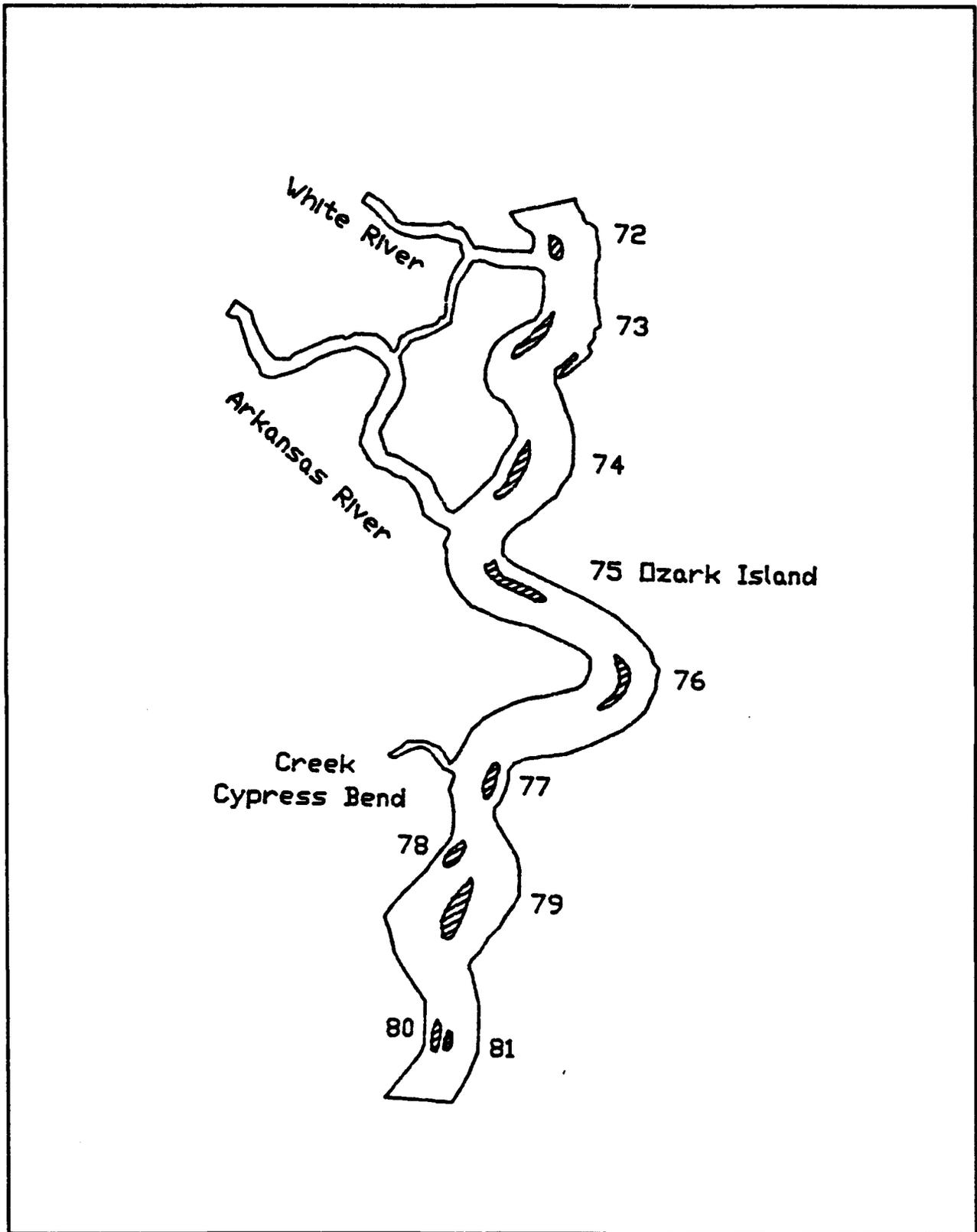


Figure 17. White River Channel: 1811 (Cramer 1811: 198).

our astonishment, the current took us through the lateral opening, which was nearly at right angles with the course of the river, and had nearly the same width and appearance with the river itself. We continued to float on through this deep and inundated forest six or seven miles, when at right angles to our course we discovered another opening. It was the Arkansas, moving on with a majestic current of waters of the colour of Arnotto die [yellowish red] (Flint 1968:183-184).

Although Flint passed Montgomery Point in 1819 and again in 1822, he makes no mention of it (Flint 1968:204, 211).

In 1819 William Montgomery operated a tavern at Arkansas Post. The territorial legislature met at Montgomery's tavern; a regiment of Arkansas militia held its muster there; elections were held there; and travelers, important and otherwise, boarded there (Martin 1977:5-6). All of these activities gave Montgomery important commercial and political contacts. In February 1821, Montgomery bought McLean's preemption right and moved his establishment to the mouth of White River (Arkansas County Deed Record C:684; Bearss and Brown 1971:207). The property became an important transshipment point for freight and passengers transferring from large Mississippi River boats to smaller boats for the Arkansas and White Rivers, and vice-versa (Figure 18).

As the time approached for Arkansas to become a state, the United States Congress gave the territory ten sections of land to be sold to pay for building a public building (what is now known as the Old State Capitol in Little Rock). The land in Sections 30 and 31 of Township 8 south, Range 1 east occupied by William Montgomery, roughly 195 acres, was chosen as part of this ten section donation. The land was then deeded to Montgomery in January 1834, and a patent issued to him in May of the same year (Arkansas State Land Office, Original Entry Records, Book 96:70; Arkansas County Deed Record F:24).

Several vivid descriptions of Montgomery's Point survive from this period. William F. Pope visited there in 1832. He mentions a hotel building set up on "high brick pillars [with] wide verandas on all sides." Equally important and impressive were the "two large log warehouses. . .for storing freight destined for points along the Arkansas and White rivers" (Pope 1895:62).

More detailed is the description of Cassandra Lockwood who spent 21 days at Montgomery's Point in 1833 while waiting for a boat to take her up the Arkansas River to Dwight Mission:

This place of landing is called Montgomery's Point & is known to be the greatest sink of iniquity on all the shore of the Mississippi. But this is the only place where travelers can stop who leave the Miss. to go up the Arkansaw. Here is but one family & no other inhabitants are to be found for many miles in any direction. The landlord is a slaveholder & lives in a two-story log house, which is surrounded by numerous little cabins, occupied by his servants. When we arrived, we found nearly 100 persons waiting for a passage up the river, which was so low that no boat could ascend.

When our hostess returned, we found her quite a lady in her own estimation & if finery in dress & profusion of ornaments constituted a lady, she was one. But she was not able to read even the alphabet. Her principal employment and greatest happiness seemed to be in smoking a long pipe, which you would invariably see extended from her mouth, wherever you should meet her. One of her daughters was married at the age of 13 & became a widow at 19. . . Her brother, 10 years old, was accustomed to stand by his father's side to learn to gamble. Such is a specimen of the education of these children.

Mrs. Lockwood had nothing kind or complimentary to say about the manners or lifestyle at Montgomery's Point (Thoburn 1955:207-208).

The General Land Office surveyed Township 8 south, Ranges 1 east and 1 west, and Township 9 south, Range 1 west between 1837 and 1844. The surveyors recorded roads along the north (left) bank of the White River and the south (right) bank of the Arkansas River. Scattered fields were shown on both banks of the Arkansas River, the south bank of the White River, and the west bank of the Mississippi River (General Land Office Records, Fifth Principal Meridian Plat Maps). Much of the land was claimed as soon as it was offered for sale—some as preemption claims, some with Choctaw certificates, some as outright purchase. By whatever method, most of the

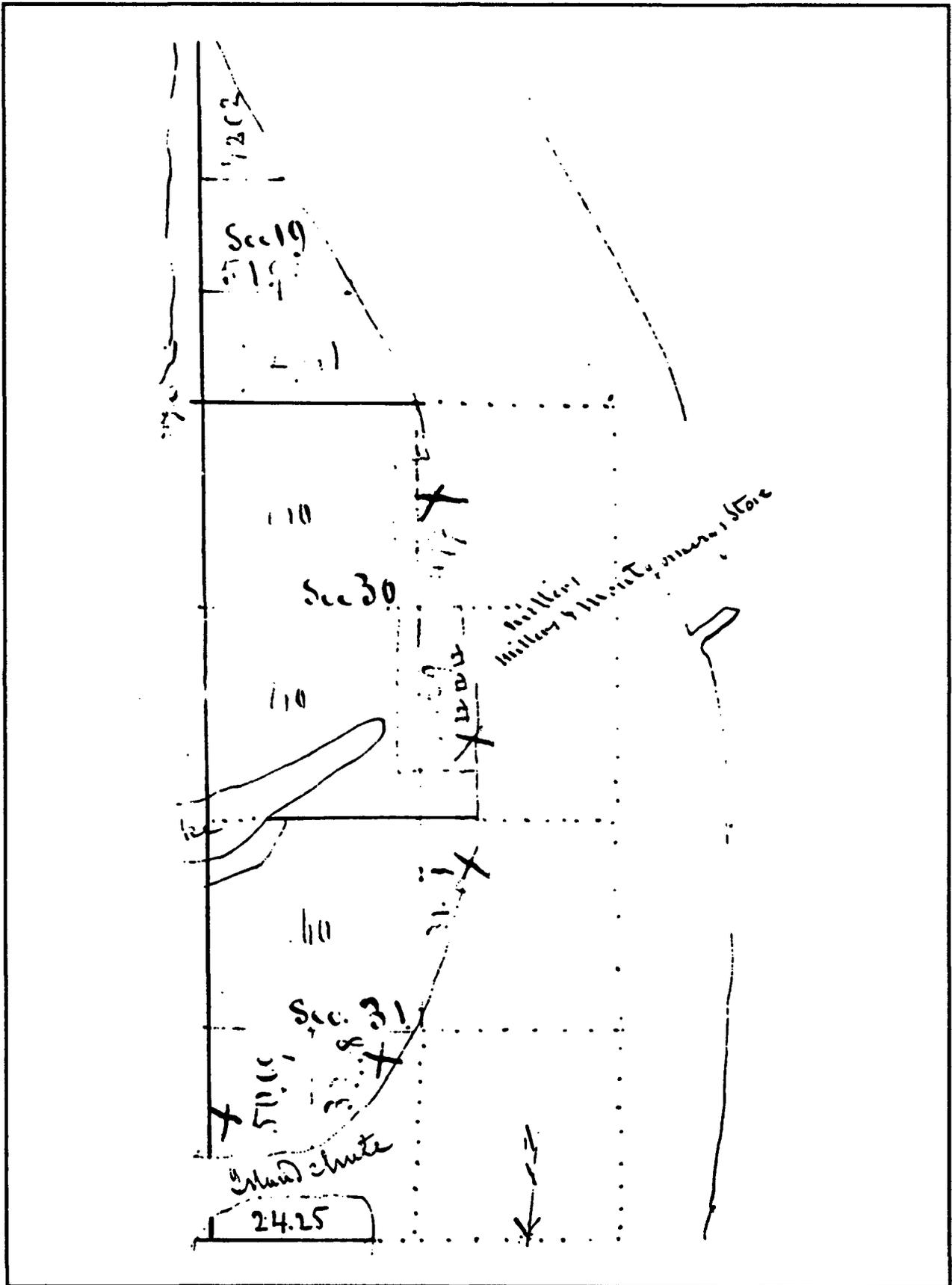


Figure 18. Montgomery Point: 1830 (Arkansas History Commission, Map No. 269.)

land in these three townships passed to private ownership in the 1840s (Arkansas State Land Office, Original Entry Record, Book 96:70-72, 81-87).

The period from 1800-1840s is the time when Euro-American settlement made its first permanent impact on the study area. The facilities at Montgomery's Point were outside the actual project area, but by the end of this time period there were many settlers along the banks of all three rivers.

The Civil War, 1861-1865

The coming of the Civil War focused the attention of both the Union and the Confederacy on the importance of the Mississippi River as a highway through the South. Part of the grand strategy of the Union was to gain control of the river, and thereby cut the lines of communication and supply between the eastern part of the Confederacy and the states of the Trans-Mississippi west. This control was not easily won, however, for the Confederacy also understood the importance of the river.

One of the important battles in the struggle to control the Mississippi River was fought at Arkansas Post. The Confederates had established a base at Arkansas Post from which to raid Union shipping on the Mississippi. In January 1863 Union forces attacked and captured the Post, gaining control of the mouths of both the Arkansas and the White Rivers (Bearss and Brown 1971:235-285; Coleman 1987:103-118).

Two facilities grew up at the mouth of the White River: an army camp and a freedmen's camp. The army camp was much the same as earlier transshipment establishments. Troops and freight waited there while transferring from Mississippi River boats to those bound up the White River to the railroad at Duvall's Bluff. Although the facilities were far from luxurious, the soldiers found the trip by steamboat a welcome relief from marching (Sperry n.d.:120-121).

The second facility at the mouth of the White River was a camp for freedmen. As the Union army occupied the South, some slaves left their homes and followed the army. By 1864 many Union commanders were trying to deal with the large numbers of freedmen by establishing plantations or camps or by trying to provide other means for the freedmen to support themselves. The freedmen's camp at the mouth of the White River was run by a contractor. With a total population of 203 in 1864, including 65 infirm adults and 43 children, most of the 95 workers chopped or corded wood, presumably for steamboats. Most of these freedmen had come from Mississippi although some were from Arkansas and Alabama (Freedmen's Bureau Records, entry 370, "Registration of Freed People at the Mouth of White River Ark., Feb. 1st 1864").

A map made in 1864 shows a road running along the north (left) bank of the White River to its mouth, so both of these camps were probably in that area (Figure 19). Another map made at about the same time shows scattered homes along the south bank of the Arkansas River, and dense settlement along Red Fork Bayou (Figure 20).

Steamboat Trade, 1865-1927

The entire history of Montgomery Point is tied to the systems of navigation and commerce on the Mississippi, Arkansas, and White Rivers. Although the Mississippi River was a highway of trade from the beginning of the French period, it was not until after the United States purchased Louisiana, and free passage down the river to New Orleans was guaranteed that a real system of commerce developed.

Beginning with flatboats and keelboats, expanding during the steamboat era, and continuing into the mid-twentieth century the basic outline of this commercial system has changed little in almost two hundred years. Downbound boats were loaded with agricultural products or other natural resources; upbound boats carried merchandise or manufactured goods (passengers, of course, went both ways). This is a drastic over-simplification of a complex system, but now let us focus on how the larger system affected Montgomery Point.

Until the railroads were built in the 1870s and 1880s, the only reasonable option for shipping agricultural products, especially cotton, was by boat. In the early years a farmer might build a flatboat, float his cargo to New Orleans, sell both his goods and his boat and walk home. But beginning as early as the 1820s steamboats became the major

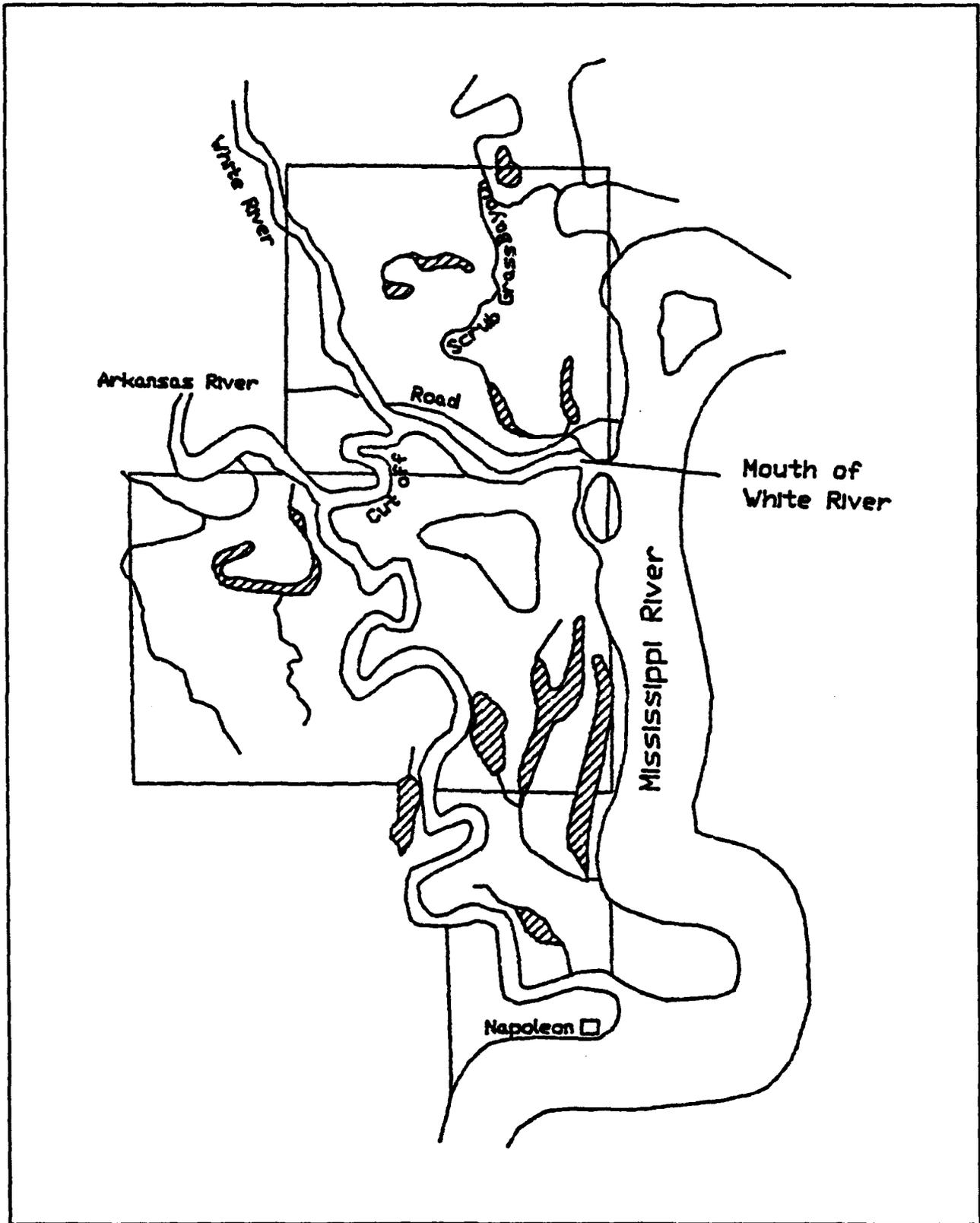


Figure 19. White River Channel: 1864 (Arkansas History Commission, from Map No. 290).

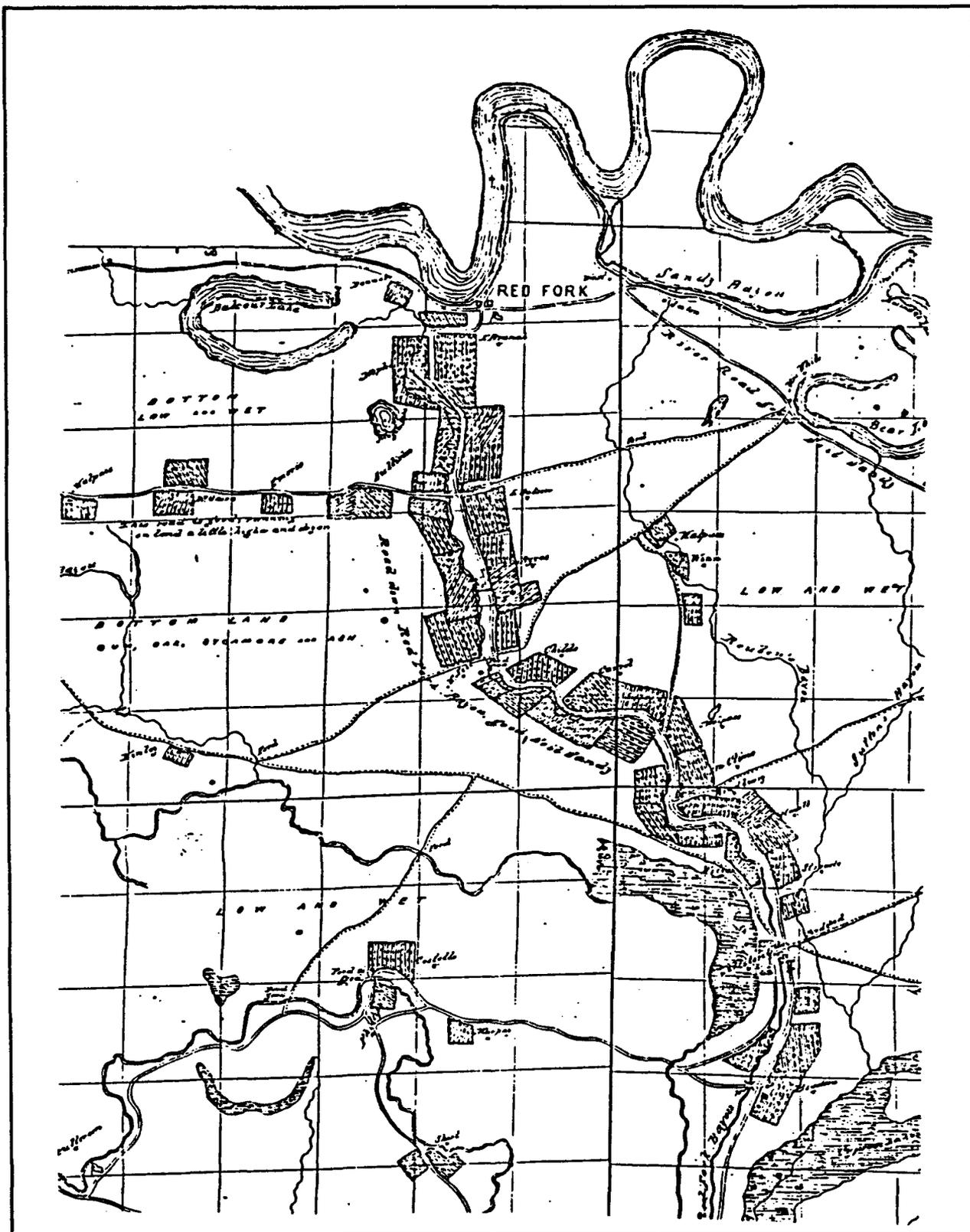


Figure 20. Portion of Desha County: 1864 (U. S. Army Corps of Engineers, RG 77:Z48).

mode of transportation for commerce. Three cities — St. Louis, Memphis, and New Orleans — provided the major markets for products from throughout the Mississippi valley. Both independent boats and shipping lines running a number of boats established trade routes between these cities and from these cities to points along the various tributaries of the Mississippi, including Little Rock, Pine Bluff, Batesville, and hundreds of small landings.

Steamboat trade could reach the places along the Arkansas and White Rivers in either of two ways. A boat might run a direct trade, for example from Little Rock to Memphis; or one boat might carry the goods and passengers to an intermediate, connecting point to be transferred to another boat for the rest of the trip. Montgomery Point was just such a transshipment point, for interchanging people and freight from Mississippi River boats to those that traded up the Arkansas and White Rivers. (Napoleon, at the mouth of the Arkansas River, served the same purpose).

Although this process is usually thought of as changing from a large boat to a smaller one, this was not necessarily the case. The distinction tended instead to be a commercial one of chosen trade routes and connections. The smallest boats were able to navigate the Mississippi; the largest boats could come up the Arkansas and the White, at least during high water. There were problems from time to time with the low water at the bar at the mouth of the White River (and at the cutoff near Montgomery Point) but this troubled all boats, not just the biggest.

Steamboat trade into the Arkansas and White River valleys grew as the population grew. It was well established by the 1830s; suffered during the Civil War; and reached its peak between 1875 and 1900. Three hundred and twenty-three boats are known to have traded on either the Arkansas or White River. An additional twenty-one boats traded on both. Of this number 17% were in business before the Civil War; 13% were on the rivers during the Civil War; and 69% traded there after the war ended. These figures are not entirely accurate because they do not take into account any boats that may have been in business during more than one of these time periods. The figures do, however, show the general pattern of the growth of this trade.

By the 1870s trade began shifting away from the rivers to the railroads which could offer more reliable schedules and which were not as dependent on Mother Nature. At first railroads built from a river town into the interior parts of Arkansas to take advantage of the established steamboat trade. But as the rail net grew and connected large parts of eastern Arkansas with Little Rock and Memphis the demand for river transportation (and transshipment at Montgomery Point) declined.

A letter written in 1875 describing a trip on the "Thompson Dean" between Memphis and New Orleans picking up cotton does not mention a stop at Montgomery Point in an extensive list of landings that includes "Laconia, Carsons, Waxhaw, White River, Terrene, Floryville, Riverton, Napoleon, . . ." (Way 1983:453). The White River landing mentioned was at what is now called the "old mouth" of the river (Figure 21).

River trade continued to serve small landings and plantations that were close to the rivers. The new trade that grew using barges and towboats was (and is) a direct trade that had no need for transshipment facilities.

One other aspect of steamboat trade and navigation has also had an impact on the study area. Steamboats were fragile creatures. They sprang leaks, hit snags, exploded boilers, caught fire. They sank. If the wreck was not too destructive, if the water was not too deep, if the equipment was available, the boat or its cargo might be salvaged; but most of the time they were not. Records giving the locations of sinkings are notoriously inaccurate about the site of the wrecks because the information was often recorded days after the event when someone with authority reached the boat's port of registration. Thus a boat reported wrecked at the mouth of White River might have sunk at the intersection of the White with the Mississippi, or where the cutoff near Montgomery Point entered the Mississippi, or in the Mississippi River either above or below the mouth of the White River or that cutoff, or in the White River several miles above its mouth. The following list is included to give some idea of the possibility of wrecks in the area. It is not intended to be an all-inclusive list, and it must be used with an appreciation for the vagueness of the locations.

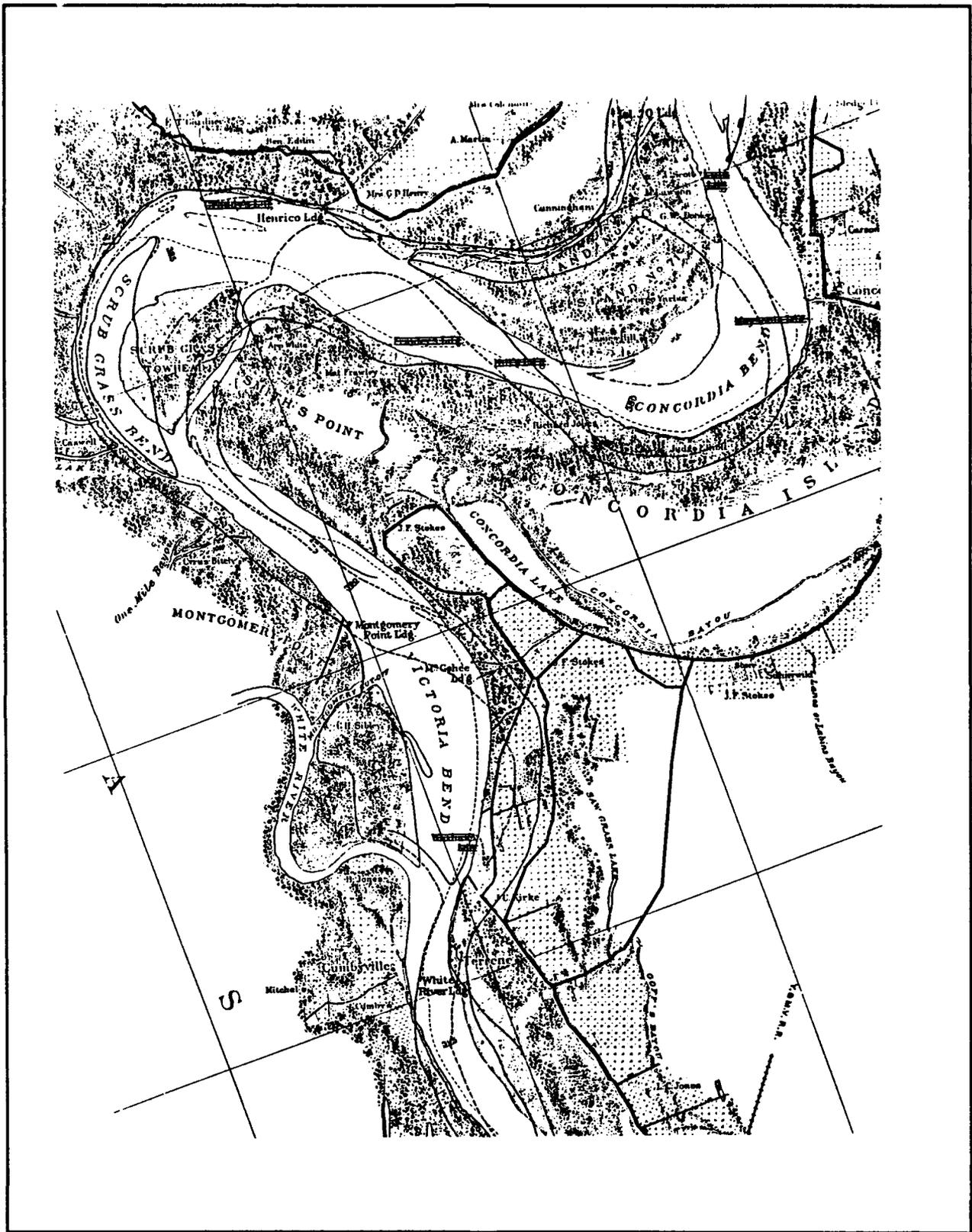


Figure 21. Montgomery Point: 1879-1880 to 1928 (U. S. Army Corps of Engineers 1975).

Montgomery Point Steamboat Wrecks

Name	Date	Place
Fort Smith	1871; Oct 27	1/2 mile below the foot of the cut off on White River
Frontier City	1861; Jan 4	head of Smith's Cut-Off near the mouth of Arkansas River
General Chas. H. Tomkins	1891? (boat built 1878)	1/2 mile above mouth of White River
Goldena	1865; Dec 31	in cut-off between Arkansas and White Rivers, wreck of Linton nearby
I Go	1864; June 12	burned at Arkansas Post
Linton	1869; Oct 25	head of cut-off between Arkansas and White Rivers
Lizzie Gill	1866; Jan (early)	at the mouth of White River
Mattie	1867; May 14	snagged at Cut Off, AR – this is not the same boat as the New Mattie, sunk in 1900
Mercury	1867; Mar 13	cut off between White and Arkansas Rivers in 50 feet of water, 15 feet over top of roof
Red Wing	1860; May 25	snagged at Smith's Cut-Off
Tom Morgan	1877; Nov 10	exploded at head of Scrubgrass Bend, seventeen miles above mouth of White River
W. A. Caldwell	1870; Dec 6	snagged in Caldwell's Bend in cut-off between White and Arkansas Rivers

All information taken from Way (1983).

With the end of the steamboat era, Montgomery Point returned to a wild and uninhabited state, probably as early as 1900, certainly following the 1927 flood. Even though the people have gone, the Mississippi and White Rivers have continued to affect the study area.

Throughout its history the area at the confluence of the White and Mississippi Rivers was a part of a riverine trade system. From the time of the French voyageurs the area was recognized as a strategic location and a gateway to the interior. Established as a transshipment point, Montgomery Point became an integral part of the system linking the commercial cities of the Mississippi River with the cities, towns, and other communities of the Arkansas and White River valleys. It prospered for much of the nineteenth century, but its fortunes were tied to the river. When that trade adjusted to the competition of the railroads, the transshipment facilities became superfluous, but the river itself continued as a highway for trade and transportation.

Chapter 5. Summary and Recommendations

Summary

The preceding chapters have presented the results of our literature search and geomorphic reconstruction of the project area as well as our field investigations. The following discussion is a recapitulation of these findings as they relate to particular periods of the possible human use of the project area. This discussion is illustrated with maps which show the development of the landscape within the study area from 1765 to 1977. We begin this discussion with a consideration of possible Native American use of the project area.

Native American Occupation of the Study and Project Area. There are two basic issues to consider regarding the possible existence of pre-Euro-American cultural remains within the project area. These are the location of the previously recorded site, 3DE9, and the locations of late 17th Century Quapaw sites referenced by French explorers.

According to the accounts of late 18th Century French explorers, including Marquette and Jolliet, LaSalle, de Tonti, and Joutel, there seem to have been four separate Quapaw villages situated in the general vicinity of the confluences of the Arkansas, White, and Mississippi Rivers. The location of these villages, in terms of 1951 geography, was the subject of a detailed study made by Phillip Phillips (Phillips, Ford, and Griffin 1968: 392-419). In this study Phillips used large scale geologic maps of the region developed by Harold Fisk in conjunction with a review of important secondary sources as well as primary documents. Phillips concluded this detailed review of the documentary evidence and geologic maps by stating

The rather meager conclusions of this long inquiry can be set down briefly as follows:

- 1) Osotouy is the Wallace Site (17-K-3) or very near it.
- 2) Tourima is on Big Island either in the vicinity of Moore Lake or in the northeastern corner of the island. In either case, the chances of finding it, if it still exists, are remote.
- 3) Tongigua is either on or near Montgomery Island or in the vicinity of Henrico, Arkansas, but in either case its chances of having survived are extremely slight.
- 4) Kappa is either near Desha, Arkansas, or a few miles below Knowlton, Arkansas. In either case, there is a possibility that the site exists and may yet be found. (Phillips, Ford, and Griffin 1968: 417, 418)

Of these four sites, the only one Phillips suggested as located on Big Island was Tourima, which was abandoned by 1700. Phillips' best estimation for its location is several miles to the south and west of our project area but he lists as an alternative, though not favored choice, for its location the "northeastern corner of the island." For this reason we quote the conclusion of Phillips' specific discussion of the location of Tourima which is based on a number of specific assumptions regarding Joutel's accounts and Fisk's geographic reconstruction.

If the reasonableness of this postulation be granted, the first place to look for Tourima would be in the vicinity of Moore Lake and Knowlton Bayou, specifically along the outside bend of the prominent Stage 16 Mississippi meander at this point. We may infer that the mouth of Joutel's Arkansas was on an outside bend, because on entering the Mississippi the Indian canoemen immediately crossed over to catch the slack water on the other side. According to Fisk's plate 22, a considerable portion of the Stage 16 bankline in this vicinity can be traced, so there is a reasonable chance that the site still exists. When we talk about looking for it, however, we might as well admit to using the words in a figurative sense. Big Island is not the sort of place where archaeological sites are found, unless by accident. Second choice, based on the later Stage 17 conditions, would also be on Big Island, in the bight of land between White River and Montgomery Island, not quite so hopeless perhaps, since there are a few, probably ephemeral, clearings shown on the Mississippi River Commission quadrangle in the vicinity.

After bringing the reader through all this tiresome and possible unintelligible argument, we have to conclude sorrowfully that the chances of actually finding the site of Tourima are so remote as to be practically non-existent" (Phillips, Ford, and Griffin 1968: 416).

If we compare the location of the confluence of the White and Mississippi Rivers in 1765 (Figure 22) with the landforms as shown on Figure 23 it is clear that the former bankline noted in Sections 1 and 2 on Figure 23 is that of the White River in 1765. Thus the landforms designated as HWPB to the northeast of this bankline must have been created at some time during the late 18th and/or early 19th Centuries. In fact, a comparison of the White River course in 1765 with that documented for the period 1829-1840 (Figure 24) clearly illustrates the creation of this landform (which is essentially that portion of our project area on Big Island; Figure 3) by the movement of the White River during this period. Since this landform was created primarily as a result of lateral accretion it cannot contain cultural materials (except those which may have been washed in by the river) older than the middle of the 18th Century. The recent age of this landscape determined by map analysis was completely supported by field observations. If the village of Tourima was located in this general vicinity it would have to be south and west of the 1765 bankline and thus out of our project area.

Obviously this analysis has consequences for the location of 3DE9. Assuming that 3DE9 was occupied no later than 1700 (Tourima is reported to have been abandoned by that date; Figure 16) it cannot be situated at or near its present mapped location.

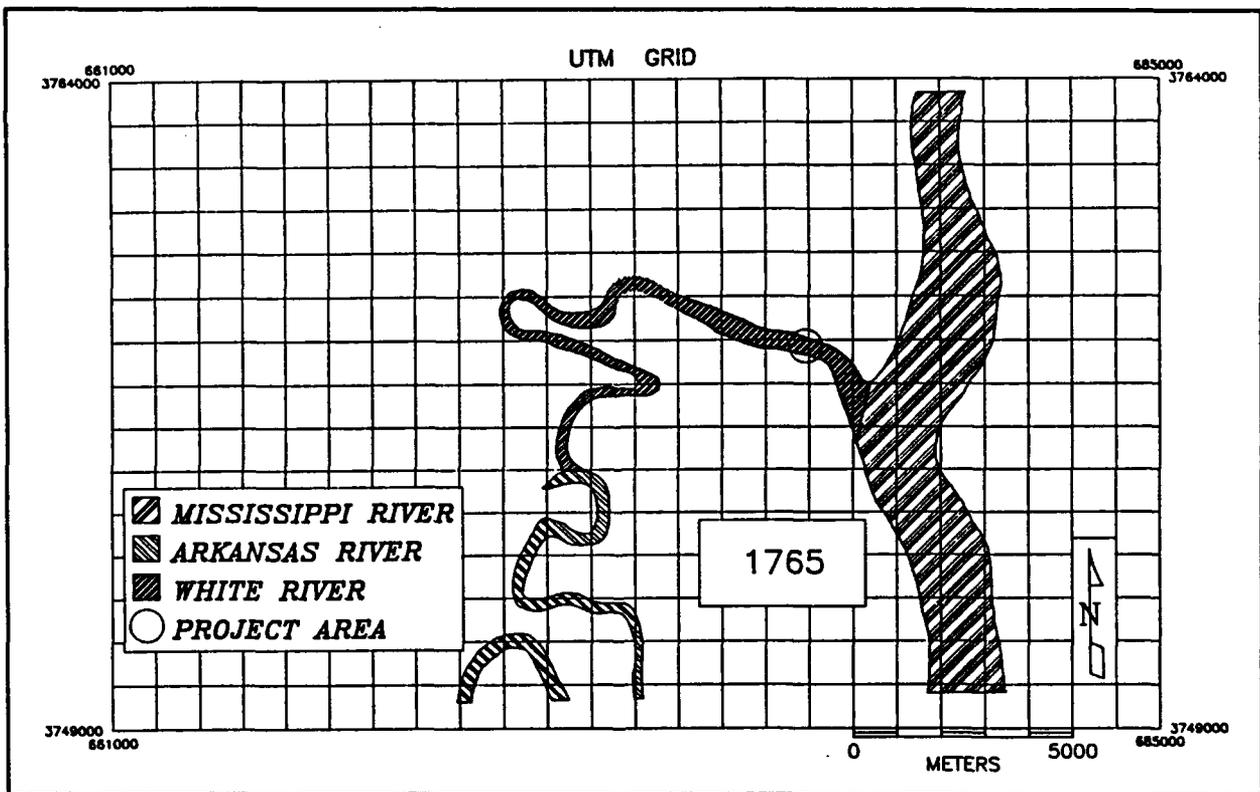


Figure 22. White River Channel: 1765

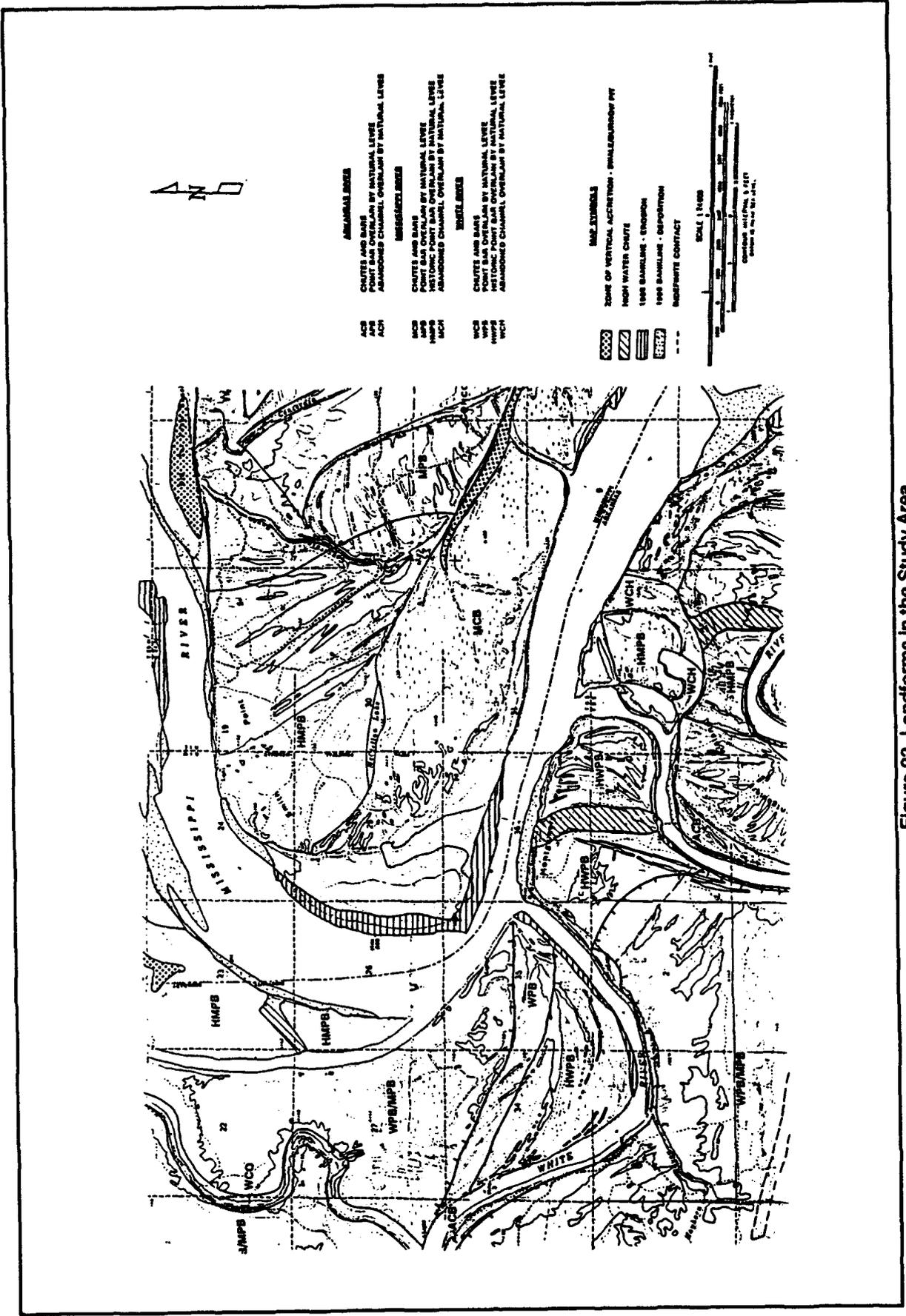


Figure 23. Landforms in the Study Area.

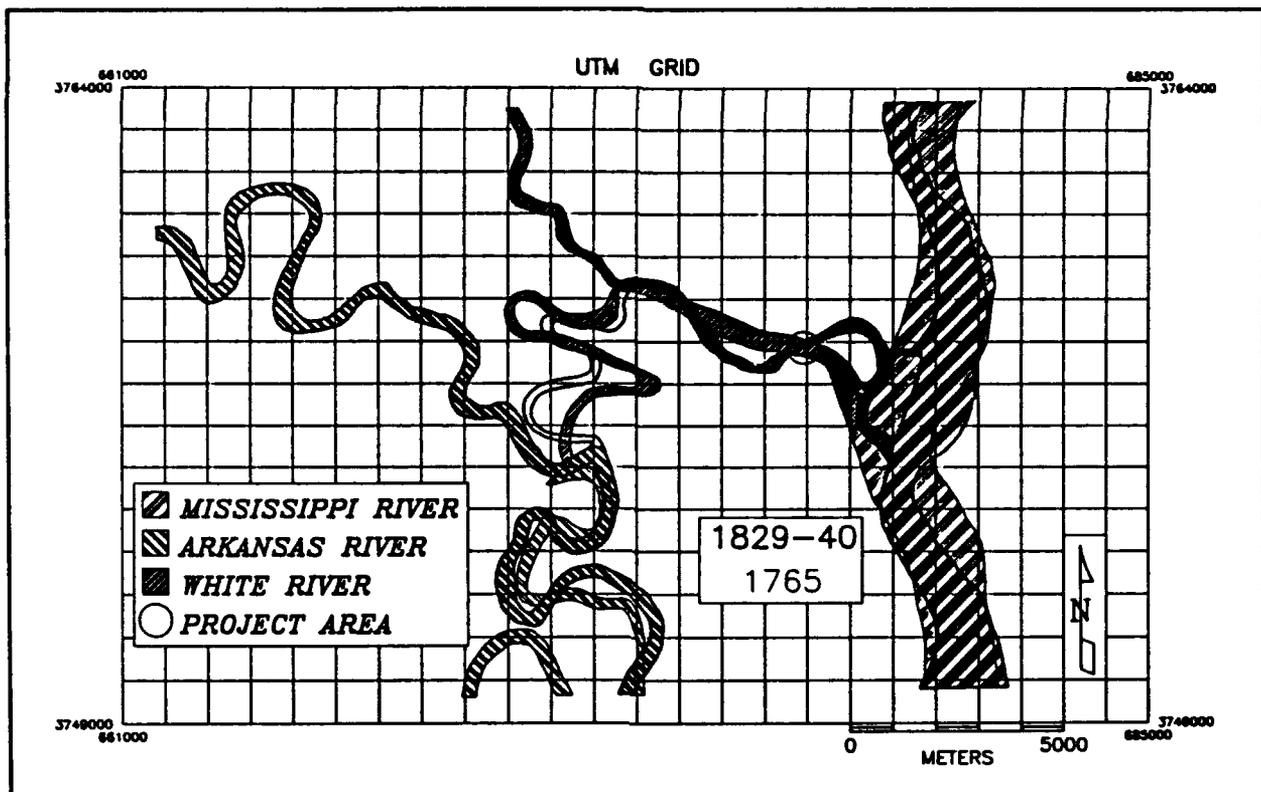


Figure 24. White River Channels: 1765/1829-40

American Settlement, 1800-1840. As Chapter 4 has indicated the confluence of the White and Mississippi Rivers was an important location in the early Euro-American settlement of Arkansas. Beginning in the early 1800s there was a settlement at or near this confluence which offered travelers food and lodging, served as a supplier of wood and supplies to navigation, and functioned as a transshipment point for trade along the Arkansas and Mississippi Rivers. This location which became known as Montgomery's Landing was, however, several miles east of our project area, as the Mississippi River had meandered to the east causing the White River to lengthen its channel to reach it (Figure 24). Thus the various facilities mentioned by travel accounts from the early 19th Century cannot be expected to be found in the project area.

The Civil War, 1861-1865. The confluence of the White River with the Mississippi River was also an important location during the Civil War. As noted above both an army encampment and a freedmen's camp were situated here. But during this period the Mississippi River had continued to move eastward placing such activities even further from the project area (Figure 25).

Steamboat Trade, 1865-1927. By the early 20th Century the confluence of the White and Mississippi Rivers was no longer an important site for river traffic, as cargo shipment by rail had become an established and reliable means by which to transport goods within the region. What little activity may have been ongoing at or near the confluence of our two rivers was, however, even further away from our project area as shown in Figure 26. This situation was drastically changed in 1953 when the Mississippi River again meandered through our area, destroying all remains of the Montgomery Landing (Figure 27).

The only possible remains of this important aspect of the Euro-American settlement of the region which could exist within our project area would have been created by navigation disasters resulting in abandoned shipwrecks within the 18th and 19th Century White River channels.

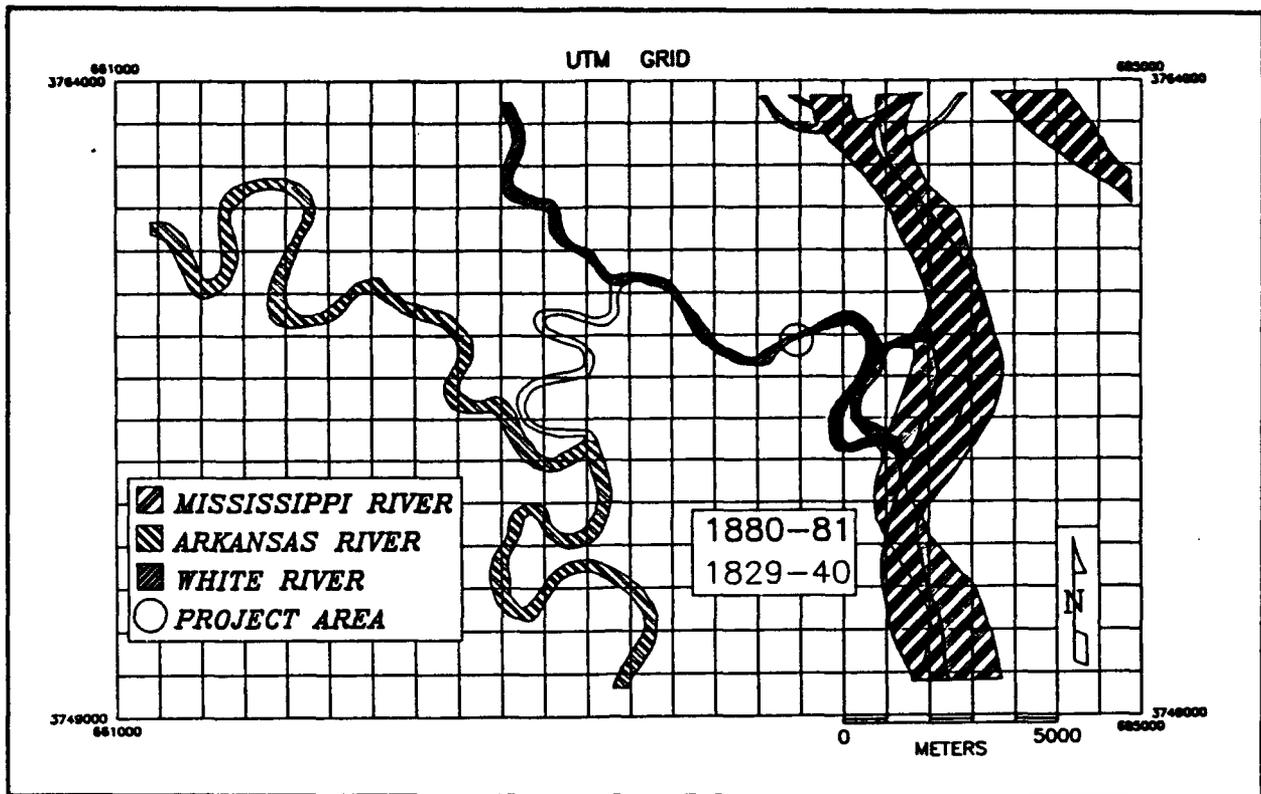


Figure 25. White River Channels: 1829-40/1880-81

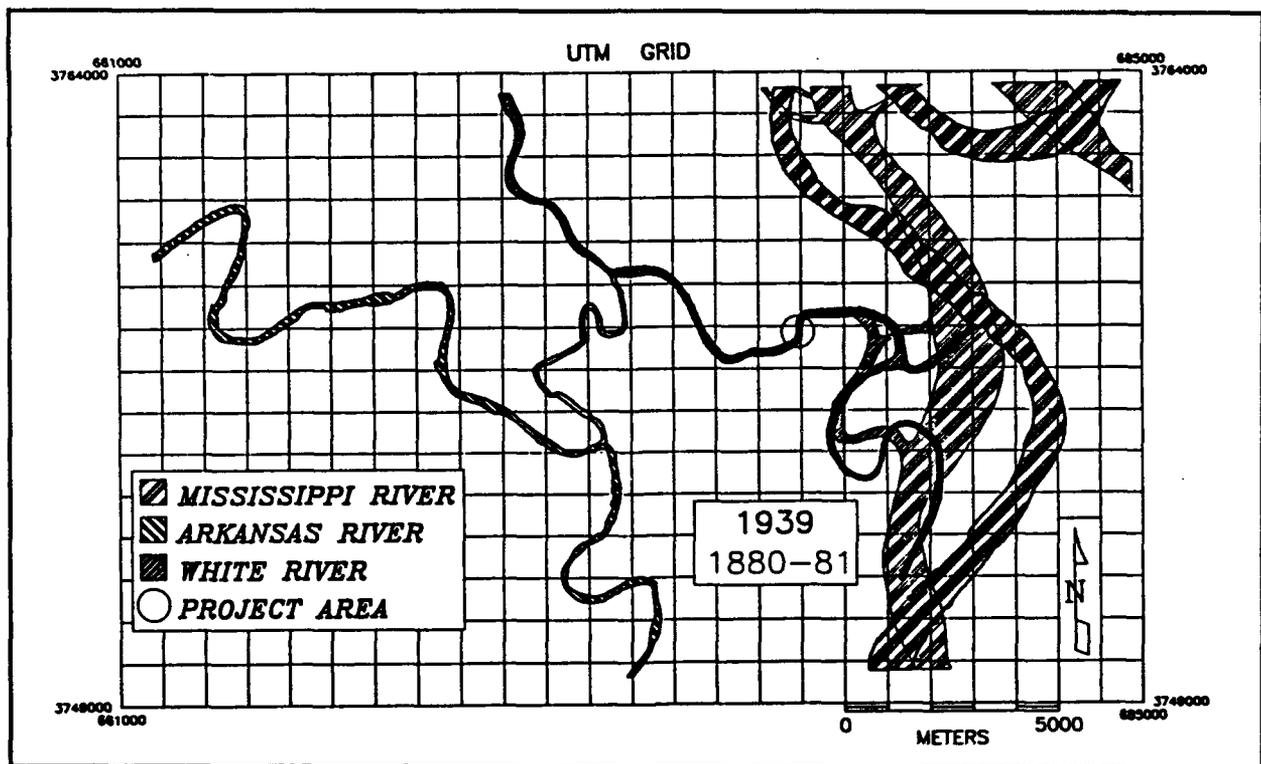


Figure 26. White River Channels: 1880-81/1939

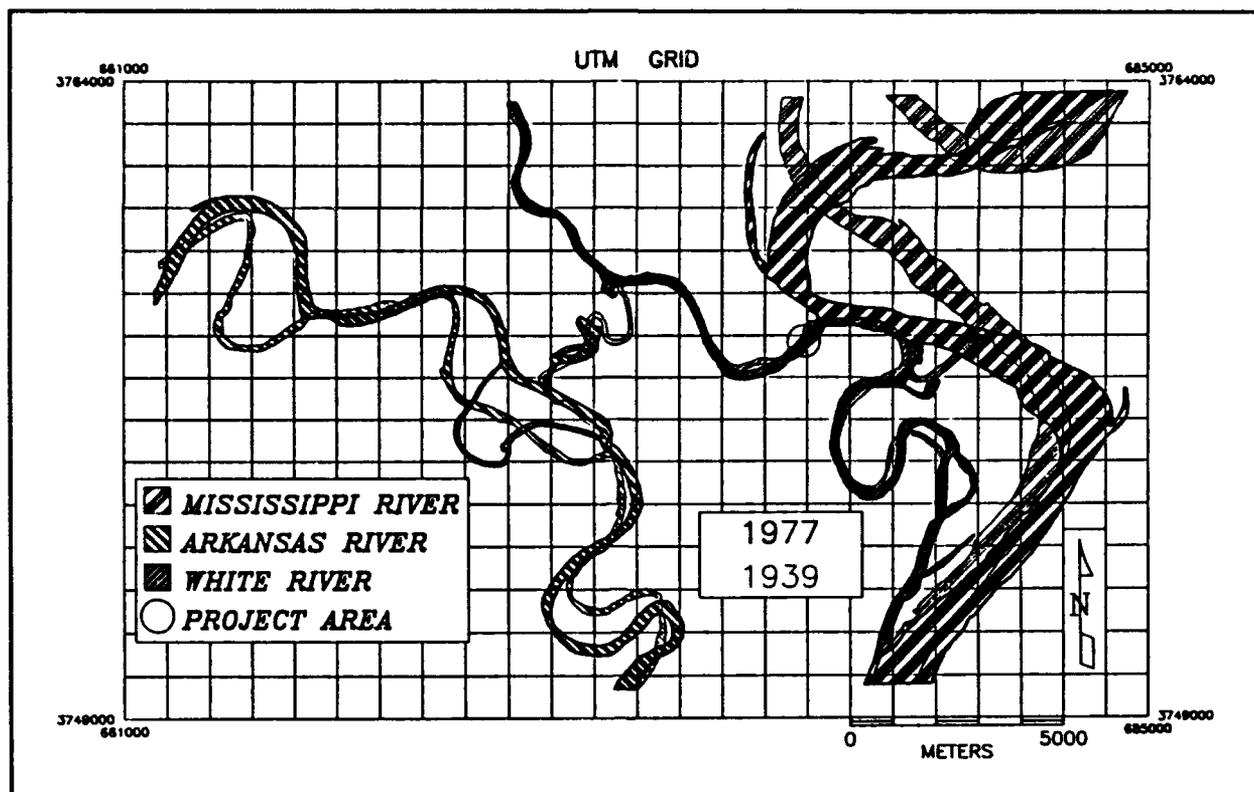


Figure 27. White River Channels: 1939/1977

We have considered several lines of evidence regarding the possibility of shipwrecks in the vicinity of our project area. There do exist reports of wrecks within the general area. While none of those reports place the location of specific wrecks in our project area these reports may not be entirely accurate and they are almost certainly not complete.

While it is clear that we cannot completely discount the possibility of such remains in our project area it is important that we consider the data from three other sources.

- 1) During the period of low water in the summer of 1988 the US Army Engineer Districts, Vicksburg and Memphis, separately conducted aerial surveys of the Mississippi River for the express purpose of locating evidence regarding possible shipwreck locations. Both of the surveys passed over our project area. Neither observed any indication of sunken vessels in the vicinity of our project area.
- 2) Dredging operations in the White River channel since the opening of the McClellan-Kerr Arkansas River Navigation System have failed to encounter any evidence of sunken vessels in this portion of the channel.
- 3) A series of deep (40m) borings conducted in support of the planning for this project also failed to encounter any evidence of deeply buried materials.

20th Century Developments. As we indicated earlier Montgomery Point was largely uninhabited by the early 20th Century. Floodwaters inundated the area to considerable depth in 1927. The traders and the farmers have again been replaced by the hunters and fishermen.

References Cited

Arkansas County

Deed Records. Available on microfilm at the Arkansas History Commission, Little Rock, Arkansas.

Arkansas History Commission

Map Collection. Little Rock, Arkansas.

Arkansas State Land Office

Original Entry Records. Available on microfilm at the Arkansas History Commission, Little Rock, Arkansas.

Arnold, Morris S.

1985 *Unequal Laws Unto A Savage Race: European Legal Traditions in Arkansas, 1686-1836*. University of Arkansas Press, Fayetteville, Arkansas.

Bates, R. L. and J. A. Jackson

1980 *Glossary of Geology*. American Geological Institute, Falls Church, Virginia.

Bearss, Edwin C. and Lenard E. Brown

1971 *Arkansas Post National Memorial, Arkansas: Structural History, Post of Arkansas, 1804-1863, and Civil War Troop Movement Maps, January, 1863*. Eastern Service Center, Office of History and Historic Architecture, National Park Service, Washington, D. C.

Bennett, W. J., Jr., Phyllis Breland and Lawson Smith

1989 *Cultural Resources and Geomorphological Reconnaissance of the McClellan-Kerr Arkansas River Navigation System Pools 1 through 9*. Archeological Assessments Report No. 79. Report submitted to the U.S. Army Engineer District, Little Rock, Little Rock, Arkansas.

Coleman, Roger E.

1987 *The Arkansas Post Story, Arkansas Post National Monument*. Professional Papers No. 12, Division of History, Southwest Cultural Resources Center, Southwest Region, National Park Service, Santa Fe, New Mexico.

Cramer, Zadoc

1811 *The Navigator*. Cramer, Spear & Eichbaum, Pittsburgh, Pennsylvania.

Davis, Hester A., and Charles M. Baker

1974 *Emergency Survey and Testing in the Lower White River and Arkansas Post Canal Area*. Arkansas Archeological Survey, Research Report No. 21, Fayetteville, Arkansas.

Dickinson, Samuel D., and S. C. Dellinger

1940 A Survey of the Historic Earthenware of the Lower Arkansas Valley. *Texas Archeological and Paleontological Society Bulletin* 12:76-96. Reprinted in *The Arkansas Archeologist* 4(4):9-18.

Dohan, Mary Helen

1981 *Mr. Roosevelt's Steamboat*. Dodd, Mead & Company, New York.

Fisk, Harold N.

1944 *Geological Investigation of the Alluvial Valley of the Lower Mississippi River*. War Department, Corps of Engineers, U.S. Army. Mississippi River Commission, Publication No. 52. Washington, D. C.

- Flint, Timothy
1968 *Recollections of the Last Ten Years in the Valley of the Mississippi*. Edited by George R. Brooks. Southern Illinois University Press, Carbondale, Illinois.
- Ford, James A.
1961 *Menard Site: The Quapaw Village of Osotouy on the Arkansas River*. In *Anthropological Papers of the American Museum of Natural History*, Vol. 48, Part 2. New York, New York.
- Freedmen's Bureau Records
Arkansas Field Office Records. National Archives, RG 105. Available on microfilm at the Arkansas History Commission, Little Rock, Arkansas.
- General Land Office
Fifth Principal Meridian Plat Maps. Available on microfilm at the Arkansas History Commission, Little Rock, Arkansas.
- Halliburton, W. H.
1978 *A Topographical Description and History of Arkansas County, Arkansas from 1541 to 1875*. Reprint edition, Southern Historical Press, Easley, South Carolina.
- Holder, Preston
1957a *Archeological Field Research on the Problem of the Locations of Arkansas Post, 1686-1803, a Preliminary Report on Work in Progress at the Menard Mounds Site, Field Season: Fall, 1956 Spring, 1957*. Ms. submitted to the National Park Service, Region One, Richmond, Virginia.
1957b *Archeological Field Research on the Problem of the Locations of Arkansas Post, 1686-1803*. Ms. submitted to the National Park Service, Region One, Richmond, Virginia.
- Kolb, C. R., et al.
1968 *Geological Investigation of the Yazoo Basin, Lower Mississippi Valley*. Technical Report No. 3-480, U.S. Army Corps of Engineers, Waterways Experiment Station, Vicksburg, Mississippi.
- Martin, Patrick E.
1977 *An Inquiry into the Locations and Characteristics of Jacob Bright's Trading Post and William Montgomery's Tavern*. Research Series No. 11, Arkansas Archeological Survey, Fayetteville, Arkansas.
- Moore, Clarence B.
1908 *Certain Mounds of Arkansas and Mississippi*. P. C. Stockhasusen, Philadelphia.
- Moorehead, Warren K.
1931 *Archaeology of the Arkansas River Valley*. Yale University Press, New Haven, Connecticut.
- Northwestern Louisiana University
Map Collection, Cammie G. Henry Research Center, Natchitoches, Louisiana.
- Nuttall, Thomas
1980 *A Journal of Travels into the Arkansa Territory, During the Year 1819*. Edited by Savoie Lottinville. University of Oklahoma Press, Norman, Oklahoma.
- Phillips, Philip
1970 *Archaeological Survey in the Lower Yazoo Basin, Mississippi 1949-1955*. Papers of the Peabody Museum of Archaeology and Ethnology, Harvard University, No. 60.
- Phillips, Philip, James A. Ford, and James B. Griffin

- 1968 *Archaeological Survey in the Lower Mississippi Alluvial Valley, 1940-1947*. Papers of the Peabody Museum of American Archaeology and Ethnology, Harvard University, Vol. XXV, 1951. Reprint edition Kraus Reprint Corp., New York.
- Pope, Judge William F.
1895 *Early Days in Arkansas*. Frederick W. Allsopp, Little Rock, Arkansas.
- Saucier, Roger T.
1967 *Geological Investigation of the Boeuf-Tensas Basin, Lower Mississippi Valley*. Technical Report No. 3-757, U.S. Army Corps of Engineers, Waterways Experiment Station, Vicksburg, Mississippi.
1974 *Quaternary Geology of the Lower Mississippi Valley*. Research Series No. 6, Arkansas Archaeological Survey, Fayetteville, Arkansas.
- Scholtz, James A.
1971 Investigations at the Roland Mound Site, 3AR30, Arkansas County, Arkansas, 1966. Ms. on file, National Park Service, Southeast Region and the University of Arkansas Museum, Fayetteville, Arkansas.
- Scholtz, James A., and Michael P. Hoffman
1968 An Archeological Survey of the Arkansas River Navigation Projects in Arkansas. Ms. on file, University of Arkansas Museum, Fayetteville, Arkansas.
- Shinn, Josiah H.
1908 *Pioneers and Makers of Arkansas*. Genealogical and Historical Publishing Company, Washington, D. C.
- Smith, F. L.
1979 *Geological Investigation of the Yazoo Basin, Lower Mississippi Valley*. Technical Report No. 3-480, U.S. Army Corps of Engineers, Waterways Experiment Station, Vicksburg, Mississippi.
- Smith, Lawson M.
1988 *Geomorphological Reconnaissance of the Arkansas/White River Cutoff Containment Area*. Geotechnical Laboratory, U.S. Army Corps of Engineers Waterways Experiment Station, Vicksburg, Mississippi.
- Smith, F. L., and R. T. Saucier
1971 *Geological Investigation of the Western Lowlands Area, Lower Mississippi Valley*. Technical Report No. S-71-5, U.S. Army Corps of Engineers, Waterways Experiment Station, Vicksburg, Mississippi.
- Smith, L. M., and P. L. Breland
1989 *Geomorphic Reconnaissance of the McClellan-Kerr Arkansas River Navigation System*. Project Report, U.S. Army Corps of Engineers, Waterways Experiment Station, Vicksburg, Mississippi.
- Sperry, A. F.
n.d. *History of the 33rd Iowa Infantry Volunteer Regiment, 1863-6*. Mills & Company, Des Moines, Iowa, 1866; Reprint edition, Rare Book Publishers, Pine Bluff, Arkansas.
- Thoburn, Joseph B., annotator.
1955 Letters of Cassandra Sawyer Lockwood: Dwight Mission, 1834. *Chronicles of Oklahoma* 33:202-237.
- Thomas, Cyrus

- 1985 *Report on the Mound Explorations of the Bureau of Ethnology*. Reprinted. Smithsonian Institution Press. Washington, D. C. Originally published 1894, Government Printing Office, Washington, D.C.

U.S. Army Corps of Engineers

Civil Works Map File. Cartographic Archives, National Archives, Washington, D. C.

- 1939 *Big Island 15-Minute Quadrangle, Arkansas-Mississippi*. U.S. Army Engineer District, Vicksburg, Mississippi.
- 1975 *Master Index: Upper and Lower Mississippi River Surveys for Period 1879-80 to 1928*. Vol. 2, Mississippi River Commission, Vicksburg, Mississippi.
- 1977 *Big Island 15-Minute Quadrangle, Arkansas-Mississippi*. U.S. Army Engineer District, Vicksburg, Mississippi.
- 1988 *1988 Flood Control and Navigation Maps of the Mississippi River*. 56th edition, Lower Mississippi Valley Division, Vicksburg, Mississippi.
- 1989 *Montgomery Point Lock and Dam, Geotechnical Report: Appendix C Concept, Geotechnical Design Analysis*. U. S. Army Engineer District, Little Rock, Arkansas.

Vaudreuil Papers

Papers of Pierre de Rigaud De Vaudreuil, The Huntington Library, San Marino, California.

Walker, John W.

- 1971 *Excavation of the Arkansas Post Branch of the Bank of the State of Arkansas, Arkansas Post National Memorial*. Ms. submitted to Southeast Archeological Center, National Park Service, Macon, Georgia.

Way, Frederick, Jr., compiler.

- 1983 *Way's Packet Directory, 1848-1983*. Ohio University, Athens, Ohio.

Westbury, William A.

- 1976 *Archeological Assessment of Arkansas Post*. Southern Methodist University, Dallas, Texas.

Wilson, Rex L.

- 1966 *Archeological Explorations at Arkansas Post, 1966*. Ms. submitted to Southwest Archeological Center, National Park Service, Globe, Arizona.