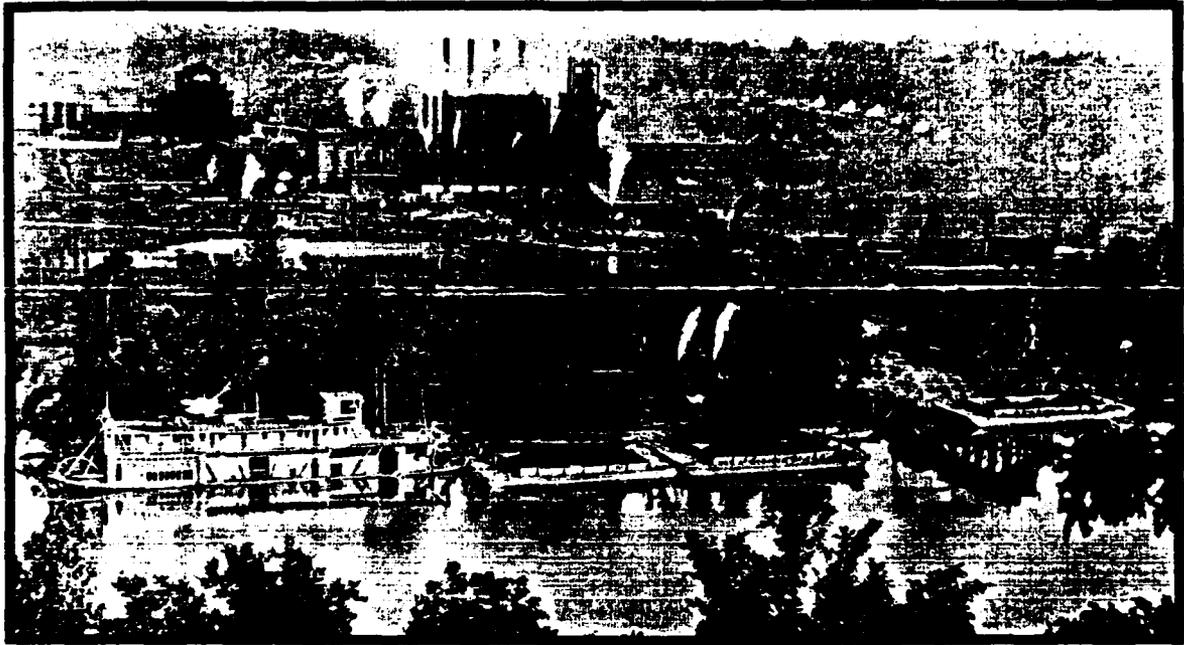


27

AD-A198 033

DTIC FILE COPY
FROM TUSCALOOSA TO SQUAW SHOALS:
A HISTORY OF HOLT LAKE, ALABAMA



DISTRIBUTION STATEMENT A
Approved for public release;
Distribution Unlimited

by
Karen G. Wood

DTIC
ELECTE
AUG 16 1988
S D D

Prepared for

The U.S. Army Corps of Engineers
Mobile District

Southeastern Archeological Services, Inc.

Athens, Georgia

88 8 12

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM	
1. REPORT NUMBER COESAM/PDER-88/001	2. GOVT ACCESSION NO. A19803	3. RECIPIENT'S CATALOG NUMBER	
4. TITLE (and Subtitle) FROM TUSCALOOSA TO SQUAW SHOALS: A HISTORY OF HOLT LAKE, ALABAMA		5. TYPE OF REPORT & PERIOD COVERED	
		6. PERFORMING ORG. REPORT NUMBER	
7. AUTHOR(s) Karen G. Wood		8. CONTRACT OR GRANT NUMBER(s) DACW01-87-C-0104	
9. PERFORMING ORGANIZATION NAME AND ADDRESS Southeastern Archeological Services, Inc.		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS	
11. CONTROLLING OFFICE NAME AND ADDRESS U.S. Army Corps of Engineers Mobile District, PD-ER P.O. Box 2288, Mobile, AL 36628-0001		12. REPORT DATE 15 July 1988	
		13. NUMBER OF PAGES 105	
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		15. SECURITY CLASS. (of this report) UNCLASSIFIED	
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE	
16. DISTRIBUTION STATEMENT (of this Report) UNLIMITED			
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report) UNLIMITED			
18. SUPPLEMENTARY NOTES			
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) History; Holt Lake, Alabama; Cultural Resources; Historic Preservation			
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) An archival study was performed for Corps of Engineers land at Holt Lake, located north of Tuscaloosa, Alabama, on the Black Warrior River. The project area lies at the southern terminus of the Warrior Coal Fields, which are dissected by the Black Warrior River. Much coal mining activity has taken place in the area historically. But coal mining did not increase significantly until the early twentieth century when the building of several railroad lines into the area facilitated coal operations. The construction of locks on the Black Warrior River north of Tuscaloosa in the early twentieth century allowed year-round			

20. traffic on the Black Warrior River which added extra impetus to the coal mining industry. Three lock sites, portions of a railroad complex (including the road grade, a tunnel, and trestle piers), a probable twentieth century house site, a small cemetery, a historic artifact scatter, and two aboriginal sites were identified during a survey of the area. The lock sites and the railroad complex do not appear to be eligible for nomination to the National Register of Historic Places because a great portion of them have been destroyed or submerged by the construction of Holt Lock and Dam.

**FROM TUSCALOOSA TO SQUAW SHOALS:
A HISTORY OF HOLT LAKE, ALABAMA**

Funded by

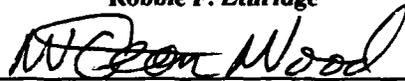
**U.S. Army Engineers District, Mobile
P.O. Box 2288
Mobile, Alabama 36628-0001**

by

Karen G. Wood

With a Contribution by

Robbie F. Ethridge



W. Dean Wood, Principal Investigator

Southeastern Archeological Services, Inc.

**P.O. Drawer 8086
Athens, Georgia 30603**

15 July 1988

FROM TUSCALOOSA TO SQUAW SHOALS: A HISTORY OF HOLT LAKE, ALABAMA

being a True and Accurate Account of the development of Transportation and Coal Mining on the Black Warrior River of Tuscaloosa County, Alabama, with descriptions of the Physiography, Geology, and Flora along with discussions of the late Indian Societies and European Settlement, the Civil War, Coal and Iron Mining, including a detailed summary of the Navigation Locks constructed in the late Nineteenth and early Twentieth centuries by the Mobile District of the U.S. Army Corps of Engineers to facilitate the shipment of Coal and Iron from the great Warrior Coals Fields to local, regional, and World Markets.

ABSTRACT

An archival study was performed for Corps of Engineers land at Holt Lake, located north of Tuscaloosa, Alabama, on the Black Warrior River. The project area lies at the southern terminus of the Warrior Coal Fields, which are dissected by the Black Warrior River. Much coal mining activity has taken place in the area historically. But coal mining did not increase significantly until the early twentieth century when the building of several railroad lines into the area facilitated coal operations. The construction of locks on the Black Warrior River north of Tuscaloosa in the early twentieth century allowed year-round traffic on the Black Warrior River which added extra impetus to the coal mining industry. Three lock sites, portions of a railroad complex (including the road grade, a tunnel, and trestle piers), a probable twentieth century house site, a small cemetery, a historic artifact scatter, and two aboriginal sites were identified during a survey of the area. The lock sites and the railroad complex do not appear to be eligible for nomination to the National Register of Historic Places because a great portion of them have been destroyed or submerged by the construction of Holt Lock and Dam.

This report does not contain site information.
Per Mr. Ernie Seckinger, US Army Corps of
Engineers, Mobile District

Accession for	
NTIS CRASH	<input checked="" type="checkbox"/>
DTIC TAB	<input type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	
By <i>per call</i>	
Distribution/	
Availability Codes	
Dist	Avail and/or Special
<i>A-1</i>	



ACKNOWLEDGMENTS

Sincere appreciation is offered to all those named and unnamed who willingly contributed their efforts and expertise to the successful completion of this project. The author would like to acknowledge the diligent work of our primary historical researcher, Ruthanne Mitchell, who worked long, hard days through the hot summer of 1987. She traveled Alabama, visiting most of the major libraries and archival repositories from Tuscaloosa to Montgomery to Mobile. She also collected data from the National Archives office and major libraries in Georgia.

All of the staff at Southeastern Archeological Services, Inc., who worked on the project are to be commended for their efforts. Robbie Ethridge worked hard on her contributing section and in editing the report from cover to cover. Dean Wood, principal investigator, provided invaluable advice and direction, as well participating in the fieldwork, from the beginning to end of the project. Tom Gresham provided important advice and peer review of the report. Jean Spencer and Robbie Ethridge spent many long hours typing, formatting, and assembling this report. Gisela Weis-Gresham drafted several of the maps. John Graham's assistance in helping us conquer our desktop publishing program is also greatly appreciated.

The conscientious help of staff members at the numerous libraries and archival repositories visited is sincerely appreciated. Although not everyone can be named, a few individuals should be. The able and willing assistance of Eugene Futato at the State Site Files at Moundville, Alabama, is gratefully acknowledged. Alex Sartwell and Don DeJarnett of the Geological Survey of Alabama provided important information and assistance throughout the research period. Mary Bess Paluzzi and Yvonne Crumple of the Birmingham Public Library were most helpful. Mary Ann Hawkins of the East Point, Georgia, Branch of the National Archives, Richard Smith of the National Archives in Washington, D.C., Joanna Sibley of the W.S. Hoole Special Collections Library, University of Alabama, and Marilyn Morton of Samford University were also very helpful. The staffs at the Department of Archives and History and the Alabama Historical Commission are also to be thanked for their assistance, as well as Sara McGee of the Athens Regional Library in Athens, Georgia, for her help in numerous interlibrary loans.

Finally, the author would like to thank the Mobile District Corps of Engineers who managed the project. Numerous Corps personnel participated and assisted in the completion of the project. Danny Hinsley, Assistant Resource Manager, and David Larkin, Ranger, at Holt Lake were most cooperative and helpful, particularly during the early stages of the project. At the Mobile District Office, the attentive assistance of the Corps' representative, Charles Moorehead, is acknowledged. Mildred deGruy of the Supply Contract Administrating Office and Glenn Howard and Clarence York of Engineering Support are also acknowledged for their able assistance.

Table of Contents

	Page
Abstract	iii
Acknowledgements	iv
List of Figures	vi
List of Tables	viii
INTRODUCTION	1
Environmental Setting	3
Previous Research	8
METHODS	11
Archival Research	11
Fieldwork	13
Laboratory Analysis	13
Curation	13
HISTORICAL OVERVIEW OF THE TUSCALOOSA AREA	15
Ethnohistory of the Holt Lake Area, 1540-1816 (by Robbie F. Ethridge)	15
Early European Settlement to the Civil War, 1816-1865	21
The Holt Lake Project Area	26
The Civil War	29
Reconstruction Through the Twentieth Century, 1865-present	31
INDUSTRIAL AND TRANSPORTATION DEVELOPMENTS ALONG THE BLACK WARRIOR RIVER IN TUSCALOOSA COUNTY	43
Early Transportation and Coal Mining	43
Development Prior to and Following the Construction of the Locks ...	60
Coal Operations in Recent Years	72
Other Industries	74
ARCHEOLOGICAL RESULTS	77
Formulation of the Predictive Statement	77
Archeological Sites	81
Evaluation of Predictive Statements	87
DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS	88
Discussion	88
Conclusions	89
Recommendations	90
REFERENCES CITED	93

List of Figures

Figure	Page
1. Location of Project Area	2
2. Physiographic Regions of Alabama	4
3. Coal Fields of Alabama	5
4. Project Area and Surrounding Counties	6
5. "Falls on Brush Creek, One of the Triple Falls"	8
6. Places of Ethnohistorical Significance Mentioned in the Text	17
7. Detail from Map of Portions of Mississippi, Alabama, and Georgia, Showing March of Cavalry Corps, Military Division of the Mississippi	27
8. Portion of Smith's 1879 Map	28
9. 1864 General Topographic Map	30
10. Beehive Ovens at Holt	38
11. Holt Furnace Complex with Coal Barges and Steamboat in Foreground	38
12. Portion of <i>Map of the Black Warrior River, Showing the Highlighted Details of Mines, Mills, Roads, Houses, etc.</i>	45
13. Portion of Corps of Engineers <i>Map of the Upper Black Warrior River</i>	49
14. Table Detailing Information on the Locks and Dams on the Black Warrior and Tombigbee Rivers	50
15. Plan and Elevation of Lock 3 (Lock 12)	51
16. Front Elevation of Lockhouse at Lock and Dam 13, 1937	52
17. View of Lock 13	54
18. Detail of Tidewater on the Black Warrior in 1928	54
19. Detail of Lock 14 in 1928	55
20. Detail of Lock 15 in 1928	56
21. View of the <i>Nugent</i> in Lock 15	57
22. Detail of Lock 16 in 1928	57
23. Detail of Scales Community in 1928-29	59
24. Detail of Scales Community in 1895	60
25. Detail of Warrior Southern Railroad in 1928	61
26. Composite Map of Industry, Mining, and Transportation at Holt, Alabama, ca. 1900	64
27. Detail of Burchfield, Kellerman, and Searles in 1928	66

28. Analysis of Alabama Coals73

29. "Small sawmill on L & N Railroad about 1/4 mile east of
Warrior Southern Railroad" in 191375

30. "Turpentine Stills among pine hills between Brookwood and
Tidewater" in 191176

31. Map Showing Government-owned Land at Holt Lake 82

32. Detail of Topographic Map Showing House Site in 1928,
1Tu504, Identified in Deerlick Public Use Area 86

LIST OF TABLES

Table	Page
1. Black Warrior Commerce Reported in 1902	37
2. Coal Miners by County for 1930	70
3. Coal Operators in Tuscaloosa County in 1912	70
4. Coal Operators in Tuscaloosa County in 1921	71
5. Annual Coal Production in Alabama's Leading Coal-Producing Counties	72
6. Cultural Resources Located in Holt Lake Reservoir	83

INTRODUCTION

Holt Lake is a narrow, sinuous body of water formed by the damming of the Black Warrior River several miles above Tuscaloosa, Alabama (Figure 1). It was completed by the U.S. Army Corps of Engineers, Mobile District, in 1969. Holt Lake is the middle of three lakes stretching from Tuscaloosa to the mouth of Mulberry and Locust Forks, two streams that, along with the Sipsey Fork, form the Black Warrior River. The William Bacon Oliver Lock and Dam is located downriver from Holt Lake and the John B. Hollis Bankhead Lock and Dam is located directly upriver.

The Black Warrior River drains the Warrior Coal Basin, an approximately 4,000 square mile expanse of coal reserves in north-central Alabama. From early historic times, the Black Warrior River was viewed as an important transportation corridor, stretching from Alabama's interior to her coastal shores. However, the numerous rocky shoals from Tuscaloosa to its headwaters made the Black Warrior a treacherous stream for boat travel. In the late nineteenth and early twentieth centuries a series of locks and dams were built by the U.S. Army Corps of Engineers to open the river to year-round traffic. Coal became the most important commodity shipped downriver to Tuscaloosa, Demopolis, and Mobile. Although settlement was always sparse, the Holt Lake area nevertheless played an important part in early transportation and mining operations in Alabama. Today the area is a scenic recreation spot, despite the fact that considerable coal mining activity is still taking place outside the bounds of the lake. Large, coal-laden barges ply the now placid waters of the Black Warrior River between Birmingham and Mobile.

The Holt Lake archival study was performed from July to December, 1987, by Southeastern Archeological Services, Inc., under contract with the U.S. Corps of Engineers, Mobile District. The Holt Lake area includes 1,500 acres of fee-owned property, almost all of which is flooded. Corps-owned property above the pool level is mainly concentrated in public-use areas and at the Holt Lock and Dam.

The Corps of Engineers Scope of Work (1987:F-1) stated the following goals for the Holt Lake archival study:

The objectives of this effort are to identify and locate, through archival investigations, areas within the project which hold potential for historic cultural resources. The historic narrative on the interrelatedness of resources and statements as to their significance in history is also an important objective. It is imperative that extant remains with the potential of having exceptional historical significance, shall be visited. Visitation shall also be made at areas predicted to have historic resources in order to verify the presence or absence of possible historic resources.

The resultant historical synthesis covers human occupation in the area from the proto-historic period to the present. Known cultural resources on Corps-owned

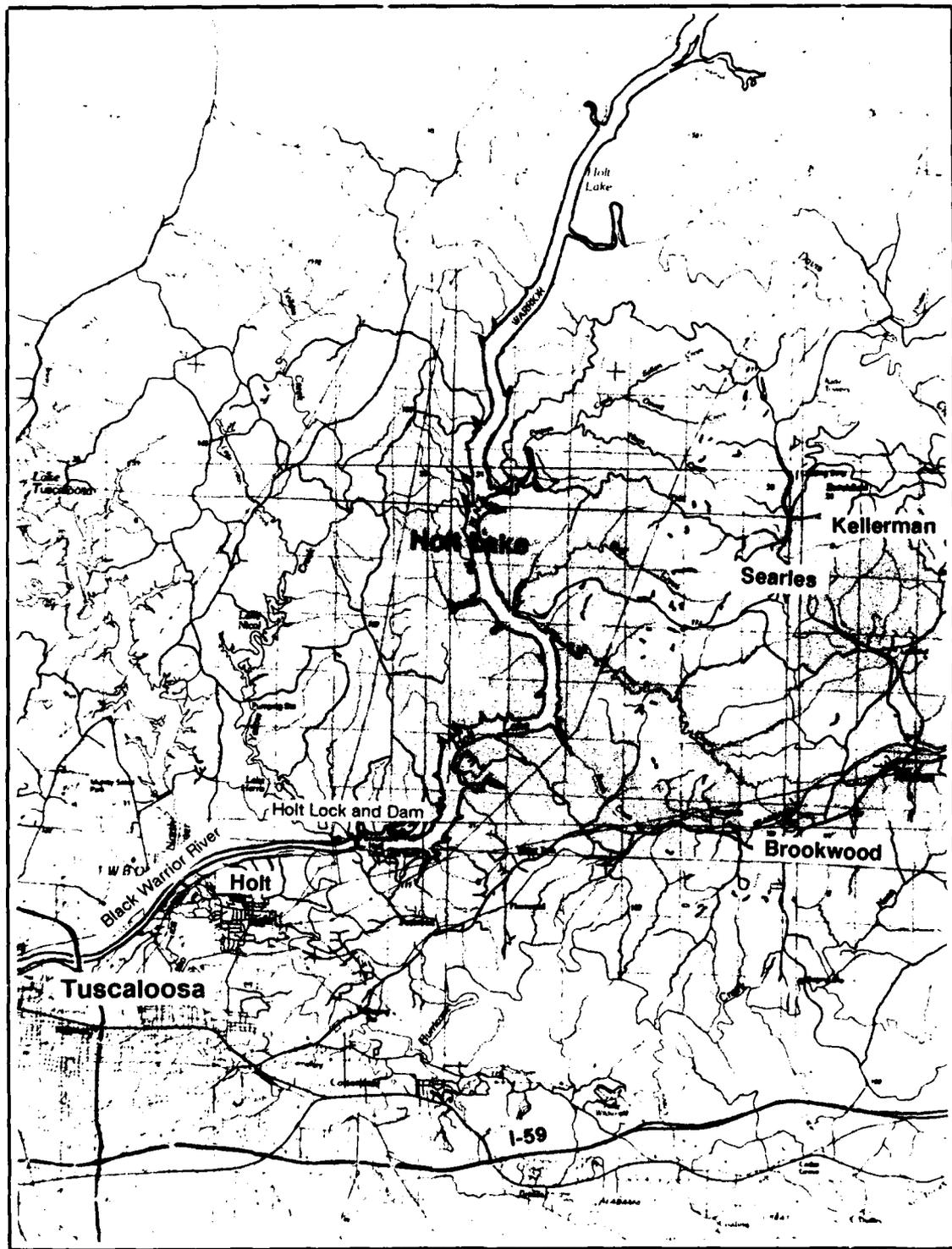


Figure 1. Location of Project Area (1984 USGS Tuscaloosa quadrangle map).

property in the Holt Lake project area were located and a predictive statement of where historic sites should occur, based on the archival research, was formulated and tested during a week-long survey of high probability areas. The field survey investigated seven high probability areas in the project area. Cultural resources were identified in all areas except one. At least some evidence of three of the four lock complexes were found. A historic house site, a historic artifact scatter, Scales Cemetery, partial remains of a railroad grade, tunnel, and trestle piers, and two prehistoric sites were also located in the project area.

Environmental Setting

Physiography. The impounded section of the Black Warrior River known as Holt Lake lies in Tuscaloosa County. Approximately one-quarter of the county, in the north-eastern section, lies within the southern end of the Appalachian Mountain Chain and the other three-quarters lies within the East Gulf Coastal Plain section (Winston *et al.* 1912:5). The boundary between these two regions, known as the Fall Line, cuts across the Black Warrior River at the city of Tuscaloosa, with the Appalachian region to the northeast and the Coastal Plain section to the southwest (Figure 2). This change in physiographic sections determines the character of the Black Warrior River. The river cuts a deep trough with high bluffs through the Cumberland Plateau as it flows south to Tuscaloosa. Below Tuscaloosa and the Fall Line, the river slows its descent and begins a meandering path as it enters the Coastal Plain. The Black Warrior River flows into the Tombigbee River, which then joins with the Alabama River to form the Mobile River before flowing into Mobile Bay.

The southern end of the Appalachian Mountain Chain in Alabama is divided into several physiographic sections: the Highland Rim (bordering Tennessee), the Cumberland Plateau, the Alabama Valley and Ridge, and the Piedmont Upland (see Figure 2). All of these extend in a general northeast to southwest direction.

Geology. The portion of Tuscaloosa County located in the Appalachian region is part of the Cumberland Plateau. The Plateau is composed of coal-bearing formations consisting of sandstone, conglomerate, shale, slate, clays, and coal. The Alabama Valley and Ridge section, which contains iron and coal-bearing rock formations, extends into the eastern edge of Tuscaloosa County. Butts (1926:1-2) divides the coal region of Alabama into four separate coal fields: the Warrior, Cahaba, Coosa, and Plateau (Figure 3).

Holt Lake lies entirely within the Warrior Coal Field. This area is characterized as hilly with deeply entrenched stream beds feeding into the Black Warrior River, the major drainage through the basin. The Warrior Coal Field is the largest one in Alabama, approximately 4,000 square miles in area and up to 2,000 feet thick (McCalley 1899:2; Butts 1926:1, 2). The Warrior Coal Field covers all of Walker County and parts of Tuscaloosa, Jefferson, Blount, Cullman, Winston, and Fayette Counties (Figure 4). The Warrior Coal Field is comprised of numerous seams of bituminous coal of varying length, thickness, and quality. Late in the nineteenth century, McCalley (1886; 1898)

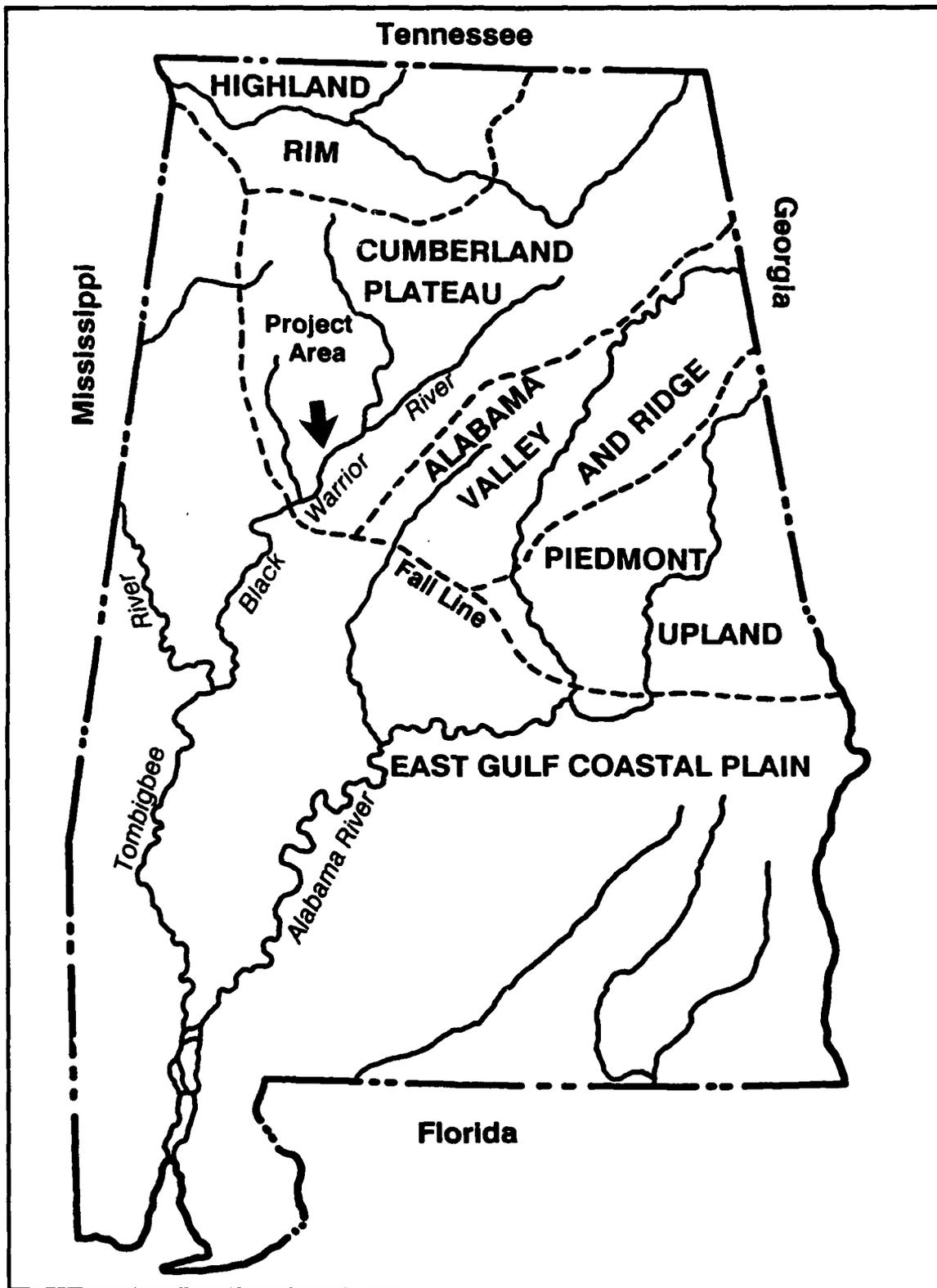


Figure 2. Physiographic Regions of Alabama (from Sapp and Emplainscourt 1975).

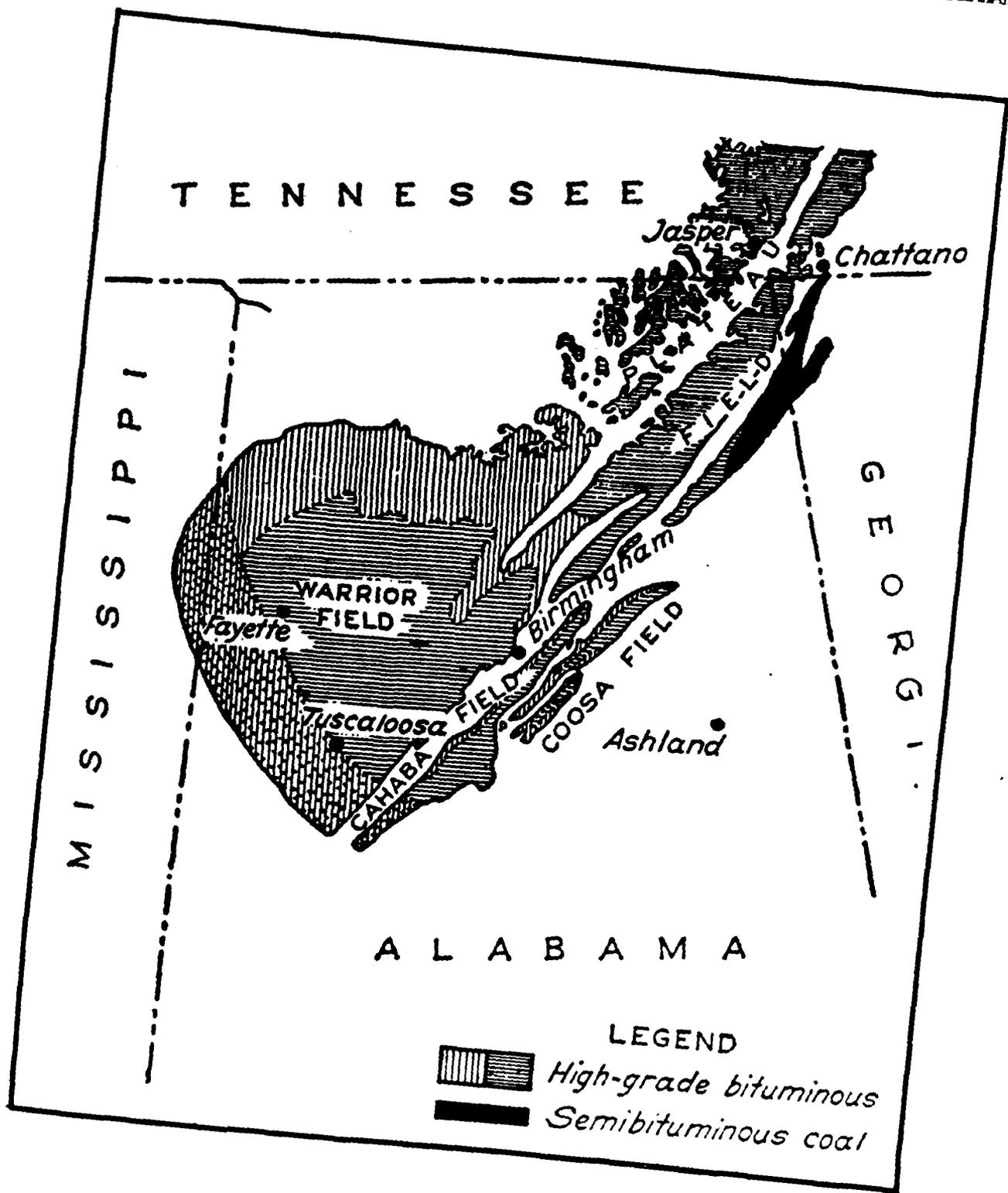


Figure 3. Coal Fields of Alabama (Butts 1926:2).

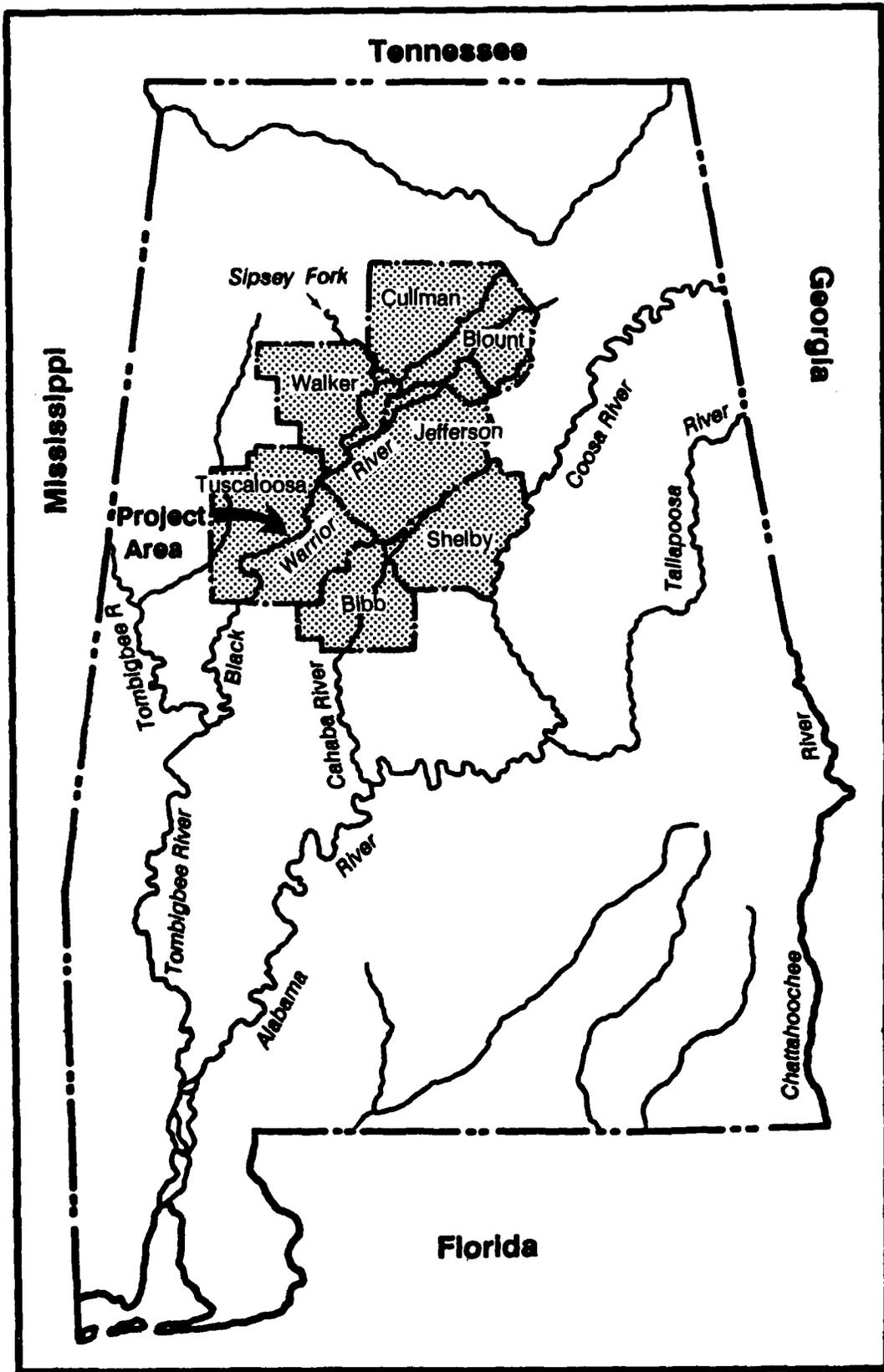


Figure 4. Project Area and Surrounding Counties (based on Griffith 1962).

reported in detail on 23 regular coal seams in the Warrior Coal Basin, covering all of those known in Tuscaloosa County at the time.

The Black Warrior River drains through the center of the Warrior Coal Field. In 1874 an act of Congress approved a survey called the *Black Warrior River, from Locust Fork to Its Mouth* in the *Annual Report of the Chief of Engineers* (hereafter referred to as the *Annual Report*). The description of the upper Warrior began:

Above Tuscaloosa the river expands into a series of lakes 500 to 700 feet in width, skirted by rock-bluffs 100 to 200 feet in height, and connected by falls or rapids flowing over rock-ledges. The rock-bluffs seldom abut directly upon the river, but usually leave a margin of tillable land from 100 to 500 ft wide bordering on the banks. [Annual Report 1875:23]

The river was made up of a series of shoals. Behind each shoal the water backed up slightly, forming an expanse of calm water referred to as "lakes" in the above quote. The rapids ranged from 700 to 1,000 feet in width and over 1,000 feet in length. The bed of the shoals was described as consisting of hard sandstone embedded with coal seams and extending across the river bed. A number of nineteenth and early twentieth century maps indicate the shoals by name. The two largest and most impressive shoals were the University (or Tuscaloosa) Shoals, located directly above Tuscaloosa, and Squaw Shoals, located some 26 miles above Tuscaloosa. These shoals closely delimit the project area now covered by Holt Lake. University Shoals drops over 30 feet in a 2-mile stretch (*Annual Report 1896:1433*). Harper (1914:150), reporting on the aquatic vegetation at Squaw Shoals in 1914, noted that the shoals stretched for about 3 miles, with a drop of over 40 feet during low water. The average depth at the shoals was only 2 feet and they could be crossed on foot.

The *Annual Report* (1875:23) also noted that the tributaries draining into the Black Warrior were mostly rock-gorges contributing little water flow to the river, particularly during the dry seasons. These streams originated in the uplands and flowed over alternating layers of hard and soft rock strata, often resulting in high falls that McCalley (1886:410) termed a "varied and picturesque scenery." Harper photographed one of a triple falls on Brush Creek in the project area which he estimated to be about 30 feet high (Figure 5).

The soils in the coal fields were recognized early on as being much less fertile than those soils in the Coastal Plain portion of the county (Berney 1878:209). As noted above, river bottom land above Tuscaloosa consisted of very narrow shelves usually not any wider than 500 feet and, therefore, offered limited arable land. Harper (1943:136) classified the soil texture on the uplands as gravelly sandy loam and gravelly loam, containing rocky slates, sandstones, and gravels of smooth, water-worn quartz pebbles.

Vegetation. There are a number of reports describing the varied environments along the Black Warrior River. Riley (1893:121) noted immense forests in the area and McCalley (1886:410) noted that the forests consisted primarily of pine, oak, gum, hickory, and bay. Roland Harper extensively surveyed and reported on the area during the early twentieth century. In 1905, Harper visited an area north of Tuscaloosa on the



Figure 5. "Falls on Brush Creek, One of the Triple Falls" (Roland Harper Collection 1935; courtesy of the W.S. Hoole Special Collections Library).

Black Warrior. He believed that this was a particularly important region for study because it formed the boundary between the Paleozoic formations of the Cumberland Plateau and the Coastal Plain. He reported the most southern occurrence then known of the cliff pine, *Pinus virginiana* (Harper 1906:105, 7), in this area. Harper characterized the forests early in the twentieth century as having

dry oak and pine woods on the uplands or ridges, dense thickets of cliff pine on the brows of many of the bluffs, a considerable variety of trees on the lower slopes of the same bluffs and in ravines, and still other kinds in the valley bottoms and on the banks of the river. [Harper 1914:54]

In a list of tree species present in the coal basin area, he enumerated a number of species that were specifically present along the bluffs and ravines of the Black Warrior River (Harper 1914:55-56). Because the project area was never used heavily for agriculture, much of the land remained forested into the twentieth century. As late as 1935, Harper (1943:147) noted and photographed a virgin long-leaf pine forest on the gravelly hills above Scales Lake.

Previous Research

There has been very little archeological, and particularly historic archeological, work in the vicinity of Holt Lake. A preliminary survey of the Holt area, conducted in

1933 by the Alabama Museum of Natural History of the University of Alabama at Tuscaloosa (Benthall 1966), located nine prehistoric sites in the Holt area. These sites are recorded in the State Site Files at Moundville, Alabama. In 1963 Benthall directed a reconnaissance level survey of the project area prior to the inundation of the Black Warrior by the Holt Lock and Dam. Benthall's survey re-located the sites from the 1933 survey, and discovered 12 more, yielding a total of 21 prehistoric sites dating from the Late Archaic through Middle Woodland periods. Five of these sites were excavated in 1965 and 1966 (Benthall 1966). Neither survey identified any historic sites in the Holt Lake area and Benthall makes no reference to the proto-historic or historic periods of occupation in the area.

North of the project area, an archeological survey was conducted in 1978 (Moorehead *et al.* 1978) by the University of Alabama Office of Archeological Research. A 10% sample of 66,120 acres in portions of four counties (Tuscaloosa, Walker, Fayette, and Jefferson) were examined. Based on the identification of 23 historic sites and 41 aboriginal sites, a predictive model of prehistoric and historic site location was formulated. The model for historic sites suggested that the majority of sites should occur on upland areas at elevations of 331 to 820 feet above sea level. In a nutshell, the report offers a model of where historic structures should occur based on the percentages of historic sites located in each of the substrata set up for the model, i.e., uplands, 77%, divide ridges, 16%, and mixed bottoms and uplands, 7%.

A 1980 reconnaissance survey of the Oliver Lock and Dam properties, the next lake south of Holt Lake, located mostly prehistoric sites (Alexander 1982). A historical overview (Knight 1982), covering the prehistoric through historic periods, concentrated on Tuscaloosa and the area immediately to the south. Several historic properties, such as the Jemison Cherokee plantation, the Alabama Insane Hospital, and the Perteet and Marlow Tanyard were discussed. After consulting the National Register of Historic Places, it was determined that there were no listed properties within the survey area (Knight 1982:27).

The more comprehensive historical studies on coal mining, the iron industry, and the development of the mineral regions have concentrated on the Walker County and Jefferson County/Birmingham areas. These areas have had the most growth and development in the coal and iron industry. A number of histories of Tuscaloosa and Tuscaloosa County have been written by professional and amateur historians (Bell 1933; Dowling 1938; Clinton 1958; Lambert 1977; McEachin 1977; Moorehead *et al.* 1978; Green 1980; Hubbs 1986). Unfortunately, most of these histories have dealt only marginally with the areas surrounding Holt Lake and information on the coal mining region above Tuscaloosa is spotty at best.

METHODS

Archival Research

The main portion of the archival research was conducted from 17 July to 11 September, 1987. A large body of disparate cartographic and documentary data was collected and then synthesized. The initial analysis necessitated additional research to fill in gaps or resolve conflicting data in the documents.

The major depositories visited and/or contacted during the archival research were:

- University of Alabama Library, Special Collections, Tuscaloosa
- Samford University Library, Special Collections, Birmingham
- Department of Archives and History, Montgomery
- Alabama State Historic Preservation Office, Montgomery
- Birmingham Public Library, Center for Southern Studies, Birmingham
- National Archives, East Point, Georgia, and Washington, D.C.
- Alabama Geological Survey Office, Tuscaloosa
- U.S. Army Corps of Engineers Library, Environmental Office and Real Estate Files, Mobile
- Alabama State Site Files, Moundville
- University of Georgia Libraries, Special Collections and Map Collection, Athens
- Georgia State University Library, Atlanta
- Emory University Library, Atlanta
- Georgia Institute of Technology Library, Atlanta

The Resource Manager's Office at Holt Lake was also contacted and visited to gather information on known historic cultural resources on the government property. The Dora Mining Museum in Dora, Alabama, was contacted concerning possible pertinent information on mining in the project area. The Alabama Department of Industrial Relations, Division of Safety and Inspection, was contacted for information on mining statistics. The three mid-nineteenth century blast furnaces located in Tannehill

State Park were visited, as well as the Iron and Steel Museum of Alabama, also located within the park boundaries.

Several primary sources, in particular, provided excellent information on the area. The *Annual Report*, which has reported on all Corps of Engineers activities and projects across the United States since the 1860s, was an invaluable source of information on the area. Maps, drawings, plans, and reports charted the development of river transportation on the Black Warrior River. An anonymous 1937 report located in the Civil Works Project Files at the East Point, Georgia, branch of the National Archives, entitled *Economic Analysis of the Black Warrior, Warrior, and Tombigbee River, Alabama, and the Intercoastal Waterway from Mobile and New Orleans (Warrior System)* (hereafter called *Economic Analysis*), contained information on economic activities on the Black Warrior River. In general, the Civil Works Project Files at the National Archives in both East Point and Washington, D.C., contained correspondences, maps, plan drawings and profiles, and reports on Corps activities on the Black Warrior River.

The Geological Survey of Alabama series of bulletins, circulars, reports, monographs, and maps were invaluable. Included in this body of information were early reports on coal and iron mining activities, mining statistics and methods, early forest and environmental reports, and geologic maps of the area. McCalley's (1886, 1898) reports on the Warrior Coal Field mention inhabitants' names, mills, and other features in describing the coal deposits along the Black Warrior River and its tributaries.

A focused attempt was made to gather early maps depicting settlement and land use in the project area. In addition to the National Archives, the Geological Survey of Alabama, and the *Annual Reports*, pertinent maps were obtained from the Agee Map Collection at the Birmingham Public Library/Lyn Henley Research Library, the John Adams Collection in the William Stanley Hoole Special Collections Library, University of Alabama, University, and the University of Georgia Science Library Map Collection, Athens. Early USGS quadrangle maps showed structures and other activities in the project area. A 1944 Tuscaloosa County map recorded occupation and economic activity in the project area during the second quarter of the twentieth century.

Although many of the maps examined encompassed the project area, very few indicated the activities there. The actual number of maps with pertinent information on the project area was quite small. Of these, many were redundant or unsuitable for reproduction. In the case of maps with redundant information (such as those in the *Annual Report*), one map was chosen for reproduction in this report. Unfortunately, copies of several maps were unavailable for reproduction or the available maps did not reproduce well. Those maps most suitable for reproduction are presented in this report.

The Roland Harper Photographic Collection, located in the William Stanley Hoole Special Collections Library of the University of Alabama, provided visual information concerning the project area during the first and second quarters of the twentieth century. Harper's meticulous notes make these photographs even more valuable.

Based on these various sources, predictive statements concerning the locations of other sites within the project area were then generated. High probability areas were delineated and then examined with field inspection in order to verify and/or refine the accuracy of the predictive statements.

Fieldwork

During the week of August 17-21, the project director and principal investigator visited the project area and conducted an archeological reconnaissance of the areas known or predicted to have once contained historic structures. The goal of the survey was to identify cultural resources evident on the surface, without subsurface testing. High probability areas determined from the predictive statements were transcribed onto the most current USGS quadrangle maps for field checking. All high probability areas determined from predictive statements were visited during fieldwork. The majority of ridge tops present in these high probability areas were also examined.

For each site identified in the field, an in-house field site number was assigned and a field site form was completed. Each site was plotted on the appropriate USGS quadrangle map. Black and white photographs and color slides were also taken for each site. Sites were identified based on the working definition that a site is any area revealing the remains of human occupation and/or activity.

Laboratory Analysis

All artifacts collected during the survey were brought to Southeastern Archeological Services' Athens laboratory and standard laboratory procedures were used in the processing and identification of the artifacts. Historic artifacts were identified using the standard classificatory types of Noel Hume (1970), South (1977), and Bartovics (1981).

Curation

All artifacts, notes, maps, etc., will be turned over to the Corps of Engineers, Mobile District. All sites recorded during the survey have been placed on clean, current USGS quadrangle sheets. Site forms have been completed on all the sites identified.

HISTORICAL OVERVIEW OF THE TUSCALOOSA AREA

The following historical overview provides a chronological description and setting for the growth of the Holt Lake area. In general, it provides a regional perspective on the area with some particular details where available or warranted. Subsequent chapters present more specific details concerning the two major themes for the area, transportation and industrial development, and how they directly relate to the history of the Holt Lake project area.

Ethnohistory of the Holt Lake Area, 1540-1816

The ethnohistorical data on the lower Black Warrior River and the Holt Lake area, in particular, are sparse. To date, Vernon J. Knight, Jr. (1982), has written the most comprehensive synthesis of the lower Black Warrior area. Knight examined historical documents looking for any information, however slight, about the lower Black Warrior River area during the colonial years. Although Knight (1982:59) admits that he could not examine every document, his synthesis covers the major colonial activities in the area.

Although other explorers had been to the Gulf coast, Hernando de Soto and his army, in the 1540s, were the first Europeans to travel through Alabama. No colonies were established, but the early explorers introduced contagious European diseases to the indigenous populations (Knight 1982:46). Lacking immunity from these diseases, the Indians were highly susceptible to contagion. It is impossible to assess the indigenous Alabama population decline resulting from the earliest Indian exposure to European diseases, except to say the diseases spread rapidly and the interior populations, even before De Soto's *entrada*, were probably also affected.

In Alabama, De Soto encountered the powerful chiefdom of Mauvila, somewhere in southwest Alabama (Swanton 1939:219). After the battle of Mauvila, in which his army was nearly defeated, De Soto traveled into north-central Mississippi to the Chicasa chiefdom. Therefore, he must have traveled northwest, through west-central Alabama, near the Black Warrior region (Knight 1982:46). En route the army traveled through the province of Pafallaya.

Recent work on the route of De Soto through the Southeast places the province of Pafallaya on the Black Warrior River between Moundville and Tuscaloosa (Lankford 1977:30-31). Not only was the Black Warrior River known as Pafallaya, which translates as "long hair," but the Choctaws were also called Pafallaya by neighboring Indian

groups. This linguistic association may indicate that the Indians of the province of Pafallaya were ancestral Choctaws (Swanton 1922:421; Knight 1982:47).

The next Europeans to come to Alabama comprised the ill-fated expedition led by Tristan de Luna (Priestly 1928). De Luna camped on the Alabama River at the Indian village of Nanipacana. After his supply ships were destroyed in a storm, De Luna sent a reconnaissance group into northwest Georgia to locate De Soto's famed Coosa chiefdom. De Luna hoped to re-locate his colony in Coosa, which he believed to be a well provisioned chiefdom. However, Coosa's prosperity had dramatically declined after the ravages of De Soto's army and the direct exposure to European diseases. This was the ultimate disappointment to De Luna and he subsequently abandoned the expedition.

After De Luna's departure, the next 139 years, dubbed the "Century of Obscurity," are unknown for the Black Warrior area (Hamilton 1976). It seems that the aboriginal populations withdrew from the Black Warrior area. The archeological evidence corroborates this assumption (Knight 1982:48); major historic Indian sites are unknown for this area in this time period. Knight's (1982:48-49) review of cartographic sources show the area devoid of Indian towns. The lower Black Warrior River area was apparently a borderland between the Creek tribes to the east, the Choctaw to the southwest, and the Chickasaw to the northwest (Figure 6; Knight 1982:49). As such, the area was in dispute and each group considered permanent settlements as encroachments. It served as common hunting ground between the three groups. In the early colonial period the Creek groups pitched against the Chickasaw and Choctaw were the Alabama, Abihika, and the Tallapoosa. The Chickasaw and the Choctaw were traditional enemies (Williams 1930). The lower Black Warrior served as a buffer zone between these factions and endured as such throughout the colonial period (Knight 1982:49).

When the English settled Charles Town, South Carolina, in 1670, English traders, encouraged by Charles Town authorities, played on these intertribal antagonisms. A few traders ventured into interior Alabama and established trade relations with the Chickasaw and Creek. They supplied these tribes with guns and ammunition and set them to raiding the Choctaws and other Gulf tribes for slaves (Crane 1929:45). The consequences of the English slave trade and the resultant intertribal warfare on the Indians of Alabama is difficult to assess. The degree of disruption was probably much less than that which occurred along the south Atlantic coast. The journey to the Choctaws and Chickasaws from the Atlantic Coast was difficult and long. Therefore, during the early colonial period only a few intrepid Englishmen ventured to these tribes, and the Choctaws and Chickasaws, unlike the Creek tribes and the Cherokee, did not become vitally integrated into the European slave trade. In fact, when the French established French Louisiana, the Indian slave trade was outlawed (Woods 1980:46).

When the French settled along the Gulf Coast in 1699 the nascent colony was faced with intertribal strife, exacerbated by the machinations of the English. The French colony, under Sieur de Bienville, took immediate steps to secure trade alliances with the Chickasaw, Choctaw, and Creek (Woods 1980:1-12). The Chickasaw and Creek

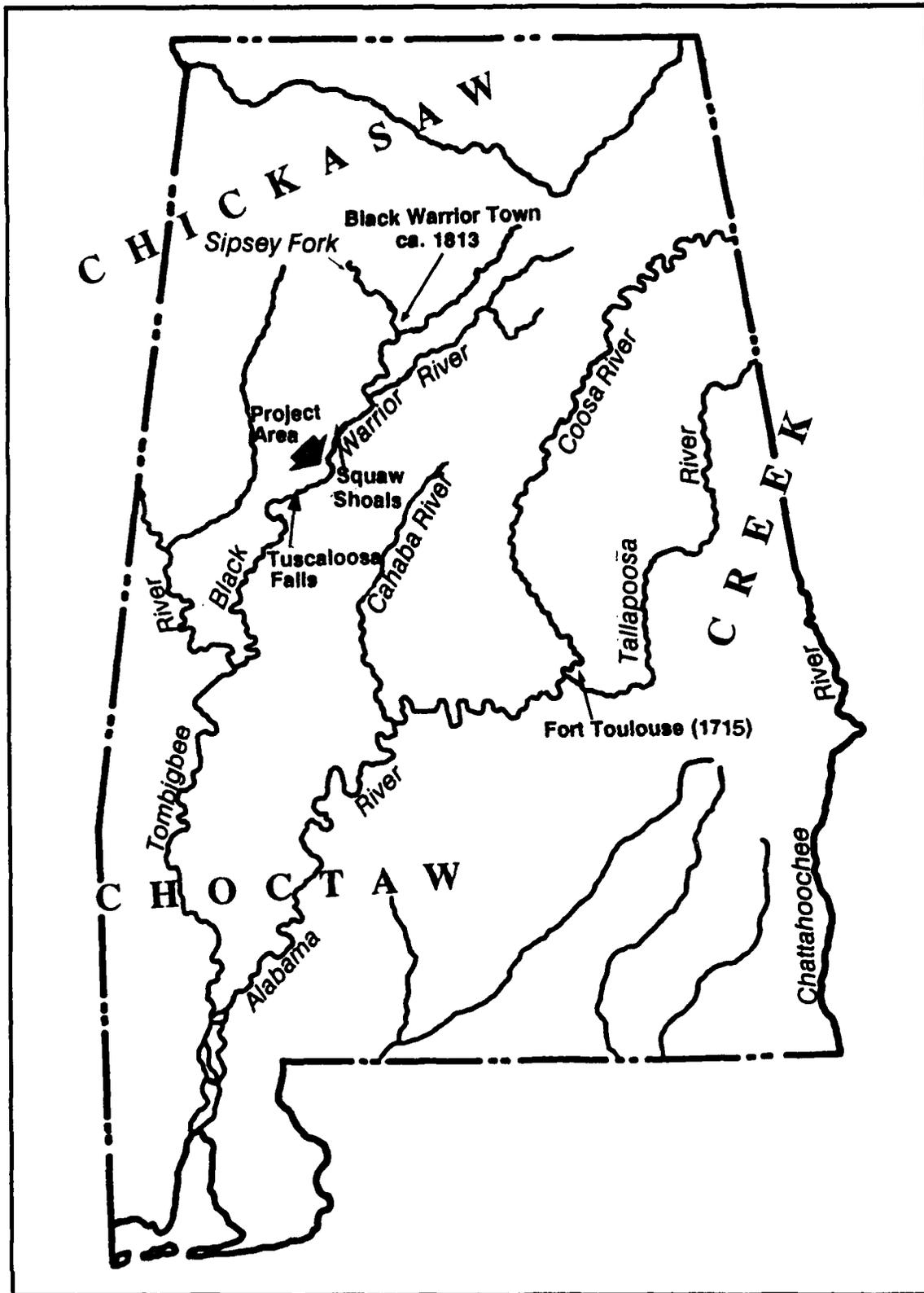


Figure 6. Places of Ethnohistorical Significance Mentioned in the Text.

vacillated between the French and English, playing one off the other in order to secure the most favorable trade agreements. In tense times both tribes invariably sided with the British. The Choctaw, on the other hand, remained a staunch French ally throughout the colonial period.

From 1700 until after the Revolutionary War the Southeastern Indian tribes played an important role in frontier politics and economics. France, England, and Spain vied for Indian allies with which to secure their colonial frontiers. Indian allies were courted with trade agreements and, in Alabama, the contest was between the French and the English. After the Yamasee War of 1715, the eastern Muskogean tribes, now amalgamated into the Creek Confederacy, had moved west to the lower Chattahoochee River and to the Coosa and Tallapoosa Rivers in Alabama. The Creeks were now also a major factor in the French and English rivalry.

Fort Louis de la Mobile was established in 1702, giving the French a permanent base of operations in Alabama. Then, eager to thwart an English trading hegemony in French Louisiana, the French built Fort Toulouse on the Alabama River in 1717 as a distribution point and, in a small measure, to oversee the traders (see Figure 6). The British, of course, understood the significance of Fort Toulouse and took steps to widen and strengthen their influence in Alabama.

The English persuaded a group of Creeks from the Tallapoosa region to settle on the Black Warrior. They were to protect English traders en route to the Chickasaw country. The location of this settlement is unknown, but it was likely where one of the major Indian trading paths crossed the Black Warrior River (Knight 1982:51). These Creeks were quickly expelled by the French.

The English also built a storehouse on the Black Warrior River in an effort to strengthen ties with the Choctaw. The location of this storehouse is uncertain, but it was probably located on the bluff at Demopolis, Alabama, at the mouth of the Black Warrior on the Tombigbee River (Knight 1982:51). The storehouse, remote and expensive to maintain, was abandoned in 1731 with the outbreak of the Chickasaw War (Knight 1982:58).

The Chickasaw War began, ostensibly, as a reprimand by the French for the Chickasaw harboring Natchez refugees who had been defeated at the hands of the French (Woods 1980:119). However, the Chickasaw War can also be seen as a precursor to the French and Indian War. De Bienville, fully aware of the Chickasaw's alliance with the British, wanted to annihilate the Chickasaw, thus removing a particularly belligerent English ally and securing the frontier for France (Woods 1980:120). He intended to exploit the protracted conflict between the Choctaw and Chickasaw by prompting the Choctaw, with French material and troop support, to war against the Chickasaw. Fort Tombeche, on the Tombigbee River at present-day Epes, Alabama, in Choctaw country, was built to solicit Choctaw support for the campaign. This conflict continued for many years, but the Chickasaw, equipped with English guns, were never defeated. The French and English conflict, repeated in many parts of the New

World, escalated into the French and Indian War. Afterwards, the French ceded the Louisiana Territory to the British in the Treaty of Paris in 1763.

After the American Revolution the Americans granted Spain portions of the Louisiana Territory. Over the next ten years, the American government launched a development program among the Southeastern tribes. Indian agents, sent to various tribes, intended to regulate trade and transform the Indians into yeoman farmers. During this time, intertribal conflict seems to have subsided. The tribes, no doubt, had more to worry about from the encroaching white settlers.

In the late eighteenth century, Indian and mixed-blood settlements were established along the lower Tombigbee and the lower Alabama areas, previously uninhabited territory. The Creek-Choctaw boundary was now in open dispute and the U.S. government stepped in to establish the boundary line. The Treaty of Hopewell, in 1786, set the boundary at the watershed line between the Tombigbee and the Alabama Rivers and at the watershed line between the Black Warrior and the Cahaba Rivers (Royce 1899:1-2). These official boundaries were probably more useful to the U.S. government than to the Indians.

Tensions flared in the late 1780s. The Creeks, pushed farther and farther west by the Georgians, apparently began establishing settlements along the Black Warrior River, outside of the official Creek boundary. The Choctaws saw this as an intrusion. According to one reliable, but unsubstantiated document, the Choctaws, under Pushmata, invaded a Creek town at the falls of the Black Warrior River (Lincecum 1906). The ensuing fight, known as the Battle of Tuscaloosa, resulted in a Choctaw victory and the expulsion of the Creeks. This battle probably took place at Mill Creek, west of present-day Northport in Tuscaloosa County (Knight 1982:52).

Around the beginning of the nineteenth century the lower Black Warrior area was still relatively uninhabited. At the outbreak of the Red Stick War in 1813, there were at least four Creek settlements on the Black Warrior (Knight 1982:54). However, the precise location of these towns is uncertain.

Around 1805 the Creek chief Ocochemothla established a small settlement near present Tuscaloosa (Gaines 1964:151-154). This group of Creeks, responding to the Shawnee prophet Tecumseh's entreaties for an Indian uprising against the Americans, raided a Tennessee farmstead, killing two children and kidnaping their mother, Mrs. Crawley. Mrs. Crawley was taken to Ocochemothla's village and was later rescued. This and other, similar incidents heralded the beginning of the Red Stick War. When a group of Creeks attacked Fort Mims in Alabama, the U.S. government appointed General Andrew Jackson to quell the uprising.

Briefly, Tecumseh traveled throughout the East soliciting support for a British-supported, pan-Indian uprising. The Chickasaw and Choctaw wavered and finally opposed Tecumseh. The Creeks were divided. Loyal Creeks and the Choctaws joined the American forces to defeat the Red Sticks, as the rebel Creeks were called.

The correspondence and official records of the Red Stick War mention the Black Warrior settlements. Knight (1982:60-72) closely examined these records in an effort to locate the Black Warrior settlements and to reconstruct the activities in the area during the war. At the time, the U.S. government believed that the Red Sticks were planning to migrate to the Spanish Territory west of the Mississippi. Two settlements, Holy Ground on the Alabama River and Black Warrior Town on the Black Warrior River, were thought to be staging areas for this migration (Knight 1982:61; Halbert and Ball 1969:92). Jackson intended to destroy both towns.

Jackson sent General Coffee from Tennessee to find and destroy the Black Warrior settlements (Bassett 1926:334-335). Coffee found three Creek settlements near the convergence of Blount, Cullman, and Walker Counties (Knight 1982:72). Retracing Coffee's campaign, Knight (1982:61) concludes that Black Warrior Town was at the mouth of Sipsey Fork in Walker County, well outside of the Holt Lake area (see Figure 6). Black Warrior Town was previously thought to have been near present-day Tuscaloosa. Knight (1982:65) attributes this to an error by David Crockett in his autobiography subsequently perpetuated by historians (Knight 1982:65; Garland 1923:58). Coffee burned two of the towns and rejoined Jackson.

A month later, Colonel John McKee and Captain George Smith, with 25 mounted American troops and Choctaw troops under Pushmata, moved from present Meridian, Mississippi, to the falls of the Black Warrior and destroyed the Creek town located there, presumably the town established by Ocochemothla (Knight 1982:72).

From these accounts it is clear that the Creeks had at least four settlements on the Black Warrior, with the southernmost located near Tuscaloosa. However, other Creek towns may have existed. The Choctaw raided Creek towns after the McKee and Smith march. In February of 1814, Jackson instructed McKee to lead a combined Choctaw-Chickasaw force against the Black Warrior settlements (there is no evidence that this actually took place). The object of these two latter activities is obscure. It could indicate that other Creek towns existed along the Black Warrior or that Coffee and McKee, although destroying the towns they encountered, did not succeed in driving the Creeks from the area. Both would have prompted Jackson to continue giving some attention to the area.

Turning to the Holt Lake area in particular, it is unlikely that the Creeks established a settlement there. However, a major trading path, known as the "English Trading Trail," may have crossed the Black Warrior at Squaw Shoals, at the northernmost section of the project area (see Figure 6; Clinton 1958:2). The English Trading Trail was a principal east-west route from Charleston, South Carolina, to the Chickasaw country. Squaw Shoals would have been a favorable crossing-point. But, at this time, it cannot be asserted without doubt that the trail did, in fact, cross the Black Warrior River at Squaw Shoals.

The crossing-points for Indian trails were optimal locations for settlements. At least three other trails crossed the Black Warrior. The southerly Alabama-Chickasaw Trail crossed the river in Tuscaloosa County, but the precise location is unknown (Meyer

1928:Plate 15; Knight 1982:83). A possible portion of the Coosa-Tombigbee Trail, which ran east-west, crossed the Black Warrior a few miles below present-day Tuscaloosa. And, finally, the Black Warrior Road, running from the northeast, crossed the river near Sipsey Fork in Walker County (Knight 1982:83). Coffee had followed the Black Warrior Road and, as will be recalled, encountered Black Warrior Town and two other Creek towns near Sipsey Fork (Bassett 1926:334-335). And Ocochemothla's village was located near Tuscaloosa, near the crossing of the Coosa-Tombigbee Trail.

If the English Trading Trail did cross at Squaw Shoals, this would be a likely place to find an Indian settlement. However, because the Black Warrior area constituted a buffer zone, transgressed only in later years by a handful of Creeks, the settlements established would have been in more favorable locations along the river, as described above.

The Red Stick War ended with Jackson's victory at Horseshoe Bend in 1814. Afterwards, in the Treaty of Fort Jackson, the Creeks were forced to cede 25 million acres of land in Alabama and Georgia as punishment and to recover the expenses incurred by the U.S. government. This cession included the upper reaches of the Black Warrior River, north of the Choctaw claims (Knight 1982:54). In 1816 the Choctaw ceded the lower Black Warrior area (Knight 1982:54). White settlers immediately began moving into the newly acquired areas. Twenty years later all the Southern tribes were forcibly removed to west of the Mississippi River.

Early European Settlement to the Civil War, 1816-1865

Tuscaloosa County was originally settled in 1816 when a few people settled themselves on a high bluff overlooking the Black Warrior River at Tuscaloosa Falls (Clinton 1958:12). The next year, Congress divided the Mississippi Territory, establishing the eastern section as the Alabama Territory. A year later, in 1818, the county of Tuscaloosa was created by the territorial legislature, and in 1819 Alabama became a state (Lambert 1977:1).

The falls settlement became the town of Tuscaloosa, which was incorporated in 1820. As any frontier town of that period located in a newly opened territory, the early settlement was sparse and backward. A classic, early description of the town is presented by William H. Ely, an agent/land speculator for the Connecticut Asylum for the Deaf and Dumb, which had been granted a township (36 square miles) by the U.S. government (Clinton 1958:30). Ely visited Tuscaloosa in 1820 and, in letters to his family, described the conditions he found there:

...The buildings throughout this Country are, almost wholly miserable Log Cabins or Pens so open as not to require Windows either for the purpose of lighting or ventilating them. Even in this Town [Tuscaloosa], which is said to contain 800 Inhabitants, all squatters, & 20 Stores of one kind or other, there is not one building which in Hartford would be worth \$50, many of them are made by driving Poles or Stakes in the ground and nailing Staves on the outside covering them over head with the same kind of Stuff for shingles the rest of rough or hewed Logs.... [Hoole 1950:46]

Ely did observe some beauty in the lands of Alabama and apparently was successful in his real estate enterprises. Overall his stay was rather unpleasant, although he did have a town named after him, Elyton, the county seat of Jefferson County.

Most of the early settlers in Tuscaloosa County were farmers and settled in the rich bottom lands along the Black Warrior River below Tuscaloosa. Many of these were planters seeking good cotton growing lands. The early settlers followed a distinct settlement pattern that characterized the expansion movements into the Southeast and the Southwest. The first inhabitants settled along the river floodplains and terraces, where the best soils were found. The rivers also offered transportation during a period when there were few roads. In fact, as one early Alabama traveler noted, the best soils were in the cane bottoms and the worst soils were in the pine uplands (Tower 1959:134). Subsequent settlers unable to afford the richer bottomlands lived on the smaller tributaries and finally on the higher grounds away from the streams (Allman 1979:10). This pattern continued throughout the antebellum period, with the larger plantation holdings on the large, fertile bottomlands. The smaller farmers with a subsistence level economy lived farther away from the streams (Tower 1959:134-135).

Alabama's early settlers came from Tennessee, Georgia, Virginia, South Carolina, and North Carolina. In the Tuscaloosa area settlers from Kentucky, Tennessee, and the Carolinas were the first to settle along the Black Warrior River. Most of these people were of Scottish, Irish, and English descent (Winston 1912:6; Lambert 1977:79). Very few immigrants came from outside of the United States during the early to mid-nineteenth century.

Most of the earliest settlers in Tuscaloosa County probably arrived via Indian trails through the area since there were few roads. Those roads that did exist were usually treacherous and often impassable. At least three are reputed to have crossed the Black Warrior River near the project area: one at Squaw Shoals and two at Tuscaloosa Falls. The major route in the early nineteenth century was the Huntsville Road which, like many roads through the South, followed an earlier Indian trail (Knight 1982:84). According to Halbert (1899:152), James Crump made improvements on the Huntsville Road in 1816.

Only a few people chose to live in the rugged and hilly lands north of Tuscaloosa, resulting in widely scattered settlements (Winston 1912:6). Hamilton (1977:11-12) notes that most early farmers avoided the mineral lands of the lower Appalachian Mountain Chain, acknowledging the general infertility of the soils. Those that did obtain these hilly lands usually sold them as soon as possible. However, some people inhabited these hills because they were too poor to afford any other land; or they preferred the area because it seemed healthier and more similar to areas from which they had migrated. Corn rather than cotton was the preferred crop on these hills. Other crops such as potatoes, peas, sorghum, tobacco, barley, and rye were also raised in the subsistence-based economy.

A few pioneers recognized the future potential of the valuable minerals that lay under their feet. As early as 1834 there was a report of a Dr. Jones (Jones 1935) in

Mobile using coal brought to Mobile from Tuscaloosa by flatboat. However, Michael Toumey, Alabama's first State Geologist, reported that the first recorded coal mining endeavor occurred near the State University at Tuscaloosa in the 1840s (Berney 1878:256-257). Jones (1935:180) reports that Tuscaloosa County, in 1850, produced 23,650 bushels of coal. Mostly, however, various individuals mined coal in a very informal manner. Many of the settlers who lived in the coal hills regularly brought wagon loads of coal into Tuscaloosa for cash or trade to obtain those items (coffee, tea, sugar, etc.) which they could not raise themselves (Hodgson 1875:33; McCalley 1886:415).

In a key location on the Black Warrior at the Fall Line, Tuscaloosa grew steadily. In fact, as early as 1816 James Crump, a Huntsville merchant, transported goods on the Black Warrior River between Mobile and Tuscaloosa and from there on to Huntsville (Halbert 1899:152). Endeavors such as this no doubt encouraged settlers to Tuscaloosa. Tuscaloosa was considered to be at the "headwaters" of the Black Warrior River, with navigation possible from Mobile to Tuscaloosa during part of the year (Riley 1893:123; Richardson 1965:717). Prior to the Civil War the majority of interstate commerce was via rivers. In fact, prior to 1860 all of Alabama's major cities were located on rivers (Moore 1951:306).

Tuscaloosa quickly became the major market center for the surrounding area. Cotton was taken to Tuscaloosa and shipped down the Black Warrior River to Mobile. Hogs and mules were driven to Tuscaloosa in the fall by drovers, some of whom came from as far away as Tennessee (Hamilton 1977:43), for shipment to Mobile (Walker 1971:27-28). Corn, coal, and timber products were also brought to the town for river transport. As Mobile grew into a major port, so did many of the interior river towns, such as Tuscaloosa, that supplied raw products to the port city. Mobile was already becoming an important coastal export center by the time Tuscaloosa was incorporated. The demand for cotton, timber products, and coal for export from Mobile rose steadily throughout the antebellum years (Weaver 1981:83). By the late 1840s Mobile was considered more favorable than New Orleans as a coaling port. Tuscaloosa coal shipments were received in Mobile and lauded by some as a steaming coke superior to that of Welsh coal (DeBow 1850:478).

As a market center, a number of industries developed in Tuscaloosa, including a thriving tannery and shoe factory established in the 1820s (Clinton 1958:89). Cotton quickly became the major commercial enterprise during the earliest years of development. By 1832 at least two warehouses were built for storing cotton until shipped downriver on steamboats (Boucher 1947:9; Knight 1982:85). A number of retail stores developed to supply the planters and surrounding areas. Land speculation occurred regularly during the earliest years of settlement, as indicated by the presence of the unhappy Mr. Ely from Connecticut. Many of the town's merchants became involved in buying and selling land, as well as financing various other economic enterprises in and around Tuscaloosa (Knight 1982:80). Tuscaloosa's importance increased appreciably when it became the state capitol in 1826 and a few years later in 1831 when the state university was established there (Richardson 1965:718). However, in 1847 the capitol was moved from Tuscaloosa to Montgomery as a result of the increased development of the central and eastern portions of the state (Moore 1951:186-187). Tuscaloosa's

population fell by half, to about 1,750 individuals (Richardson 1965:718). But the county population grew steadily, although between 1840 and 1860 the population had its smallest increases (Lambert 1977:19).

Most of the population in Tuscaloosa County was concentrated in Tuscaloosa and to the south in the Coastal Plain. But another early pocket of development occurred along the eastern edge of Tuscaloosa County near the Jefferson County line in Roupes Valley, which stretched from Tuscaloosa County into Jefferson County. The first pioneers in Roupes Valley were farmers (Walker 1971:2). But a farmer, Daniel Hillman, impressed by the rich iron ores available in the valley in 1830, established a forge there. He also found good water power potential, vast forests for fueling the forge, fertile soils for growing food to support his laborers, and a good market in the valley and in nearby Tuscaloosa. Hillman named his forge the Roupes Valley Iron Works and operated it until his death in 1832.

In 1836 Ninion Tannehill purchased Hillman's forge site. Tannehill had also begun as a farmer the area, but in the 1840s he began forging iron and making cooking vessels (kettles, skillets, etc.) which were taken in wagons to sell in Tuscaloosa. In 1857 the ironworks were purchased by John Alexander, the son-in-law of veteran ironmaster Moses Stroup who, along with his father, Jacob, had established furnaces in South Carolina, North Carolina, and Georgia (Wood 1987). Jacob Stroup established the Stamp Creek Iron Furnace in the Etowah Valley of Georgia in the late 1830s (Ledbetter *et al.* 1987). Moses Stroup sold his interest in the Etowah furnace complex in 1852. He then moved to Alabama where he built a furnace in Cherokee County, later known as the Round Mountain Furnace (Duffee 1937). After the purchase of Tannehill by Alexander, Moses Stroup built the first blast furnace next to the old forge originally built by Daniel Hillman. Nearby a nail factory and smaller forges were constructed to manufacture some of the pig iron into marketable products and raw pig iron was shipped to other locations for finishing. A store and commissary were built to supply the labor forces that operated the iron community. Operating a southern iron industry during the mid-nineteenth century was labor intensive and it is reported that as many as 600 slaves were housed and worked at Tannehill. They were involved in all phases of the iron operation including iron mining, timber cutting, charcoal production, iron production, and transportation (Bennett 1986:42). No doubt many were also involved in the agricultural labor necessary to feed a large number of laborers. Tannehill Iron Works in many respects developed into an iron plantation very similar to those iron mill communities recorded in Pennsylvania and other iron mining regions of the United States--a self-contained support system centered on sustaining the many operations required to produce the final product of iron (Binning 1938:30).

Development of the ironworks and iron production reached its peak during the Civil War years. John Alexander sold the Tannehill Iron Works in 1862 to William L. Sanders who, with the aid of Confederate bonds, expanded the ironworks by adding a double blast furnace next to Stroup's first furnace. Tannehill became a major supplier to the Confederate Arsenal and Naval Foundry at Selma. When Union troops arrived in Roupes Valley on March 31, 1865, they found the double furnaces filled with molten iron. By the end of the day the Tannehill iron complex had been completely

destroyed and was never revived after the war (Armes 1910; Bennett 1986). Tannehill Iron Works was the only iron industry community in Tuscaloosa County during the antebellum period, and along with the Leach and Avery foundry in Tuscaloosa the only iron manufacturers in the county.

The Black Warrior River remained the major route for transportation and communication throughout the first half of the nineteenth century. The Black Warrior River connected Tuscaloosa with all of the early commercial centers in the southern portion of Alabama: Cahaba, Jackson, St. Stephens, and Mobile (Knight 1982:84). After 1821 the steamboat became the primary mode of boat travel on the Black Warrior (Clinton 1958:36) and cotton was the primary commodity transferred downriver to the Mobile port. Two wharves were built in Tuscaloosa, one on the south side at Newtown, an early community on the southern edge of Tuscaloosa, and one on the north side of Tuscaloosa at the foot of the falls (Knight 1982:84). Eventually, the wharf at Newtown failed because pilots preferred to travel the extra mile upriver to the head of navigation of the Black Warrior.

During the rainy season, when the river was high, steamboats laden with goods from Mobile plied the Black Warrior River to Tuscaloosa and returned to Mobile with bales of cotton. Many of these steamboats also carried cotton and passengers, who found the river trip, although perilous at times, still better than the long, arduous trip by stagecoach (Clinton 1958). By 1826 there were four steamboat lines traveling regularly between Tuscaloosa and Mobile (Boucher 1947:79).

Although the river remained a major transportation route through the Civil War period, attempts were made to improve overland routes by constructing turnpikes or plank roads. During the 1850s the Alabama state legislature chartered 24 plank roads in Alabama. These roads were constructed by connecting planks to parallel stringers (Griffith 1968:212). However, their maintenance proved too expensive (Clark 1893:322). As early as 1819 a mail route was established in Tuscaloosa and by 1830 stage lines were in service to most towns in Alabama and many outside the state. Coach houses were regularly placed every 10 to 16 miles along the routes (Clinton 1958:102-103).

Railroad fever ran high in Alabama during the antebellum years. Between 1830 and 1837 approximately 25 railroad companies were chartered by the state legislature; however, most of them failed and there was little actual construction. In 1852 only 165 miles of rail line ran through Alabama (Armes 1910:105). Various prominent men promoted the many benefits of the construction of the railroads. In 1850 a writer in *DeBow's Review* stressed that a railroad to the mineral region would open up the area to investors (DeBow 1850:478-479). Again, in 1851, a railroad or plank road around the "Warrior Rapids" was called for to develop the full commercial potential of Tuscaloosa and surrounding areas (DeBow 1855:82). In 1855 a rather heated article called for a rail line to connect the "mineral region with the rest of Alabama" (Clark 1893:323). That same year the state legislative session chartered 14 new railroad corporations. Despite all the talk and legislative action, no railroads were constructed to Tuscaloosa

prior to the Civil War (Moore 1951:315). The Alabama and Tennessee Railroad, which ran approximately 35 miles east of Tuscaloosa (Figure 7), was the closest railroad.

Despite the lack of good roads or a railroad, Tuscaloosa continually grew in importance as a regional market center in west-central Alabama because of its location at the "headwaters" of the Black Warrior River. From the surrounding counties of Pickens, Lamar, Fayette, Marion, and Walker, farmers came to Tuscaloosa to trade (Clinton 1958:97-98). As Tuscaloosa's importance as a market center grew, so did its role in industry. The same year that the capital was moved from Tuscaloosa, the Black Warrior Cotton Factory was established on the Black Warrior River. In 1852 the Leach and Avery Foundry was established, manufacturing iron plows, farm tools, and industrial machines. The Leach and Avery Foundry in 1854 produced the first coke in Alabama from coal mined 10 miles from Tuscaloosa (Clinton 1958:89). A few years later, Daniel Cribb's jug factory was established at Tuscaloosa.

The 1860 U.S. Census Industrial Schedules for Tuscaloosa County listed the following industries with a total annual production of at least \$500: 23 sawmills, 1 planing mill, 3 furniture factories, 1 sash and door manufacturer, 22 flour/corn mills, 3 commercial potters, 4 tanneries, 3 boot/shoe factories, 1 wool carding company, 2 hat factories, 1 cart and wagon maker, 3 saddle/harness makers, and 1 lime manufacturer. Having burned in 1859, the Leach and Avery Foundry was not listed. It was not rebuilt until some time shortly after the 1860 census. Almost all of these industries were located in or immediately around Tuscaloosa.

The Holt Lake Project Area

Very little is known about the Holt Lake project area during the antebellum period. There are no informative early maps of the area other than the 1838 LaTourette map which shows very little settlement north of Tuscaloosa on either side of the Black Warrior River. The LaTourette map depicts Brown's Mill on a small stream entering the south side of the Black Warrior River just north of Tuscaloosa. Brown's Mill shows up on later maps, in 1879 (Smith 1879) and in 1903 (Civil Works Project 1903), on a small stream south of Hurricane Creek in the vicinity of the early twentieth century community of Holt. Brown's Mill probably developed near Brown's Ferry. Rev. Daniel P. Brown, a Baptist minister and blacksmith, supposedly operated both in 1816. References to Brown's Mill Branch or Creek near the Old Tuscaloosa Plank Road most likely indicate the name of the small stream upon which Brown's Mill was located (Rich 1979:128). The LaTourette map also indicates Edward Davis living on Davis Creek, some 10 miles east of the Black Warrior River. The Smith map indicates Ed Davis living near Davis Creek on the Oak Hollow Road in 1879 (Figure 8). On the west side of the Black Warrior River, the only place shown near the project area is Langston's Saw Mill on the North River (LaTourette 1838).

Only a few people inhabited the area north of Tuscaloosa along the Black Warrior River during the antebellum period. Because there was so little floodplain on this portion of the Black Warrior River, most people lived farther back on the hills away from

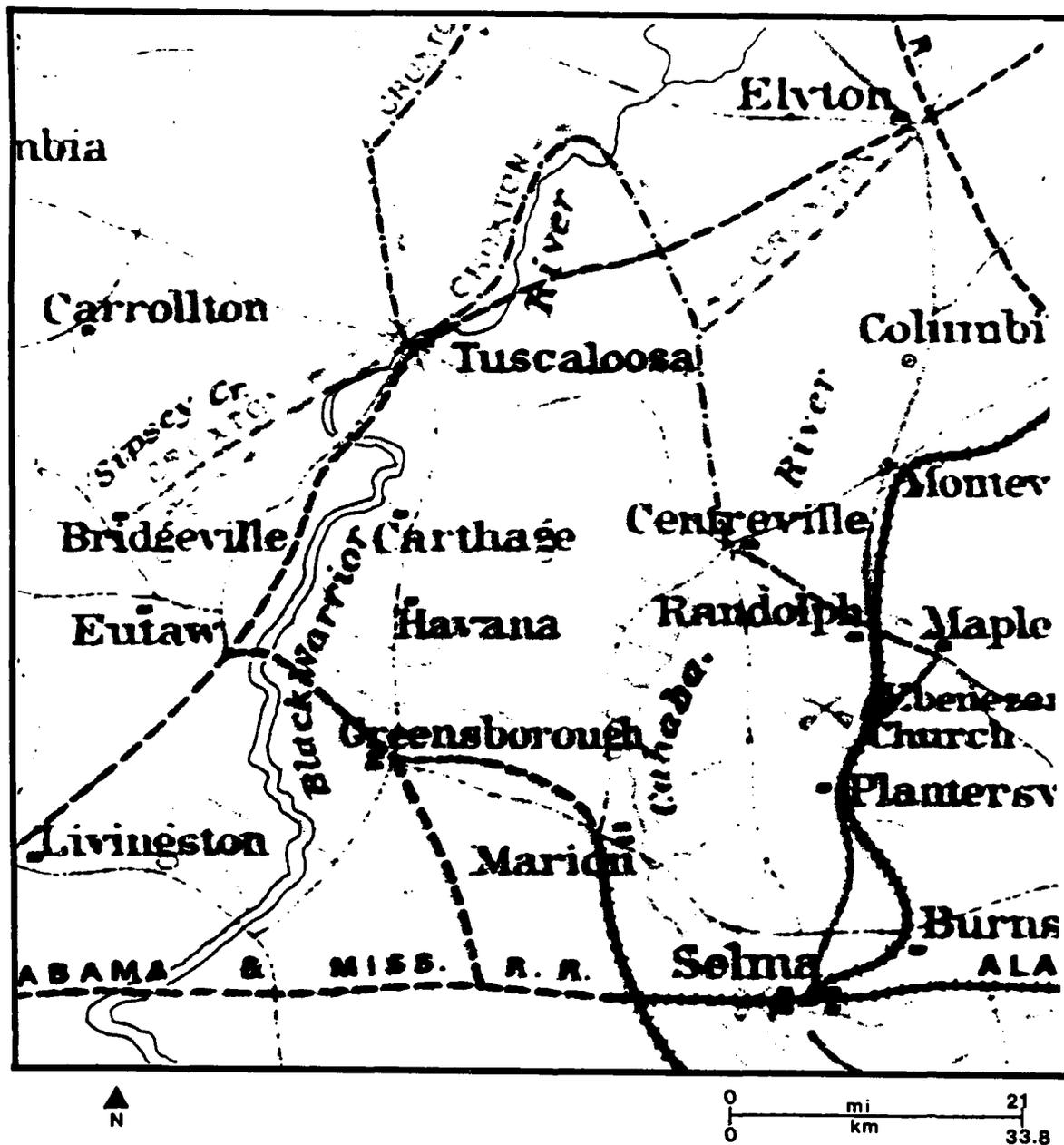


Figure 7. Detail from map portion of Mississippi, Alabama, and Georgia Showing March of Calvary Corps, Military Division of the Mississippi (Davis *et al.* 1864).

the river and nearer the few roads that existed in the area during that time. Smith's 1879 map (see Figure 8) seems to verify this. All of the shoals in the river were named, usually incorporating the names of early settlers on or near the river. Smith's map lists the names of all of the shoals and indicates individuals living in the project area and the nearby environs.

The Civil War

The Tuscaloosa area experienced little action during the Civil War until the final days. Of course, the devastating economic effects and the loss of loved ones were felt long before the late arrival of the Union forces in 1865. Some 3,500 men from Tuscaloosa County joined the Confederate Army. The University of Alabama at Tuscaloosa became a cadet training school. Many small industries, as well as larger industries in the county like the Leach and Avery Foundry and the Black Warrior Cotton Factory, geared up production for the Confederate government (Clinton 1958:159).

Most of Alabama was left untouched by Sherman's famous 1864 campaign through the South. In 1865, as the war was drawing to an end, the federal forces planned numerous operations in the South to completely destroy the Confederate economy and spirit.

One such campaign was the Union cavalry raid led by Brevet Major General James Harrison Wilson. Wilson's raid through Alabama destroyed most of Alabama's industry and the few rail lines. Figure 9 is a portion of an 1865 map included in Wilson's report on the campaign. Upon reaching Elyton in Jefferson County, Wilson detached a small brigade under Brigadier General John T. Croxton on March 30th, 1865. Croxton's forces left Elyton traveling south toward Tuscaloosa on a road paralleling the Old Huntsville Road. Croxton destroyed the Tannehill furnaces and a number of other businesses before turning west to avoid Confederate forces. Croxton then crossed the Black Warrior River 30 miles north of Tuscaloosa at Black Rock Shoals, above Squaw Shoals and north of the project area (Longacre 1982:109; Clinton 1958:161). The brigade had only one small ferry boat and the men and horses swam across the Black Warrior River, swollen from spring rains. Croxton's forces then traveled south down Water Melon Road, which parallels the river on the west, running along ridge tops to Tuscaloosa (Clinton 1958:161).

Croxton reached Northport on the west side of the Black Warrior River near Tuscaloosa before the alarm was sounded that Union forces were in the town. According to Clinton (1958:161-162), the town guardsmen began ripping up the planks from the bridge that spanned the Black Warrior River. However, Union forces overcame them and, after replacing the planks, marched into Tuscaloosa. A recently published letter (Longacre 1982:115), written by one of General Croxton's brigade raiders, Charles Wooster of Company G, 2nd Michigan Volunteer Cavalry, describes Croxton's entire raid through Tuscaloosa but does not mention the bridge's planks being removed by the guardsmen. Wooster states that the Union forces quickly crossed the bridge once they had wounded the guardsman standing sentry at the bridge and partially occupied

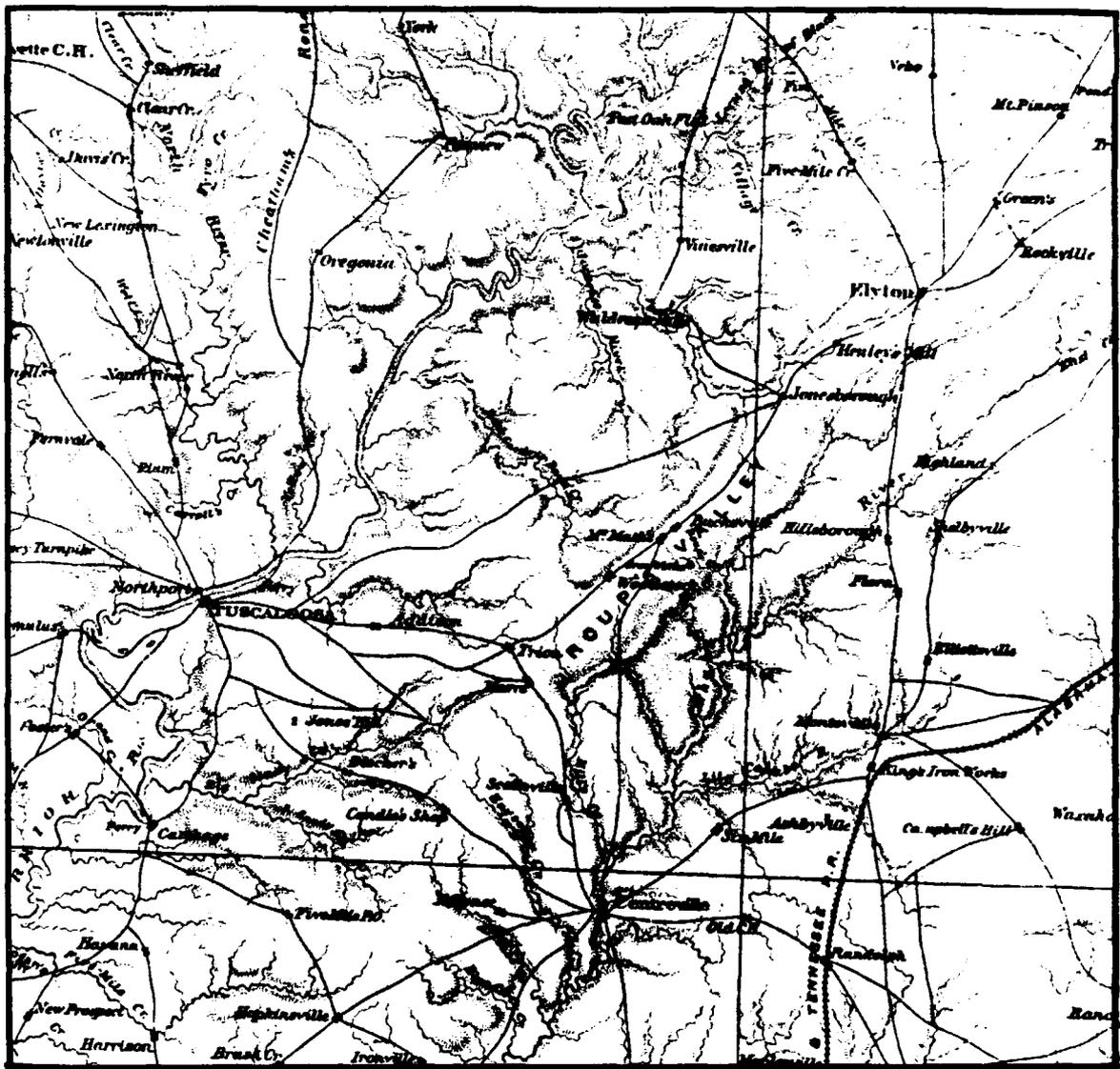


Figure 9. 1865 General Topographic Map (Davis *et al.* 1864: Sheet XIII).

the town during the night. The following morning the entire company crossed into Tuscaloosa. Wooster relates the following concerning the destruction of Tuscaloosa:

...In the interval all stores, government houses &c, were given up to indiscriminate plunder; but I heard of no private dwelling houses being disturbed....Early on the morning of Apr. 5th the command was in motion, recrossed the river and burned the bridge, having previously burned the Military Institute [the University], a large cotton factory, a foundry, two large tanneries, a hat factory &c. After seeing all these things were done, we marched fifteen miles to the [south] westward and camped for the night. [Longacre 1982:116]

Croxtan's march down Water Melon Road and into Tuscaloosa was the closest Civil War action to the Holt Lake project area. Since Wooster makes no actual mention of this trip down Water Melon Road, it must have been uneventful, not meriting description. Wooster does provide some description of the area before crossing the Black Warrior River. He is vague as to exactly where he is; it is probably the general region to the north of the project area. Wooster describes the area as follows:

With one or two unworthy exceptions the soil is very poor and much broken. A great deal of the land is untillable, and almost invariably covered with a light growth of oak and pine....The people wear homespun and are gennerally [sic] quite ignorant; so much so that they often took our men for rebels, not acting as though they had ever heard of such a thing as a U.S. uniform....[Longacre 1982:112]

After leaving Tuscaloosa, Croxtan marched to the southwest and then turned north toward Jasper, Alabama, crossing the Sipsey and Black Warrior River forks, the Mulberry, and the Little Black Warrior (Locust Fork). Wooster again noted the similarity between this coal region and that north of the project area, including the generally poor condition of the inhabitants (Longacre 1982:119).

Reconstruction Through the Twentieth Century, 1865-present

Railroad Development. Following the Civil War, the Tuscaloosa area gradually began to recover, with cotton as the major cash crop well into the twentieth century. With the freeing of the slaves, a new labor system developed based on sharecropping, a system that some have identified as little more than slavery (Orser and Holland 1984:113). For the inhabitants who lived above Tuscaloosa in the coal hills, the subsistence farming economy changed very little following the war. The area continued to be sparsely occupied, as a number of maps indicate. Settlement patterns did not change until the coming of the railroads which had a profound effect upon population demographics throughout the state (Tower 1959:135) and, particularly, in the coal regions.

Although the first railroad construction in Alabama began in 1831 (the Tuscumbia and Decatur Railroad in northern Alabama), the development of Alabama's railroad system was slow and laborious (Clark 1893:321). Many articles were written and speeches made prior to the Civil War on the desperate need for railroad service to all of Alabama. Orators and politicians pointed out the dependence of the South upon the North because of the lack of southern industry and adequate rail lines. Clark

(1893:323) describes an article written in *DeBow's Review* which reiterated a speech by Judge Phelan, given at a railroad convention in Elyton in 1855. The judge pointed out the need for a railroad "to connect the mineral region with other sections." Clark (1893:323), continuing to paraphrase the judge, noted "this isolation to be a continually prolific source of great political evils, and that a railroad connecting the two sections was needed to overcome the geographical barriers that make us two people."

Klein (1972), also observing a divided development in the economy of Alabama, stated that:

During the ante-bellum period the central and southern counties emerged as an important sector of the cotton belt. Most of the region's commercial activity centered around agriculture, and Montgomery soon became a leading cotton market. By virtue of their wealth, influence, and initiative, the cotton planters thoroughly dominated the state government and gave scant attention to the mountainous northern counties. That area, though not lacking in good farming land, never achieved the agricultural prosperity of its southern neighbors. It did happen to possess one of the world's richest deposits of coal, iron, and other mineral ore. In a preindustrial age, however, such potential sources of vast wealth went largely unnoticed and unappreciated. [Klein 1972:112]

Exemplifying the dual economic development in the state, most of the railroads until the 1870s had skirted the mineral regions in favor of the cotton regions. It was not until 1871 that a railroad, the Alabama and Chattanooga Railroad, reached Tuscaloosa. The construction of the Alabama and Chattanooga Railroad has an interesting history. Chinese laborers, who reportedly arrived in Tuscaloosa County in 1870 from California, constructed most of the lines (Krebs 1982:379). The exact number arriving in Tuscaloosa is vague. One source reports that approximately 960 Chinese were sent to work on the railroad (Cohen 1984:91). Typical of railroad development of that time, the Alabama and Chattanooga Railroad Company was in serious financial straits by early 1871. The hapless Chinese soon found themselves involved in economic and political difficulties. Three or four hundred Chinese quickly left Tuscaloosa, reportedly lured to Louisiana early in 1871. Several hundred who had remained in Tuscaloosa County were stranded there when a bankruptcy judgment against the railroad forced it to halt construction. There were riots as the railroad laborers, Chinese, blacks, and whites, demanded their overdue pay (Krebs 1982:380).

Local citizens complained that the Chinese had been forced to forage for food (Walker 1971:68). Cohen (1984:95) states that "while waiting in Tuscaloosa, some Chinese sold fruit and others found work as house and yard servants...About 330 Chinese settled in a camp outside of Tuscaloosa, where they reportedly were living on blackberries and crawfish." The *Independent Monitor*, a Tuscaloosa newspaper, reported that these Chinese were encamped at Kennedale (later renamed Cottdale) immediately west of the city of Tuscaloosa (Bell 1933:12). By late 1871 all of the Chinese laborers had left the county. The 1880 U.S. Census recorded no Chinese in the state of Alabama (Krebs 1982:383). The Alabama and Chattanooga Railroad was finished in 1871. A few years later, in 1877, the Alabama and Chattanooga Railroad, the Northeast and Southwest Railroad, and the Wills Valley Railroad were consolidated into the Alabama Great Southern Railroad Company. This railroad, which

ran diagonally across the state from Chattanooga, Tennessee, through Birmingham to Tuscaloosa and on to Meridian, Mississippi, was the only railroad through Tuscaloosa County until very late in the nineteenth century.

A railroad-building spree followed the war and lasted until 1873 when a national economic panic struck, followed by a depression (Doster 1949:8; Moore 1951:499). Alabama was in great financial distress, agricultural prices dropped, and homes and property had to be sold at auctions. In addition, severe floods wiped out crops and homes, and a cholera epidemic ensued (Moore 1951:499-500; Hamilton 1977).

During the depression of the 1870s there were a number of railroad mergers such as the Alabama and Chattanooga Railroad consolidation of 1877 noted above. In fact, every railroad in Alabama, except three, went into receivership during this time (Doster 1949:8-9). Improvements began to occur as the depression subsided. Finally, in 1881 the first Railroad Commission Act was passed to help regulate Alabama's railroads which had suffered too long from erratic growth and control (Doster 1949:44).

The 1870s depression demonstrated the need to diversify the economy of the state away from a strictly agricultural base. The 1875 *Annual Report* noted the need to develop the Black Warrior River for transportation. The *Mines, Miners and Mining Interests of the United States* also commented upon this predicament in Alabama with the following:

...so we have today the somewhat peculiar phenomenon of a market at the iron ore deposits, in the cities of the South, and in the Gulf and export trades, calling for an amount of coal the carriage of which would in itself make a railroad profitable; a coal-field in which we know there exists an abundance of coal of excellent quality in large veins; and on each side of the field, railroads which have become bankrupt, because through some strange design, they have avoided the very source from which not only their own prosperity, but also that of the entire State must come...[Bulch 1882:116]

The writer commented that the railroads seemed more concerned with obtaining state grants than of actually developing the natural resources of the state.

Early in the 1870s the Louisville and Nashville Railroad Company, recognizing the potential of the mineral regions of Alabama, drafted a plan to penetrate the area with railroads. The first area to receive attention was north of Birmingham where a line was constructed between Decatur and Birmingham. But due to the 1870s depression, the Louisville and Nashville Railroad was unable to expand into the mineral region south of Birmingham. Also, during this time many of the mines, plants, and furnaces around Elyton, Birmingham, and Irondale were closed due to lack of capital investors (Klein 1972:122, 129-130). Although development slowed dramatically, a new process for coking coal to produce iron was developed. This process, known as the Shantle Reversible Bottom Ovens, converted coal to coke. Ovens were built at the Oxmoor furnaces at Birmingham and the first coke pig iron using this process was produced in 1876. Eventually, investors were encouraged by these new development and the production of iron steadily increased. The Louisville and Nashville Railroad Company, inspired

by these improvements in the industry, started a development program to induce growth in the area (Klein 1972:134-135).

Most of this growth in the coal and iron industries occurred around Birmingham in Jefferson County, which quickly became the industrial center of the iron and coal region in the state. The coal mining and iron industry in Tuscaloosa County lagged behind the Birmingham area, but its development was intimately tied to that of Birmingham.

In 1884 the Louisville and Nashville Railroad Company formed the Birmingham Mineral Line in order to penetrate the coal and iron ore regions south of Birmingham (Clark 1893:324). A few years later, in 1888, a 27-mile long branch line known as the Blue Creek Extension was constructed through Valley Creek (Jefferson County) to Yolande in Tuscaloosa County and on to Block Junction in the northern edge of Bibb County. This Blue Creek Extension was the first to enter the mineral region of Tuscaloosa County. By 1890 a line had been extended from Yolande to Brookwood in Tuscaloosa County. Not until 1912 did the Louisville and Nashville Railroad form the Tuscaloosa Mineral Line with an 18-mile long branch line from Brookwood to Tuscaloosa (Klein 1972:248, 270). The construction of these mineral lines into Tuscaloosa County finally opened the county to serious coal mining.

The coming of the railroad system gave Tuscaloosa industry an important boost. An 1887 prospectus for Tuscaloosa listed two cotton mills, a yarn mill, a wool carding factory, a suspender factory, two brick yards, a brick and tile company, two foundry and machine companies, a street railway, and a cottonseed oil company. Other enterprises under contract were also noted, including three railroads, Friedman Furnace, Merchants National Bank, and an electric light and ice company (Dowling 1938:7).

River Improvements. The improvement of the Black Warrior River was probably just as important as the railroads to the development of Tuscaloosa and the county. The need to remove impediments in the river so that year-round travel was possible had been discussed since the founding of Tuscaloosa. Although the Birmingham area was gradually becoming a larger user of coal, there was also great demand for Alabama coal for export to markets outside of the state. The Black Warrior River, draining all of the Warrior Coal Basin, was viewed as an extremely important artery for transporting this coal to Mobile, Alabama's major port.

To the north, Walker County, already developing as an important coal mining area, was excluded from the railroad expansion movement throughout the nineteenth century. Since the 1830s, industrious individuals in Walker County had been loading coal onto flat boats during the summer months when the water was low and floating the laden boats downriver during the rainy seasons, winter and spring. The numerous shoals, in particular Squaw and Tuscaloosa Shoals, were the most dangerous and detrimental to this enterprise (Hamilton 1977:14).

In 1874 Congress approved an examination and survey of the Black Warrior River from Locust Fork to the mouth of the river. This included the Upper and Lower Warrior Rivers with Tuscaloosa as the dividing point. The Lower Warrior is referred to in

the *Annual Report* as the Warrior River while the Upper Warrior, above Tuscaloosa, is referred to as the Black Warrior River. According to Green (1980:73-74), this division was made in an attempt to acquire Congressional funding for two different rivers. By 1896 Congress must have been aware of this, since a report explains the difference in the names (*Annual Report* 1896). The report on the survey appeared in the 1875 *Annual Report* and emphasized the importance of the Black Warrior River because it penetrated

...the very center of the coal and iron region of Alabama, and its opening to navigation as far as Locust Fork would furnish cheap water-transportation to the Gulf for the finest coal and iron-ore in the State, as well as the agricultural products of the country adjacent to the river....[*Annual Report* 1875:16]

The report noted that the river was navigable only to Tuscaloosa during high water (about four months out of the year) for "side-wheel boats" and six to nine months a year for "light-draught stern-wheelers." The report stated that the Alabama Coal and Navigation Company, a private company, "has already been chartered by the State of Alabama, with authority to construct locks and dams on the Upper Warrior" with the understanding that the work would begin when assurance was given that the Lower Warrior would be made navigable (*Annual Report* 1875:17). The report included a discussion on the lack of rail access to the area and the need for cheap river transportation, as well as figures demonstrating the cost of transporting cotton by river versus rail, the cost of improving the Warrior River, and a brief analysis of coals for coking and gassing in the Warrior Coal Field.

A few years later, in 1884, Congress granted appropriations for the improvements on the Black Warrior River as part of the Rivers and Harbor Act which had been approved in 1875. In 1887 the Secretary of War approved plans for five locks and dams to be constructed between Daniels Creek and Tuscaloosa providing "6-foot slack water navigation" (*Economic Analysis* 1937:6-7). Construction began in 1888 on three locks at Tuscaloosa (or University) Falls with the following specifications:

The locks were to be 52 feet clear width, 322 feet long between hollow quoins, available length 285 feet, and to have a depth of 6 1/2 feet on miter sills. The locks were to be built with iron gates and of rock found in the vicinity. The dams were to be of the rock-fill type. [*Annual Report* 1896:1433]

The Black Warrior-Tombigbee River system was the first river system in Alabama to be improved for navigation (Richardson 1965:884). The first locks, numbered 1, 2 and 3, were at Tuscaloosa Falls and opened in 1895. The first coal barge passed through the gates on January 12th, 1896, reaching Mobile by January 30th. At the end of the fiscal year 1896 (June 30th), 2,628 tons of coal and 85,000 feet of lumber had passed through the three locks. Negotiations for land for a fourth lock were already underway (*Annual Report* 1896:1434). By 1895 work was begun to remove obstructions such as logs and snags from the Lower Warrior, although no locks and dams had been constructed at that time.

In 1902 work on the Upper Warrior was merged with projects on the Lower Warrior and Tombigbee Rivers by the River and Harbor Act of 1902 (*Economic Analysis* 1937:7). Locks 1, 2, and 3 were renumbered Locks 10, 11, and 12, respectively. Over the next 13 years, five more locks were built on the Black Warrior River, extending navigation to the head of Squaw Shoals.

The Iron and Coal Industry. The opening of Black Warrior River to year-round traffic brought a new era of development to the Warrior Coal Field, finally providing cheaper access to and transportation from the vast coal reserves of the basin. Moore (1951:525) notes that "between 1886 and 1889 there was a 'boom' in the mineral belt that equaled, if it did not surpass, the 'flush times' spirit of the thirties." Prospectors, investors, and other entrepreneurs throughout the state and outside descended upon the mineral region.

Most of the movement and financial influx centered around the Birmingham area because of the number of iron plants there. A new iron town, Bessemer, sprang up when Henry F. DeBardeleben invested heavily in the iron and coal industry of the area with his DeBardeleben Coal and Iron Company. Two other important iron companies also developed in the Birmingham area during this period: the Sloss Iron and Steel Company (later becoming the Sloss-Sheffield Steel and Iron Company) and the Tennessee Coal, Iron and Railroad Company which eventually became the United States Steel Corporation (Fuller 1966).

Between 1880 and 1890 the population of Jefferson County nearly quadrupled (Moore 1951:526-528). The 1893 economic panic brought much of this investment flurry to a standstill. However, the three large corporations of DeBardeleben, Sloss, and Tennessee had merged in 1892 (Fuller 1966:43). This no doubt enabled the iron industry in Birmingham to survive the economic miseries of the period while most of the speculators lost their investments. But even the newly merged DeBardeleben and Tennessee Company suffered greatly and Henry DeBardeleben lost his entire fortune. By 1895 economic conditions began to improve. The development of open-hearth steel in 1879 by the Tennessee Company "brought about a revolution in the iron industry of Alabama" (Moore 1951:531).

In Tuscaloosa County, the first real boost for coal mining came with the railroad. In 1878 Berney (1878:172, 261-262) reported on several coal mines around Tuscaloosa and near the Alabama Great Southern Railroad. He mentioned Johnson's Mine, located 14 miles east of Tuscaloosa near Clements' Station, as well as mines near Caldwell's Station and Coaling, west of Tuscaloosa on the Alabama Great Southern Railroad. Berney also noted coal beds at Ward's Shoals (Lock 13) on the Warrior River above Tuscaloosa and at the University Coal Mine. Coal was also mined at the mouth of the North River near Finley's Mill and on the property of the Insane Hospital. In 1875 Spencer and Company had begun mining coal on the Black Warrior River near the Insane Hospital. Most of these enterprises were small and little development of the large mineral wealth of the county had occurred even as late as 1897 (Culver 1897:163).

The increased river traffic and the railroad access brought new industrial vigor to Tuscaloosa as a major market center for the surrounding counties. As the Tuscaloosa Mill grew, Cottdale, originally named Kennedale, became an important cotton factory town on the Alabama Great Southern Railroad, 7 miles west of Tuscaloosa (Berney 1878: 277-278; Harris 1982:48). By 1897 waterworks, electricity plants, and an ice factory had been constructed (Culver 1897:164).

Around 1905 the first terminal to handle barge traffic was built just north of Tuscaloosa at Riverview (River Mile 364) by the city of Tuscaloosa. Coal, lumber, gravel, and cotton were the primary products moved down the Black Warrior River. The 1902 *Annual Report* noted commercial traffic through the three locks at Tuscaloosa (Locks 10, 11, and 12) for that year (Table 1; *Annual Report* 1902:301).

During the early years of the twentieth century, before rail rates were adjusted (around 1923), iron ores and steel were traded between Birmingham and Mobile on the Black Warrior-Tombigbee River system. Gravel also became an important commodity for barge transportation on the Black Warrior River (*Economic Analysis* 1937:14, 29-31).

Although the iron industry remained centered around Birmingham, the iron industry in Tuscaloosa developed some in the early twentieth century. In 1901 Frank Holt arrived in the Tuscaloosa area from South Pittsburgh, Tennessee (Blackman 1976:1). Holt was a purchasing agent for the newly formed Central Iron and Coal Company which had been created in 1901 as a subsidiary of the parent Central Foundry Company, a major producer of cast iron sanitary pipes (Woodward 1940:77). A 1,200-acre tract on the Black Warrior River just north of Tuscaloosa was selected for building a furnace complex. The property was accessible by the Warrior Southern, a branch line of the third major and most recent rail line into the Tuscaloosa area, the Mobile and Ohio Railroad. Construction on a blast furnace began late in 1901 along with a "battery of 164 beehive ovens...built...to utilize the gas under the boilers" (Woodward 1940:78; Figures 10 and 11). The blast furnace, which had an 85-foot high stack and an 18-foot wide bosh, went into blast in August of 1903, producing the first pig iron casts

Table 1. Black Warrior Commerce Reported in 1902 (*Annual Report* 1902:301).

coal	625 tons
stone	9,314 tons
sand	1,819 tons
lock gates	180 tons
logs	87 tons
lumber	805 tons
general merchandise	170 tons



Figure 10. Beehive Ovens at Holt (Jones 1926:115).

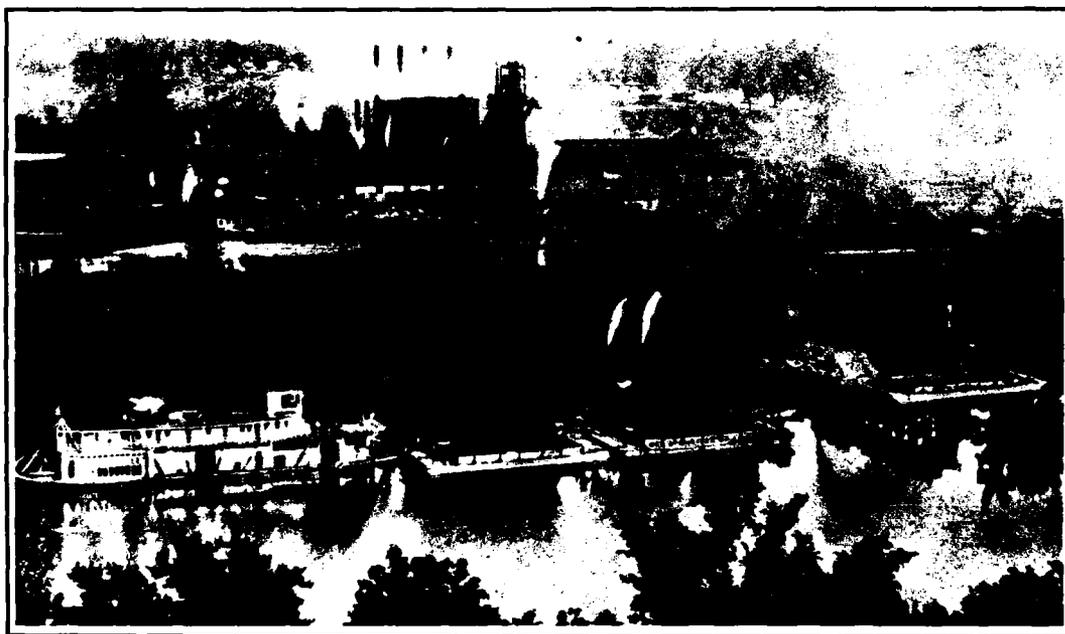


Figure 11. Holt Furnace Complex with Coal Barges and Steamboat in Foreground (Hall and Hall 1916:Plate XV).

three days later. The furnace was rated at 150 tons a day. The community of Holt grew around the furnace complex (Woodward 1940:18).

Coal for coking first came from the Tidewater Mine, a mile or so above Holt on the Black Warrior River. In 1903 the Central Iron and Coal Company bought coal mining property 16 miles northeast of Holt. Also, the Mobile and Ohio Railroad built a 13-mile long railroad to the mines there. The mining community of Kellerman grew up around the mines. The Central Coal and Iron Company purchased ore mining property near Woodstock on the eastern extreme of Tuscaloosa County on the Alabama Great Southern Rail Line to supply iron ore to the furnace at Holt (Woodward 1940:78).

A new coking process patented by the Semet-Solvay Company was implemented at Holt with the construction of 40 more coke ovens in 1904, although some of the beehive ovens continued operating for several years. In 1907 a soil pipe plant was also built at Holt. In 1912, a much larger pipe plant was built to replace the original one. A nodulizing plant was also built in 1909-10 for the "preparation of pyrite cinder from Spain" and a contract was signed with the Virginia-Carolina Chemical Company for this production (Phillips 1912:191; Woodward 1940:78).

In 1912 a new furnace was built at Holt. This furnace had a stack height of 85 feet with a new bosh width of 19 feet, and could produce 72,000 tons of iron annually. The old stack, which had been continuously operated since 1903, had been relined eight times. Twenty additional Semet-Solvay by-product coke ovens were added in 1912 to the 40 ovens present since 1904; the inefficient and wasteful beehive ovens were then discontinued (Woodward 1940:78). A new, 3-mile long spur was built from Tuscaloosa to Holt by the Louisville and Nashville Railroad Company in 1912 (Klein 1972:400).

Only about 40% of the iron produced by the Holt furnace was used in the manufacture of pipes, the rest being sold under the brand names of 'Warrior,' a high manganese iron, and 'Tuscaloosa,' a straight foundry iron. In 1929 the Holt Furnace was closed and early in 1940 the Central Iron and Coal Company went into general receivership. The furnace, by-product plant, Kellerman Coal Mines, and ore mines were sold (Woodward 1940:79).

Railroads had a great influence on settlement patterns in the South (Tower 1959:135). This is certainly true for the Tuscaloosa and the Holt Lake area. Not until the coming of the railroad did the coal hills north of Tuscaloosa have any sizable communities. Five mining towns, Yolande, Brookwood, Searles, Kellerman, and Burchfield, developed along the Mineral Railroad line. Other communities developed along the Black Warrior River and the Warrior Southern Railroad (Mobile and Ohio Railroad) such as Holt, Tidewater, Fox, Scales, and Gilmore--all except Holt now under the waters of Holt Lake. Tuscaloosa County west of the Black Warrior River, which comprises two-thirds of the county, had no railroads and few communities until late in this century. Settlement in Tuscaloosa County was densest near the railroad towns, although the mining district as a whole remained the most thinly populated area in the county (Winston 1912:8, 70). The population in the Holt Lake project area was concentrated along the river during the first quarter of the twentieth century, when the

Central Iron and Coal Company was at the height of its operation at Holt. Harper (1913:56) notes that, for the coal basin in general, there were about 40 inhabitants to the square mile in 1910, which was a 38% increase from the turn of the century, with 70% of the population employed in mining.

Developments During the Mid-Twentieth Century. The years between 1910 and 1930 witnessed large population growth in the urban areas of Birmingham, Mobile, and Montgomery. By 1900 Birmingham had become slightly more industrialized than the Black Belt areas which centered around Montgomery. In the 1900 population census, Mobile ranked second behind Birmingham and Montgomery ranked third (Dodd 1974:69). The dual economy that had hindered economic development in Alabama during much of the nineteenth century was changing as the state shifted more toward industrialization. The arrival of the boll weevil and the disastrous cotton failures of 1914-1916 forced a drastic change in agricultural practices in the state (Gray 1977:211).

World War I had an immediate effect upon the economy of Alabama. Millions of dollars were spent in Alabama during the war years. Mobile became an important shipyard and lumber was in high demand there for constructing ships. Much money was also spent in the Birmingham district for the production of iron and steel (Gray 1977:210-211). The war also placed great demands for coal and the coal industry grew rapidly during this period, reaching its height in bituminous coal production in 1923 (Eller 1982:155). Thousands of military men were trained at military posts such as Camp McClellan and Maxwell Field in Alabama. Following the end of World War I, however, Alabama suffered an economic slump as the country began to readjust to peacetime levels of production (Gray 1977:210-211). Despite the depression in agriculture prices, the abandonment of cotton monoculture forced Alabama farmers to diversify agricultural production, growing crops such as peanuts, potatoes, and soybeans. Efforts were also made for the state to improve the socio-economic status of its citizens by providing better services (Dodd 1974:72-73; Gray 1977:212).

The creation of the Alabama State Docks Commission and the building of the state-owned docks in Mobile proved a far-reaching economic boon to the state, cutting the cost of water transportation for farming and industry in the state. The Mobile docks also attracted commerce from other states and foreign countries as well (Gray 1977:212; Summersell 1975:486). The economic effects of the Mobile docks were profound in the Tuscaloosa area since the Black Warrior/Tombigbee River System was a major thoroughfare for commerce from the Birmingham area to Mobile.

As the Great Depression of the 1930s swept the nation, the economic effects were felt severely in Alabama, hitting agriculture first, then industry, and finally retail sales. Although Alabama was hard hit and experienced greater declines in retail sales than the national average, the state and the South in general pulled out of the depression more quickly than other regions of the nation. Nevertheless, the steel and textile industries were slow to revive (Gray 1977:216). Under Franklin Roosevelt, federal relief programs pumped millions of dollars into Alabama and other southern states. These programs involved a stabilization of agricultural production, but more importantly they provided for improved dams, locks, and electrical facilities, primarily in the northern

part of Alabama along the Tennessee River. By the early 1940s the economy of Alabama had been successfully revived (Gray 1977:216-222).

Between 1920 and 1940 there was a marked increase in population in the Tuscaloosa area. The 1930 census figures show a population growth of 72.2% for Tuscaloosa County (Richardson 1965:720). The city of Tuscaloosa became one of the major secondary population centers in the state along with Dothan, Jasper, Gadsden-Anniston, Selma, and Huntsville-Decatur. This population and economic growth in the Tuscaloosa area was directly related to that of the Birmingham area (Dodd 1974:90).

The outbreak of World War II and the involvement of the United States brought higher levels of prosperity to the state. Many new military installations and other war industries were constructed in Alabama. The Birmingham steel industry produced millions of tons of steel for the construction of war machinery (Gray 1977:223, 225-227).

Following the war, the Birmingham district continued its steel making importance, reaching peak production during the early 1950s. After 1953 Birmingham experienced a decline in the steel industry. From 1960 to 1980 the number of employees involved in the primary metal industries in Birmingham declined from 28,000 to 20,000 (Bennett 1986:103). The decline in the steel industry in Birmingham reflects the national trend as the steel industry has suffered the effects of foreign competition, although some industrial production merely shifted to other areas of the state, particularly Gadsden-Anniston and Huntsville (Dodd 1974:119).

Following World War II, coal production declined nationally as cheaper, more efficient fuel sources became available. As early as 1919 petroleum products had begun to erode the coal market and a number of northern manufactures had converted to fuel oil (Eller 1982:159). In Alabama the first gas production began in the early 1900s and the first oil well was drilled in 1944 in Choctaw County (Lineback and Traylor 1973:75). Hydroelectric power was already becoming an important energy source for the nation as early as 1917 (Eller 1982:159). The New Deal programs and the Tennessee Valley Authority (TVA) provided competitively priced electric power to Alabama and much of the South. Construction projects on the river systems such as the Warrior/Tombigbee also began to utilize water power for the production of electricity. In the 1960s, coal was viewed as a less desirable fuel because of its pollutant qualities. However, in the last two decades, coal production has begun to increase as other fuel sources such as electricity and petroleum products have risen in cost. Today coal production is on the rise and Alabama (and Tuscaloosa County, in particular) is a major coal producing state.

During the second quarter of the twentieth century, larger barges with increased tonnage and more powerful tugboats built to travel the Black Warrior River necessitated improvements on the locks. In 1939 the William B. Oliver Lock and Dam was completed and the first three locks constructed on the Black Warrior River were removed or covered by Oliver Lake (Alexander 1982:101). Detailed plans, on file at the U.S. Army Corps Mobile office, were made in the late 1940s to improve the locks and facilities above the William B. Oliver Lake, including Locks 13, 14, 15, and 16.

However, it was obvious that the locks were nearly obsolete for the newly designed larger boats and barges (Richardson 1965:884). Plans for construction of the Holt Lake Lock and Dam at the location of Lock 13 were begun in the 1950s, with actual construction beginning in 1962 and completion in 1965. The documentation was unclear concerning the actual disposition of each of the four locks and dams inundated by Holt Lake. More than likely, the portions of each lock and dam that could hamper river navigation during low water were removed. Following completion of the John Hollis Bankhead Lock and Dam at the head of Holt Lake, the Black Warrior River began a new era of river/lake travel for the area.

Beginning in the 1940s, the Black Warrior River in the project area became popular for fishermen and numerous fishing camps developed along the river. A 1944 Tuscaloosa County highway map shows seven of these camps. Most of these fish camps were on the western side of the Black Warrior River. An examination of the real estate files and maps at the Corps of Engineers office, Mobile District, showed the largest concentration of fish camps to be near Lock 15 on the west side of the Black Warrior River. Here Howse Camp, or Lazy River subdivision, developed, with a number of cabins, trailers, and associated structures. Across the river and downstream toward Pegues Creek was another fish camp with 11 cabins. A string of cabins were also located along Pegues Creek.

At the junction of Blue Creek (north side) and the Black Warrior River was the Roberts Fishing Camp. This camp had eight cabins and associated recreation facilities, including a boat ramp and ferry. The Appraisal Report for the Roberts Camp noted a *reputation for attracting an undesirable crowd* and also hinted at the production of illegal liquor in the area. Additional cabins were located on the south side of Blue Creek. Another fish camp, owned by the Burchfields and located on the east side of the Black Warrior River just south of Indian Creek, contained three cabins, a store, and various other structures. One other area of fish camps was located on the western side of the Black Warrior River north of Deerlick Creek. Four cabins, associated structures, and improvements were owned by four separate individuals. Up and down the river single cabins occurred between the various parcels of land owned (fee-simple and mineral rights) by mining companies and other enterprises.

INDUSTRIAL AND TRANSPORTATION DEVELOPMENTS ALONG THE BLACK WARRIOR RIVER IN TUSCALOOSA COUNTY

The following discussion focuses on the development of transportation and the attendant growth of industry, primarily coal mining, along the Black Warrior River north of Tuscaloosa. A more detailed discussion of the coal industry in Tuscaloosa County and surrounding areas is also presented, as this ultimately influenced the development of the project area.

Early Transportation and Coal Mining

Early Coal Mining. Brannon (1939:54-58) attributes the discovery of coal in Alabama to a man from Sparta, Georgia, named Jonathan Smith who, in 1814, used black rocks found along the Big Cahaba River (near the site of the old BRIGHTHOPE FURNACE) to build a campfire. He recounts how pioneers in Walker County began shipping coal in flatboats from the Lost Creek tributary down the Black Warrior River to Mobile in the early 1830s. Coal seams traverse most of the stream beds of the Black Warrior River and its tributaries. Early pioneers, possessing only a rudimentary technology for mining and transporting coal, found mining coal from the stream beds the easiest method of extraction. David Hanby's name occurs in a number of treatises as an early innovator in stream bed mining (Brannon 1939:57; Hamilton 1977:13; Klein 1972:113). Berney (1878) presents a description of "diving for coal" given by Michael Toumey, the first State Geologist, in the 1840s:

A flat boat is moored parallel with the joints and near the edge of the coal; long, wedge-shaped crow bars are driven into the seams by means of mauls handled by men in the boat; when a ledge of about two feet is loosened in this way, across the seam, the men take the water, and dive two or three together, according to the size of the masses to be brought up, and lift the coal bodily to the surface and place it in the boat: as an improvement on this simple process, a crane is rigged on the boat, and a chain, slipped around the blocks of coal, raises them into the boat. [Berney 1878:257]

Dr. Toumey also noted in 1849 that about 200 individuals were involved in the coal trade in Alabama. Only three underground mines were in operation. The rest of the coal mining took place in the beds of the Black Warrior River and its tributaries and in exposed surface seams eroding from the hillsides (Berney 1878:257). Most of the mining in the streams and river occurred during the dry season when access to the coal would have been easiest. The flat boats were loaded with coal and then, when the rains came and the river level rose, the boats were floated downstream (Dombhart 1937:25-26). There were many unsuccessful trips due to the treacherous nature of the shoals even at high water.

In 1846 Charles Lyell, the English geologist, on his second visit to the United States, traveled through the Tuscaloosa area. He visited areas north of Tuscaloosa where he observed surface outcroppings of coal and reported on rudimentary coal mining activities there (Lyell 1849). Henry McCalley, Assistant State Geologist in 1886, commented on the informal nature of the coal mining efforts in Tuscaloosa. Evidence for old pits and surface mining occurred mainly

along the banks and beds of the smaller streams and near the heads of the hollows and ravines....From such out-crops as these, for a great many years, up to the building of the Alabama Great Southern Railroad, Tuscaloosa was supplied with coal that was hauled in wagons from ten to twenty miles. [McCalley 1886:414]

As soon as the railroad was laid, most of the land along the rail lines was bought by land speculators. Most of the land along the Black Warrior River north of Tuscaloosa fell into the hands of these investors who had an eye on future mining prospects. The rough and steep terrain along the river, the small amount of flat land suitable for agriculture, and the purchase of much of the land by speculators contributed to the thinly populated nature of the area throughout the nineteenth and twentieth centuries.

Henry McCalley's report on the Warrior Coal Field in Tuscaloosa County in 1886 provides a detailed description of all the known coal seams in the county. He began on the northeastern edge of the county, starting at the mouth of each stream and working upstream, while generally progressing south toward Tuscaloosa. At Tuscaloosa he crossed the Black Warrior River and moved upstream for each tributary, progressing in a northerly direction to the county line. In addition to describing each coal seam and its chemical composition, McCalley described coal activities and mentioned landmarks such as bridges, roads, ferries, and the names of owners of mills and homes. His report provides one of the best sources available for reconstructing the area during the nineteenth and early twentieth centuries when heavy coal mining began. Again, very few people lived in the project area along the river; most of the population was thinly scattered along the ridges to the east of the river (Figure 12).

McCalley noted old mining activities on Davis, Pegues, and Daniels Creeks near the river where coal was mined and floated downriver. A number of coal outcroppings were also noted on Eddin's Road near Daniels Creek. At Rock House Creek, McCalley noted that thousands of bushels of coal were dug up and transported by wagon to Tuscaloosa. Construction of the Alabama Great Southern Railroad brought this surface mining to a halt in some of these areas, shifting much of the mining closer to the railroad tracts (McCalley 1886:442-447). The limited coal mining of the area by individuals mostly ceased once larger, more organized mining operations developed. Most individuals could not have successfully competed with these mining companies.

McCalley (1886:479) reported coal mining along the Old Plank Road that ran along the top of the ridge between Hurricane Creek and the river. The coal was loaded into wooden boxes made at a nearby mill (known as Jemison's Steam Saw Mill) and then placed on wagons which hauled the coal 1.5 miles to the river, where it was then loaded onto flatboats and floated to Mobile.

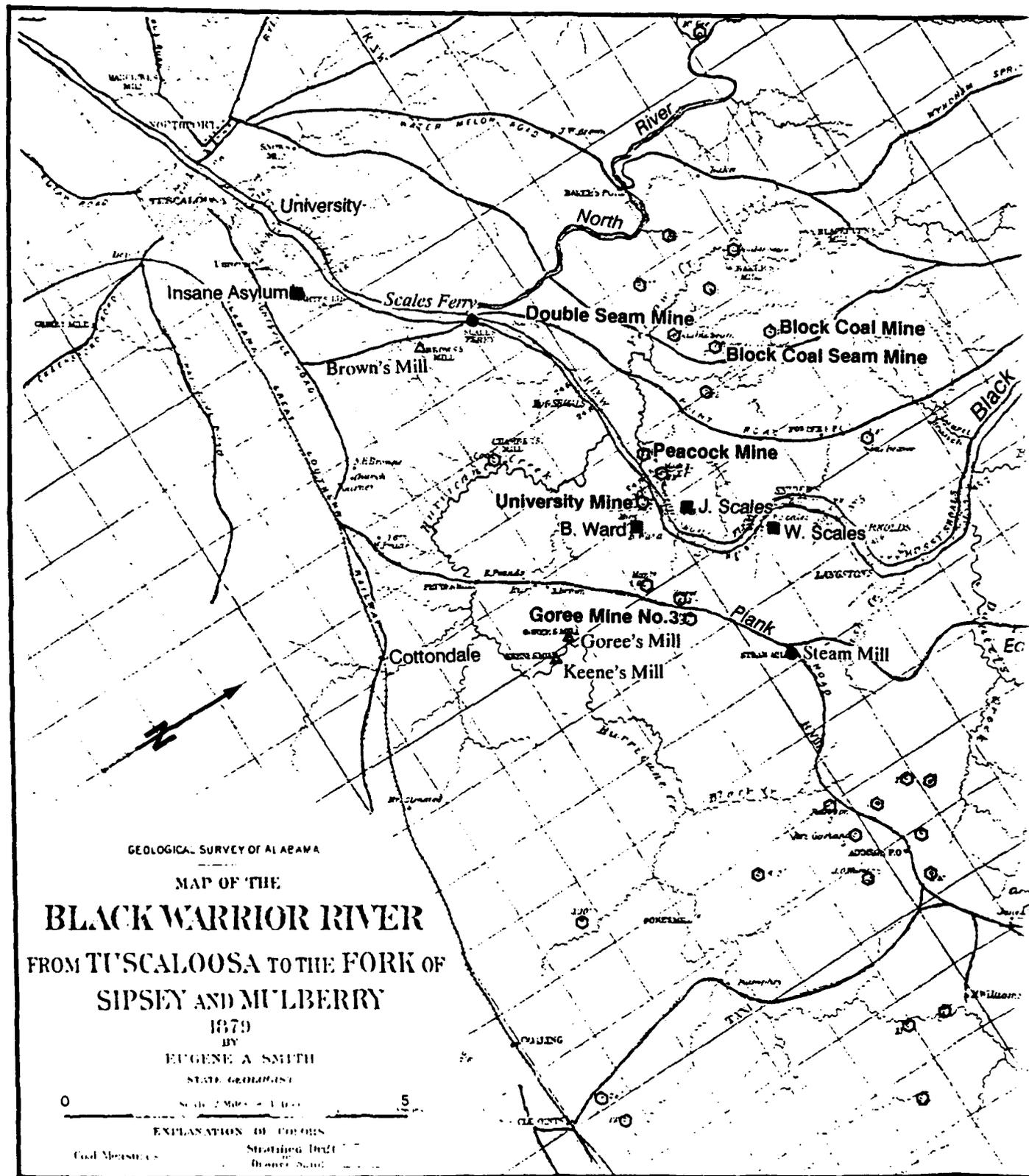


Figure 12

1172

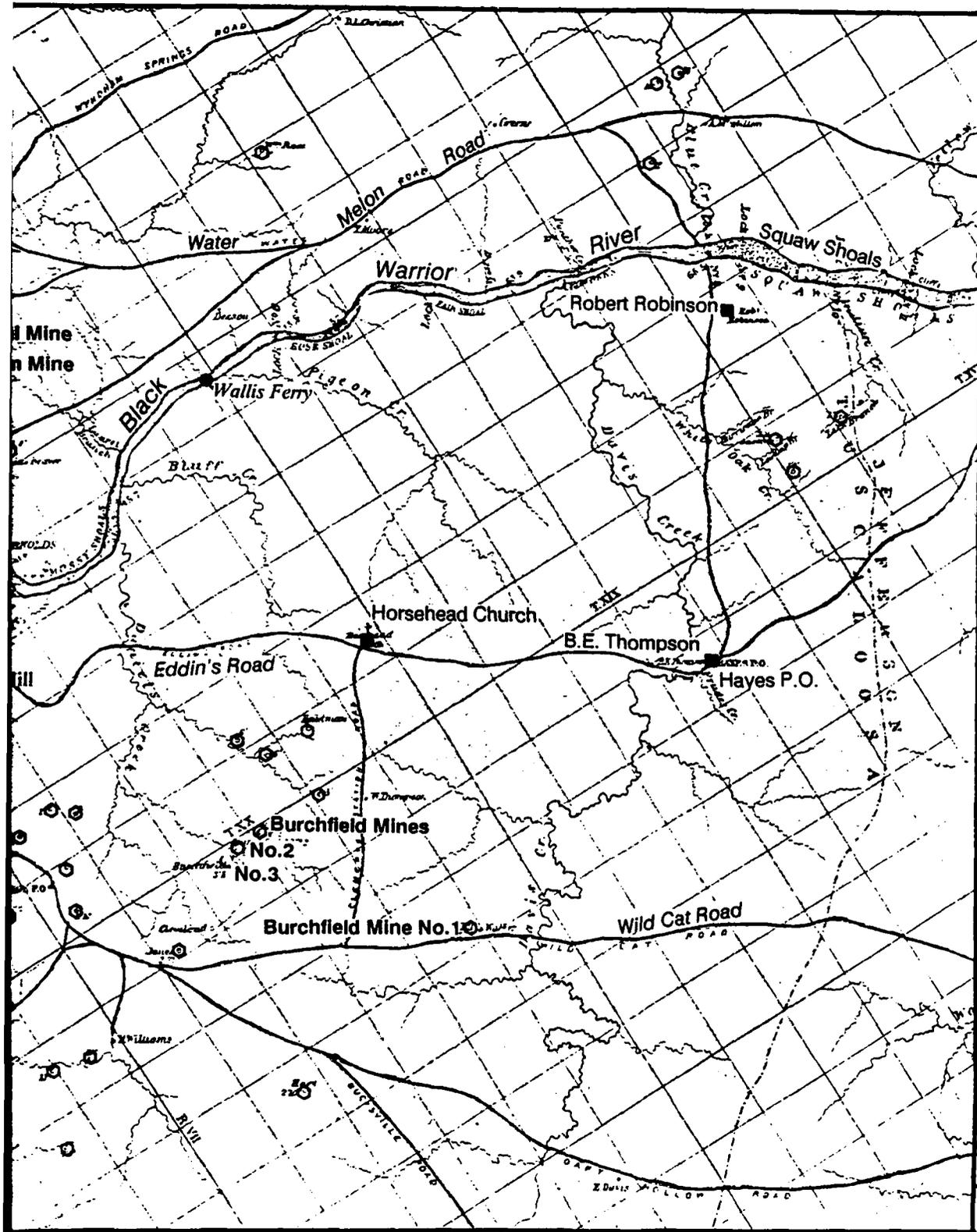


Figure 12. Portion of Map of the Black Warrior River, Showing the Highlighted Details of Mines, Mills, Roads, Houses, etc. (Smith 1879).

2172

Coal pits were observed on Brush Creek and Rocky Branch (McCalley 1886:481) and coal mining in the Black Warrior River at Arnold's Shoals was also noted. McCalley (1886:483) also observed coal outcroppings in the field near Mr. Willis Scales on Rocky Branch. Coal was mined at Snider Shoals south of Arnold's Shoals as well. Both sides of Hurricane Creek were heavily mined. Being closer to Tuscaloosa, this area had been mined early on and, when the Alabama Great Southern Railroad was completed, the area was even more intensively mined. McCalley (1886:485) noted the old Goree mines around Dry Bridge and Toll Gate branches, outcroppings at Ward's Shoals, and, a little further south, Old Tom Scale's Mines (McCalley 1886:488-489). Most of the coal mined around Cottdale was used at the cotton factory there, providing good steam (1886:500). The State Insane Hospital mined its own coal, making gas that was used in the hospital as well as supplying the State University (McCalley 1886:504).

Across the Black Warrior River, the coal seams were generally much thinner than on the east side (McCalley 1886:509). Coal outcrops started at the bridge that crossed the river from Tuscaloosa to Northport. Although a number of seams were located along the stream beds, particularly of North River, Little Yellow Creek, Jim Mack Branch, and Lick Branch, McCalley (1886) made no mention of the coal being mined or raised as it had been on the eastern side of the river. Nor did he mention as many land owners along the western side of the river, implicitly indicating the sparse population there.

Early Roads and Ferries. Until the twentieth century only a few roads ran through the coal hills of Tuscaloosa County near the Black Warrior River. Smith's 1879 *Map of the Black Warrior River* (see Figure 12), one of the earliest detailed maps of the area, shows three roads paralleling the Black Warrior River to the east: Eddin's Road (closest to the river), Wild Cat Road, and Oaky Hollow Road (the farthest to the east). Wild Cat Road is indicated as a plank road; the date of construction for the plank road is postulated as 1850 (Rich 1979:128). Plank road construction was popular at this time. A short road shown as Clements Station Road connects Eddin's Road and Wild Cat Road (Smith 1879). Later maps show only one road paralleling the river, the Wildcat Road/Plank Road, which seems to be the same road, known as Eddin's Road on Smith's 1879 map. Some of these later maps show the road continuing to the Jefferson County line where it changed name to Patton's Ferry Road. Smith's map, as well as several turn of the century maps, indicate that only one road crossed the Black Warrior River in the project area. This was the Robertson's Ferry Road (not named on Smith's map) which crossed at the foot of Squaw Shoals.

The 1899 (surveyed 1895) USGS Brookwood quadrangle map shows the most detail of the road system through the area. On the east side of the river the only road named that is in the project vicinity, however, is the Plank Road, which seems to follow the same path as Eddin's Road on Smith's (1879) map, and Wildcat Road on two early twentieth century maps. This map also shows a thin scattering of houses along many of the roads that lead to the river.

On the west side of the river, Robertson's Ferry Road, which crossed at Squaw Shoals, connected with the Water Melon Road, which paralleled the Black Warrior River. Smith's map shows another road, the Point Road, paralleling closer to the Black Warrior River on the west side. On the east side of the river, the Point Road branched off the Hunstville Road, crossing Brown's Mill Creek at Brown's Mill, and then the Black Warrior River at Scales Ferry. Point Road paralleled the river on the west, finally merging with Water Melon Road west of Rose Shoals. Smith's map also shows an unnamed road between Water Melon and Point Roads. The 1899 USGS Brookwood quadrangle map clearly indicates only two paralleling roads, Water Melon Road and an unnamed road. At least eight roads are shown descending from these two parallel roads to the river between North River and Blue Creek. A 1903 map (Civil Works Project) indicates the presence of three of these roads. However, two maps drawn in 1916 and 1918 do not show the other two roads paralleling the river to the east of Water Melon Road. The 1942 (surveyed 1928-29) USGS Searles quadrangle map still shows a detailed network of roads in the area, although there are fewer roads and many appear less developed than on the earlier 1899 map.

Smith's 1879 map indicates only one ferry on the river in the actual project area, Wallis Ferry, although his map shows a road (later Robertson's Ferry) crossing at Squaw Shoals. Since Squaw Shoals was reported by Harper (1906) to be shallow, traffic may have forded the river. Later, when the locks and dams were in place, Squaw Shoals would have been submerged, perhaps necessitating a ferry crossing. Although Wallis Ferry is shown on Smith's map, there is no road shown leading to it. The two topographic maps (1899 and 1942) do not indicate any ferries, although they show roads leading to the river on both sides in several places, including where Wallis Ferry would have been according to Smith's map (1879) and the 1903 map (Civil Works Project). South of the immediate project area was Scales Ferry (mentioned above) located where Point Road crossed the river at the mouth of North River. Scales Ferry may have been known earlier as Brown's Mill Ferry, which was first operated in 1916 (Rich 1979:128), assuming that Brown's Mill Ferry was located near Brown's Mill. The 1903 map (Civil Works Project) shows McWright's Ferry in the same location. Rich (1979) discusses Ward's Ford at Ward's Shoals, although Smith indicates only the shoals. Irons' (1951:36) article on antebellum ferries, which notes four ferries in Tuscaloosa County in 1861, does not identify any above Tuscaloosa. One unnamed ferry near Tuscaloosa could possibly be the Scales/McWright's Ferry.

The Locks and Dams. The first railroad into the county skirted the coal region which lay to the west, leaving inadequate transportation for much of the county west of the railroad (*Annual Report* 1875:27). There were a number of roads in the area by the late nineteenth century, but most were difficult to travel. The rugged terrain of the area, particularly on the east side of the river, meant rough, winding, and rutted roads. River travel remained the primary means of commerce movement. In 1874 the *Annual Report* stated that the Alabama Coal and Navigation Company had plans to make the river navigable above Tuscaloosa, providing the federal government agreed to open navigation below Tuscaloosa. A prospectus prepared by the Alabama Coal and Navigation Company in 1874 contained the following statement by Mr. G.B. Stebbins of Detroit, Michigan:

The coal beds I saw on the Warrior were mostly in the lands of the Alabama Coal and Navigation Company, who own lands for miles along the rivers, and have exclusive right of navigation from the State for twenty years. They propose to build dams, open slack-water navigation to Mobile and the Gulf, and thus hold the key to a coal trade equal to supplying the Gulf, the lower Mississippi, and the iron furnaces by water transportation. [Alabama Coal and Navigation Company 1874:15]

No later mention is made of the Alabama Coal and Navigation Company. Most likely the company was one of the many speculative enterprises formed during the early 1870s to take advantage of rising interests in the mineral region of Alabama. The 1874 prospectus, written to attract potential investors, contains glowing accounts of the great mineral wealth of Alabama. The depression of the 1870s likely brought about the demise of the Alabama Coal and Navigation Company, a fate that befell many speculators of the times (Moore 1951:499-500).

The Rivers and Harbor Acts allowed the first improvements on the Black Warrior River. The construction of Locks 10, 11, and 12 on the Black Warrior River began an era of involvement by the U.S. Army Corps of Engineers that continues to this day. The first three locks built on the Tombigbee-Warrior River system were completed at Tuscaloosa Falls in 1895. By 1896, when the first coal barge passed through the three locks, plans were already underway to build a fourth lock at Ward's Shoals with five more locks planned above there (*Annual Report* 1896:1434).

The 1902 *Annual Report* noted that work on Lock 4 (later Lock 13) was progressing slowly but steadily with 84% of the lock masonry construction completed and about 16% of the dam completed (*Annual Report* 1902:295). Lock 13 was completed two years later in 1905. In 1910, Locks 14 at Arnold Shoals and 15 at Rose Shoals were also completed (Figure 13). Work on Lock 16 near the foot of Squaw Shoals, begun in 1909, was completed in 1915. A year after construction began on Lock 16, work began on Lock 17 at Squaw Shoals. Lock 17 was the most complicated of the locks since double lift gates were necessary to obtain sufficient lift over Squaw Shoals. The tables presented in Figure 14, which appeared in the *Annual Report* (1920:892), succinctly describe all the locks then completed on the Black Warrior-Tombigbee River system.

Figure 14 shows the type of construction for the first 17 locks built on the river system. This table indicates that the lock and dam at Lock 13 was constructed of stone with a lift of 12.14 feet. Locks 14, 15 and 16, however, were constructed of concrete. Figure 15 shows a diagram of Lock 3 (Lock 12) presented in the 1896 *Annual Report*. Lock 12 was similar to Lock 13, except that it had a stone-filled timber crib, while Lock 13's dam was constructed of stone.

Descriptions of the facilities associated with each lock are generally lacking in the *Annual Reports*. The upkeep of the lockmaster's house is mentioned, but no indications of the kinds or numbers of structures that were originally built at the complex are given. However, a 1937 reconstruction of a "lockhouse" at Lock 13 was located in the Civil Works Projects (1937) files at the National Archives in East Point, Georgia. The floor plan (not shown) and front elevation (shown in Figure 16) of the house were recorded, showing a five-room house with a bathroom and a screened porch. This was

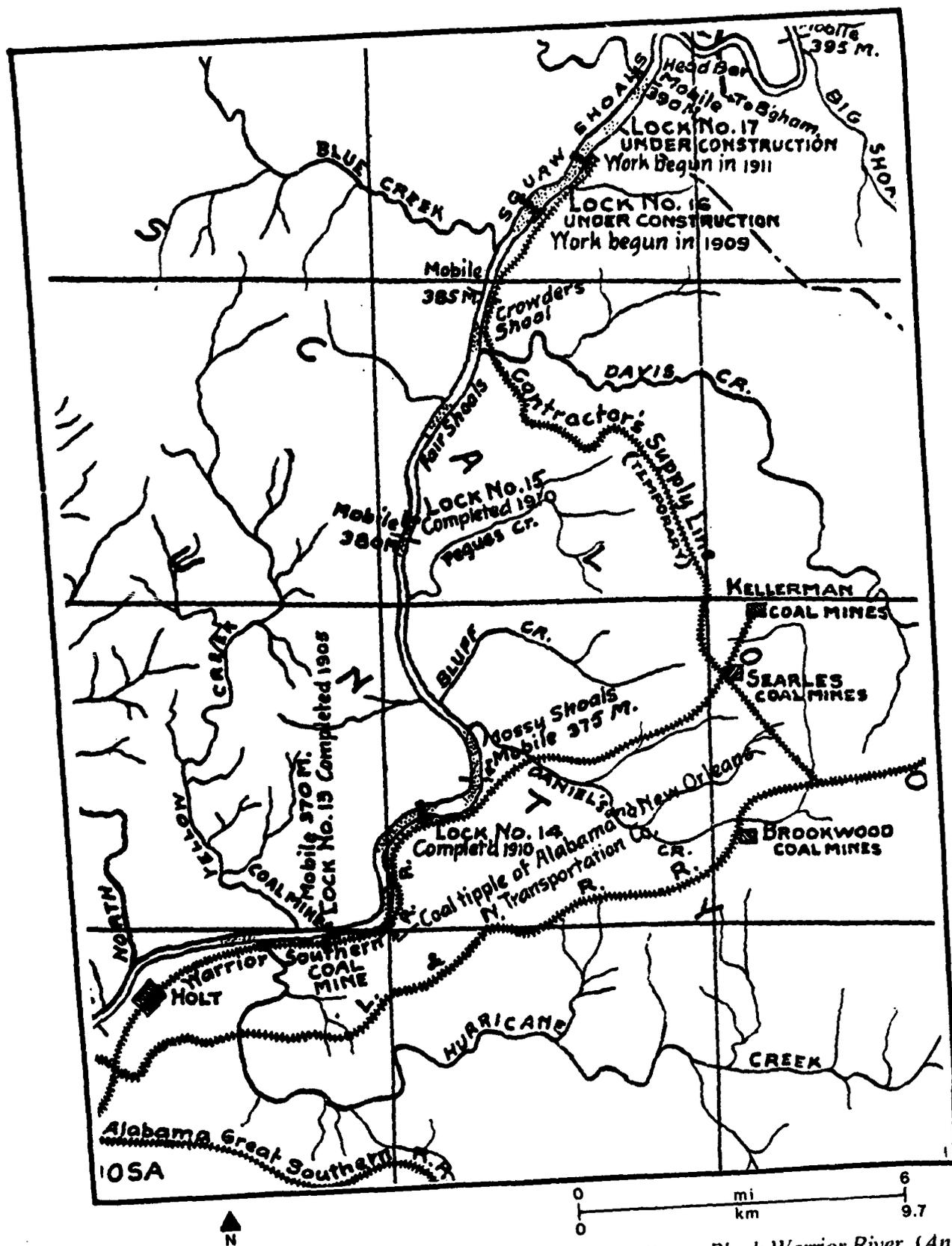


Figure 13. Portion of Corps of Engineers Map of the Upper Black Warrior River (Annual Report 1911:1703).

Location and other data for locks in this system.

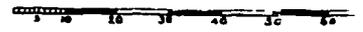
Lock No.	Distance from Mobile.	Nearest town.	Distance.	Width of chamber and greatest length available for the full width.	Lift.	Depth over sills at low water.
	Miles.			Feet.		Feet.
1.....	111	St. Stephens, Ala.....	3	281.9 by 52.....	10.00	6.5
2.....	182	Pennington, Ala.....	6	286 by 52.....	10.00	6.5
3.....	206	Oakchie, Ala.....	5	.....do.....	10.00	6.5
4.....	231	Demopolis, Ala.....	1	285.6 by 52.....	10.00	6.5
5.....	248	Cedarville, Ala.....	5	.....do.....	10.00	6.5
6.....	267	Sawyer ville, Ala.....	5	.....do.....	10.00	6.5
7.....	282	Wedgworth, Ala.....	5	284.7 by 52.....	10.00	6.5
8.....	298	Alron, Ala.....	3	284.7 by 51.65.....	10.00	6.5
9.....	315	Powers, Ala.....	4	284.7 by 52.....	10.00	6.5
10.....	322	Tuscaloosa, Ala.....	.....	286.6 by 52.....	9.88	6.5
11.....	322	.....do.....	.....	286 by 52.....	8.50	6.5
12.....	323	.....do.....	1	286.2 by 52.....	10.50	6.5
13.....	370	Tidewater, Ala.....	.....	285.5 by 52.....	12.14	6.5
14.....	373	Searles, Ala.....	8	282.1 by 52.....	14.00	6.5
15.....	380	Kellerman, Ala.....	6	.....do.....	14.00	6.5
16.....	387	.....do.....	14	285.5 by 52.....	21.00	6.5
17 ¹	388	.....do.....	14	.....do.....	63.00	6.5

Lock No.	Character of foundation.	Kind of dam.	Type of construction.		Date of completion.	Actual cost of lock and dam.
			Lock.	Dam.		
1.....	Soft rock.....	Fired.....	Concrete.....	Concrete.....	1909	\$560,290.02
2.....	Hard clay.....	.....do.....	.....do.....	Timber crib, stones filled.	1915	560,114.00
3.....	.....do.....	.....do.....	.....do.....	.....do.....	1915	609,622.80
4.....	.....do.....	.....do.....	.....do.....	.....do.....	1908	479,000.00
5.....	.....do.....	.....do.....	.....do.....	.....do.....	1908	501,000.00
6.....	Piles.....	.....do.....	.....do.....	.....do.....	1908	443,000.00
7.....	.....do.....	.....do.....	.....do.....	.....do.....	1903	225,600.00
8.....	.....do.....	.....do.....	.....do.....	.....do.....	1903	212,400.00
9.....	.....do.....	.....do.....	.....do.....	.....do.....	1902	202,440.00
10.....	Hard sandstone.....	.....do.....	Stone.....	.....do.....	1895	244,500.00
11.....	.....do.....	.....do.....	.....do.....	.....do.....	1895	170,000.00
12.....	.....do.....	.....do.....	.....do.....	.....do.....	1895	160,500.00
13.....	.....do.....	.....do.....	.....do.....	Stone.....	1905	203,700.00
14.....	.....do.....	.....do.....	Concrete.....	Concrete.....	1910	414,714.80
15.....	.....do.....	.....do.....	.....do.....	.....do.....	1910	430,233.87
16.....	.....do.....	.....do.....	.....do.....	.....do.....	1915	520,833.68
17 ¹.....	.....do.....	.....do.....	.....do.....	.....do.....	² 1915	³ 3,115,520.36

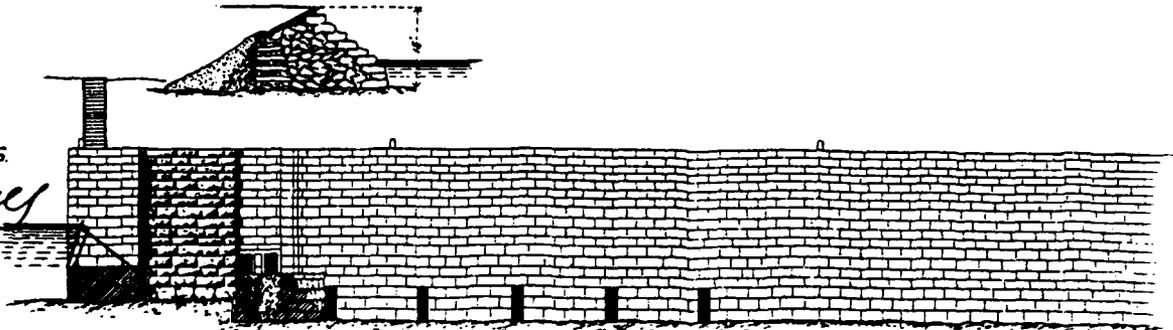
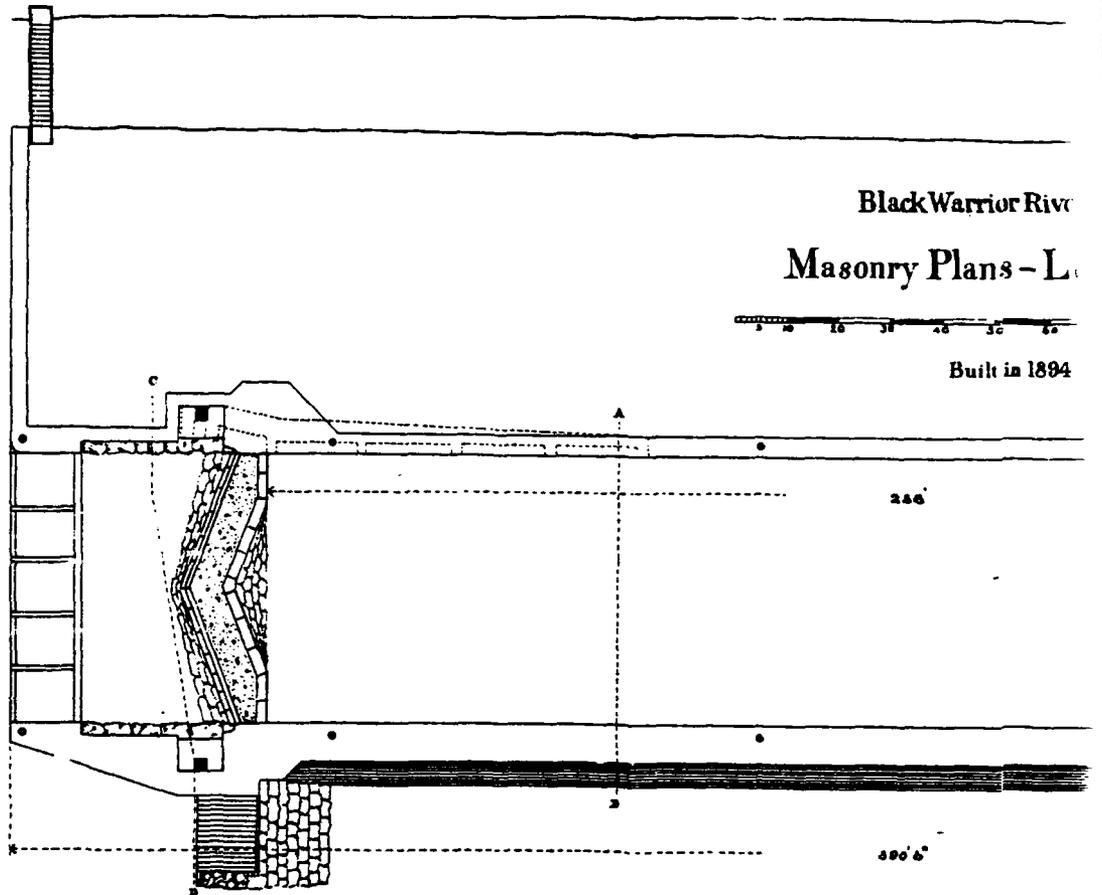
¹ Double lock.
² Opened to navigation in 1915. Now 99 per cent completed; the remaining 1 per cent covers cost of submerged land.
³ Estimated cost. Payments for submerged lands not completed. Cost to Jan. 1, 1920, \$3,101,703.07.

Figure 14. Table Detailing Information on the Locks and Dams on the Black Warrior and Tombigbee Rivers (Annual Report 1920:892)..

Black Warrior River
Masonry Plans - L



Built in 1894



Section through axis showing Bank Wall

to accompany Report for Fiscal Year
ending June 30th, 1896.

Wm. H. Kelly
Major of Engineers U.S.A.

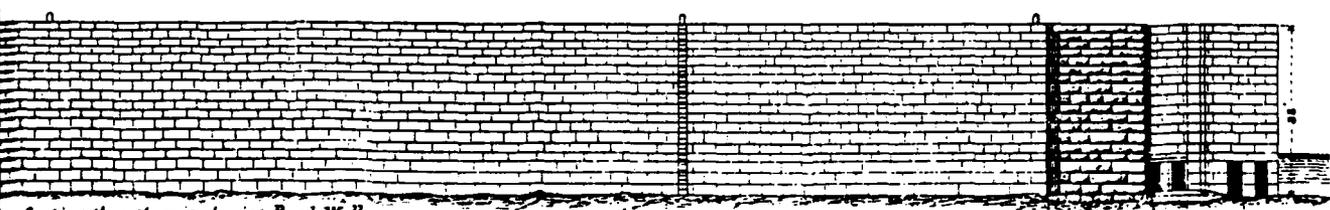
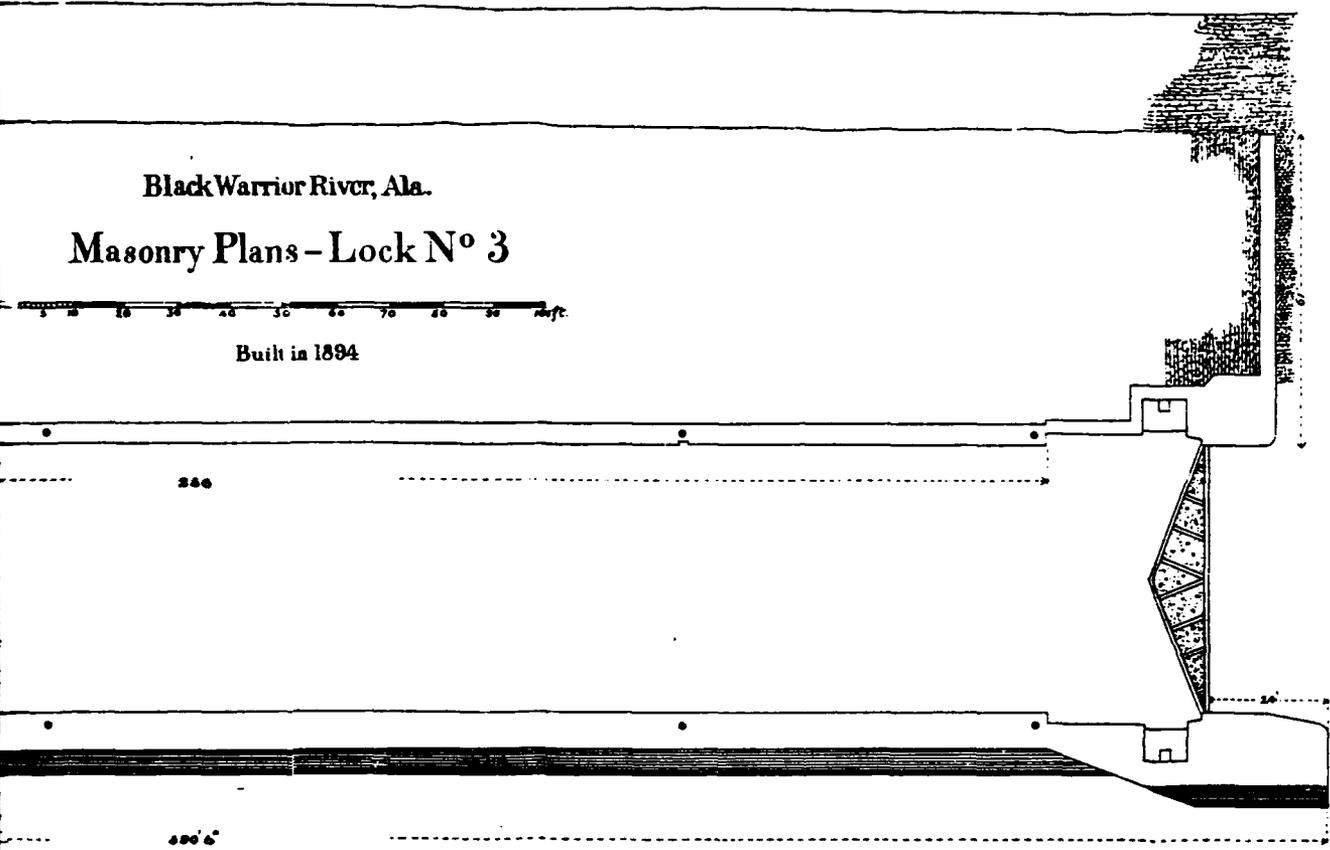
10/2

Black Warrior River, Ala.

Masonry Plans - Lock N° 3

0 10 20 30 40 50 60 70 80 90 ft.

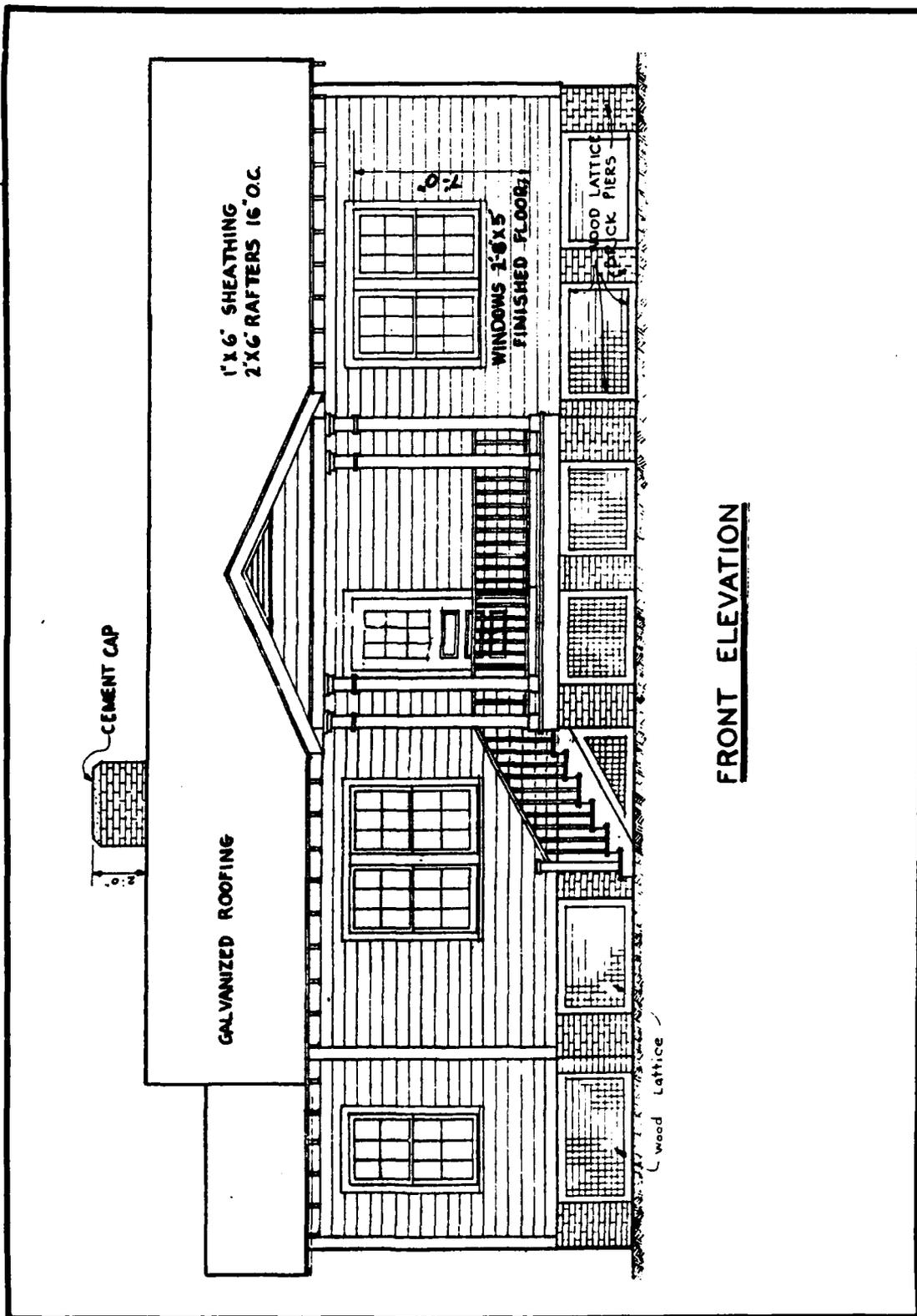
Built in 1894



Section through axis showing Bank Wall

Figure 15. Plan and Elevation of Lock 3 (Lock 12; Annual Report 1896).

20/2



FRONT ELEVATION

Figure 16. Front Elevation of Lockhouse at Lock and Dam 13, 1937 (Civil Works Project 1903).

the only drawing of a lock structure found and the actual location of this structure within the lock complex could not be determined. (The plan does not indicate whether it was a lockmaster's or boatman's house.) Figure 17 shows a view of Lock 13 with a row of houses on the right side of the photograph that were probably the boatmen's and lockmasters' residences. Figure 18 shows the topographic location of the lock around 1928-29 (1942 USGS Searles quadrangle map).

The best available record of the lock complexes are plan drawings made in the late 1940s by the Corps of Engineers for modernizing the electrical facilities at the locks (U.S. Army Corps of Engineers 1948). These plans, which show structures and other improvements for each lock, are based on original contour plan drawings made in 1904 (U.S. Army Corps of Engineers 1904). The following information is compiled from the 1948 plan maps:

Lock 13

- **2 lockmasters' houses with rock foundations**
- **2 boatmen's houses with rock foundations**
- **1 pump house**
- **1 old well**
- **1 filter plant**
- **1 tow hauling unit**

The plans also indicate a railroad grade (the Mobile and Ohio) bordering the south edge of the complex, a coal mining shaft immediately to the east of the complex, an air shaft opening directly south across the railroad tracks from the lock complex, a stable yard 100 feet west of the complex, and another mine shaft opening approximately 100 feet west of the stable yard. The map also shows the location of a barge wreck approximately 300 feet below the lock in the river channel. Pastures are shown across the river on either side of the dam abutment (U.S. Army Corps of Engineers 1948).

Lock 14

- **2 lockmasters' houses with rock foundations**
- **2 boatmen's houses with rock foundations**
- **1 tow hauling unit**
- **1 tool house**
- **1 water storage tank**
- **1 well**

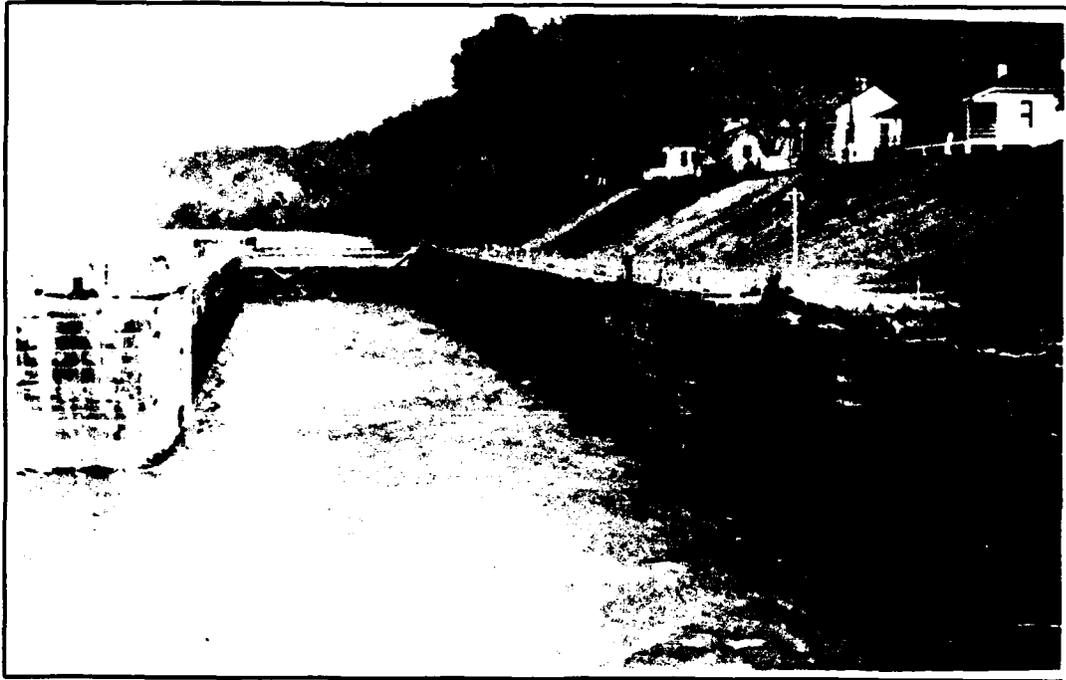


Figure 17. View of Lock 13; (note row of lockmaster and boatman's houses on right Jeane 1981:55).



Figure 18. Detail of Tidewater on the Black Warrior River in 1928 (USGS 1942).

The Warrior Southern Railroad paralleling the river passes along the south edge of the complex. An abandoned field is shown downriver (west) of the complex and a cultivated field is indicated across the river and north of the dam abutment (U.S. Army Corps of Engineers 1948). Figure 19 shows the area around Lock 14 in 1928 (1942 USGS Searles quadrangle map).

Lock 15

- 2 lockmasters' houses
- 3 boatmen's houses
- 1 tool house
- 1 gasoline hoist
- 1 water storage tank
- 1 well
- 1 hydraulic ram

Lock 15 was the only lock complex located on the western side of the Black Warrior River. A relatively flat hill above the lock is shown as forested and a cultivated

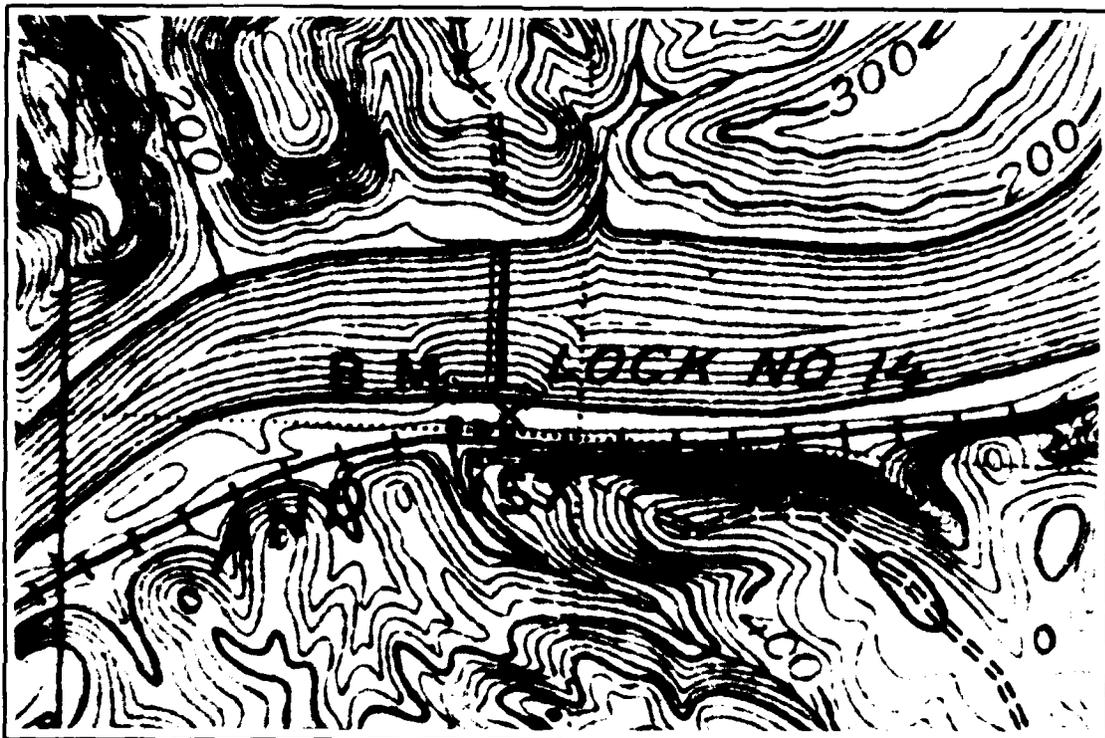
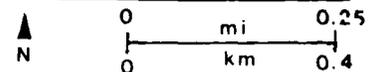


Figure 19. Detail of Lock 14 in 1928 (USGS 1942).



field is indicated just downriver from the complex (U.S. Army Corps of Engineers 1948). Figure 20 is a topographic detail taken from the 1942 Searles quadrangle map, which show the area in 1928. Figure 21 is a photograph of Lock 15 taken around 1916 showing the steamboat *Nugent* passing through the lock.

Lock 16

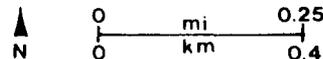
- 2 lockmasters' houses
- 2 boatmen's houses
- 1 well
- 1 tow hauling unit
- 1 water storage tank

The most expansive cultivated field is indicated immediately southeast of the Lock 15 complex. Abandoned fields are shown to the northeast. Steep hills face the complex across the river (U.S. Army Corps of Engineers 1948). Figure 22 is a topographic view of the locks (1928-29) showing four major structures (1942 Searles quadrangle map).

Correspondence reviewed in the Civil Works Project files and the *Annual Reports*, at the National Archives in East Point, Georgia, indicates that maintenance on the locks



Figure 20. Detail of Lock 15 in 1928 (USGS 1942).



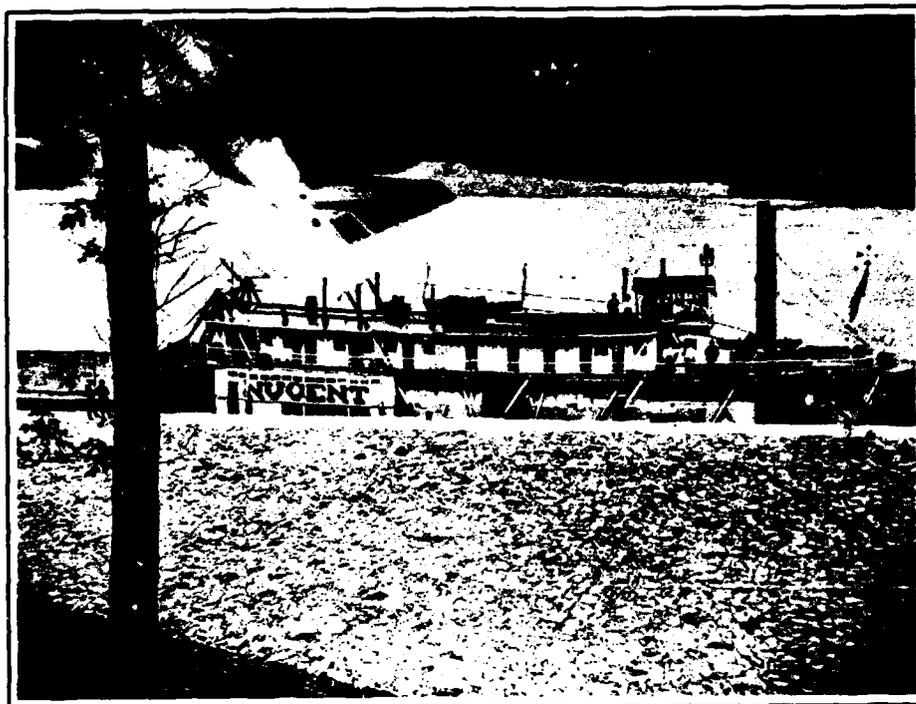


Figure 21. View of the *Nugent* in Lock 15 (Hall and Hall 1916:Plate IX).

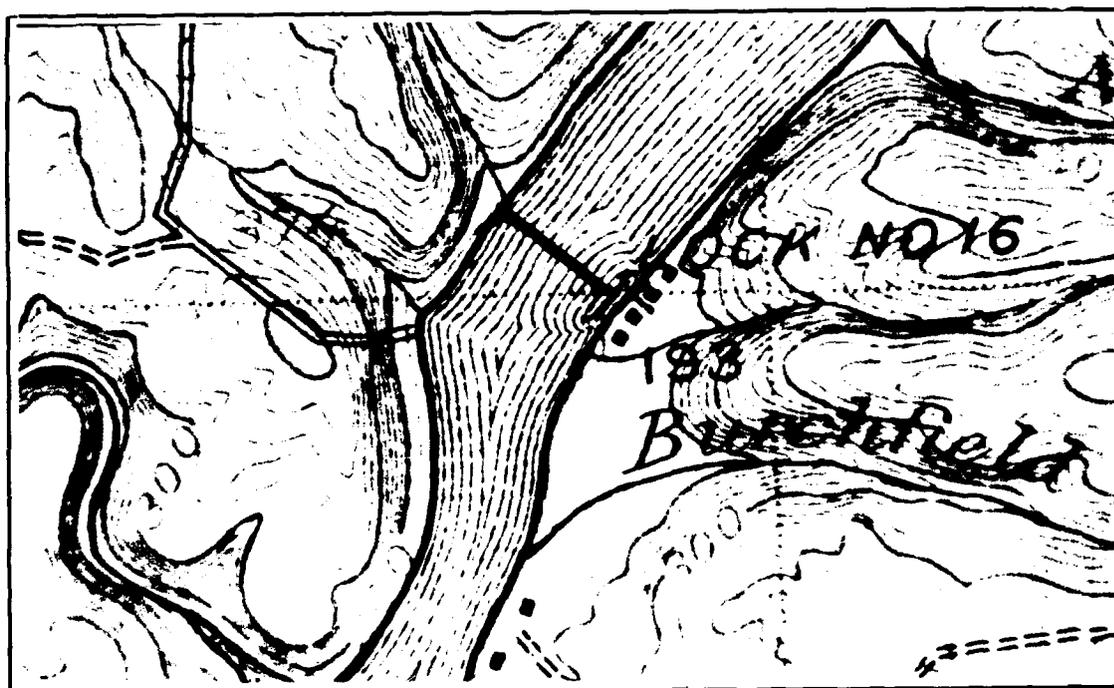
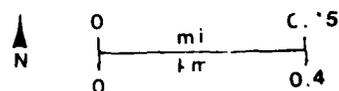


Figure 22. Detail of Lock 16 in 1928 (USGS 1942).



was a continual process as the river flooding and barge traffic sometimes damaged the locks. Certainly, as boats became larger some had difficulty passing through the locks. A flood in 1938 damaged the cap of the dam at Lock and Dam 16 which had to be replaced (U.S. Army Corps of Engineers 1938). Early in the 1940s the timber guard cribs at Lock 13 were replaced with 10 x 10 foot logs and salvaged stone from Locks 12 and 13 (U.S. Army Corps of Engineers 1941, 1942).

Early Communities in the Area. An 1865 Civil War map (see Figure 7) shows no communities in the project area, with Tuscaloosa being the closest town. This map shows Oregonia located on Water Melon Road in the northwestern corner of Tuscaloosa County. According to Harris (1977:97), Oregonia appears on Colton's 1853 map. Smith's 1879 map shows no communities in the area, although he indicates individual inhabitants' names. Following the arrival of the Louisville and Nashville mineral lines in the late 1880s and early 1890s, a number of mining communities began to spring up near the railroads on the eastern side of the Black Warrior River.

Smith's 1879 map (see Figure 9) shows Hayes Post Office with B.E. Thompson on Eddin's Road near Davis Creek (on the eastern side of the Black Warrior River). Berney's 1893 map shows the community of Hayes near Davis Creek. Hayes was named for a local family who lived in the area by 1840 (Rich 1979:273). The 1887-88 *Alabama State Gazetteer and Business Directory* (Polk 1887-1888:410) reported that Hayes had a population of 14, with B.E. Thompson as the postmaster (with a general store, grist mill, and cotton gin). An 1889 State of Alabama map shows Hayes as the only community on the east side of the Black Warrior River in the coal hills northeast of Tuscaloosa (Dinsmore 1889). The latest map to show Hayes is the 1903 Civil Works Project Map. A 1916 map (Friedman and Loveman Coal Lands) does not indicate the Hayes community but does locate Thompson's Mill.

According to McCalley's map of the Warrior Coal Basin, by 1898 there were two communities on the eastern side of the river in the coal hills: Brookwood located near Daniels Creek and Burchfield to the north near Davis Creek. Brookwood, a mining community, was originally named "Horsehead," but around 1890 the name was changed (Rich 1979:126). Around the same time, the Birmingham Mineral Line (Louisville and Nashville) extended a branch to Brookwood (Klein 1972:270). The population in Brookwood in 1890 was 273; in 1900 the population had risen to 2,510 (Owen 1903:185), reflecting burgeoning coal operations there. From this period to the present, Brookwood has continued as one of the largest coal mining areas in the county. During the early twentieth century coal washers and beehive ovens were built at Brookwood, indicating the importance of this coal mining area.

Burchfield, located several miles north of Brookwood, was not on the Mineral Line Railroad, although it became for a time a prosperous coal mining community during the early twentieth century. The Burchfield Post Office, with James G. Burchfield as postmaster, operated from 1894 to 1898 (Rich 1979:136). Milldale and Yolande, located to the northeast of Brookwood on the Mineral Line, are shown on the 1899 USGS Brookwood quadrangle map.

According to the maps reviewed, Tidewater is the only settlement on the river in the project area to exist prior to the construction of Lock 13. According to the 1942 USGS Searles quadrangle map, Lock 13 was constructed at Tidewater. Rich (1979:542) states that Tidewater was in existence by 1896 and was named after the Tidewater Coal Company.

The community of Scales, located between Locks 13 and 14, probably predates the locks and railroad, although it does not show up under that name on any pre-lock maps. Little information on Scales could be found; Smith's 1879 map shows W. Scales on the river in the vicinity of Snider's Shoals. Scales was an early family name around Tuscaloosa and a James R. and a John C. Scales served in Company F, 41st Alabama Infantry Regiment, during the Civil War (Lambert 1977:86). Smith's map indicates a J. Scales on the west side of the Black Warrior and another Scales on the Point Road near the North River (west side of the river) near Scales Ferry. The 1942 Searles quadrangle map is the first map to show the Scales community at Rocky Branch (Figure 23), although the 1899 USGS Brookwood quadrangle map shows an unnamed settlement on the river in the same area (Figure 24). McCalley (1886:483) mentions a coal outcropping in a field below Arnold's Shoals next to Mr. Willis Scales. A natural 'lake' known as Scales Lake is shown on the 1942 Searles quadrangle map. Roland Harper and David DeJarnette visited the lake, photographing a nearby virgin pine forest bluff and hill top (Roland Harper Collection 1935:A10,752,2). Several tiers of waterfalls were located on Rocky Branch. Near the river a lake was formed by one of the shale ledges, named Scales Lake (Rich 1979:493). Both Willis Scales and his wife Sarah lived in the vicinity

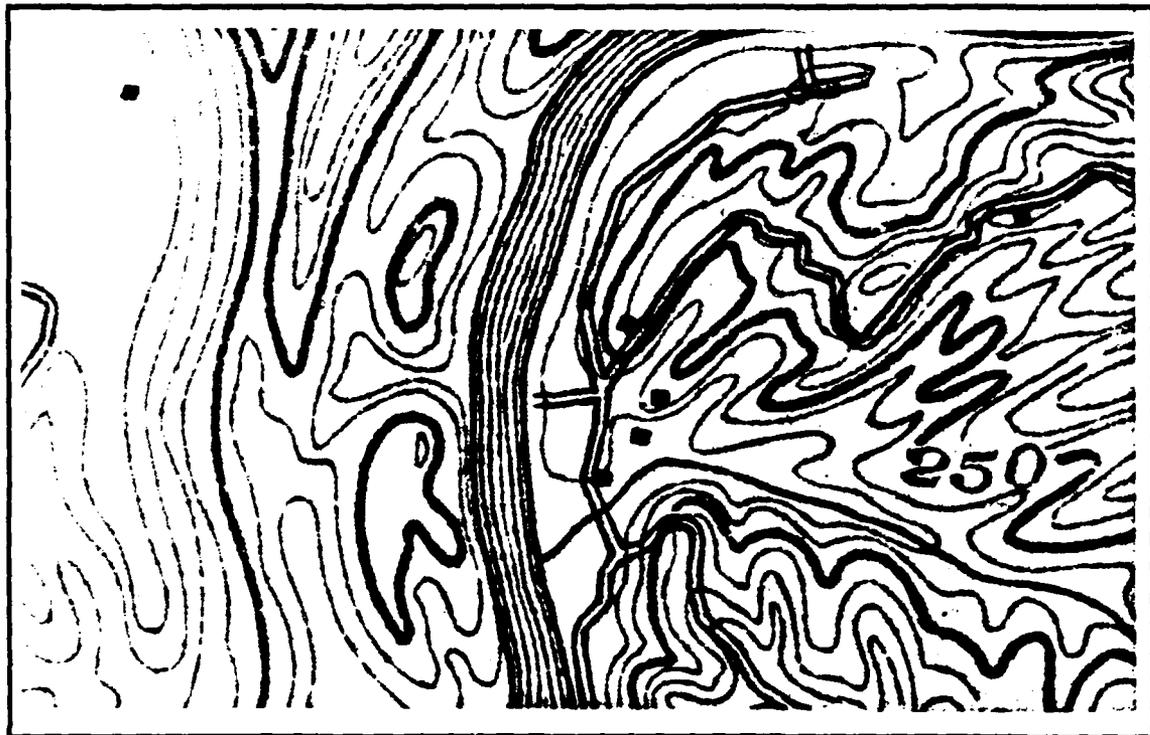
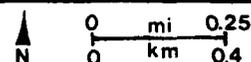


Figure 23. Detail of Scales Community in 1928-29 (USGS 1942).



Figure 24. Detail of Scales Community in 1895 (USGS 1899).



of Scales until their deaths early in the twentieth century. Activities at Scales probably involved some type of mining operations. A 1913 *Annual Report* map indicates a coal tipple of the Alabama and New Orleans Transportation Company north of Lock 13 and Tidewater in the direction of Scales. Unfortunately, the map does not indicate Scales *per se* and according to the map the tipple was probably located slightly downstream (*Annual Report* 1913:2144).

Development Prior to and Following the Construction of the Locks

The construction of the locks, a railroad paralleling the river (in the project area), and new coal mining endeavors brought increased development and settlement to the area. The completion of these locks opened the river to year-round traffic, extending navigation to 388 miles up the Tombigbee-Black Warrior River system from Mobile Bay. The establishment of Holt by the Central Coal and Iron Company in 1901 aided significantly in the development of the area. The Holt furnace was located approximately 4 miles below Lock 13 and began operation two years before the completion of the lock. Shortly after the establishment of Holt, coal land was purchased by the Central Coal and Iron Company 16 miles northeast of Holt in an area between Burchfield and Brookwood. In 1903 the Mobile and Ohio Railroad constructed a rail line to this area where the community of Kellerman developed. The Tidewater Coal Mine supplied coal to the Holt Furnace prior to the purchase and construction of the rail line to the coal mines at Kellerman (Woodward 1940:78).

The rail line constructed by the Mobile and Ohio Railroad Company, known as the Warrior Southern branch, began at Holt, passed through Tidewater, and paralleled the Black Warrior River until it reached the mouth of Daniels Creek. Turning in an easterly direction at Daniels Creek, a tunnel was cut through a steep hill to maintain the railroad grade (Figure 25). A few hundred feet from the tunnel mouth facing Daniels Creek, railroad trestles were constructed to span the grade across the creek. The railroad grade then switched back and forth across Daniels Creek, through several more hillsides following the creek bed for several miles before veering to the northeast toward Kellerman. There appear to have been four tunnels for this railroad grade. Recent topographical maps (1974 Brookwood and Lake Nicol quadrangle maps) indicate at least three more tunnels along Daniels Creek past the one near the mouth of the stream. In a photograph (not shown) taken by Roland Harper in 1919, the photographer is standing in one tunnel and shooting toward another tunnel 100 feet or so away. Light can be seen through this second tunnel, indicating that it is fairly short (Roland Harper Collection 1919:A4, 402, 4).

Boats and Traffic. The development of river transportation on the Black Warrior River and the growth of coal mining are closely connected. The first boats used on the Black Warrior were flatbed boats with solid timber gunwales that were used to transport coal downriver during high water. Dr. Toumey (Berney 1878:257) reported that first-class boats of this type could carry about 2,000 bushels of coal and drew 20-30 inches of water. They were floated to Mobile where the coal and the boat were sold, the boat

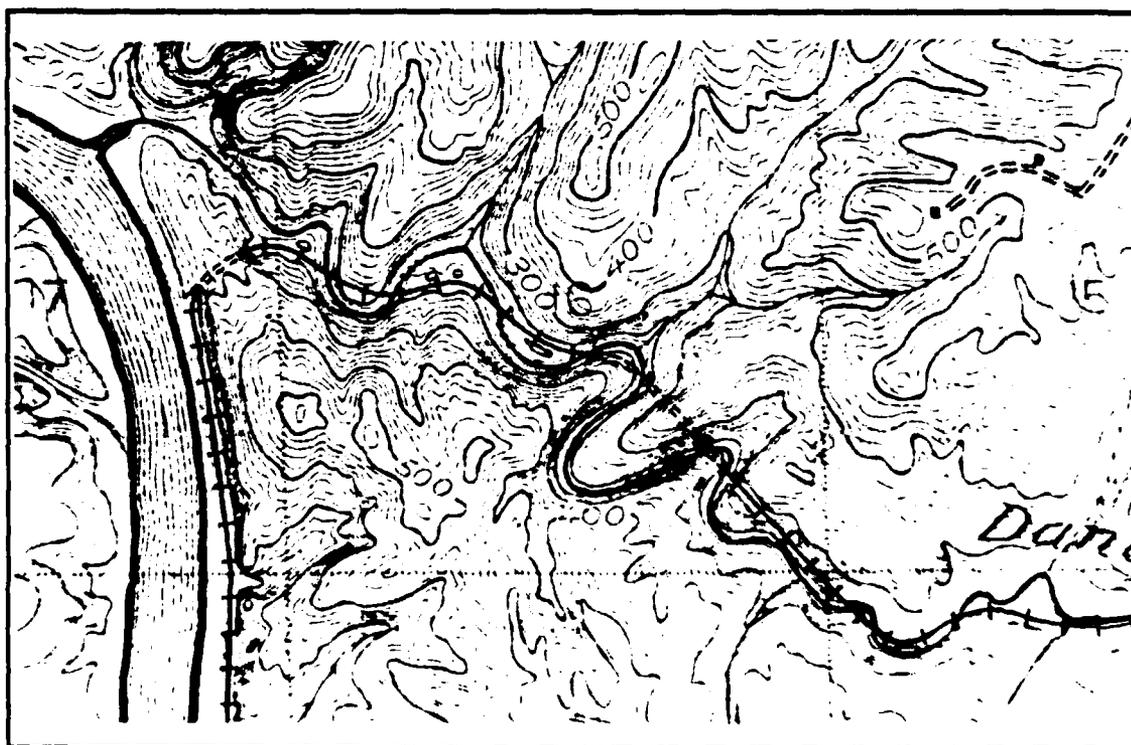
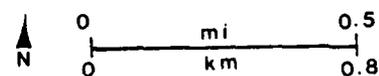


Figure 25. Detail of Warrior Southern Railroad in 1928 (USGS 1942).



being worth little. In 1895 when the first three locks were opened on the Black Warrior at Tuscaloosa, barges began to be used, loaded with coal and gravel. Steam packets were also finally able to travel above Tuscaloosa. As the locks in the Holt area and above Squaw Shoals were completed, a number of public and private terminals were built at points along the river as far as the Birmingham port. There were terminals at Holt, Fox, and Gilmore, the latter two in the immediate project area (*Economic Analysis* 1937:14-15, Table 3-B).

In 1913, the Alabama and New Orleans Transportation Company began operating a fleet of barges between the Warrior Coal Fields and New Orleans (U.S. Army Corps of Engineers 1913; *Economic Analysis* 1937:130). The transport fleet consisted of six to eight steel, self-propelled barges that handled bulk cargo, most of which was coal. The Alabama and New Orleans Transportation Company operated six barges on the Mobile-Tombigbee-Warrior River system (Neville 1964). The company had two 75 horsepower motors that were operated on gas from coke. The towboats, the *Clio*, the *M. Carney*, and the *Volcano*, were the first vessels to regularly transport coal on the river system after the completion of Lock 17 in 1915. (See Figures 11 and 21 for examples of these boats used on the river.) The company was sold to the state government in 1918 and then operated by the Director General of Railroads as the Mississippi-Warrior Service. In 1924 the company was purchased by the Federal Barge Line, Inland Waterways Corporation (*Economic Analysis* 1937:13; Neville 1964:33-35). A few years later cargo barges that could be pulled in tandem began to be used. Around 1953 large, flat-decked barges were introduced into the Walker County area for transporting coal. These barges could carry 600-700 tons of coal each, greatly increasing the amount of coal that could be moved down the river (Fies 1981:64).

During the early years prior to the building of the locks, numerous wrecks occurred on the shoals. Even after the completion of the locks, periodic wrecks occurred on the river. A 1940 letter to the U.S. Army Corps of Engineers, Mobile District, concerned the removal of a sunken barge and steamer at the municipal wharf (Holt). The wreckage was obstructing the river channel and was a hazard to river traffic. The Corps of Engineers vessels the *Upatoi*, a derrickboat, and the *Mixon*, a towboat, were used for the removal project (U.S. Army Corps of Engineers 1940).

Settlements and Coal Development In the Project Area and Nearby Vicinity. The community of Fox was located between Holt and Tidewater (1942 USGS Searles quadrangle map). Fox was established in 1930 as a siding and station for the Mobile and Ohio Railroad, where shipments of coal were sent (Rich 1979:238). A 1944 Tuscaloosa County highway map indicates several structures at Fox, including an unnamed industry directly on the river, a church, and a number of dwellings. A reference is made to a derrick used for the transfer of logs from barges and rafts to a sawmill at Fox (*Economic Analysis* 1937:5, Table 3-B).

Gilmore is a late settlement on the river near Lock 14. It appears on the 1944 Tuscaloosa County highway map and, although a community is not named on the 1942 Searles quadrangle map, several structures are shown at Lock 14 that probably represent Gilmore. A list of coal producers in Tuscaloosa County indicates that the Cannon

Shepherd Coal Company of Tuscaloosa was operating the Gilmore mine from 1921 to 1923 (Wingard 1923:43; Ernst 1924:51; Jones 1925:46). The Gilmore mine was not listed in the 1925 coal producers' directory (Jones 1926:62). A mine probably existed at Gilmore, although this is not certain. A river landing, with a coal bin and loading chute that was open to all water carriers, was definitely there by 1937 (*Economic Analysis* 1937:5, Table 3-B). The 1944 county highway map shows only the lock and a camp or lodge which was not in use at Gilmore.

Peterson, south of Lock 13, also developed during the early twentieth century. In 1903 Charles M. Peterson purchased the area which became known as Peterson. When the Louisville and Nashville Railroad Line was extended from Brookwood to Holt around 1911 the railroad stop at Peterson became known as Shiras. A post office was opened there in 1914 (Rich 1979:435). The Hallman Coal Company was mining at the Shiras No. 3 mine in 1925 (Jones 1928:104). Mr. Charles Hallman was pastor at the Methodist Church in 1917 (Lambert 1977:125) and the Hallman family possibly had a small coal operation near Peterson. Strip mining still continues today around Peterson (1975 USGS Cottdale quadrangle map).

Holt became an important transportation hub. A terminal and derrick warehouse were constructed at Holt in 1927 (*Economic Analysis* 1937). Switching and railroad connections for the Louisville and Nashville, the Mobile and Ohio, and the Central Iron and Coal Railroads were also constructed at Holt. A loading station for coal, slag, coke, and pig iron onto barges was built, but was abandoned by 1937 (*Economic Analysis* 1937:5, Table 3-B). Later, Reichold Chemicals of White Plains, New York, built a chemical plant at Holt (U.S. Army Corps of Engineers 1963).

Coal mining activities were concentrated on both sides of the river around Holt and Lock 13, extending northeast to the mining districts of Kellerman, Searles, and Brookwood. There were numerous small and large mining operations around Lock 13 (Figure 26). A ca. 1905 untitled map shows the location of the furnace of the Central Coal and Coke Company with the Warrior Southern Railroad (Mobile and Ohio) Line. Upriver, past the mouth of Hurricane Creek, is the "Coal Mine of the Alabama Barge & Coal Co." (Tidewater) at "Lock #4" (Lock 13). Across the river from Lock 13 is the "Blair Coal Mine." A slightly later map, ca. 1910 untitled, again shows the Blair mine and the "Blair Coal Company's Property," as well as "Scales Property" on the west side of the Black Warrior River. Also shown is a narrow-gauge railroad track leading from the mine to a coal tipple at the mouth of Yellow Creek. The Blair Coal Company's property is shown on the west side of the river. Another mine is shown in the river, downstream from the Blair Mine a short distance above the mouth of Hurricane Creek. A "haulage" track is shown leading from Yellow Creek and across the river to a coal tipple on the Mobile and Ohio track north of Hurricane Creek. At Lock 13, the Tidewater Mine is shown. An 1896 newspaper article in the *Tuscaloosa Times*, describing the opening ceremonies for the first three locks at Tuscaloosa, heralds the industrious endeavors of the Tidewater, Blair, and Miller Coal companies and predicted a prosperous future for Tuscaloosa (Griffith 1962:434-435).

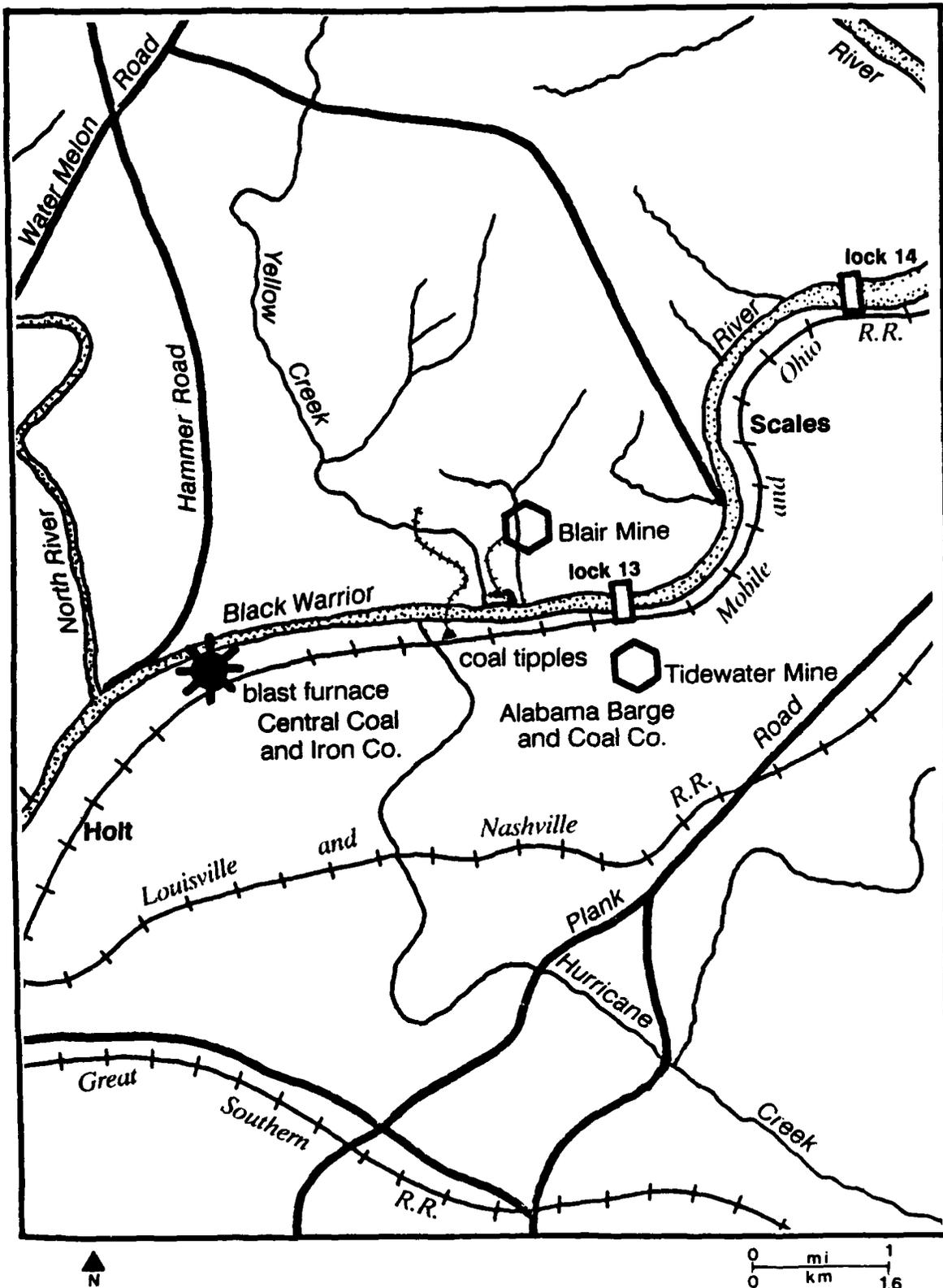


Figure 26. Composite Map of Industry, Mining, and Transportation at Holt, Alabama, ca. 1900.

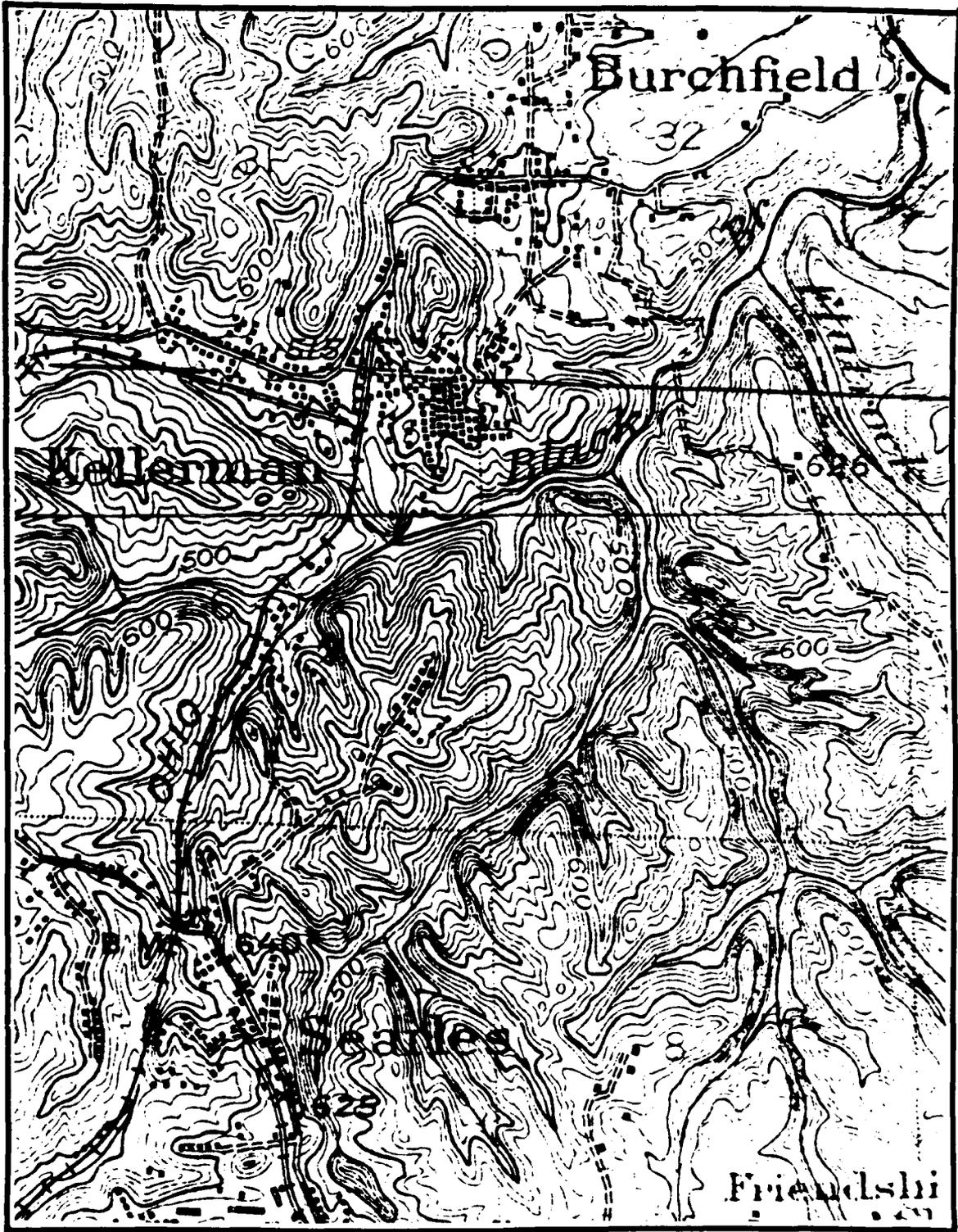
According to Polk (1887-1888), the Tuscaloosa Coal Iron and Land Company owned 40,000 acres of timber and mineral lands and 4,600 acres of city and suburban property. Officers of the company were William C. Jemison, President and Mayor of Tuscaloosa, F. Friedman, Vice President, and J.W. Castleman, Secretary. Later, much of this land became the Friedman and Loveman Coal Lands, which owned the Blair Coal, North River, and Tidewater Coal Mines (Polk 1887-1888:722; Friedman and Loveman 1916). The Friedmans and Lovemans were general merchandise wholesalers and retailers in Tuscaloosa (Smith 1881:630). The Friedman and Loveman Coal Lands 1916 map shows fee-simple, mineral, and surface rights property of the company. The company owned sections of property on both sides of the river up to Squaw Shoals, with the largest contiguous block of land around the North River/Yellow Creek area.

The Twin Seam/Shook Mining Companies. One of the largest coal companies in the area during the early twentieth century was the Central Iron and Coal Company which built Holt and owned much coal property around Kellerman and Searles (Figure 27). In 1912 the company president was Waddill Catchings of New York and the Vice President was J.N. Shook of Tuscaloosa (Phillips 1912). The Central Iron and Coal Company which had constructed the Holt Furnace in 1903 blew out the furnace in 1929 and went into receivership 11 years later in 1940 (Woodward 1940:79). The coal lands and the railroad lines were sold.

In 1938 the Mobile and Ohio Railroad merged with the Gulf, Mobile and Ohio Railroad and the Warrior and Southern Railway that ran from Holt to Kellerman was abandoned. The Twin Seam Mining Company, which was owned by the Shook family, then purchased the Warrior and Southern Railway, and associated properties. J. Newman Shook, President of the Twin Seam Mining Company, had earlier been the Vice President of Central Iron and Coal Company. In 1945 the property was deeded from the Twin Seam Mining Company to the Shooks, and the railroad that followed the river to Daniels Creek to Kellerman became known as the Shook Railroad.

In 1960 John Chichester prepared an appraisal report on the Shook Railroad and properties in 1960 for the U.S. Army Engineer District in Mobile, which had purchased lands for the construction of the Holt Lock, Dam, and Lake. This report provides information on the project area and nearby environs and sheds some light on the railroad and coal mining town of Kellerman. The appraisal report states that the Twin Seam Mining Company purchased from the Central Coal and Iron Company 5,868 acres of land, plus mineral rights to 90 acres of land for a total of 5,958 acres. This land was around Kellerman where, during the first quarter of the twentieth century, the Central Coal and Iron Company had operated underground mines supplying coal for the coke ovens at Holt. Arthur J. Blair (1960), consulting and mining geologist, prepared a small report on the Twin Seam Mining Company for the Chichester report. Blair reports that the Twin Seam Mining Company reopened the Central Coal and Iron Company coal mines and repaired the Mobile and Ohio Warrior Southern rail lines.

The Chichester report describes the railroad as being approximately 16 miles long (13.66 miles were originally built in 1903, with an extra 2.5 miles added in later years), with two steam, coal-burning Shay engines, and several gasoline service cars. The en-



▲
N

0 ————— 1
0 ————— 1.6
mi
km

Figure 27. Detail of Burchfield, Kellerman, and Searles in 1928 (USGS 1942).

gines were described as obsolete and upkeep of the railroad as excessive. The tracks, especially between Tunnel 1 at Daniels Creek to the termination of the track at a coal washer (Kellerman), were in constant need of repair. The railroad grade passed through four tunnels on Daniels Creek. An unspecified number of bridges were constructed over ravines and Daniels Creek. Apparently all the bridges were replaced in the 1920s with treated wood (Chichester 1960:3, 12).

The origin of Kellerman is uncertain, Rich (1979:313) suggests that the name Kellerman may have been from a civil engineer who worked for the Kellerman Coal Mine Company around 1900. McCalley does not mention the Kellerman mines in his 1899 *Report on the Warrior Coal Basin*. Kellerman was apparently an undocumented mining town until purchased by the Central Iron and Coal Company in 1903. The nearest mining community to Kellerman was Brookwood, located a few miles to the south on the Louisville and Nashville Mineral Line. Mining operations at Kellerman during the Central Iron and Coal Company ownership involved underground mining. Following the purchase of the Kellerman property by the Twin Seam Mining Company, underground mining operations were renewed, but finally abandoned in 1955. After 1955 all coal was obtained through stripping operations involving strip pits and augering (Blair 1960:25-26). Mining equipment included power shovels, a mining auger, a drag line and boom, front end loader, truck, a coal washer, and a coal washer system (Chichester 1960:15).

The operations at Kellerman by the Twin Seam Mining Company were particularly successful during the latter part of World War II. This prosperity continued throughout the 1950s, despite a minor lag in coal production profitability for many Alabama coal mines. The average annual production for the company from 1957 to 1959 was around 200,000 tons. Much of the coal was sold for the manufacture of coke during the World War II period (Blair 1960:3). In 1960 the principal customers for the Twin Seam Mining Company were: Goodrich Rubber Co. (Tuscaloosa), Gulf States Paper (Tuscaloosa), Reichold Chemical (located at Holt), the Alabama Power Company (Barry steam plant), the Marathon Southern Corporation (Naheola), and International Paper (Panama) (Blair 1960:26-27). In 1960 there were an estimated "1,000,000 tons of strippable coal remaining on the Twin Seam Mining Company's property" (Blair 1960:31, 28).

The Chichester report lists 59 one-story, frame, vertical board, employee houses averaging 3 to 8 rooms at Kellerman. Heating was supplied either by fireplaces or woodstoves. Most of the structures did not have interior plumbing but did have electricity. Water was supplied by storage tanks located nearby. Employees paid from \$5.25 to \$10.50 a month for rent. Other structures included a school house, office, store, and storage house. Although most of the houses were livable, the majority were in need of repair and refurbishing. Interestingly, 50% of the dwelling occupants "were not employed in the mine operation and worked elsewhere" (Chichester 1960:13-14).

The report also noted that the Twin Seam Mining Company had "sold all standing timber without limitation as to the cutting." Apparently, from the report's observation,

no consideration was given to future growth (Chichester 1960:14). The area must have been totally devoid of timber, based on this statement.

Other Coal Operations. Two mining communities developed on either side of Kellerman (see Figure 27): Burchfield (immediately north of Kellerman) and Searles (approximately 1.5 miles south of Kellerman). Very little is known about Burchfield as a mining community. It apparently did not have direct railroad access as late as 1928-1929 (1942 USGS Searles quadrangle map). However, the 1944 Tuscaloosa County map shows the Mobile and Ohio branch extending to the community. The map also shows a number of tenant houses, industries, and other groups of buildings at Burchfield and a continual series of structures stretching from Kellerman.

Searles was accessible by the Warrior Southern/Shook Railroad. The settlement flourished during the 1920s when it was operating coal mines and producing coke. The town was named for John E. Searles of the Alabama Consolidated Coal and Iron Company (Armes 1910:473-474; Rich 1979:494). A coal washer existed at Searles in 1912 (Phillips 1912:244). A number of beehive coke ovens were also located at Searles, as well as Brookwood, which served furnaces at Bessemer, Fairfield, Birmingham, and Holt (Lambert 1977:91).

Lambert (1977) presented a short description of the life of the early underground coal miners in Tuscaloosa County that is similar to descriptions presented in Eller's (1982) book on the miners of the southern Appalachian Mountains in West Virginia, Virginia, Kentucky, and Tennessee. According to Lambert, miners worked long hours, as many as 12 to 14 hours a day during the early years, earning no more than \$2.00 a day. Company men, mule drivers, weighmen, and foremen earned the highest wages, up to \$3.00 a day. The miners who dug and loaded the coal worked "piece work," loading the coal onto tram cars which were pushed out by hand or pulled by mules. Dynamite or black powder was used to blast holes, to make "shots" into the hillsides for the tunnel. The main tunnel leading into the mine was called the "entrance," with other tunnels leading from it, referred to as "first rights" or "second lefts," etc. Large timbers supported the roofs of the mines. When the earth shifted or settled, these timbers would break and the miner would "fall out to the grass roots" (die). The miner who was paid by the ton was at the mercy of the "picker" or "weighman" whose job was to remove the rock from the mined coal. If there was more than the normal amount of waste rock in the tram car, the miner could be "docked" and lose the whole car of coal. The weighman recorded the miners' earnings on a store order which the miner would take to the company store to purchase food and other necessities (Lambert 1977:88-91). Many of these early miners lived a hand-to-mouth existence and did indeed "owe their souls to the company store."

Lambert's account of early mining conditions in Tuscaloosa is one of the few for the county. Most information on mining in Alabama centers on mines in Walker and Jefferson Counties (Elliott 1977). It is uncertain what role the Tuscaloosa County miners played in the United Mine Workers (UMW), which was first organized in 1893 (Straw 1985:183). Poor working conditions and a number of mine deaths, including the Pratt Mine Disaster of 1891 (Griffith 1972:615-618), brought about new mining

regulations and regular mine inspections in Alabama. On August 13, 1912, 12 men at the Abernant Mine in the extreme western portion of Tuscaloosa County died from "after damp," a gas build-up that causes suffocation. Six more miners died that same day from an explosion which resulted from a build up of gas in the mines due to improper air flow (Lambert 1977:92).

An important part of the coal operation was coal washing. This process separates the impurities from the coal, which was then classified according to the amount of impurities that remained. Coal washing involved either wet or dry processing. Coal washers began to partially replace weighmen during the latter part of the nineteenth century. One of the earliest successful coal washing facilities in Alabama was built at Brookwood around 1894. In 1899 Elwood Stewart invented a new type of washer that handled larger loads and eliminated the preliminary sorting. The first Stewart coal washer was built at Brookwood around 1900 (Phillips 1912:234). In the early twentieth century the coal washing industry grew dramatically and many mining operations such as those at Kellerman, Searles, and Brookwood built their own coal washing facilities. By 1912 there were four coal washing facilities in Tuscaloosa County: the Stewart washer at Brookwood, a Stewart washer at Searles, and two washers at Kellerman--one a Stewart and one a New Century (Phillips 1912:243-244). Coal washing facilities also handled coal from mining operations without their own coal washer. One such facility, known as the Day, Sexton, Toxey Coal Washer, was built below Lock 13 on the south side of Hurricane Creek (Donan 1963).

A common practice in the South during the late nineteenth century was the use of leased convict labor in a number of industry-related jobs. Many convicts were used in the mines of Alabama, particularly in Jefferson County. According to the *Alabama Board of Inspectors of Convicts Report* for 1884-1890, convict labor was being used in some of the mines in Tuscaloosa County, although it does not state which particular mines. The Board of Inspectors reported that 22 convicts were at hard labor in the county from 1884 to 1890. The two companies using convicts in Tuscaloosa County were the Pratt Coal and Iron Company (owned by Henry DeBardeleben) and the Heard and Pace Company.

The UMW had an open policy of accepting both blacks and whites into its membership. In fact, by the turn of the century, approximately one half of the miners in Alabama were black. The UMW reported in 1902 that 65% of Alabama miners were members and one half of these were blacks (Straw 1985:184). Strikes in 1904 and 1908 apparently resulted in an increased exodus of white miners and a continued influx of black miners (Straw 1975:105). By 1910, 75% of all of the miners in Alabama were black. According to the 1930 U.S. Census, 61% of the coal miners in Tuscaloosa County were white and 39% were black (Harper 1940:19; see Table 2).

The exact number of coal mines and companies that operated in the vicinity of the project area cannot be determined. Coal operation ownerships changed names and owners frequently. Table 3 indicates the ten coal companies listed in the 1912 *The Coal Companies Report*. There were 1,364 miners, including inside and outside day men, in Tuscaloosa County mines. The Blair and Mabel mines were the only mines on the

Table 2. Coal Miners by County for 1930 (Harper 1940:19).

County	White	Black
Jefferson	5,185	8,358
Bibb	965	791
Shelby	788	689
Tuscaloosa	638	413
Walker	4,918	1,949

Table 3. Coal Operators in Tuscaloosa County in 1912.

Mine Name	Operator and Address
Abernant	Abernant Coal Co., Birmingham
Blair	Blair Coal Co., Tuscaloosa
Brookwood	Alabama Consolidated Coal and Iron, Birmingham
Kellerman No. 1	Central Iron and Coal Co., Holt
Kellerman No. 2	Central Iron and Coal Co., Holt
Mabel	Northport Coal Co., Tuscaloosa
Rockcastle	Davis Creek Coal and Coke Co., Abernant
Searles	Alabama Consolidated Coal and Iron, Birmingham
Tidewater	Tidewater Development Co., Birmingham
Yolande Nos. 1 and 2	Yolande Coal and Coke Co., Birmingham

Coal Companies Report 1912

western side of the Black Warrior River. Table 4 lists the coal operators in Tuscaloosa County in 1921 (Wingard 1923:43). Only four of the coal companies listed in 1912 remained on the 1921 list of coal producers: Blair Coal, Central Iron and Coal, Davis Creek Coal and Coke, and Yolande Coal and Coke.

In 1920 a major coal strike involving the UMW turned into a bitter struggle which eventually resulted in the demise of the miners' union in Alabama (Straw 1975:105). According to Straw (1985:184), the UMW ultimately failed in Alabama because of the increasing trend toward black membership in the union and the prevalent "racist and anti-union attitudes of the New South." The role Tuscaloosa County miners actually

Table 4. Coal Operators in Tuscaloosa County in 1921.

Mine Name	Operator and Address
Aetna mine	Aetna Coal Co., Birmingham
Blair mine	Blair Coal Co., Tuscaloosa
Brookwood and Searles mines	The Alabama Co., Birmingham
Cedar Cove mine	Big Sandy Iron and Steel Co., Coaling
Coaling mine	Calhoun Land and Mining Co., Coaling
Gilmore mine	Cannon Shepherd Coal Co., Tuscaloosa
Hospital mine	Alabama Insane Hospital, Tuscaloosa
Kellerman mine	Central Iron and Coal Co., Holt
Liberty mine	Liberty Coal Co., Birmingham
Mabel mine	Riverview Coal Co., Tuscaloosa
Rock Castle No. 1, 2 & 3	Davis Creek Coal and Coke Co., Rock Castle
Woodrow mine	Daniels Creek Coal Co., Birmingham
Yolande No. 4	Yolande Coal and Coke Co., Birmingham

Wingard 1923:43

played in these strikes is unknown, since most of the action appeared to center in Jefferson County, particularly the Birmingham area.

Strip or surface mining was the first type of mining practiced in Alabama. It was practiced on a limited basis, with underground mining becoming the prevalent method by the late nineteenth century and continuing into the twentieth century. However, strip or surface mining has grown in the last 25-30 years to again become the primary type of mining. The abandoning of the underground mines at Kellerman in 1955 marks this trend. The unhealthy and dangerous work of underground mining made surface mining much more economical than deep mining, although the environmental consequences are more devastating (Bailey 1975:1). Improved technology, beginning with the steam shovel and progressing to heavy earth-moving equipment, and the rise in labor costs were also important contributions toward these changes in coal mining methods.

Until recently, coal operations in Tuscaloosa County were more limited than in Walker and Jefferson Counties. Even Bibb and Shelby Counties had more coal operations in the early twentieth century than Tuscaloosa. Table 5 gives the coal production rates for the top coal producing counties of Alabama ranging from the late nineteenth into the late twentieth centuries.

Table 5. Annual Coal Production (in Tons) in Alabama's Leading Coal-Producing Counties.

Year	Bibb	Jefferson	Shelby	Tuscaloosa	Walker
1889	500,525	2,437,446	84,333	19,141	488,226
1895	653,732	3,726,325	52,754	208,117	946,241
1900	964,785	5,255,296	135,832	268,422	1,489,380
1905	1,335,923	5,873,268	157,569	885,361	2,845,617
1910	1,580,243	8,298,702	488,141	1,081,219	3,788,479
1917	1,624,623	10,453,093	781,858	1,032,705	4,844,480
1920	968,001	7,719,910	586,996	914,186	4,768,457
1924	1,072,533	9,749,869	713,587	1,127,836	5,530,762
1980				3,443,316	
1986			4,168	7,651,486	2,582,784*

1889-1910 Phillips 1912:142-153
 1917-1924 Jones 1924:55
 1980-1986 Annual Statistical Reports, Division of Mining Safety and Inspection
 *Underground mines only, not including strip mines

On the average, Tuscaloosa ranked fourth in coal production from 1889 to 1925, even though some of the most productive coal groups existed in Tuscaloosa, such as the Brookwood group. Wingard (1923:320) listed Brookwood as one of the three most important coal groups in the coal basin. These three groups produced most of the coking coal for the state and more than half of the coal mined in the state in 1921.

In Butts' (1926) report, *Analyses of Alabama Coals*, a table (Figure 28) shows the coal production in Alabama by county from 1919 to 1921. The annual coal production is broken down according to where the coal was sent and what it was used for. He also presents the number of employees involved in underground and surface mining operations.

Coal Operations in Recent Years

Tuscaloosa County has steadily increased coal production and is now one of the leading coal producing counties in Alabama. The *Annual Statistical Report* (produced by the Division of Mining Safety and Inspection) indicates that for 1985-86 only three underground mines were being worked in Tuscaloosa, all located near Brookwood and owned by Jim Walters Research. One of the mines at Brookwood (no. 4) is 2,000 feet

County	Production (net tons)					Number of employees				
	Loaded at mines for shipment	Sold to local trade and used by employees	Used at mines for steam and heat	Made into coke at mines	Total	Underground			Average number of days worked	
						Miners ¹	All others	Surface		
1919										
Bibb	984,845	7,616	41,638	-----	1,034,099	1,072	-----	424	2,090	224
Blount	271,268	2,243	10,100	-----	283,606	411	-----	169	580	212
Etowah	87,664	1,140	2,598	-----	91,397	153	-----	55	208	253
Jefferson	6,347,911	84,073	284,662	681,921	7,548,567	9,578	3,458	2,574	12,152	254
St. Clair	635,067	7,122	21,809	4,306	668,304	657	-----	373	1,030	260
Shelby	525,057	6,191	31,015	-----	562,263	911	-----	377	1,288	230
Tuscaloosa	588,322	4,548	24,227	255,681	872,778	1,308	-----	433	1,741	259
Walker	4,065,593	83,166	108,090	33,449	4,290,298	5,703	1,045	1,645	7,348	212
Winston	58,921	2,035	4,050	-----	65,006	82	-----	55	137	184
Other counties ²	105,037	1,988	12,365	-----	119,390	185	-----	109	294	252
Small mines	-----	418	-----	-----	418	-----	-----	-----	-----	-----
	\$13,869,880	200,585	641,149	925,357	15,536,721	20,660	6,214	26,874	-----	239
1920										
Bibb	934,555	6,207	27,249	-----	968,011	947	556	335	1,838	174
Blount	279,809	5,575	-----	-----	285,384	410	100	115	625	189
Etowah	73,755	1,104	1,709	-----	76,568	102	26	39	167	223
Jefferson	6,851,632	148,003	270,198	450,077	7,719,910	5,742	3,458	2,177	11,377	264
St. Clair	629,936	7,289	24,984	-----	662,209	334	184	112	630	192
Shelby	547,164	8,497	31,335	-----	586,996	647	330	212	1,189	279
Tuscaloosa	671,628	5,336	14,926	222,293	914,183	937	377	418	1,732	272
Walker	4,470,876	167,825	99,098	30,668	4,768,457	4,320	1,011	1,718	7,049	238
Winston	35,629	816	50	-----	36,495	53	23	15	91	211
Other counties ²	108,159	1,544	12,183	-----	121,886	155	43	44	242	221
Small mines	154,000	-----	-----	-----	154,000	-----	-----	-----	-----	-----
	\$14,757,143	352,196	481,727	703,033	16,294,099	13,647	6,708	5,185	25,540	247
1921¹										
Bibb	616,709	6,112	21,171	-----	643,992	1,009	426	280	1,715	150
Blount	298,712	1,878	1,800	-----	302,390	437	62	136	635	177
Etowah	72,869	705	1,473	-----	75,107	147	35	44	226	172
Jefferson	5,585,362	91,138	167,338	20,637	5,864,475	6,468	3,067	1,757	11,292	173
St. Clair	622,355	5,029	18,828	-----	646,212	509	202	134	835	203
Shelby	429,614	7,670	23,212	-----	460,496	681	237	181	1,089	192
Tuscaloosa	411,514	7,209	11,958	107,721	538,402	1,053	340	229	1,622	129
Walker	3,685,128	191,487	43,269	-----	3,919,884	4,816	1,450	1,827	8,093	158
Winston	33,150	-----	-----	-----	33,150	89	32	25	146	181
Other counties ²	79,100	1,837	3,758	-----	84,791	95	28	33	156	142
	\$11,834,609	318,125	292,807	128,358	12,568,890	15,304	5,869	4,636	25,809	166

¹ Includes also loaders and shot firers.
² Cullman and Marion.
³ Includes coal for by-product coke ovens transported over private railroads.
⁴ Exclusive of product of wagon mines.

Figure 28. Analysis of Alabama Coals (Butts 1926:8).

deep, one of the deepest mines in Alabama. One thousand, eight hundred and ninety-two employees worked these underground mining operations and 5,090,286 tons of coal were produced. The 22 strip mine operations in the county employed 477 persons and produced 2,562,200 tons for the same fiscal year. Walker County had four underground mines with 927 employees and a annual production of 2,582,784 tons, slightly less than half that of Tuscaloosa County (*Annual Statistical Report 1986*).

The most recent USGS quadrangle maps show strip-mined areas as large areas devoid of vegetation. Driving through the area one can see the total alteration of the landscape in many places. Most of the mining operations are concentrated east of the Black Warrior River. However, many strip mines and gassification wells are also on the west side of the river. Strip mining has created some extremely eroded and barren areas. Complaints of stream pollution on Davis Creek and Rock Castle Creek near Yolande were filed as early as 1912. Acidic drain-off was killing the fish and making the water unsuitable for consumption. An inspection of Davis Creek indicated a trace of coal dust in the water, noting that the stream and "its bed are inky black from coal washings." A number of suits were brought against the Yolande Coal Company (U.S. Army Corps of Engineers 1912). Erosion on Daniels Creek has been severe. Surface mining in the Daniels Creek watershed has filled the creek to an estimated depth of 10 to 15 feet (Bailey 1975:8). Fortunately, environmental legislation in recent years is helping to reclaim some of the lost land (Bailey 1975:1).

Other Industries

Lumbering. Coal mining has always been the predominate industry in the project area. Two minor industries are lumbering and rock quarrying. Harper (1913, 1943), among others, reported on the splendid forests along the bluffs, ravines, and hilltops of the Black Warrior above Tuscaloosa. He (Harper 1913:56) noted in 1913 that about 80% of the Warrior Coal Basin was still wooded. He also recorded virgin long-leaf pine forests in the Holt project area as late as 1935 (Roland Harper Collection 1935:137). He took several photographs around Scales, showing the difference between the hardwood forest at the base of the hill and the virgin long-leaf forest that grew on the ridge top (Harper 1943:105, 137). Concerning lumbering in the coal basin, he noted that "Lumber has long been an important industry, on account of the large area of forest and the abundance of pine. And yet sawmills have never been very numerous..." (Harper 1943:104). He attributed the limited development of the timbering industry partly to the topography of the area and partly to the coal industry. A large amount of raw timber was used in coal operations, since such things as mine props did not have to be milled at a saw mill. Also, wood was used in the production of charcoal to fuel the iron furnaces around Tuscaloosa (Harper 1913:56).

The *Southern Lumberman* listed 21 sawmills in the Warrior Coal Basin area (Harper 1913). Of these, 13 cut long-leaf pine and most were in Walker and Tuscaloosa Counties. Figure 29 is a photograph taken by Harper in 1913 of a sawmill on the Louisville and Nashville Railroad, a quarter of a mile east of the Warrior Southern Railroad (Roland Harper Collection 1913). Other forest products included cross-ties, white oak

cooperage stock, and naval stores (Harper 1913:57). During the late 1920s a paper mill that used short-leaf pine logs was established outside of Tuscaloosa. Wood for the paper mill came from locally timbered areas transported on logging trucks or by rail from 50 miles or further away (Harper 1943:104).

Long-leaf pines, used in the production of naval stores like turpentine, grew south of the Tuscaloosa/Walker County area. Tuscaloosa County was the northernmost point for turpentine production. Figure 30 is a photograph of a turpentine still located between Brookwood and Tidewater (Roland Harper Collection 1911). This particular still had a shop for constructing "rough" pine barrels (a normal and necessary component of the turpentine still) to hold the rosin and a wooden railing for rolling the barrels to a road for transport (Roland Harper Collection 1911).

As large strip mining operations began, timber was usually cut prior to mining. Like the Kellerman mine property owned by the Twin Seam Mining Company, many mine companies sold timber rights. Since strip mining has a devastating effect on the land, most lumber companies probably were not conservation-minded in their operations, knowing the eventual outcome in the area.

Rock Quarrying. Sandstone, flagstones, gravel, and slag were quarried in the project area. Lock 13 was built entirely out of sandstone except for some wood crib-

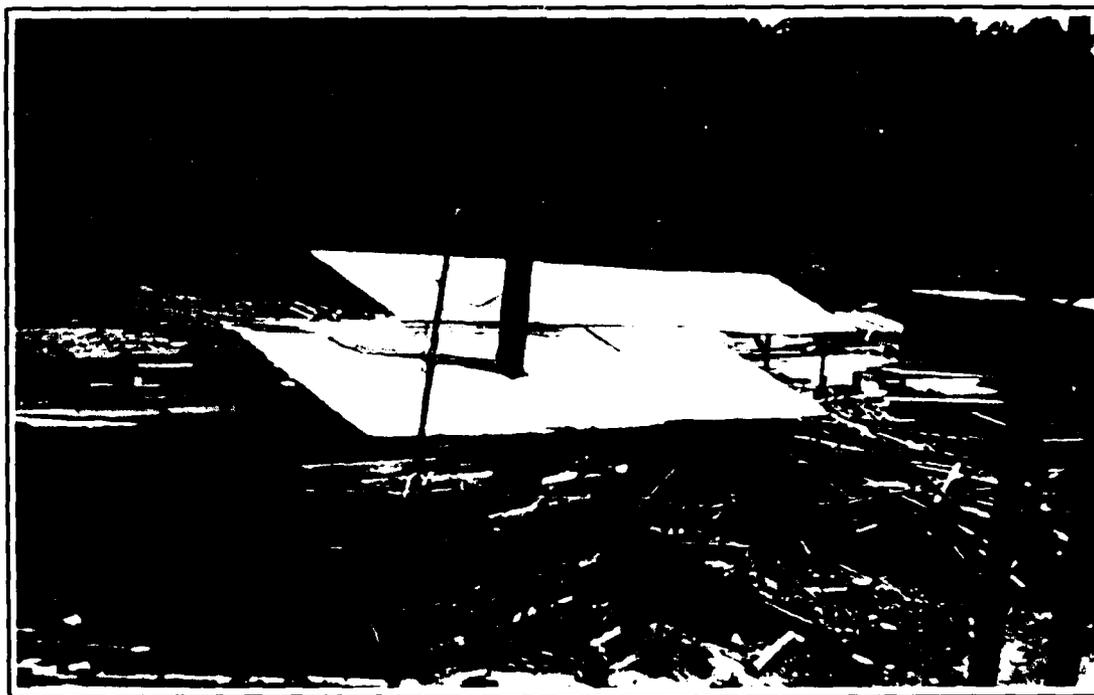


Figure 29. "Small sawmill on L&N Railroad about 1/4 mile east of Warrior Southern Railroad" in 1913 (Roland Harper Collection; courtesy of W. S. Hoole Special Collections Library).



Figure 30. "Turpentine Stills among pine hills between Brookwood and Tidewater" in 1911 (Roland Harper Collection; courtesy of W.S. Hoole Special Collections Library).

bing in the dam. Although Locks 14, 15, and 16 were constructed mostly from concrete, stone was used in some parts of the construction. A 1933 Congressional House document noted the opening of a new sandstone quarry on the Black Warrior River downriver from Lock 15 on the "right bank." This quarry was to supply rock for maintaining the lock (U.S. Army Corps of Engineers 1909). Another rock quarry was also located below Scales and above Lock 13. Rock Quarry Public Use Area is there today. These two quarries were operated by the Dravo Contracting Company of Dravo, Alabama (U.S. Army Corps of Engineers 1909).

Shale, which sometimes weathers into flat rectangular sheets called planks, has been reportedly used and gravels have also been intermittently quarried. But no formal mining operations for either were recorded for the project area or environs (Jones 1926:237). Slag, a by-product of blast furnaces, was quarried at Holt soon after production began (Prouty 1911:31).

ARCHEOLOGICAL RESULTS

Formulation of the Predictive Statement

One of the objectives of the Holt Lake Archival Study was the development of predictive statements for historic site locations. These predictive statements were to be based on a thorough search of the archival records pertaining to the project area. Following the formulation of these statements about the anticipated location of historic sites, there would be an in-the-field verification of these site predictions.

Several critical restrictions are inherent in the successful formulation of predictive statements for the Holt Lake project area. The six restrictions listed below are thought to be the most constraining.

- 1) very small, restricted, and discontinuous project area;
- 2) most of the resources are very specialized (locks and dams, railroad features) and not suitable for constructing a predictive model at the scale of this project;
- 3) there are a wide variety of types of resources (houses, locks, railroad features, mining features) which make the construction of a predictive model more difficult;
- 4) a major part of the historical development of the area is now under water and therefore cannot be verified;
- 5) the project area has been highly modified and developed in the past two decades;
- 6) the area has experienced low population density and use throughout the historic period of occupation.

These restrictions impose critical restraints on any attempt to construct a predictive model. The first three restrictions, the very limited size and disconnected nature of the parcels of fee-owned lands and the disparate types of often specialized sites located within the project area, in particular, are crucial limitations to the effectiveness of formulating reliable predictive statements.

We proposed that our predictive statements rely heavily on cartographic materials, which are very useful for determining land use patterns for historic period sites. We also proposed to refer to recent surveys of large reservoirs and large forest tracts. Mr.

Danny Hinsley, Assistant Resource Manager, and Mr. David Larkin, Ranger, at the Holt Lock and Dam Resource Manager's Office, were consulted for their knowledge of known cultural resources present on the Holt Lake Corps property.

The Historic Preservation Office, the Archives and History Departments in Montgomery, and the State Site Files at Moundville were checked for extant structures and known historic archeological sites on Holt Lake property owned by the U.S. Army Corps of Engineers. The lock sites and the Shook Railroad remains were known although never officially recorded. None of these historic resources have been recorded on site forms. The closest National Register site was the John Hassel House, near Northport. Wilson (1975) recorded no structures in the project area, although there is a photograph of a covered bridge that stood over Hurricane Creek (near Tuscaloosa). The bridge was built around 1850 and burned in 1962. In fact, few folk houses were recorded for the entire county of Tuscaloosa (Wilson 1975:107).

Mr. Donald W. DeJarnette (1986) of the Geological Survey of Alabama Office in Tuscaloosa prepared a directory of all the underground coal mines in Alabama and was interviewed during our study. He has recorded over 3,500 underground mines, which he estimates to be about 50% of the total. He has not located any underground mines in the Holt Lake project area that are above the lake level. The two closest underground mines to the project area are the Blair Mine and the Tidewater Mine, which are directly below the Holt Dam and are now flooded by Oliver Lake.

No National Register properties or archeologically recorded historic sites are known for the Corps of Engineers property at Holt Lake. Cartographic sources were the major references for the predictive phase of the study. Several maps were particularly important for determining possible historic site locations:

- 1) *Map of the Black Warrior River From Tuscaloosa to the Fork of Sipsey and Mulberry*, 1879, Eugene A. Smith;
- 2) *Map of the Warrior Coal Basin*, 1898, Eugene McCalley;
- 3) Brookwood Quadrangle, 1895 (surveyed), USGS;
- 4) *Soil Map of Tuscaloosa County, Alabama*, 1911, U.S. Department of Agriculture;
- 5) Searles Quadrangle, 1928-1929 (surveyed), USGS; and
- 6) General Highway and Transportation Maps of Tuscaloosa County, Alabama, 1944 and 1968, Alabama State Highway Department.

A series of plans, *Modernization of Locks* (1948), detailed structures and facilities at each of the four locks in the Holt Lake project area. These plans were obtained from U.S. Corps of Engineers Mobile Office of Engineering Support. The Mobile Corps of

Engineers real estate files and project maps for the Holt Lock and Dam Project, showing the acquisition tracts, were also examined for locations of structures and other facilities present prior to inundation.

Another pertinent source was McCalley's (1899) description of the Black Warrior Coal Basin, which mentions inhabitants in the area in the late nineteenth century. McCalley's written descriptions were correlated with the 1879 Smith map, which gave a general location to many of the names mentioned in the text.

Early nineteenth century maps contained no information on settlement in the project area and nearby environs during the first half of the nineteenth century. The two USGS quadrangle maps (Brookwood 1895 and Searles 1928-1929) provided the most detail concerning the locations of historic structures and activities during the late nineteenth and early twentieth centuries. Two 1944 Tuscaloosa County highway maps provided the best information of settlement for the mid-twentieth century and the 1968 Tuscaloosa County highway map was consulted for more contemporary settlement patterns.

One trend is obvious from the written and cartographic sources: the Corps of Engineers Holt Lake property has had low population levels throughout historic times. This can be explained, in part, by geography. The topography of the project area is characterized by a deeply entrenched river (the Black Warrior) that has cut through layers of shale, sandstone, limestone, and dolomite, creating a constricted valley with 100-foot cliffs and intermittent narrow floodplains. The terrain is rugged and the tributaries that feed the river are also narrow and entrenched. Several sources noted that the floodplain averaged only 100 to 500 feet in width (*Annual Report* 1875:23; Harper 1943:136). The narrow floodplains and ridge tops, along with lower soil fertility and the rugged nature of the terrain, have restrained population growth in the project area. This is supported by a 1978 report (Moorehead *et al.* 1978) of government properties surveyed to the north of the project area along several drainages that feed into the Black Warrior River. The survey located 23 late nineteenth to early twentieth century sites. This was considered a low density of sites and was attributed to the general lack of arable land and the ruggedness of the terrain. The report also presented a model for the location of historic sites, which succinctly suggests that Euro-American sites should occur in the uplands at elevations of at least 331 feet above mean sea level.

Studies based on surveys in South Carolina and Georgia suggest that the earliest settlers into a region sought level, fertile ground near good water sources and transportation routes (Drucker *et al.* 1984; Ledbetter *et al.* 1985; Gresham and Wood 1986). In river systems with broad floodplains such as Allatoona in northwest Georgia, early house sites were often located on high terraces and at the base of ridges bordering the floodplains (Jeane 1984:182-1983; Ledbetter *et al.* 1987:306). Otto and Anderson (1982:91) state that:

During the eighteenth and early nineteenth centuries, it was widely believed that the forest cover on land accurately predicted the fertility of the soil. Hardwood trees denoted more fertile soils, coniferous trees grew on less fertile soils, and an absence of tree growth allegedly indicated soil

infertility. In fact, well drained floodplains and broad level ridge tops tend to have good hardwood stands.

The earliest communities developed in areas accessible to adequate transportation: along roads, railroads, or navigable river corridors. As a region became more populated, less desirable areas further away from the river were settled. Surveys and archaeological studies in other areas of the South (i.e., Georgia and South Carolina) with data pertaining to historic settlement patterns corroborate this, particularly at Russell Lake and Allatoona Lake where two of the largest reservoir surveys have taken place (Taylor and Smith 1978; Ledbetter *et al.* 1987). The earliest communities were located along the major rivers (The History Group 1981; Worthy 1983; Taylor and Smith 1978; Drucker *et al.* 1984; Ledbetter *et al.* 1985; Gresham and Wood 1986; Ledbetter *et al.* 1987). Moore (1951:306) noted that all of Alabama's major towns prior to the Civil War were located on rivers.

Our predictive statements were concerned with locating historic sites only on Corps-owned property, which is limited primarily to the public use areas. Using archival information, two predictive statements can be formulated from which high probability areas can be derived:

Statement I. Sites of specialized development (locks, dams, railroad features, communities) and certain structural sites will be located where early cartographic sources show them to be situated.

Predicted High Probability Areas:

- 1) Remnants of four late nineteenth and early twentieth century locks, including associated structures, should be present in the project area. The lock sites are clearly indicated on a number of maps from the *Annual Reports*, the Brookwood and Searles quadrangles, and the 1944 Tuscaloosa County highway map.
- 2) Remnants of the Warrior and Southern Railroad (owned by the Mobile and Ohio Railroad Company), later known as the Twin Seams Mining Company or Shook Railroad, should be present as a partial railroad grade paralleling the river to Daniels Creek. A tunnel and a series of wooden trestle piers should also be present in the vicinity of the mouth of Daniels Creek. (These are indicated on the same maps referenced above in the first predictive statement.)
- 3) In addition to the possible house sites located at each of the lock complexes, structures or house sites should occur at the following locales:
 - a) the location of the former community of Scales which, according to the 1942 USGS Searles quadrangle map and the 1879 Smith map, should be in the Rocky Branch Public Use Area;

- b) on a road that ran along a ridge toward Lock 15; this area should be in Deerlick Creek Public Use Area;
- c) at Daniels Creek Public Use Area. The 1944 County highway map indicates the presence of a church, school, and lodge here, but no houses or railroad tunnel.

Statement II. House sites not associated with areas of specialized development will occur on ridge tops and ridge divides. According to Moorehead *et al.* (1978), over 77% of all the historic sites recorded in their study occurred in the uplands, while 16% occurred on divide ridges and the remaining 7% occurred on mixed bottomlands and uplands. This predictive class is more difficult to verify because of the very restricted amount of land that could be checked against the Moorehead *et al.* (1978) model.

Predicted High Probability Areas:

- 1) ridge top areas at Deerlick Creek Public Use Area;
- 2) ridge tops and ridge divides along Rocky Branch Trail in Rocky Branch Public Use Area.

Archeological Sites

Seven high probability areas were determined from the formulation of the predictive statements. These statements essentially correlate with the government-owned public use areas (Figure 31). They included the four lock areas, all of the public use areas (except Blue Creek), and the portion of the railroad grade running along the river, including the tunnel at Daniels Creek and remnants of a wooden trestle bridge in Daniels Creek. Remnants of the locks or associated features were noted at all of the locks, with the exception of Lock 13, where the Holt Dam is located. A total of nine sites, two aboriginal and seven historic, were recorded during the survey (Table 6). None of these had been previously recorded.

Lock 13. The survey of the Holt Lake area began with a visit to the Resource Manager's Office at the Holt Lock and Dam, which was constructed at the location of Lock 13. This area is highly modified today. The construction of the Holt Lock and Dam completely destroyed all visible evidence of the early lock and dam, the first lock built in the project area.

Rocky Branch Public Use Area. The key high probability area visited was in the Rocky Branch Public Use Area, where a settlement called Scales was shown on the 1942 USGS Searles quadrangle map. The map showing Scales indicates seven structures, as well as portions of the Mobile and Ohio Railroad and Scales Lake which, according to one source, was a small lake formed by a ledge of Rocky Branch Creek just before it enters the Black Warrior River. A house, possibly the home of Willis and

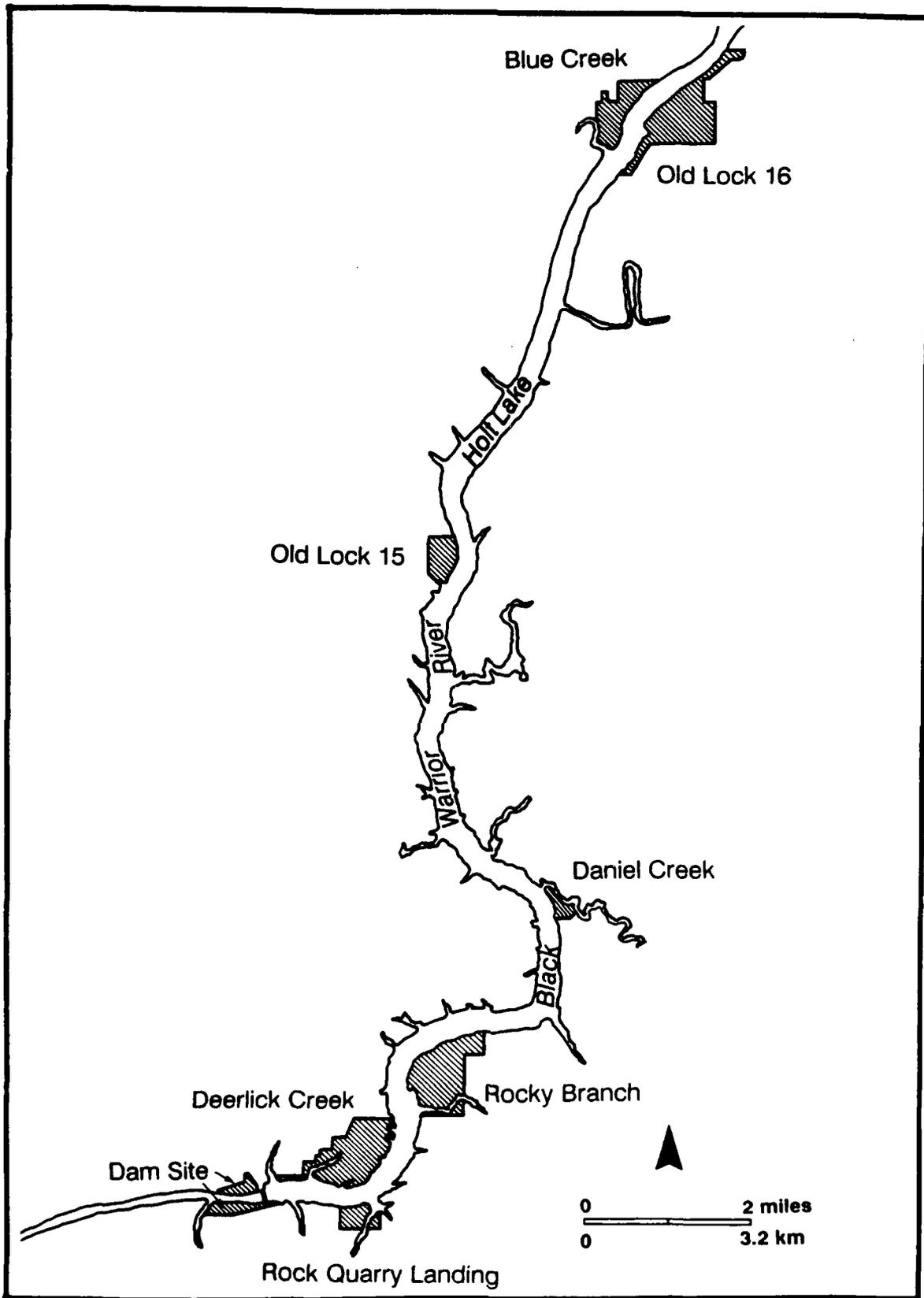


Figure 31. Government -owned Land at Holt Lake.

Table 6. Cultural Resources Located in Holt Lake Reservoir.

Site No.	Description
--	Scales Cemetery
1Tu496	Prehistoric lithic scatter
1Tu497	Railroad tunnel and wooden trestles--Daniel Creek
1Tu499	Historic artifact scatter on Rocky Branch Trail
1Tu501	Prehistoric lithic scatter on Rocky Branch Trail
1Tu502	Lock 14 site
1Tu503	Lock 16 site
1Tu504	House site in Deerlick Public Use Area
1Tu505	Lock 15 site

Sarah Scales, probably stood on a ridge nose (west of their graves) where a pavilion in a picnic area now stands. Most of the structures and the railroad bed were inundated when Holt Lake was built. Four sites were located in the Rocky Branch Public Use Area.

Scales Cemetery: The only evidence of the settlement today are the graves of Willis and Sarah Scales located on the edge of an extensive picnic and swimming recreation area. A double headstone enclosed in a wire and post fence marks the location of the Scales Cemetery. The headstone reads:

Willis P. Scales
Died Jan. 1906
About 80 Years of Age

Sarah
Wife of
Willis P. Scales
About 80 Years of Age

1Tu496: This site was located at a campground near the boat ramp and consisted of a prehistoric artifact scatter of quartz flakes and plain sherds. Artifacts were collected from an area of approximately 20 x 20 meters. The following artifacts were identified from the site:

Ceramics	
plain grit-tempered	2
Lithics	
quartz flake tool fragment	1
chert biface fragment	1
chert debitage	2
quartz debitage	30
Total Artifacts	36

The site, which lies on a flat ridge above the lake, has been greatly disturbed by the construction of picnic tables, a circular fire pit, and general camping activities. The site does not appear eligible for nomination to the National Register because of loss of integrity through recent development.

Two sites were located on the Rocky Branch trail that leads from the Public Use Area to the Lock 14 site. The first of these sites, *1Tu499*, consisted of four whiteware sherds found in the trail near an old road bed in an area of secondary growth. Approximately 10 meters to the west of the trail is a small trench (0.5 x 1.0 meter) and backdirt pile with a metal band protruding from the ground; this feature appears to be recent. A small intermittent stream crosses the trail near the trench. All exposed areas along the trail and the roadbed were searched but no other artifacts were visible. Since artifacts were quite sparse, the whiteware sherds may be associated with traffic from the old road or with the unknown activity nearby. Due to the sparsity of artifacts (n = 4), the site does not appear eligible for nomination to the National Register.

Site *1Tu501*, a quartz lithic scatter, was located farther north on the trail along a narrow ridge top. The site lies in a secondary growth forest of mixed pines and hardwoods. The following artifacts were recovered:

quartz (river pebbles w/cortex) debitage	7
quartz (no cortex) debitage	4

Site *1Tu501* is not considered eligible for nomination to the National Register of Historic Places.

Lock 14. *1Tu502*: The only visible evidence of Lock 14 was a 4-foot high concrete wall and steel fence posts on a ridge overlooking the lake edge. There was no evidence of the lock or associated structures.

A low concrete dam across a small stream on the downriver side of Lock 14 was observed where the trail crosses the stream. Twentieth century garbage was also observed on the bank of the road leading into the lock area. Due to the destruction of most of the site, it does not appear eligible for nomination to the National Register.

Old Lock 15 Public Use Area. *1Tu505*: Lock 15 had the most visible remains, with a series of terrace retaining walls constructed of concrete and rock, and steps leading to the lake. A concrete walk ran along the lowest terrace above the lake level and on the northern end the probable foundation of a structure was evident. According to a 1948 General Plan Map (U.S. Corps of Engineers), this structure was the lockmaster's house. Another possible structure foundation was located near the ridge edge where the steps leading to the old lock began. This structure is also listed as a lockmaster's house on the same map. The access road to the Lock 15 site runs along a ridge ending in a flat open area with several large oaks. According to the General Plan Map, three structures were located along the edge of the ridge facing toward the river. As mentioned above, the remains of one structure were evident near the steps. The site has been razed of all extant structures, with the exception of one standing structure, a tool

shed, evident near the southern edge of the open area on the flat ridge above the lock remains. The concrete piers of a possible water tank were evident next to the shed. Mostly twentieth century household artifacts were present in the roadbed. A grab sample of artifacts were collected from the roadbed:

Ceramics

UNREFINED EARTHENWARE

yellowware with blue glaze 2
 unidentified yellowware with black glaze 2

REFINED EARTHENWARE

whiteware, plain 16
 SUBTOTAL 20

Glass

BOTTLE

Brown 5
 Blue 2
 Aqua 2
 Clear 1

FLAT, aqua 3

MILK GLASS 3

SUBTOTAL 16

Metal

unidentified iron fragment 1

scrap lead fragment 1

cast-white metal button 1

clinched wire nail 1

SUBTOTAL 4

Other

carbon core to dry cell battery 1

TOTAL ARTIFACTS 41

Although Lock 15 has more remains present than any of the other locks, most of its integrity has been lost through flooding of the locks and the razing of other associated features. It is not likely to reveal any significant information that could not be obtained through a thorough document search. The site does not appear eligible for nomination to the National Register.

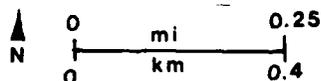
Old Lock 16 Public Use Area. 1Tu503: Lock 16 was the only lock site with a portion of the actual lock wall still present. Approximately 5 feet of the top east edge of Lock 16 is visible above the water level. A number of maps show four structures at Lock 16 in a large flat area that is presently part of the Old Lock 16 Public Use Area. No standing structures or evidence of foundations are present except for a storage building standing next to the lock wall. The area appears recently filled to make the picnic area that presently occupies the site area. Looking upriver from Lock 16, portions of Lock 17 are partially visible below the Bankhead Dam. It appears that most of the Lock 16 complex has been destroyed and therefore the site is not deemed eligible for nomination to the National Register.

Deerlick Public Use Area. 1Tu504: The 1942 USGS Searles quadrangle map indicated a structure on a flat ridge top near a road that now leads into the recreation area (Figure 32). The remains of the structure, primarily a rock chimney base, were easily located approximately 10 meters from the road edge in a hardwood stand. An open well was found approximately 5 meters from the road edge. The chimney base seems to be preserved, although the house pad may have suffered some disturbance. Surrounding areas of the site do not appear disturbed. No subsurface testing was made and there were no artifacts collected as surface visibility was poor. Eligibility of the site for nomination to the National Register could not be determined at this level of investigation.

Daniels Creek Public Use Area. 1Tu497: Another high probability area was at Daniels Creek where the old Mobile and Ohio Railroad grade turns east, cutting through a steep hill and then travels up the creek, switching back and forth across the creek several times. The first tunnel near the mouth of Daniels Creek is impressive. Large rock falls were evident in the tunnel, but it is still passable by vehicle. Several intact railroad ties were visible just outside the northeast opening of the tunnel. Approximately 250 meters east of the tunnel were wooden trestle supports in Daniels Creek, indicating where the railroad bridge spanned the creek. The Brookwood and Lake Nicol quadrangle maps indicate at least three more tunnels farther up Daniels Creek (to the east), where the old railroad grade crosses the creek. The railroad grade remains clear and is apparently used as a road by local inhabitants. Mixed hardwoods



Figure 32. Detail of Topographic Map Showing House Site in 1928, 1Tu504, Identified in Deerlick Public Use Area.



and pines surround the site area and the topography surrounding the railroad grade is extremely steep.

The eligibility of the tunnel to the National Register of Historic Places has yet to be determined.

Evaluation of Predictive Statements

Field verification of Predictive Statement I indicated that cartographic sources were reliable. However, most structures and features had been inundated and/or destroyed by modern construction and razing. Some remains of all the locks and dams, with the exception of Lock 13, were found. Portions of the Shook Railroad were also present. There was no visible evidence of the community of Scales other than a small cemetery containing the graves of two Scales family members. One house site at Deerlick Creek Public Use Area was identified.

Verification of the Predictive Statement II could not be reliably confirmed because of the restricted amount of land that could be surveyed and the amount of modern development and destruction present in the project area. One house site at the Deerlick Creek Public Use Area was located on a ridge top. There is no apparent contradiction to the Moorehead *et al.* (1978) model. However, neither is there conclusive validation or meaningful refinement of it.

DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

Discussion

One of the goals of the project was to compare the iron mining industry of the project area with other areas of the country and with Georgia in particular. The iron mining activities in Tuscaloosa County were located primarily in the eastern sections of Tuscaloosa County where a small deposit of iron ore occurs near the Jefferson/Bibb County line, well outside of the project area. The role of Tuscaloosa County in the development of Alabama's iron industry has been limited and overshadowed by the presence of large red and brown iron ore deposits in Jefferson, Bibb, Blount, St. Clair, Etowah, and Decatur Counties. In Tuscaloosa County, the mining and production of coal rather than iron was the most significant industrial development.

The only early major iron industry activity in Tuscaloosa County was the Tannehill Furnace, built in Roupes Valley (stretching from Tuscaloosa County into Jefferson County) near Bucksville. However, the Tannehill Furnace was one of the most well developed southern iron industry complexes--an iron plantation--of the antebellum/Civil War period. There are striking similarities between the Tannehill Furnace and the Etowah Iron Works located on the Etowah River in northwestern Georgia (Jeane 1984; Ledbetter *et al.* 1987; Joseph and Reed 1987). Both complexes were heavily influenced by the Stroup ironmasters who built an impressive number of furnaces stretching from North Carolina to Alabama. Both Tannehill and Etowah were true iron plantations as described by Binning (1938) for similar complexes in Pennsylvania. Both complexes met their demise at the end of the Civil War. A few ironworks continued in the Etowah Valley after the Civil War, but most of these operations were defunct by the late nineteenth century.

To the north of the Etowah River, in the northwestern corner of Georgia, lies an area of the Ridge and Valley province that geographically more closely resembles that of the project area. This area contains both iron ore and coal deposits, unlike the Etowah River Valley which has no coal deposits. The iron industry in this area began approximately 10 years after that in the Etowah Valley, but continued into the first quarter of the twentieth century. Several furnaces were operated by the Empire State Iron and Coal Mining Company which bought a number of small furnaces in the area for the Confederacy. The Rising Fawn Iron Works of Johnson Crook south of Trenton, Georgia, was probably the largest ironworks in the area. It began operations some time before the Civil War, was partially destroyed during the war, was later rebuilt, and continued operations into the early part of the twentieth century. The postbellum iron operations at Rising Fawn were more comparable to the ironworks built in the Jefferson County/Birmingham district in the last quarter of the nineteenth century (the Ox-

moor, Mary Pratt, and Bessemer furnaces). At the Rising Fawn Iron Works coke was used for fueling the furnace and, as in the Birmingham district, convict labor was used primarily in the mining operations (Smith *et al.* 1986).

For both Alabama and Georgia, the Civil War dealt a severe blow to their respective iron industries. Although the Alabama iron industry was slow to recover, by 1890 24 new furnaces had been constructed in Alabama (Bennett 1986:91). In 1890 Georgia had only four operating blast furnaces and five ironworks (Stevens and Wright 1901:356). Because iron ore and coal deposits in Alabama and Tennessee far exceeded the deposits in Georgia, the iron industry in Georgia began to decline before the turn of the century. The shift in technology toward steel production and the consolidation of the iron industry in the Birmingham district probably dealt the final blows to the iron industry in Georgia.

By 1880 Alabama had taken the lead in southern iron production, and by 1890 it was producing almost three times as much iron as the second leading southern iron producer, Virginia (Swank 1892:296). By 1901 Alabama was the fourth largest producer of pig iron in the United States, and by 1920 Alabama was ranked third in the nation. Alabama had also become a leading producer in coal and coke by 1920, ranking seventh in coal and fourth in coke production (Bennett 1986:103).

Conclusions

The major economic forces in the Holt Lake project area have been coal mining and the developing transportation system. The Black Warrior River drained the largest coal field in Alabama. Furthermore, the Black Warrior River joined courses with the Tombigbee River, thus making a water corridor to the Gulf of Mexico.

Although the vast coal reserves in the Warrior Coal Fields were recognized very early in the nineteenth century, heavy coal mining operations in Tuscaloosa County did not begin until the early twentieth century. The area has been sparsely inhabited through time. Most of the activity in the project area has been related to coal mining and river and railroad transportation. Almost all of the settlements were, therefore, oriented toward these activities, with some residual subsistence farming. There was little development or settlement on the western side of the Black Warrior River. Only one lock complex (Lock 15) was located on the west side and there were no communities in the project area or the nearby vicinity. The absence of a railroad on the western side probably accounts for this low level of development. The few recorded coal mining operations on the west side during the late nineteenth and early twentieth centuries were concentrated in an area between the North River and Jim Mack Branch.

The most significant events in the immediate Holt Lake project area were related to coal mining and to the construction of the locks and the Mobile and Ohio Railroad branch along the eastern bank of the Black Warrior River. The locks, their associated settlements, and the early twentieth century railroad were the most significant cultural resources of the area. Unfortunately, the integrity of all of the locks was either

destroyed or compromised when they were inundated by Holt Lake. Most of the house sites have been destroyed or removed. The only remaining cultural resource is the railroad grade and tunnel at Daniels Creek. Although the tunnel is an impressive engineering feat, its cultural significance could not be determined.

The nature of coal mining operations (particularly surface mining) obliterates all evidence of past human activities. Also, each improvement on the Black Warrior River has resulted in the destruction of previous improvements and activities.

The study at Holt Lake has focused primarily on a small area in the coal and iron mining region of Alabama in an attempt to keep the developments there in a more regional perspective. This study is not considered comprehensive; nevertheless, it is hoped that it will be a contribution toward better understanding the development of the coal industry and transportation in northern Tuscaloosa County.

Recommendations

National Register Eligibility. In considering the eligibility for the National Register of the sites recorded at Holt Lake, several criteria for evaluating their significance were considered. Under quality for evaluating significance, the most important criteria for the Holt Lake sites is their integrity. The Criteria for Evaluation states that "objects must...possess integrity of location, design, setting, materials, workmanship, feeling, and association." Along with the importance of integrity, two of the four listed criteria for evaluating significance are considered pertinent to Holt Lake:

- a) **association "with events that have made a significant contribution to the broad pattern of history";**
- d) **"have yielded...or likely to yield information important in prehistory or history" [36 CFR, Criteria for Evaluation, Section 60.6]**

First and foremost, it is felt that the integrity of location and setting of most of the sites recorded during the present survey has been severely altered and/or destroyed by the construction of Holt Lake. Although the lock and dams and the railroad are an important part of the development of transportation and coal mining in the Warrior Basin, there are perhaps other representative examples in existence that could contribute significant information on these developments and, hopefully, possess better site integrity. Since early coal mining figured more prominently in Walker, Jefferson, and Bibb Counties, perhaps a study of coal mining could be better undertaken there. There may also be better examples of early railroads and locks in Jefferson, Walker, or Bibb Counties. Certainly in addressing the second criteria, it is thought that most of these remains are not likely to yield important information that is not already available in the documents.

Nine new sites were recorded (seven historic and two prehistoric) at Holt Lake on Corps-owned property. Seven are recommended ineligible; the eligibility of the other two is unknown at present. All three lock site complexes (Lock 14, 1Tu502; Lock 15,

1Tu505; and Lock 16, 1Tu503) are recommended ineligible because of loss of integrity through severe disturbance and because the archeological remains are unlikely to reveal any significant information that could not be gained from available documents.

The Scales Cemetery is currently protected by a fence. Information on Willis and Sarah Scales could possibly be obtained from a thorough document search. The site is recommended ineligible for nomination to the National Register. 1Tu499, a scatter of four whiteware sherds, is recommended ineligible for nomination to the National Register due to the lack of integrity of the site. The few artifacts may be associated with a nearby roadbed. The prehistoric site 1Tu496, located in a group campground, is recommended ineligible for nomination to the National Register due to the sparsity of artifacts and apparent disturbance to the site. Site 1Tu50, a lithic artifact scatter, is also recommended ineligible by the Alabama SHPO.

The two sites for which eligibility could not be determined are 1Tu497, the railroad tunnel, and 1Tu504, a late nineteenth/early twentieth century house site. Further archeological investigation, outside the scope of this project, would be required to determine the eligibility of these two sites. Subsurface testing of the historic site 1Tu504 could also determine whether intact portions of the site are still present. Artifacts from subsurface testing could also better determine the date of occupation for the site. A more detailed recording of present features, landscaping, and general layout of the site could also be made. At present the site appears to be protected and maintained.

Future Research Directions. As commented on in several recent treatises (Washburn 1985; Kammen 1975), the South has largely been ignored in the writing of American history. Emphasis has been placed on the South as an agrarian region with little industry. Certainly agriculture, particularly cotton culture, dominated much of the South's economy for many years, but industry was also vital to parts of the South.

Doster (1951) realized this and called for scholarly studies to examine the industrial growth of the South. In order to place southern industrial developments in a national perspective, he called for both comprehensive and focused studies on various industries in the South. Both historical approaches, he believed, would be valuable and necessary contributions for better understanding southern industry (Doster 1951:3-4).

More focused and comprehensive studies are needed on the coal mining industry in Alabama, which has been all but ignored by most regional studies. Studies of southern coal mining tend to focus on the Kentucky, West Virginia, and Virginia area of the Appalachias. Eller's (1982) study on mining in southern Appalachia, which is an excellent documentation of the mining industry and the lifeways of coal miners, is a good example of this problem. Although the coal fields in Alabama are part of the Appalachian Mountains, he does not include them in his study. Similar research on Alabama's coal and iron mining regions would complement his work.

Future studies should be directed toward compiling data on the development of the coal mining industry in each of Alabama's coal counties with the goal of a comprehensive study of coal mining in the state. Coal mining technology, as well as its social and

economic effects, could then be compared with other coal mining regions in the eastern United States. A more focused study is needed on the development of the railroad and the subsidiary industries in the Tuscaloosa County area and surrounding counties.

An examination of the construction of the Warrior Southern Railroad by the Mobile and Ohio Railroad Company could provide informative detail on early railroad development and technology in the project area. The construction of the tunnels along Daniels Creek was an impressive engineering feat and should be examined. Early railroad records from the Mobile and Ohio Railroad Company, if available, could provide much information. A thorough search of the Tuscaloosa newspapers of the period might also provide much data.

Also, the involvement of Chinese railroad workers in the construction of the Alabama and Chattanooga Railroad should be examined. This would be of current research interest with the Overseas Chinese Research Group which has a focused interest in the role that the Chinese played in the development of the South (Society for Historical Archaeology 1987).

The Roland Harper Collection, housed in the William Stanley Hoole Special Collections Library at the University of Alabama, University, is a tremendous archival resource. A detailed review of this collection, which includes Harper's photographs, field notes, and other miscellaneous documents, could provide the data for reconstructing the environment and landscape of the area at the turn of the century.

REFERENCES CITED

Books and Articles

Alabama Coal and Navigation Company

1874 Prospectus of Annual Report. Fairbanks, Benedict Company, Cleveland.

Allman, John Mitchell, II

1979 Yeoman Regions in the Antebellum Deep South: Settlement and Economy in Northern Alabama, 1815-1860. Ph.D. dissertation, University of Maryland, College Park.

Armes, Ethel

1910 *The Story of Coal and Iron in Alabama: Big Business and Economic Power in a Free Society*. Arno Press, New York. (Reprint, Chamber of Commerce, Birmingham, 1973.)

Bartovics, Albert F.

1981 The Archaeology of Daniels Village: An Experiment in Settlement Archaeology. Ph.D. dissertation, Brown University, Providence, Rhode Island.

Bassett, John Spencer

1926 *Correspondence of Andrew Jackson*. Vol. 1 (to April 30, 1814). Carnegie Institute of Washington, Washington, D.C.

Bell, Robert K.

1933 Reconstruction in Tuscaloosa County. Master's thesis, University of Alabama, University.

Bennett, James R.

1986 *Old Tannehill: A History of the Pioneer Ironworks in Rouses Valley (1829-1865)*. Jefferson County Historical Commission, Birmingham, Alabama.

Berney, Saffold

1878 *Handbook of Alabama: A Complete Index to the State*. Mobile Register, Mobile.

Binning, Arthur C.

1938 *Pennsylvania Iron Manufacture in the Eighteenth Century*. Publications of the Pennsylvania Historical Commission, Vol. VI. Harrisburg, Pennsylvania.

Blackman, Nancy Dean

1976 *Bron of the Hill Above the Warrior: History of Holt First Baptist Church, Holt, Alabama, 1904-1974*.

Boucher, Morris R.

1947 *Factors in the History of Tuscaloosa Alabama, 1816-1846*. Master's thesis, University of Alabama, University.

Brannon, Peter A.

1939 *Romance of the Beginnings of Some Alabama Industries. An American Pilgrimage Newcomer Address*. The Newcomer Society of England, American Branch. Mobile, Alabama.

Bulch, W.R.

1882 *The Mines, Miners, and Mining Interests of the United States*. The Mining Industrial Publishing Bureau, Philadelphia.

Clark, T.H.

1893 Railroads and Navigation. In *Memorial Record of Alabama*, Vol. 1, pp. 318-328. Brant and Fuller, Madison, Wisconsin.

Clinton, Mathew W.

1958 *Tuscaloosa, Alabama: Its Early Days, 1816-1865*. The Zonta Club, Tuscaloosa, Alabama.

Cohen, Lucy M.

1984 *Chinese in the Post Civil War South, a People Without a History*. Louisiana State University Press, Baton Rouge.

Crane, Verner W.

1929 *The Southern Frontier, 1670-1732*. Greenwood Press, Westport. Connecticut.

DeBow, J.B.D., editor

1850 Alabama Railroad Enterprise. *DeBow's Review* 7:477-479.

1851 Resources of the Warrior--Alabama Manufactures. *DeBow's Review* 11:82.

Dodd, Donald B.

1974 *Historical Atlas of Alabama*. University of Alabama Press, University.

Dombhart, John Martin

1937 *History of Walker County: Its Towns and Its People*. Cayce Publishing, Thornton, Alabama.

Doster, James F.

1949 *Alabama's First Railroad Commission, 1881-1885*. University of Alabama Press, University.

1951 *Materials for Research in Southern Industrial History*. University of Alabama Press, University.

Dowling, H.G.

1939 *Tuscaloosa, Alabama, the Druid City: A Brief Sketch of the History Back of this Thriving City*. Tuscaloosa Chamber of Commerce, Tuscaloosa.

Duffee, Mary Gordon

1937 *Sketches of Alabama Jones Valley*, Vol. I (ca. 1887). Library Project 3529, Works Progress Administration, Sponsored by the Birmingham Library Board, Birmingham, Alabama.

Eller, Ronald D.

1982 *Miners, Millhands, and Mountaineers: Industrialization of the Appalachian South, 1880-1930*. University of Tennessee Press, Knoxville.

Elliott, Carl

1977 *Alabama Coal Mines as Told to Carl Elliott*. 7 vols. Northwest Alabama Publishing Company, Jasper, Alabama.

Elliott, Carl, Sr., and Susan Crittenden

1979 *Alabama Coal Miners*. Northwest Alabama Publishing, Jasper, Alabama.

Fies, Milton H.

1981 *The Man With a Light on His Cap. Annual Report of Northwest Alabama, Being a Brief Chronicle of Coal Mining in Walker County, 1912-1960*. Vol 3.

Fuller, Justin

1966 *History of Tennessee Coal, Iron, and Railroad Company, 1852-1907*. Master's thesis, Emory University, Atlanta.

Gaines, George S.

1964 *Gaines' Reminiscences*. *Alabama Historical Quarterly* 26:135-229.

Garland, Hamlin, editor

1923 *The Autobiography of David Crockett*. Charles Scribner's Sons, Chicago.

Gray, Daniel Savage

1977 *Alabama: A Place, a People, a Point of View*. Kendall Hunt Publishing.

Green, Ben A.

1980 *A History of Tuscaloosa, Alabama, 1816-1949*. Confederate Publishing, Tuscaloosa, Alabama.

Griffith, Lucille

1962 *History of Alabama, 1540-1900, as Recorded in Diaries, Letters, and Papers of the Times*. Colonial Press, Northport, Alabama.

1968 *Alabama: A Documentary History to 1900*. University of Alabama Press, University.

Halbert, Harry S., editor

1899 *Diary of Richard Breckenridge, 1816*. *Transactions of the Alabama Historical Society* 3:142-153.

Halbert, H.S. and T.H. Ball

1969 *The Creek War of 1813 and 1814*. Southern Historical Publication No. 15. University of Alabama Press, University.

Hamilton, Virginia Vander Veer

1977 *Alabama: A Bicentennial History*. Norton Press, New York.

Hamilton, Peter J.

1976 *Colonial Mobile*. Southern Historical Publications No. 20. University of Alabama Press, University.

Harper, Roland M.

1906 A December Ramble in Tuscaloosa County, Alabama. *Plant World* 9:102-107.

1914 The Aquatic Vegetation of Squaw Shoals, Tuscaloosa County, Alabama. *Torreya* 14(9):149-155.

Harris, W. Stuart

1977 *Dead Towns of Alabama*. University of Alabama Press, University.

1982 *Alabama Place Names*. Strode Publishers, Huntsville, Alabama.

Hodgson, Joseph

1875 *The Alabama Manual and Statistical Register*. Daily Register Book and Job Office, Mobile.

Hoole, W. Stanley, editor

1950 Elyton, Alabama, and the Connecticut Asylum: The Letters of William H. Ely, 1820-1821. *Alabama Review* 3:36-69.

Hubbs, Guy, editor

1986 *Tuscaloosa: Portrait of an Alabama County*. Windsor Press.

Irons, George Vernon

1951 River Ferries in Alabama Before 1861. *Alabama Review* 4(1):22-37.

Kammen, Michael

1975 Clio and the Changing Fashions: Some Patterns in Current American Historiography. *American Scholar* 44(3):484-496.

Klein, Maury

1972 *History of the Louisville and Nashville Railroad*. MacMillan, New York.

Krebs, Sylvia H.

1982 John Chinaman and Reconstruction Alabama: The Debate and the Experience. *Southern Studies* 21:369-383.

Lambert, Alton

1977 *History of Tuscaloosa County, Alabama*. 4 vols. Stewart University Press, Centre, Alabama.

Lankford, George E., III

1977 A New Look at DeSoto's Route Through Alabama. *Journal of Alabama Archaeology* 23:10-36.

Ledbetter, R. Jerald, Karen G. Wood, and Cynthia Miller

1985 Archeological Investigations at Mistletoe State Park, Columbia County, Georgia. Southeastern Archeological Services, Inc., Athens. Prepared for the Georgia Department of Natural Resources, Atlanta.

Lincecum, Gideon

1906 Life of Apushmataha. *Publications of the Mississippi Historical Society* 9:115ff.

- Lineback, Neal G. and Charles T. Traylor
1973 *Atlas of Alabama*. University of Alabama Press, University.
- Longacre, Edward G.
1982 To Tuscaloosa and Beyond: A Union Cavalry Raider in Alabama, March - April 1865. *Alabama Historical Quarterly* 44:109-122.
- Lyell, Sir Charles
1849 *Second Visit to the United States of America*. 2 vols. Harper, New York.
- Martin, William Elejius
1903 Internal Improvements in Alabama. *Johns Hopkins University Studies in Historical and Political Science*, Series XX, No. 4. Johns Hopkins Press, Baltimore.
- McEachin, Archibald B.
1977 *The History of Tuscaloosa: 1816-1880*. Confederate Publishing, Tuscaloosa, Alabama.
- Meyer, William Edward
1928 *Indian Trails of the Southeast*. Bureau of American Ethnology. 42nd Annual Report. U.S. Government Printing Office, Washington, D.C.
- Moore, Albert Burton
1951 *History of Alabama*. Alabama Bookstore, Tuscaloosa.
- Noel Hume, Ivor
1970 *A Guide to Artifacts of Colonial America*. Alfred A. Knopf, New York.
- Orser, Charles L., Jr., and Claudia Holland
1984 Let Us Praise Famous Men, Accurately: Toward a More Complete Understanding of Postbellum Southern Agriculture. *Southeastern Archaeology* 3(2):111-120.
- Otto, John Solomon and Nain Estelle Anderson
1982 The Diffusion of Upland South Folk Culture, 1790-1840. *Southeastern Geographer* 22(2):89-98.
- Owen, Thomas M., compiler
1903 *Alabama Official and Statistical Register, 1903*. State of Alabama, Department of Archives and History. Brown Printing, Montgomery.
- Polk, R.L.
1887-1888 *Alabama State Gazetteer and Business Directory*. R.L. Polk, Atlanta.
- Priestly, Herbert Ingram, editor and translator
1928 *The Luna Papers 1559-1562*. 2 vols. Florida State Historical Society, Deland, Florida.
- Rich, Stanley
1979 The Place Names of Greene and Tuscaloosa Counties, Alabama. Ph.D. dissertation, University of Alabama, University.

Richardson, Jesse M., editor

1965 *Alabama Encyclopedia, Vol. 1, Book of Facts*. American Southern Publishing, Northport, Alabama.

Riley, B.F.

1893 *Alabama As It Is*. 3rd edition. Brown Printing, Montgomery.

Royce, Charles C.

1899 *Indian Land Cessions in the United States*. Bureau of American Ethnology. Annual Report No. 18(2). U.S. Government Printing Office, Washington, D.C.

Smith, Charlotte A., Karen G. Wood, and Elizabeth Misner

1986 Oglethorpe Power Corporation Pumped Storage Hydroelectric Facility Site Evaluations Prefeasibility Report. Historical Archeological Resources, Johnson Crook Alternative. Southeastern Archeological Services, Inc., Athens. Prepared for Oglethorpe Power Corporation, Tucker, Georgia.

Smith, Ross A.

1881 *Alabama State Gazetteer and Business Directory*. J.P. Bell & Company, Publisher and Steam Power Printers.

Society for Historic Archaeology

1987 Overseas Chinese Research Group. *Society for Historic Archaeology Newsletter* 20(3):16-18.

South, Stanley

1977 *Method and Theory in Historical Archaeology*. Academic Press, New York.

Stevens, O.B. and R.F. Wright, Commissioners

1901 *Georgia Historical and Industrial*. Department of Agriculture. Franklin Printing, Atlanta.

Straw, Richard A.

1975 The United Mine Workers of America and the 1920 Coal Strike in Alabama. *Alabama Review* 28:104-128.

1985 The Collapse of Biracial Unionism: the Alabama Coal Strike of 1908. In *Blacks in Appalachia*, edited by William H. Turner and Edward J. Cabbell, pp. 183-198. University Press of Kentucky, Lexington.

Summersell, Charles Grayson

1975 *Alabama History for Schools*. 5th edition. Viewpoint Publications, Montgomery.

Swank, James M.

1892 *History of the Manufacture of Iron in All Ages and Particularly in the United States from Colonial Times to 1891*. Reprinted by Bart Franklin, New York.

Swanton, John R., Chairman

1939 *Report of the Fact Finding Committee of the United States DeSoto Expedition Commission*. U.S. Government Printing Office, Washington, D.C.

Tower, J. Allen

1959 The Shaping of Alabama. *Alabama Review* 12(1):132-139.

Walker, James H.

1971 *Roupe Valley: A History of Pioneer Settlement in Roupe Valley, Which is Located in Tuscaloosa and Jefferson Counties, Alabama*. Montezuma Press, Bessemer, Alabama.

Washburn, Wilcomb E.

1985 The Southeast in the Age of Conflict and Revolution. In *Alabama and the Borderlands, From Prehistory to Statehood*, edited by R. Reid Badger and Lawrence A. Clayton, University of Alabama Press, Tuscaloosa.

White, Marjorie L.

1981 *The Birmingham District: An Industrial History and Guide*. Birmingham Historical Society, First National Bank of Birmingham, Junior League of Birmingham.

Williams, Samuel Cole

1930 *Adair's History of the American Indians*. Watauga Press, Johnson City, Tennessee.

Wilson, Eugene

1975 *Alabama Folk Houses*. Alabama Historical Commission, Montgomery.

Winston, R.A., W.J. Latimer and L. Cantrell

1912 *Soil Survey of Tuscaloosa County, Alabama*. U.S. Department of Agriculture. U.S. Government Printing Office, Washington, D.C.

Wood, Karen G.

1987 Etowah: A Nineteenth Century Iron Industry Community in Northwest Georgia. Paper presented at the Annual Meeting of the Southeastern Archeological Conference, Charleston, South Carolina.

Woods, Patricia Dillon

1980 *French-Indian Relations on the Southern Frontier, 1699-1762*. Studies in American History and Culture, No. 18. University of Michigan Research Press, Ann Arbor.

Woodward, Joseph H.

1940 *Alabama Blast Furnaces*. Woodward Iron, Woodward, Alabama.

Federal Documents

Alexander, Lawrence S.

1982 Phase I Archaeological Reconnaissance of the Oliver Lock and Dam Project Area, Tuscaloosa County, Alabama. Report of Investigations No. 33, Office of Archaeological Research, University of Alabama. Prepared for the U.S. Corps of Engineers, Mobile District.

Annual Report of the Chief of Engineers

1875 Examination and Survey of Black Warrior River, from Locust Fork to Its Mouth, Alabama. U.S. Government Printing Office, Washington, D.C.

1881 Survey of Black Warrior River from Tuscaloosa to Forks of Sipsey and Mulberry, Alabama. Appendix K. U.S. Government Printing Office, Washington, D.C.

1896 Improvement of Black Warrior River, Alabama, from Tuscaloosa to Daniels Creek. Appendix P: Report of Major Rossell. U.S. Government Printing Office, Washington, D.C.

Annual Report of the Chief of Engineers

1902 Black Warrior, Warrior, and Tombigbee Rivers, Alabama. Part I. U.S. Government Printing Office, Washington, D.C.

1920 Black Warrior River, Alabama. U.S. Government Printing Office, Washington, D.C.

Benthall, Joseph L.

1966 Archeological Investigations in the Holt Lock and Dam Reservoir of the Warrior River in Alabama. University of Alabama, University. Prepared for the Department of Interior, National Park Service.

Blair, Arthur J., contributor

1960 Appraisal Twin Seam Mining Company. In: Appraisal Report for U.S. Army Engineer District, Mobile, of Shook Mining Property, Holt Lock and Dam, Alabama and Gulf, Mobile and Ohio Railroad Tracks from Station 460-00 to Station 489-69, by John D. Chichester. Real Estate Files. Prepared for the U.S. Army Corps of Engineers, Mobile District.

Chichester, John D.

1960 Appraisal Report for U.S. Army Engineer District, Mobile of Shook Mining Property, Holt Lock and Dam, Alabama and Gulf, Mobile and Ohio Railroad Tracks from Station 460-00 to Station 489-69. Real Estate Files. Prepared for the U.S. Army Corps of Engineers, Mobile District.

Culver, I.F.

1897 *Alabama's Resources and Future Prospects*. Commission of Agriculture. Roberts and Son, Birmingham.

Donan, John G.

1963 Appraisal of the Coal Washer Facility Located on Tract 103-E-2, Holt Lock and Dam, Tuscaloosa County, Alabama. Real Estate Files. Prepared for the U.S. Army Corps of Engineers, Mobile District.

Drucker, Leslie M., Ronald W. Anthony, Susan H. Jackson, Susan J. Krantz, and Carl R. Steen

1984 An Archeological Study of the Little River-Buffalo Creek Special Land Disposal Tract, Clarks Hill Lake, McCormick, South Carolina. Carolina Archeological Services, Columbia. Prepared for the U.S. Army Corps of Engineers, Savannah District.

Economic Analysis

1937 *Economic Analysis of the Black Warrior, Warrior, and Tombigbee Rivers, Alabama, and the Intercoastal Waterway from Mobile and New Orleans (Warrior System)*. Civil Works Project, Record Group 77, Box 7 (1933-1959), U.S. Army Corps of Engineers.

History Group, The

1981 Historical Investigations of the Richard B. Russell Multiple Resource Area. *Russell Papers*. National Park Service, Atlanta.

Gresham, Thomas H. and Karen G. Wood

1986 Archeological Data Recovery at 38Ab387 and 9Eb368, Richard B. Russell Lake, Abbeville County, South Carolina, and Elbert County, Georgia. Southeastern Archeological Services, Inc., Athens. Prepared for the U.S. Army Corps of Engineers, Savannah District.

Jeane, D. Gregory

1981 Evaluation of Engineering Cultural Resources: Lock No. 3, Coosa River, Alabama. Prepared for the U.S. Army Corps of Engineers Mobile District.

Joseph, J.W. and Mary Beth Reed

1987 Ore, Water, Stone, and Wood: Historical and Architectural Investigations of Donaldson's Iron Furnace, Cherokee County, Georgia. Garrow and Associates, Atlanta. Prepared for the U.S. Army Corps of Engineers, Mobile District.

Knight, Vernon I., contributor

1982 Phase I Archaeological Reconnaissance of the Oliver Lock and Dam Project Area, Tuscaloosa County, Alabama. By Lawrence S. Alexander. Report of Investigation No. 33, Office of Archaeological Research, University of Alabama. Prepared for the U.S. Corps of Engineers, Mobile District.

Ledbetter, Jerald R., W. Dean Wood, Karen G. Wood, Robbie F. Ethridge and Chad O. Braley

1987 Cultural Resources Survey of Allatoona Lake Area, Georgia. Vol. 1. Southeastern Archeological Services, Inc., Athens, Georgia. Prepared for U.S. Army Corps of Engineers, Mobile District.

Moorehead, Charles W., Ben I. Coblenz, and Hope N. Gillespie

1978 Cultural Resources Survey of Federal Mineral Lands in North Central Alabama. Report of Investigations No. 7, Office of Archaeological Research, University of Alabama, University.

Neville, Bert

1964 *Directory of Steam--Some Motor Towboats and U.S. Engineer Department Vessels on the Mobile-Alabama-Tombigbee-Warrior Rivers, 1881-1947.* Selma, Alabama.

Swanton, John R.

1922 *Early History of the Creek Indians and Their Neighbors.* Bureau of American Ethnology. Bulletin 73. U.S. Government Printing Office, Washington, D.C.

Taylor, Richard L. and Marion F. Smith

1978 The Report of the Intensive Survey of the Richard B Russell Dam and Lake, Savannah River, Georgia and South Carolina. Research Manuscript Series 142. Institute of Archeology and Anthropology, University of South Carolina, Columbia.

U.S. Army Corps of Engineers

1909 Correspondence from Marcus B. Long, Inspector, Tuscaloosa, to G.K. Little, Asst. Engineer, Tuscaloosa. Civil Works Project Record Group 77, Box 8 F(1933-1959). National Archives, East Point, Georgia.

1912 Correspondence from Maj. Flagler to Mr. G.K. Little, Asst. Engineer. Civil Works Project Record Group 77, Box 8 (1933-1959). National Archives, East Point, Georgia.

1937 Reconstruction of Lockhouse, Lock No. 13, Black Warrior River, Alabama. Sheet No. 1, Civil Works Project Record Group 77, Box 9 (1933-1959). National Archives, East Point, Georgia.

1938 Correspondence from Col. Park to Washington, D.C. Civil Works Project Record Group 77, Box 7 (1933-1959). National Archives, East Point, Georgia.

- 1940 Correspondence. Memo from H.I. Collins, P.E., to District Engineer Mobile. Civil Works Project Record Group 77, Box 9 (1933-1959). National Archives, East Point, Georgia.
- 1941 Correspondence. Memo from H.I. Collins, P.E., to District Engineer. Civil Works Project Record Group 77, Box 9 (1933-1959). National Archives, East Point, Georgia.
- 1942 Correspondence. Re: Rebuilding a timber guard crib at Lock No. 13. Civil Works Project Record Group 77, Box (1933-1959). National Archives, East Point, Georgia.
- 1963 Tract 101-E. Real Estate Files, Mobile Office, Mobile.

Weaver, David C.

- 197 Settlement Patterns and Processes, 1500-1945. Cultural Resources Reconnaissance Study of the Black Warrior-Tombigbee System Corridor, Alabama. Volume III: History. Department of Geology and Geography, University of South Alabama, Mobile. Prepared for the U.S. Army Corps of Engineers, Mobile District.

Worthy, Linda H., Editor and Assembler

- 1983 All That Remains: The Traditional Architecture and Historic Engineering Structures. *Russell Papers*. National Park Service, Atlanta.

State Documents

Alabama Board of Inspectors of Convicts Report

- 1884/1890 *First Biennial Report of the Inspector of Convicts to the Governor, October 1, 1884 to October 1, 1886*. Barrett, Montgomery.

Annual Statistical Reports

- 1980, 1986 Department of Industrial Relations, Division of Safety and Inspection, Birmingham.

Bailey, Earl

- 1975 *Surface Mining in Alabama: The Environmental Impact*. Alabama Environmental Quality Association and the Alabama General's Office, Montgomery.

Butts, Charles

- 1926 *Analyses of Alabama Coals*. Geological Survey of Alabama, Bulletin 31, University of Alabama, University.

Coal Company Report, The

- 1912 Geological Survey of Alabama. University of Alabama, University.

DeJarnette, Donald W.

- 1986 *Directory of Underground Coal Mines in Alabama*. Geological Survey of Alabama, Circular 130. University of Alabama, University.

Ernst, Walter S.

- 1924 *Statistics of the Mineral Production of Alabama for 1922*. Geological Survey of Alabama, Bulletin No. 27, University of Alabama, University.

Hall, Benjamin M. and Maxcy R. Hall

- 1916 *Water Power of Alabama*. Geological Survey of Alabama, Bulletin 17, University, Alabama.

Harper, Roland

1913 *Economic Botany of Alabama*. Part 1. Geological Survey of Alabama, Monograph 8. University of Alabama, University.

1940 *Statistics of Mineral Production in Alabama, 1926 to 1938*. Geological Survey of Alabama. Bulletin 44, University of Alabama, University.

1943 *Forests of Alabama*. Geological Survey of Alabama. Monograph 10. Wetumpka Printing, Wetumpka, Alabama.

Jones, Walter B.

1923 *Statistics of the Mineral Production of Alabama for 1923*. Geological Survey of Alabama, Bulletin No. 29. University, Alabama.

1926 *Index to the Mineral Resources of Alabama*. Geological Survey of Alabama, Bulletin No. 28, University, Alabama.

1928 *Statistics of the Mineral Production of Alabama for 1925*. Geological Survey of Alabama, Bulletin No. 34, University, Alabama.

1935 *History and Work of Geological Surveys and Industrial Development in Alabama*. Geological Survey of Alabama, Bulletin No. 42, University, Alabama.

McCalley, Henry

1886 *On the Warrior Coal Field*. Geological Survey of Alabama, University of Alabama, University.

1899 *Report on the Warrior Coal Basin*. 3rd printing, 1979. Geological Survey of Alabama. University of Alabama, University.

Phillips, William Battle

1912 *Iron Making in Alabama*. 3rd edition. Geological Survey of Alabama. University of Alabama, University.

Prouty, William F.

1911 *Roads and Road Materials of Alabama*. Geological Survey of Alabama, Bulletin 11, University of Alabama, University.

Wingard, J.H.

1923 *Statistics of the Mineral Production of Alabama for 1921*. Geological Survey of Alabama, Bulletin No. 26, University of Alabama, University.

University of Alabama, Museum of Natural History

n.d. *Exploring Alabama, Museum Fieldtrip Number 1: The Bankhead Eagles*. Museum of Natural History, University of Alabama, University.

Maps and Plans

Annual Report of the Chief of Engineers

1911 *Black Warrior River, Alabama. From Tuscaloosa to Mulberry and Locust Forks*. U.S. Army Corps of Engineers, Mobile District.

1913 *Black Warrior River, Alabama. From Tuscaloosa to Mulberry and Locust Forks: 2144*. U.S. Army Corps of Engineers, Mobile District.

Civil Works Project

1903 Record Group 77, Box 7 (1933-1959). National Archives, East Point, Georgia.

Davis, George B., Leslie J. Perry, Joseph W. Kirkley, Calvin D. Cowles

1865 *Atlas to Accompany the Official Records of the Union and Confederate Armies*. U.S. Government Printing Office, Washington, D.C. (Reprinted by Arno Press and Crown Publishers.)

Dinsmore, A.F.

1889 *State of Alabama*. Department of Interior, General Land Office. Agee Map Collection. Birmingham Public Library/Lyn Henley Research Library, Birmingham.

Friedman and Loveman

1916 Folder 49. *Friedman and Loveman Coal Lands in Tuscaloosa County*. John H. Adams Collection, University of Alabama, University.

LaTourette, John

1838 *An Accurate Map of the State of Alabama and West Florida*. Photostat copy available at Samford University, Special Collections, Birmingham.

McCalley, Henry

1898 *Map of the Warrior Coal Basin*. Geological Survey of Alabama. University of Alabama, University.

Modernization of Locks

1948 Lock Numbers 13 through 16, General Plan. Holt Lake and Dam, U.S. Corps of Engineers, Mobile District.

Ranges 8 and 6; Township 20 and 21

n.d. (ca. 1908) Folder 56. John H. Adams Collection, University of Alabama, University.

Republic Iron and Steel Company

1918 North River Coal Fields, Fayette, Tuscaloosa, Walker Counties. Agee Collection, Birmingham Public Library/Lyn Henley Research Library, Birmingham.

Sapp, C. Daniel and Jacques Emplaincourt

1975 *Physiographic Regions of Alabama*. Map 168. Geological Survey of Alabama, University.

Smith, Eugene

1879 *Map of the Black Warrior River from Tuscaloosa to the Fork of Sipsey and Mulberry*. Geological Survey of Alabama. University of Alabama, University.

Tuscaloosa County Highway Map

1944 *General Highway and Transportation Map of Tuscaloosa County, Alabama*. Alabama State Highway Department, Public Roads Administration Federal Works Agency and State-Wide Highway Planning Survey.

1968 *General Highway and Transportation Map of Tuscaloosa County, Alabama*. Alabama State Highway Department, Public Roads Administration Federal Works Agency and State-Wide Highway Planning Survey.

Untitled Map (Black Warrior Area)

n.d. (ca. 1905) Ranges 8 & 6. Township 20 & 21. F-56. John H. Adams Collection, University of Alabama, University.

n.d. (ca. 1910) Accession 79-53, Box 3, Map Folder 46. John H. Adams Collection, University of Alabama, University.

U.S. Army Corps of Engineers

n.d. Holt Lake, Black Warrior and Tombigbee Rivers. Mobile District.

1948 Warrior, Black Warrior, Tombigbee River System. Modernization of Locks 13, 14, 15, and 16. General Plan. Mobile District

U.S. Geological Survey

1899 Brookwood Quadrangle, Surveyed in 1895. 1:125,000, 50 ft contour interval.

1942 Searles Quadrangle, Surveyed in 1928-1929. 1:62,000, 20 ft contour interval.

1974 Lake Nicol Quadrangle. 1:24,000, 20 ft contour interval.

1975 Cottdale Quadrangle.

1984 Tuscaloosa Planimetric Map. 1:100,000.

U.S. Department of Agriculture

1911 *Soil Map of Tuscaloosa County, Alabama*. In cooperation with the Alabama Department of Agriculture and Industry.

Photographs

Roland Harper Collection

1911 *Turpentine Still Among Pine Hills Between Brookwood and Tidewater*. (A1,141.1). William Stanley Hoole Special Collections Library, University of Alabama, University.

1913 *Small New Sawmill on L&N Railroad About 1/4 Mile East of Warrior Southern Railroad*. (A1,209,4). William Stanley Hoole Special Collections Library, University of Alabama, University.

1935 *Falls on Brush Creek, One of the "Triple Falls."* (A10,712,2). William Stanley Hoole Special Collections Library, University of Alabama, University.