Investigations at the Choccolocco Creek (Davis Farm) Archaeological Complex

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March 31, 2023

Cover: *“The Victors”* by Jerome Richard Tiger/Kocha, 1967, National Museum of the American Indian, with permission, superimposed over Choccolocco Lake and Mound photograph by author. Composite image product of Robert E. Perry & Associates, Inc.

PREFACE

This public document presents the environmental and cultural context necessary to understand the Choccolocco Creek (Davis Farm) Archaeological Complex. It was originally published as the first of a three-volume series of technical reports for the U.S. Army Corps of Engineers in support of two separate and distinct federal undertakings, Choccolocco Park and Oxford Commons. The work conducted in support of those undertakings represents the principal investigator's first steps towards an "archaeology of inclusion" in which the intent is for indigenous people's voices to be heard as participants in the interpretive process. Although some of North American archaeology's brightest young scholars today also happen to be descendants and members of indigenous communities, significant institutional, epistemological, and cultural challenges remain for an archaeology of inclusion in compliance archaeology. I am confident that all of these challenges will be met in the coming years.

I have no doubt that were it not for the leadership of key individuals representing the Muscogee (Creek) Nation (MCN), the City of Oxford, Oxford Commons, the Alabama Historical Commission (AHC), and the U.S. Army Corps of Engineers, Mobile District (USACE), neither of the federal undertakings which this work supported would have been possible. The Tribal Historic Preservation Officer in 2010, Ted Isham, along with Fred Denney, Findley Frazer and Jim Noles representing the City of Oxford, Steve Castleman representing Oxford Commons, Alabama State Archaeologist Stacye Hathorn from the AHC, and both Matthew Grunewald and Casey Ehorn from the USACE spent many months forging the path forward for both of the undertakings. All of these individuals provided crucial leadership in navigating the institutional and cultural obstacles to the undertakings' success.

Investigations at the scale and magnitude of those required at the Choccolocco Creek Archaeological Complex (CCAC) are rare occurrences in North American archaeology today. Inevitably, administrative issues and unforeseen circumstances arose over the years and it is a credit to all of the institutions involved that when critical personnel were lost, they were replaced with capable individuals. Courtney Shea replaced Casey Ehorn as project manager for the USACE and Tim Dodson stepped in to replace Matthew Grunewald. The burden carried by both of these individuals cannot be understated. As principal investigator, I was fortunate to witness the expansion of the Historic and Cultural Preservation Department at the MCN under the leadership of RaeLynn Butler, and their first Tribal Archaeologist, LeeAnne Wendt. Both were aided by their staff and supported by the MCN's Chiefs and National Council. My only regret is that I was unable to work more closely with the staff during the latter few years of the projects as the COVID pandemic impacted schedules, staffs and travel. That regret is partially mitigated by the wonderful work that I have seen RaeLynn and her staff undertake in recent years in cooperation with the City of Oxford and the staff at Choccolocco Park. One of the personal highpoints of my career was spending an entire day with Dr. Monte Randall from the College of the Muscogee (Creek) Nation and Dr. Harry Holstein from Jacksonville State University discussing the legacy of the Muscogee people in the region and opportunities for their respective institutions to cooperate in future research.

An archaeology of inclusion works both ways and I was privileged to work with several elders of the Muscogee (Creek) Nation in the interpretation of the findings from our excavations. As several peer reviewers noted during their review of these volumes, this work represents a significant departure from previous archaeological approaches in the region. Even before we began our excavations, Sam No-Se Proctor from Tvlahasse Wvkokaye and Tim Thompson from Oce Vpofv graciously opened a path for me to begin to understand a deeper perspective on the archaeological remains of the Choccolocco Valley. I will forever remember them as great men who showed us all the path forward. Mekko David Proctor from

Tvlahasse Wvkokaye and Arnold Taylor from Arbeka shepherded me down that path for the next several years. I walked too few miles with Mekko David Proctor before he passed away and he will be forever remembered by me as a friend and mentor.

Federal agencies and their permittees are mandated by Congress pursuant to the terms of the National Historic Preservation Act to conduct archaeology on federal undertakings in order to increase our understanding of "history and prehistory." The Muscogee (Creek) Nation prefers to use the terms "pre-contact" and "post-contact" as prehistory and history have negative connotations for them. Ultimately, I elected to retain those terms in these volumes based on my own epistemological concerns and for continuity with the language used in federal legislation. However, I cannot stress highly enough that an historical lack of a written language does not in any way imply that the Muscogee people lack a "history." If anything, these volumes demonstrate that the history of the Muscogee people is written on the landscape of the Choccolocco Valley. Similarly, I have retained the use of the phrase "Native American," primarily for consistency with previously published literature but it should be noted that the Muscogee (Creek) Nation prefers the more inclusive term "Indigenous."

For a century, archaeological paradigms in North America have sprouted from a root-bound philosophical materialism. These paradigms still dominate North American archaeology. An archaeology of inclusion attempts to bring disparate perspectives to bear on archaeological problems. In an era where the mantra has become, "follow the science," an archaeology of inclusion must remind all that the foundation of scientific inquiry is built upon the philosophical truth that we *Homo sapiens* are limited in our individual experiences and sensory perceptions. It shall forever be, *"through a glass, and darkly"* that we perceive the objective world; past, present and future. If scientific inquiry teaches us anything, it is that the more perspectives that are brought to bear on objective reality, the brighter the Truth we all seek will shine. In less philosophical terms, scientific inquiry requires testing of hypotheses through rigorous analysis of empirical data; nothing more, nothing less. The archaeological record at the CCAC is the product of many discreet, complex interactions between humans and the natural environment. From the mid-Holocene onward, these interactions included a religion and cosmology that echo through time to the present within descendant communities. Thus, an archaeology of inclusion directs the Neo-Darwinists' gaze towards the knowledge present within indigenous perspectives on the past. This is perhaps the most significant institutional and epistemological challenge facing 21st century archaeology.

Several of the subjects reported in these volumes provide robust opportunities for future research. For example, the research on the serpent symbolism that is so manifestly evident at the CCAC, included one of several "myths" from the Cherokee, who were 18th and 19th century arrivals in what is now northeastern Alabama. This research is consistent with others who have noted that serpent symbolism has deep roots among various North American indigenous peoples. I suspect this is indicative of the antiquity of this symbolism, which may date back as far as the late Pleistocene/early Holocene transition. While others have suggested that the Iroquoian ancestors of the modern-day Cherokee arrived in the southern Appalachians perhaps as early as the late Archaic period, our analysis of the material culture of the CCAC strongly supports the view that since at least the Early Woodland period, the Choccolocco Valley was inhabited by a group of people ancestral to the present-day Muscogee (Creek) Nation. Moreover, Muscogee oral traditions associated with the Woksi and Aktayahche clans indicate that a strong case may be made that some of these people were specifically ancestral to the Aktayahche clan of the present-day MCN. Given the strong association between this ancient clan and stone constructions within the Choccolocco Valley, it is reasonable to suggest that this association may be shown to be equally strong in other parts of the southern Appalachians.

The goal of the current investigations at the Choccolocco Creek (Davis Farm) Archaeological Complex (CCAC-Davis Farm) has been to recover archaeological data, place the data recovered within previously published cultural contexts, and report findings that, *"contribute to our understanding of the prehistory and history of the region."* Archaeology, as an empirical method, is merely one of several methods that have been utilized herein to contribute to such an understanding. Moreover, the work reported herein expressly recognizes that the terms "prehistory" and "history" are functionally-limited to the division of time into one of two periods. Within this functionally-determined construct, "history" denotes the period of time after which Western Europeans began to document in writing their interactions with the Native American people of the Middle Coosa and Choccolocco Valleys, and "prehistory" denotes the vast period of time before such written documentation occurred. This functional division of time should in no way be construed as suggesting that the Native American inhabitants of the Middle Coosa and Choccolocco Valleys did not possess a history. In fact, the approach taken herein has been to illustrate that the history of the Muskhogean-speaking inhabitants of the Middle and Upper Coosa Basin, as well as the Etowah Valley in Georgia, has been written on the landscape. The challenge herein has been to convey that understanding through the written word to a scientific community that has arisen from within a Western European, secular humanist world-view stemming from a philosophical skepticism that questions the validity of all epistemological claims.

During the literature and documents review for the current investigation it became apparent that a comprehensive review and synthesis of archival materials relating to the CCAC-Davis Farm had never been conducted during the nearly two dozen previous investigations. Moreover, the high-resolution cultural chronology obtained for the CCAC-Davis Farm as a result of the current investigations raised important research questions that had not been previously formulated during previous efforts to develop the cultural history and models of cultural transformation at the complex. Thus, this volume attempts to build upon over thirty years of research by Dr. Harry O. Holstein, who first recognized that Davis Farm was home to an important Native American archaeological complex. During his decades of research at Davis Farm, Holstein, by necessity, focused on field investigations and in chronicling the gradual destruction of sites within the complex by late 20th century intensive agriculture. His efforts in public outreach with local artifact collectors resulted in the first documentation of examples of material culture that assisted in an initial definition of the complex and that would have been otherwise lost to archaeological science. Dr. Keith Little further developed the chronological framework for the archaeology of both the Middle and Upper Coosa Basins first outlined by Dr. Vernon James Knight, Jr. and resulted in the definition of several archaeological phases. These works have served as a foundation for the current investigations.

Apart from Holstein's research at the CCAC-Davis Farm and other sites in the Middle and Upper Coosa Sub-Basins, Little's work on the 16th century chiefdoms, Dr. Marvin Smith's focus on the Coosa chiefdom, and Dr. Clay Nelson's recent work on the Hightower Site, there has been relatively little pure research interest in the archaeology of the Middle and Upper Coosa Sub-Basins. Although the archaeological gray literature on the region frequently references the fact that it was inhabited by both Cherokee and Creek occupants prior to their forced removal in the first half of the 19th century, there is still today little or no sustained research dedicated to achieving a better understanding of the history of the pre-removal occupants. Moreover, despite the efforts of Knight, Smith, Little and Nelson, much work remains to be completed on the history and archaeology of the three hundred years between the 16th and 19th centuries. While the general outline of the ethnogenesis of the Creeks was sketched several decades ago in Knight's work on these "*Forgotten Centuries*," the region still lacks an archaeology that adequately incorporates Native American history into treatments of the region's "prehistory and history" despite the large volume of historical documentation archived for this period.

Between 1884 and 1928, the Smithsonian Institution's Bureau of American Ethnology (BAE) produced several remarkable reports on the ethnology of the Cherokee and Creek Indians. In 1884, Albert Gatschet published A Migration Legend of the Creek Indians with a Linguistic, Historic and Ethnographic Introduction. This work was an English translation, from an earlier German translation, of the original 1735 English translation, of the actual migration legend given in Hitchiti by Chekilli to James Oglethorpe in Savannah, and is an excellent example of the difficulties inherent in any scholarly attempt to understand the complex period spanning first contact between Europeans and Native Americans in 1542, to the forced removal of Native Americans from the region during the first half of the 19th century. For several decades, Chekilli's migration legend served as the basis for the belief that the Creek occupation in the southeastern United States had relatively little depth in time. Gatschet's work was followed by other BAE ethnographers that provided the first hints that the ethnogenesis of both Cherokee and Creek identities was a far more complex subject.

In 1902, Charles Mooney published his Myths of the Cherokee which compiled over one hundred sacred stories and legends. Two decades later, John Swanton's Early History of the Creek Indians and Their Neighbors was published by the BAE. This work was a sweeping review of various European sources to further illuminate the cultural geography of the post-contact southeastern United States. This was followed in 1928 with Swanton's Social Organization and Social Usages of the Indians of the Creek Confederacy which also includes "Native Creek History Legends." The importance of the connection between these "legends" and the ancestral lands of the Cherokee and Creeks cannot be overstated. While largely dismissed by the new archaeology of the latter half of the 20th century, the approach utilized here has been to view these myths and legends as historical narrative, framed within a world-view that is uniquely Native American. Even today, Creek ancestral lands contain monuments and place-names that tie these legends to specific places. While details considered important by empirically-driven archaeologists may have been lost in translation and transmission over time, these historical narratives can still convey meaning when they are connected to the ancestral landscape and events which they describe. The work reported herein is a first attempt to demonstrate that Creek and Cherokee "legends" can inform archaeological paradigms seeking to understand the history and prehistory of the region.

This volume begins with a systematic review of published literature on the environmental context of the region. The review is heavily steeped in decades of studies on abrupt climate change (ACC) events in an attempt to identify environmental factors that may have contributed to cultural change and to evaluate the time-frame within which epistemological claims made by published Creek and Cherokee oral histories might have occurred. Archaeological research is particularly situated to address human responses to climate change. The general environmental context has been augmented by site-specific research to answer questions raised by the archaeological record identified at sites within the CCAC-Davis Farm. This focus was, in part, precipitated by a recognition of the geologic and topographic setting within which the CCAC-Davis Farm is located. All of the sites are either situated within an alluvial floodplain that was subject to frequent catastrophic flooding or are positioned upon geologic formations prone to subsidence. Accounts of both of these types of events can be readily found in the Native American historical narratives presented in the BAE reports and may be linked to archaeological manifestations at the CCAC-Davis Farm.

Some of the published literature on ACC events presents hypotheses on proximate causes for climate change that are still highly debated. The causes of the Younger Dryas and the AD 536 event are prime examples due to the fact that both appear to have been significant global events. While there is little disagreement that these events occurred, the work towards synchronizing proxy data from different sources and regions of the world continues to be refined in order to assist in confirming their proximate causes. The approach here has been to present an inclusive summary of current research. That past changes in climate tend to be synchronous with observed changes in material culture has now been well-documented at sites around the world.

Of particular interest for the current research is the AD 536 event that occurred within the transition period between the Middle and Late Woodland in the southeastern United States. The effects that this exceedingly rapid ACC event had on societies around the globe is well-documented but remains largely uninvestigated within North America even though the most cursory of literature reviews shows that the AD 536 occurred during a transitional period that has long perplexed archaeologists. At the CCAC-Davis Farm, the high-resolution chronology obtained as a result of the current investigations indicates that the local Cartersville population appears to have abandoned their floodplain occupation surrounding the earthen mound sometime shortly after AD 400. Moreover, there is little evidence in the Middle and Upper Coosa Sub-Basins of the Cartersville Simple Stamped pottery that became common in the Etowah Valley during this period, thus raising the possibility that the Middle and Upper Coosa Sub-Basins were largely abandoned at some interval between AD 400 and AD 600. Given the uncertainties inherent in current archaeological chronometric methods, the apparent hiatus between AD 400 and AD 600 may eventually be restricted to the 6^{th} century as more work is done in the region.

The cultural context was specifically written to inform the site investigations at the CCAC-Davis Farm. These include sites as diverse as mid-19^{th} century charcoal production pits for nearby iron furnaces, two (2) large Late Holocene multi-component sites with evidence of monumental architecture, and several small and ephemeral Early Holocene resource extraction sites. Both Late Holocene sites exhibited evidence of catastrophic flooding and sinkhole collapses; events similar to those recorded in the BAE reports. The context proceeds from the recent to more distant past and includes a section devoted to analysis of pre-removal Native American towns needed to firmly establish the link between the modern-day Arbeka Ceremonial Ground and the pre-removal Choccolocco town. This was accomplished through genealogical research linking the post-removal Fife family in Oklahoma to Jim Fife of Choccolocco Town.

The Creek town research is followed by a section on flood myths and a section on serpent symbolism apparent in stone structures of the region. Archaeologists and local federal land managers have long struggled to understand the numerous stone structures within the southern Appalachians. One of the largest known examples of these stone structures was once a component of the CCAC-Davis Farm. Thus, understanding the nature of these stone structures is a critical component required to understanding the history and prehistory of the CCAC-Davis Farm. The current investigation presents evidence of both the antiquity of one particular type of these structures (stone walls and pavements) and an apparent association with published Cherokee and Creek narratives. The discussion on myths and serpent symbolism is presented within a secular humanist empirically-driven world-view and represents an attempt to illustrate how published Native American historical narratives may be interpreted as describing actual historical events. In no way does such an interpretation imply that other interpretations of these historical narratives are not equally plausible or valid. When questioned about these historical narratives, Native American sources suggested that much of the meaning was lost after their disassociation with their ancestral lands. Thus, the current work on the ethnohistory of the Middle Coosa Sub-Basin should be considered preliminary in nature as there is much more work to be done. Nevertheless, what work has been accomplished here towards a more meaningful cultural context would not have been possible without the contribution of fluent Muskhogean speakers Sam No-Se Proctor, Mekko David Proctor and Arnold Taylor to assist in the proper pronunciation of Muskhogean words so that English analogs might be understood.

A discussion of the archaeological context of the Middle Coosa Sub-Basin is also presented. Discussion of the Paleoindian Period and Archaic Period Cultural Chronology for the Middle Coosa Sub-Basin has been limited to inclusion within the relevant table outlining complex and/or horizon markers due to the lack of new information on these Stage/Periods obtained during the current investigations. The relevant phases for the Woodland Period to the Historic Period are discussed in detail and the findings of the current investigations are introduced and situated within the existing cultural framework. As discussed previously, the Late Historic Creek period (1780-1838) has largely eluded archaeologists and pottery assemblages from the few known sites have never been fully analyzed. Archaeological phases for the preceding Protohistoric Period (1650-1780) are currently only defined for the sites in proximity to the Coosa River and little is known of sites from this period in the Choccolocco Valley.

Existing cultural phases for the Mississippi and earlier periods are somewhat better defined for the region than the later temporal periods and it is for these periods that the current investigations may contribute much to the discussion of the cultural context. The most significant revision to the existing Mississippi Period chronology is the addition of an Early Mississippi Boiling Springs phase that develops from the preceding Terminal Woodland Davis Farm phase. The evidence for both of these newly defined phases was first presented to the USACE, AHC and the MCN in 2016 and subsequently released for presentation to the Alabama Archaeological Society (AAS) in 2017. Likewise, the current investigations have recovered extensive evidence that the preceding Late Woodland and Middle Woodland Period cultural chronologies may also be further refined. This evidence was also presented to the USACE, AHC and the MCN in 2016 and the AAS in 2017. Due to the fact that data from other sites in the region is still lacking, no new cultural phases have been proposed for these periods. Nevertheless, the data recovered from the CCAC-Davis Farm may provide a strong chronological framework for further definition of cultural phases in the future.

R.E.P.

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INTRODUCTION

This report has been prepared in support of two separate and distinct Memoranda-of-Agreement (MOA) entered into on June 24, 2011, between the City of Oxford, Alabama, the Muscogee (Creek) Nation (MCN), the Alabama Historical Commission (AHC) and the Mobile District, U.S. Army Corps of Engineers (USACE) and, on August 4, 2011 between WR Oxford LLC, the MCN, the AHC and the USACE.

In 2007, the City of Oxford (Applicant) obtained a Department of the Army (DA) permit pursuant to Section 404 of the Clean Water Act (33 U.S.C. §1344) for the discharge of fill into waters of the United States for the construction of Choccolocco Park (Undertaking). The Undertaking is located on an approximate 350-acre tract of land within the City of Oxford in Calhoun County, Alabama and consists of the excavation of an approximate 40-acre freshwater lake and construction of baseball, softball and soccer fields. Choccolocco Park is identified in Figure 1 as USACE Project SAM-2007-00612-SVL.

In 2011, WR Oxford, LLC (Applicant) obtained a Department of the Army (DA) permit pursuant to Section 404 of the Clean Water Act (33 U.S.C. §1344) for the discharge of fill into waters of the United States for the construction of the proposed Oxford Commons Commercial Development (Undertaking). The Undertaking is located on an approximate 15-acre tract of land within the City of Oxford in Calhoun County, Alabama and consists in the construction of a retail commercial complex identified in Figure 1 as USACE Project SAM-2011-00420-CHE.

Both of the proposed undertakings are partially located within an area that has been identified within the technical literature as the Davis Farm Archaeological Complex (Holstein & Little, 1986). In 2011, the AHC included the Davis Farm Archaeological Complex as a "Place in Peril" as part of an expanded Choccolocco Creek Archaeological Complex (CCAC). The CCAC is centered on an area initially reported to the Smithsonian Institution in 1882 as the location of an isolated prehistoric earthen mound (Luttrell, 1882) and describes a relatively dense distribution of archaeological sites that appear to have been occupied by prehistoric inhabitants with similar cultural/archaeological traits. The earthen mound was destroyed in or about 1950 before professional archaeologists had an opportunity to investigate. However, beginning in 1979, several federally-sponsored and academic-oriented archaeological investigations were conducted in the vicinity of the mound described by Luttrell and as a result, the earthen mound described by Luttrell was given the trinomial site number 1Ca196. As a result of those investigations, at least 29 archaeological sites were identified that collectively provide evidence of human habitation of the area beginning with the end of the Late Pleistocene circa 8,500 BC. (Waselkov, 1980; Holstein & Little, 1986; Broom, 1992).

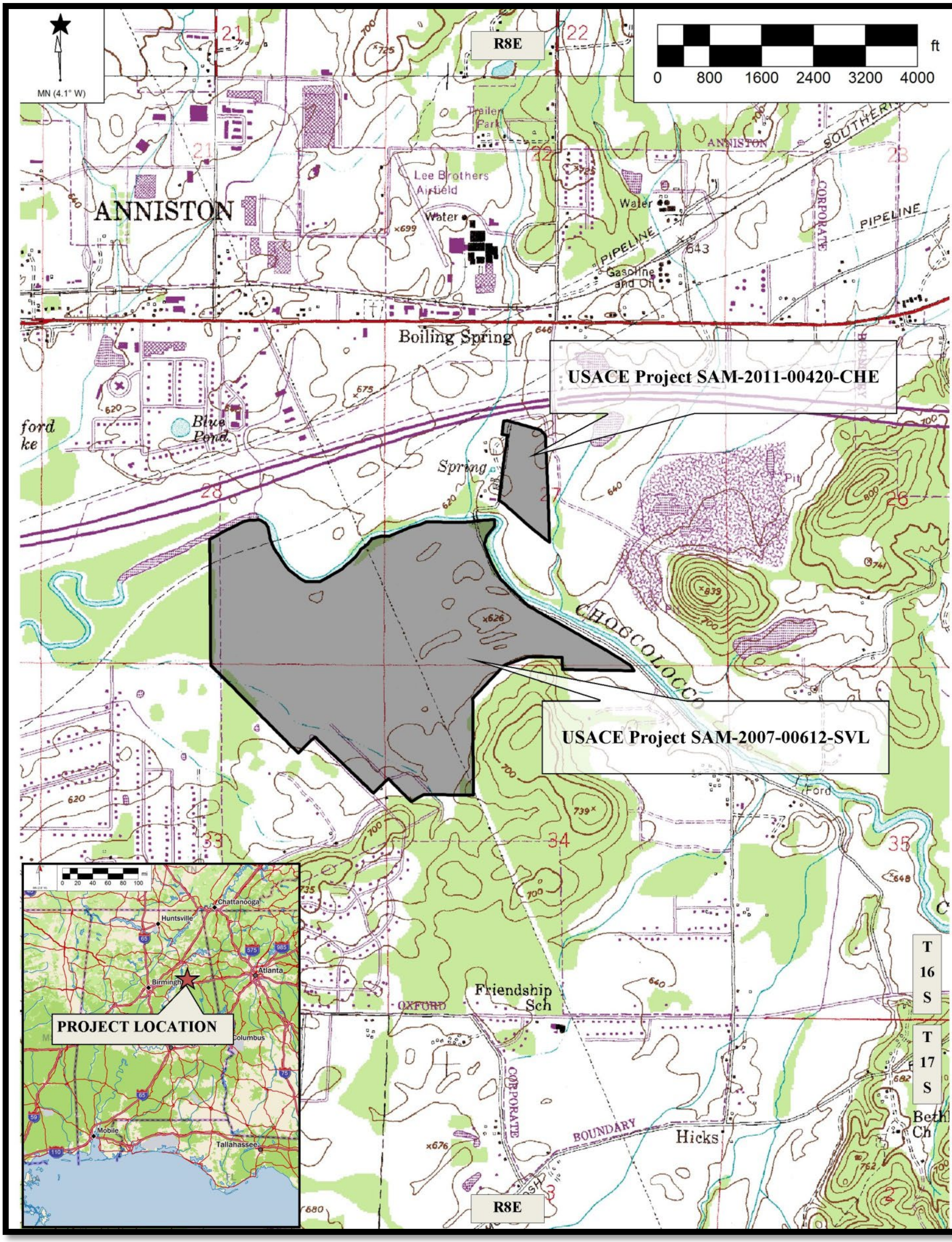

Figure 1. Project Location

ENVIRONMENT

The cultural ecology perspective first advocated by Steward (1955) considers cultures and environments as part of a total web of life in which environmental conditions such as physiography, geology, soils, hydrology, climate, flora and fauna significantly influence the character and nature of the archaeological record left behind by human populations. Reitz (1993) has suggested that Steward's cultural ecology provided the preliminary framework for the development of an ecological anthropology which emphasizes that understanding the behavior of past human populations requires a holistic view of the complex relationship that exists among cultural systems, human populations, and the environments within which they operate. Furthermore, consideration of the variable nature of environmental conditions over the vast spans of time represented in the archaeological record is important not only in understanding site formation processes but, also in understanding how the natural environment has affected archaeological deposits (Renfrew & Bahn, 2000).

The application of an ecological framework to the study of prehistoric populations has now become commonplace for archaeological investigations in the southeastern United States. However, due to the high transaction costs associated with the development of integrated environmental data, and its limited availability, archaeologists have generally had to rely on the readily-available surrogate data developed from single-purpose frameworks (i.e., physiographic, geologic, soil, hydrologic, climatological, floral and faunal) for environmental data. Beginning in 1987 the United States Environmental Protection Agency (USEPA) began compilation of ecoregion maps of the conterminous United States and by 2001 achieved mapping of current-day ecoregions at scales that may assist archaeologists in the application of the ecological framework of reference, at least for Late Holocene sites occupied within the modern climate regime. Omernik (1995) has suggested that the primary difference in the ecoregion approach from most preceding methods is that it is based on the hypothesis that ecological regions gain their identity through spatial differences from a combination of landscape characteristics. Because the ecoregion approach applies a holistic view similar to that proposed by Steward it is included herein.

Within this section the physiography, geology, soils, hydrology, climate, flora and fauna of the region are presented first as single-framework variables and then within the more holistically-oriented ecoregion format developed by the USEPA.

Physiography

The undertakings are located within a narrow portion of Choccolocco Valley (Johnston Jr., 1930) at the interface between the southwestern boundary of the Weisner Ridges District and eastern boundary of the Coosa Valley District of the Alabama Valley and Ridge Section of the Tennessee Valley and Ridge Physiographic Province and the Northern Piedmont Uplands District of the Piedmont Uplands Section of the Appalachian Highlands Piedmont Province (Figure 2). The Valley and Ridge developed on tightly folded and thrust faulted sedimentary rock layers of Cambrian to Pennsylvanian age and thus consists of numerous zigzagging ridges separated by steep-sided valleys. Lying immediately to the south of the undertakings, the Piedmont Province consists of a plateau that slopes from the north to the south that developed on northeast-southwest trending belts of Precambrian to Paleozoic metamorphic rocks that are highly deformed and bordered by faults. The most common rock types are slate, phyllite, marble, quartzite, greenstone, schist, amphibolites and gneiss. The Northern Piedmont Uplands District contains many of the highest peaks in the state and numerous northeast-southwest trending ridges (Sapp & Emplaincourt, 1975; Neilson, 2011).

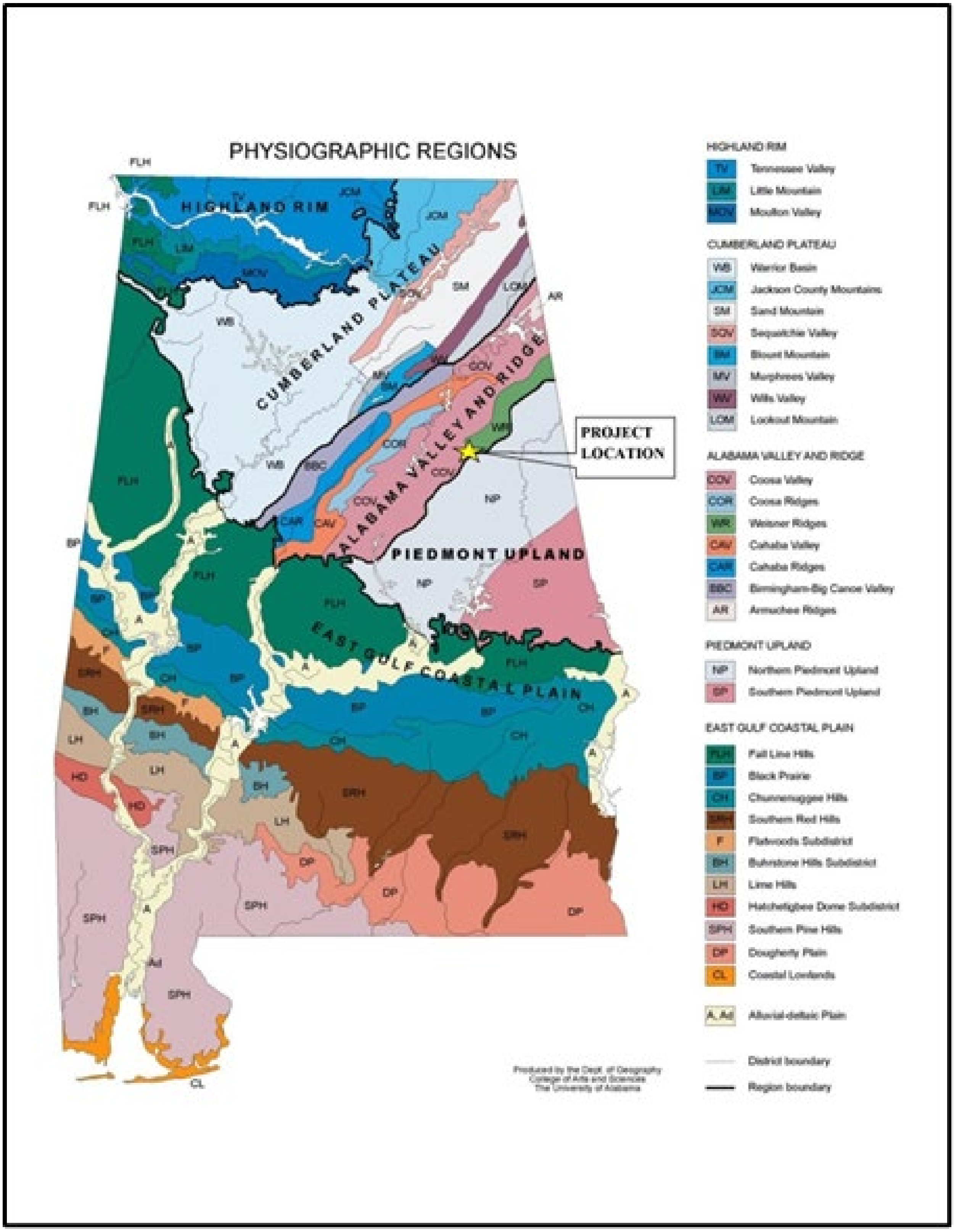

Figure 2. Physiography

Geology

As noted above, the undertakings are situated within the Choccolocco Valley. At this location, the valley is comprised of Cambrian deposits of medium-bluish-gray fine-grained, thin-bedded argillaceous limestone and interbedded dark-gray shale of the Conasauga Formation. To the north of the undertakings, the valley floor is comprised of Cambrian deposits of the Rome Formation that consist of variegated thinly-interbedded mudstone, shale, siltstone and sandstone with local occurrences of limestone and dolomite. Both limestone and dolomite were utilized by prehistoric populations for tempering pottery and these materials would have been locally abundant within the Conasauga and Rome Formations (Figure 3).

Approximately 3.4 km (2.1 mi) to the northwest, Coldwater Mountain rises 243-273 meters (800-900 ft) above mean sea level. The bedrock of the lower slopes of the southeastern flank of Coldwater Mountain is bluish-gray or pale-yellowish-gray thick bedded siliceous dolomite characterized by coarsely crystalline porous chert of the Shady Dolomite. Along the upper slopes and crest of Coldwater Mountain are the massive quartzites and conglomerates of the Chilhowee Group Weisner Formation. Approximately 10 km (6.5 mi) northeast of the undertakings, tributaries to Choccolocco Creek drain ridges underlain by the same geologic formations and receive surface water from within the Heflin Phyllite and Lay Dam Formations of the Piedmont Province.

Previous archaeological investigations within the region indicate that the Weisner quartzite was an economically important lithic resource for prehistoric populations during the Archaic and Woodland stages of cultural development. However, perhaps due to the coarse-grained nature of the Weisner quartzite, archaeological investigations indicate that later populations equipped with the bow and arrow favored other types of lithic resources such as chert.

To the southeast of the undertakings, Choccolocco Creek is incised into an area of Ordovician-Cambrian deposits of light-gray to light-brown locally sandy dolomite, dolomitic limestone, and limestone of the Knox Group with abundant light-colored chert. Due to its proximity and areal extent, this geologic formation would have provided prehistoric populations with the most readily-available chert. Higher quality chert found within the Tuscumbia Limestone and Fort Payne Chert Undifferentiated, located 22 km (13.6 mi) to the northwest was also utilized.

The Piedmont Province, to the southeast of the undertakings, provided prehistoric inhabitants of the area with access to metamorphic rock that differed significantly from the lithic resources found in the Valley and Ridge Province. Approximately 2.9 km (1.85 mi) southeast of the undertakings, Choccolocco Creek receives the waters of Hillabee Creek, which drains an area of approximately 53.58 km^2 (20.6 mi^2) initially identified by Bearce and mapped by Szabo and Copeland (1988) as the Heflin Phyllite (Figure 4). This formation consists of grayish-green, medium-gray and medium-bluish-gray calcareous sandy metasiltstone interbedded with minor greenish-gray fine-to coarse-grained metasandstone and rare thin lenses of calcite and dolomite marble. Near the base of the formation an interval of greenish-gray to dark-gray phyllitic quartzite or quartz-pebble metaconglomerate is locally present.

The Heflin Phyllite has been identified by Vaughn (1993) as a minor source of greenstone artifacts recovered from archaeological sites in northeast Alabama. Gall and Steponaitis (2001), in their study of greenstone artifacts from Moundville noted that none of the specimens were composed of metasiltstone or phyllite. Due to the lack of Heflin [Phyllite] celts in the Moundville inventory they have suggested that the people of northeastern Alabama were not engaged in greenstone trade with Moundville.

South of the Heflin Phyllite, the Lay Dam Formation underlies the upper slopes of Horseblock Mountain and is comprised of inter-bedded dark-green phyllite, medium-gray to light-brown and black metasiltstone,

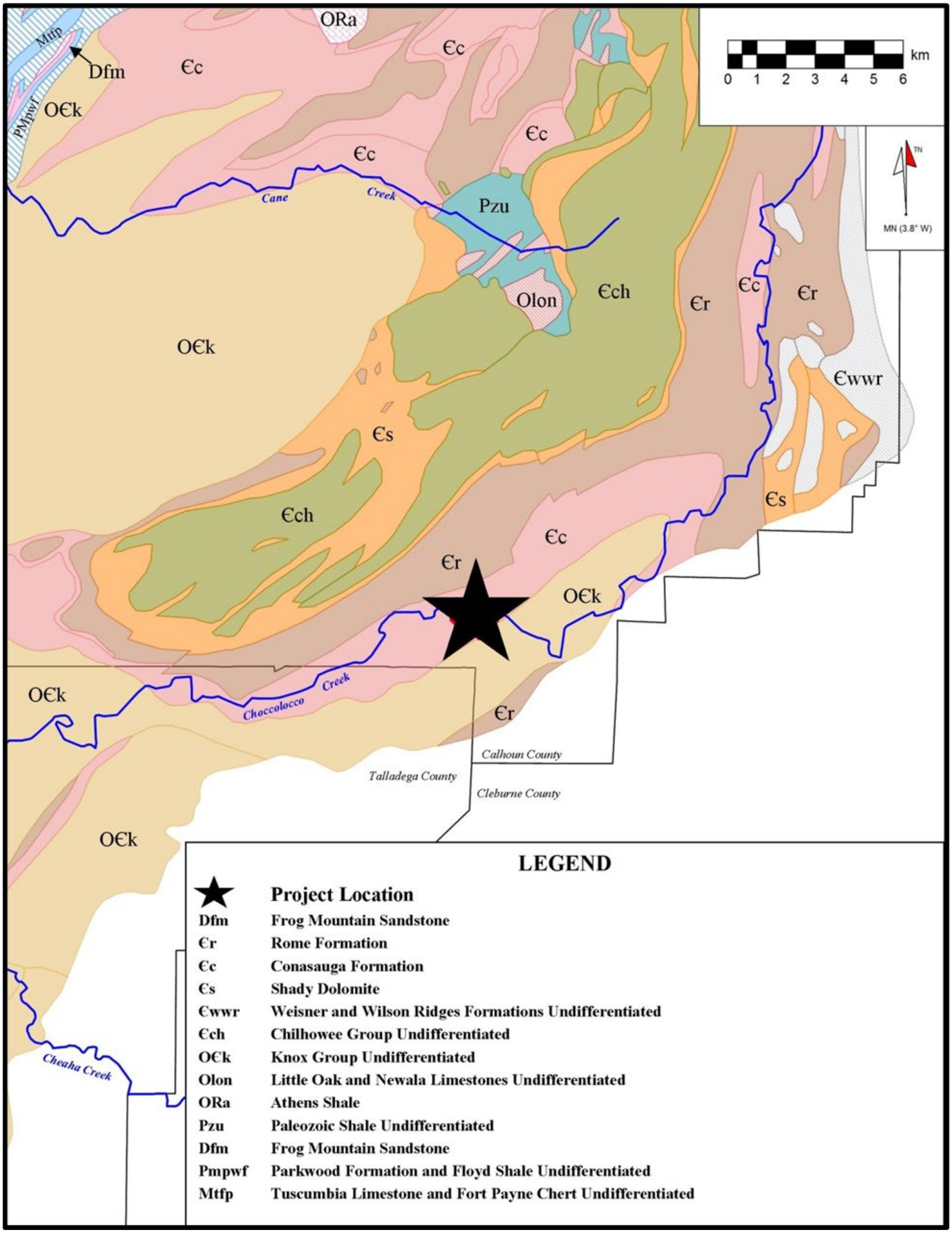

Figure 3. Valley and Ridge Geology

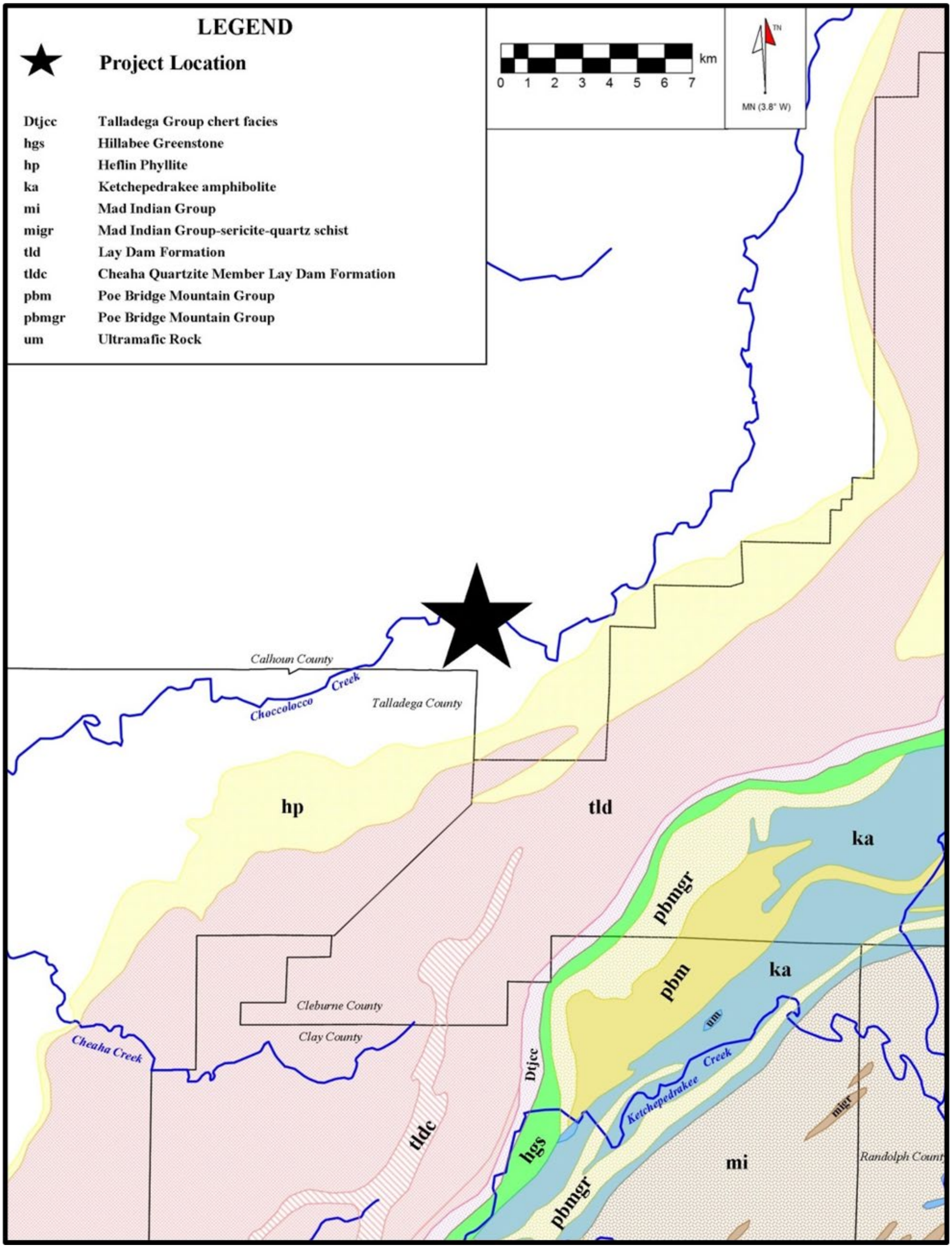

Figure 4. Piedmont Geology

dark-green feldspathic metagraywacke, and white to light-gray and dark-gray medium to course-grained arkosic quartzite and metaconglomerate; graphitic phyllite is common in the upper part of this formation. In Cleburne and Calhoun counties, rocks mapped as the Lay Dam Formation include the Abel Gap Formation and consist of interbedded greenish-gray metasiltstone and quartzite, black phyllitic metasiltstone, medium-gray to greenish-gray arkosic quartzite, and dark-gray phyllite and slate reportedly containing plant fossils. The Cheaha quartzite member of the Lay Dam Formation is described as white, to light-gray medium-to coarse-grained arkosic quartzite and metaconglomerate. Along the lower southeastern facing slopes, an unnamed chert facies of Early to Middle Devonian age crops out.

The valley floor in this region is underlain by a narrow band of the Hillabee Greenstone. This pale-green to light-olive-brown massive, fine-grained greenstone is interbedded locally with well-foliated mafic phyllite. Gall and Steponaitis have traced the petuloid celts found at Moundville to the metabasites found in this formation.

South of Chulafinnee Creek, the north-facing mountain slopes and ridges are comprised of roscoelite-graphite-quartz schist and graphitic quartzite (pbmgr) of the Poe Bridge Mountain Group. The south-facing ridges in this group consist of coarse-to fine-grained feldspathic graphite schist, staurolite, kyanite, sillimanite-muscovite-biotite schist, and garnet-biotite-muscovite schist and gneiss with locally common pegmatites (pbm). Ketchepedrakee Creek drains an area underlain by mafic and ultramafic rocks of the Ketchepedrakee Amphiboloite and high-grade metamorphic and igneous rocks of the Mad Indian Group. The Ketchepedrakee Amphibolite consists of dark-green to black fine- to coarse-grained, layered to massive amphibolite mixed with zones of chlorite actinolite schist and includes all amphiboloite associated with the Poe Bridge Mountain Group.

The Mad Indian Group consists of fine-grained feldspathic biotite gneiss; medium- to coarse-grained muscovite-biotite-garnet schist and jyanite and sillimanite. Many of the schists have been retrograded to chlorite-garnet-quartz-sericite schist. The formation is extensively cut by feldspathic dikes and pegmatites.

Soils

Modern soils within the vicinity of the undertakings have been extensively modified as a result of 20th century land use. In this section, the historic soil data is presented. Soil data acquired during the archaeological investigations is presented within the field methods section of this report. Comparison of the historical data with the data acquired during this investigation is reported within the results and interpretations section.

The undertakings are located within an area defined by Harlin and Perry (1961) as *General Soil Area 1* of Calhoun County. This soil area occurs along Choccolocco Creek and the foothills of Talladega Mountain and makes up about three percent of Calhoun County (Figure 5). The soils have been described as consisting of well drained and moderately well drained soils on level to moderately steep terraces and foot slopes. The dominant soils are the Alatvavista, Masada, and Tate series. The Altavista and Masada soils occupy about 30 percent of the area; the Tate about 20 percent and the Philo and Stendal, about 18 percent with minor soils accounting for the rest.

The Altavista and Masada soils have developed from old general alluvium that washed from Talladega slate containing some sandstone and shale. Their subsoils are yellowish-brown and yellowish-red silty clay loam. The Tate soils have developed from old local alluvium that washed from Talladega slate or from mica schist and phyllite. They occur on stronger slopes and have yellowish-red, light silty clay loam subsoil.

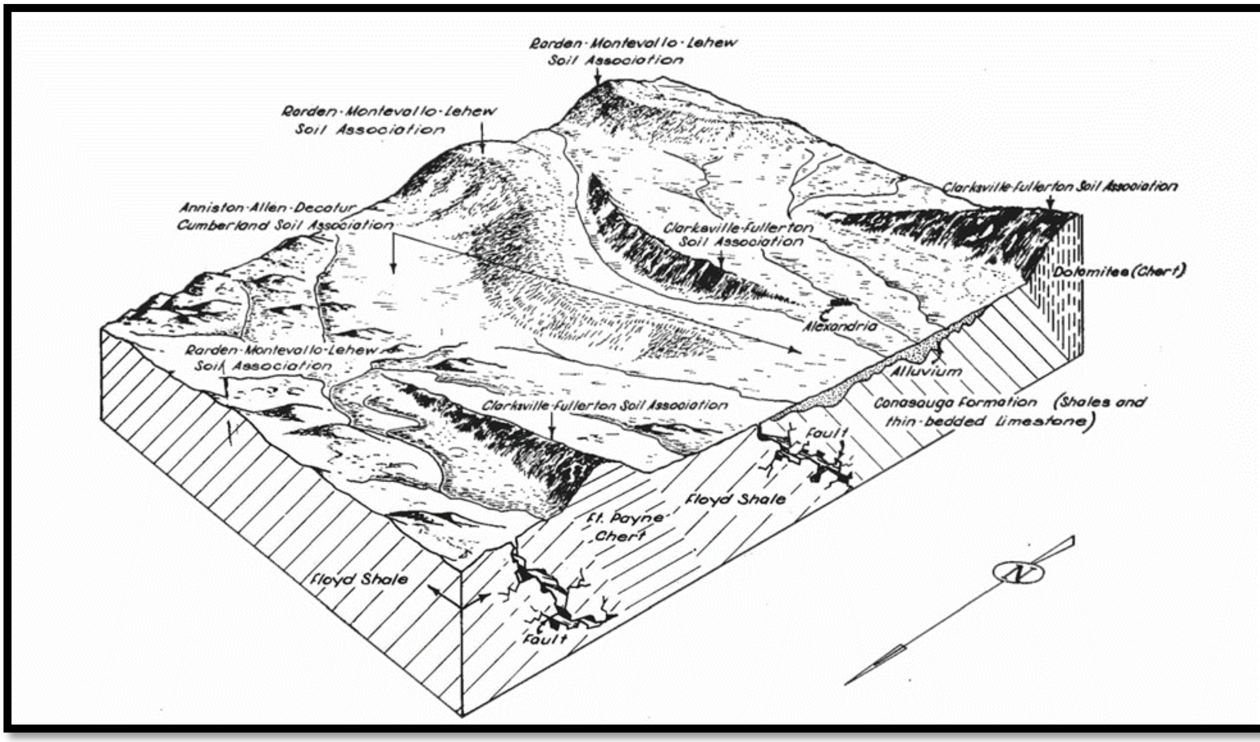

Figure 5. General Soil Associations

Mapped soil units and their relation to the vicinity of Choccolocco Park are described below and illustrated in Figure 6. In Calhoun County, the Altavista and Masada series soils have been mapped as undifferentiated units. These soils occur extensively along Choccolocco Creek and were historically flooded when water was unusually high. In 1961, approximately 70 percent of the area of these soils was in cultivation and was primarily planted in corn. Natural vegetation is primarily pine, oak, hickory and gum. Altavista and Masada silt loams, low terraces, 0 to 2 percent slopes (AaA) have been mapped to the north and west of Choccolocco Park and occur on an eroded terrace (AaB2) to the east of the park. The typical Altavista pedon consists of an A_p horizon of dark-brown (10YR4/3) silt loam extending from the surface to a depth of 18 cm underlain by a B_2 horizon of yellowish-brown (10YR5/6) silty clay loam which contains small fragments of schist and concretions of manganese and is strongly acid. The B_2 horizon extends to a depth of 84 cm.

Philo and Stendal silt loams, 0 to 2 percent slopes have been mapped along the margins of Choccolocco Creek. The finer texture surface soil forms clods if plowed when too wet and in 1961, less than 29 percent of this map unit was in cultivation. The typical Philo fine sandy loam pedon consists of an A_{1p} horizon of very dark grayish-brown (10YR3/2) fine sandy loam that extends to a depth of 13 cm that is underlain by a A_{12} horizon of dark-brown (10YR4/3) to very dark grayish-brown (10YR3/2) fine sandy loam to a depth of 43 cm.

Along the low stream terrace that defines the southern margin of Choccolocco Creek within the area of the undertakings, the soils are mapped as Sequatchie fine sandy loam, 0 to 2 percent slopes (ScA). The Sequatchie series consists of well-drained, strongly acid soils on low stream terraces that have primarily developed in alluvium that has washed from soils underlain by sandstone, limestone and mixtures of other material. In 1961, about 68 percent of the acreage was in cultivation. The typical pedon for Sequatchie fine sandy loam, 0 to 2 percent slopes consists of an A_p horizon of dark grayish-brown (10YR4/2) fine

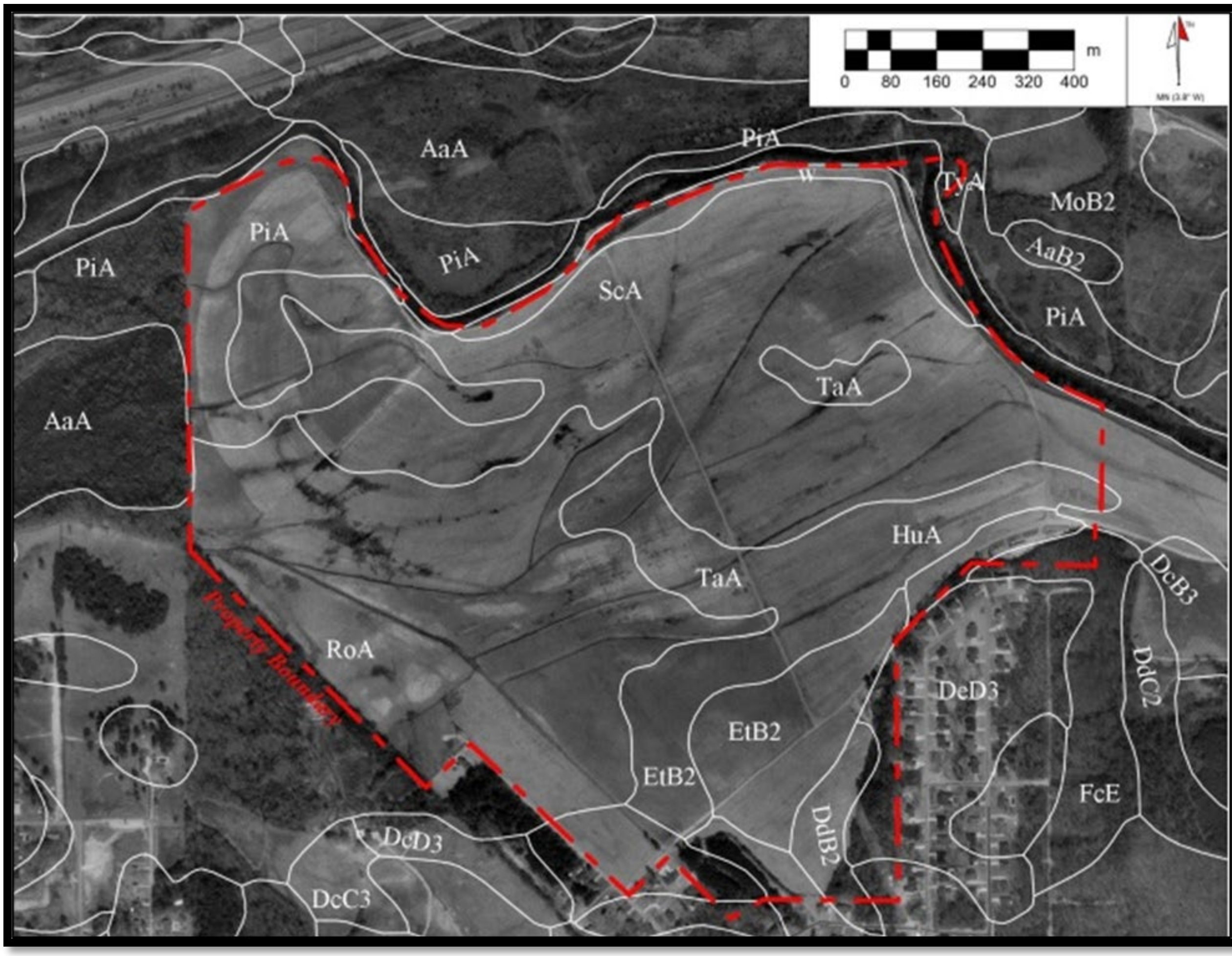

Figure 6. Mapped Soil Units at Choccolocco Park

sandy loam to a depth of 22cm underlain by a B_1 horizon of brown (10YR5/3) light fine sandy loam to a depth of 50 cm and B_2 horizon of dark-brown (7.5YR4/4) fine sandy clay loam that extends from 50 cm to 96 cm at which point the C horizon of mottled brown, grayish-brown, and light brownish gray fine sand, clay and gravel is typically encountered.

Two areas within Choccolocco Park have been mapped as Taft silt loam, 0 to 2 percent slopes (TaA). The Taft series soils occur in small areas on stream terraces and have developed from old general alluvium derived from areas underlain by limestone, cherty limestone, and shale. Harlin and Perry (1961) note that Taft soils are not very productive and suitability for crops is limited by the fragipan. In 1961, about 56 percent of the acreage was in cultivation. The typical pedon for Taft silt loam, 0 to 2 percent slopes consists of an A_p horizon of dark-brown (10YR4/3) silt loam to a depth of 15 cm with an A_2 horizon of dark-brown (10YR4/3) to brown (10YR5/3) silt loam extending to 20 cm, underlain by a B_1 horizon of light yellowish-brown (2.5Y6/4 to brownish-yellow (10YR6/6) silty clay loam to a depth of 30cm. A B_2 horizon of light olive-brown (2.5YR5/6) to yellowish-brown (10YR5/6) and light-gray (2.5YR7/2) silt loam extends from 30 cm to 58 cm and is underlain by a B_{3M} horizon of mottled strong-brown (7.5YR5/6), light brownish-gray (10YR6/2), and light-gray (2.5Y7/2) silt loam.

Soils within the southwestern portion of Choccolocco Park have been mapped as Robertsville silt loam, 0 to 2 percent slopes (RoA). The Robertsville series also developed in old general alluvium along stream terraces. The typical pedon consists of an A_p horizon of dark grayish-brown (2.5YR4/2) silt loam to a depth of 7 or 8 cm underlain by an A_2 horizon of dark grayish-brown (2.5YR4/2) silt loam from 8 cm to 15 cm and an A_3 horizon of dark grayish-brown (2.5Y4/2) heavy silt loam with distinct mottles of grayish brown and brownish yellow and small concretions to a depth of 20cm. These horizons are underlain by a B_2 horizon of light brownish-gray (10YR6/2) silty clay loam that extends to a depth of 45 cm at which point a B_{3m} horizon of olive-gray (5Y5/2) heavy silty clay is encountered.

In the southern portion of Choccolocco Park, Etowah silt loam, 0 to 2 percent slopes, eroded (EtB2) and Huntington silt loam, local alluvium, 0 to 2 percent slopes (HuA) have been mapped. The Etowah series occurs on small areas along streams and have developed from alluvium that washed from soils underlain by limestone, cherty limestone, and shale. In 1961 about 65 percent of the acreage was in row crops. The typical pedon for Etowah silt loam, 0 to 2 percent slopes consists of an A_p horizon of dark-brown (7.5YR3/2) to dark reddish-brown (5YR3/2) silt loam to a depth of 20 cm that is underlain by a B_1 horizon of reddish-brown to dark reddish brown (5YR4/4 to 3/4) light silty clay loam that extends to a depth of 30 cm with a B_2 horizon of reddish-brown to yellowish-red (5YR4/4-4/6) silty clay loam extending from 30cm to 91 cm and a B_3 horizon of yellowish-red (5YR4/8) light silty clay extending from 91 cm to 116 cm below the surface.

Figure 7. Mapped Soil Units at Site 1Ca190

To the south and north of the soils derived from alluvium, Decatur and Cumberland and soils have developed on uplands from limestone residuum and old valley fill of similar origin. The soils at the Boiling Springs Site (1Ca190) located on the WR Oxford property (See Figure 7) have been mapped as Decatur and Cumberland clay loams, 2 to 6 percent slopes, severely eroded. The surface soil is dark reddish-brown loam and the subsoil dark-red silty clay.

The typical pedon of Decatur and Cumberland soil consists of an A_1 horizon of dark reddish-brown (5YR 3/3) loam extending from the surface to a depth of 7.6 cm underlain by an A_3 horizon of reddish-brown (2.5YR 3/4) loam or silt loam that extends to a depth of 15 cm. The A_3 horizon is underlain by a B_1 horizon of dark- red (10R 3/6) silty clay loam to a depth of 30 cm. Below a depth of 30 cm a B_2 horizon of dark-red (10R 3/6) silty clay is typically encountered within this map unit. The B_2 horizon is hard when dry and sticky when wet. Depth to bedrock varies from 90 cm to more than 6 meters.

The northeastern portion of Site 1Ca190 has been mapped as Huntington silt loam, local alluvium, 0 to 2 percent slopes (HuA). The typical pedon consists of an A_p horizon of dark reddish-brown (2.5 YR 2/4) silt loam that extends to a depth of 17 cm underlain by a C_1 horizon of dark reddish-brown (2.5YR 2/4) heavy silt loam or light silty clay loam to a depth of 45 cm.

Hydrology

Archaeological research in the southeastern United States has long been organized by river basins and sub-basins of the major river systems. However, archaeologists have also long recognized that rivers and streams, as well as their associated wetlands and alluvial terraces, are natural focal points for many of the species upon which humans have historically depended on for sustenance. For example, Phillips, Ford and Griffin (1951), in their <u>Archaeological Survey in the Lower Mississippi Alluvial Valley, 1940-1947</u> noted that, "*the first time you come down out of the hills onto the level flood plain you are conscious of having left one world and entered another. If nature enters so emphatically into the culture of today….it is a reasonable assumption that it was at least equally important in the time of 'natural' man.*" Yet, the surrounding uplands within the watershed of the river basin also provided many natural resources utilized by prehistoric populations centered on the floodplain. Consequently, river basins provide a convenient and logical geospatial unit to frame archaeological research and discussion.

The Coosa River basin in Alabama has generally been divided into three sub-basins by previous researchers. However, the boundaries of these divisions have not been well defined. Wilson (1980), divided the Coosa into Upper, Middle, and Lower sections based on the underlying geology. He defined the Upper Coosa as that section of the river that meanders within a coarse that generally follows the strike or outcrop direction of the Conasauga or Coosa formation from Rome, Georgia to Greensport, Alabama. The Middle Coosa was defined as that section of the Coosa south of Greensport to Wetumpka where the Coosa is mostly entrenched while the Lower Coosa was defined as that portion of the river below Wetumpka where the river enters the Coastal Plain and once again has developed a meandering channel. Knight (1985; 1998) defined the Lower Coosa as that portion of the river which flows through the Piedmont onto the Coastal Plain or from Lay Dam south to the Fall Line and beyond, the Middle Coosa as that segment from Gadsden south to Lay Dam and the Upper Coosa as that segment of the river north of Gadsden and into Georgia.

The approach to subdivision of the Coosa River basin used herein has adopted the "Hydrologic Unit" classification system developed by the United States Geological Survey (USGS). The Hydrologic Unit approach divides the United States into progressively smaller units from regions, to sub-regions, then accounting units and cataloging units with each smaller unit nested within the larger unit. All boundaries

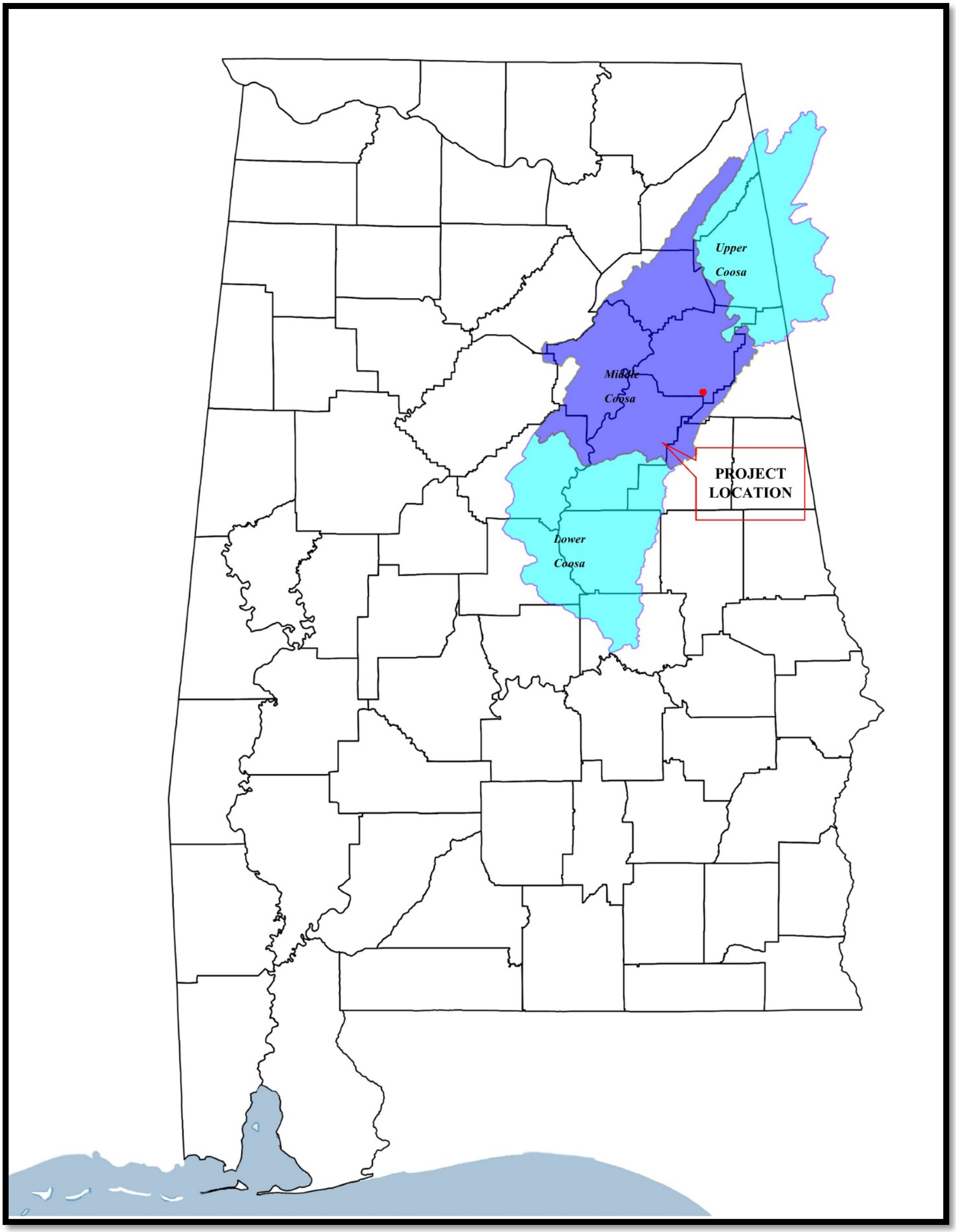

Figure 8. Middle Coosa Sub-Basin

are hydrologic (hydrographic) in nature with the topography of stream drainage basins the sole preferred determinant for hydrologic unit boundaries within the United States. However, region and sub-region boundaries terminate at the U.S. international boundary (Seaber, et al., 1987).

Utilizing the Hydrologic Unit approach, the Middle Coosa sub-basin or cataloging unit is similar to the sub-division of the Coosa loosely defined by Knight (1998) and, is herein defined as that portion of the river which extends north from the vicinity of Childersburg to the Cherokee County line (See Figure 8). The 6,737 square km (2,601 square mi.) catchment of the Middle Coosa primarily drains the Alabama Valley and Ridge within the counties of St. Clair, Calhoun, Talladega, Shelby, and Etowah. The drainage also includes Big Wills Valley that extends nearly the length of DeKalb County as well as minor portions of the Valley and Ridge drained by Big Canoe Creek in Blount and Jefferson County. The southeastern margins of the Middle Coosa sub-basin extend into the Piedmont in extreme eastern Talladega County, northwestern Clay County, and western Cleburne County.

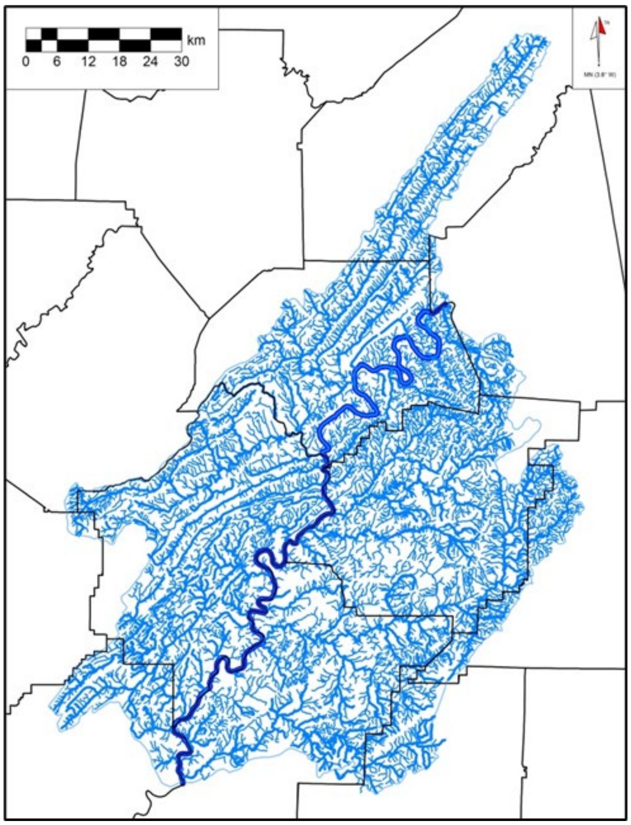

Figure 9. Middle Coosa Sub-Basin Hydrography

The surface water hydrography of the Middle Coosa (See Figure 9), underscores the varied terrain within the sub-basin. The trellis pattern of surface streams along Big Canoe Creek Valley and Big Wills Creek Valley typify uplifted eroded folds, while the dendritic drainage pattern in the central portion of the sub-basin signifies mildly sloping terrain of the valley floor. Analysis of the hydrology of the Middle Coosa indicates that the geospatial orientation of Big Wills Creek would have strongly facilitated inter-basin travel between the Coosa basin and the Tennessee basin to the north, while the orientation of Big Canoe Creek would have weakly facilitated inter-basin travel between the Coosa basin and the much smaller Cahaba basin. Least-cost analysis indicates that travel was most economical along the northeast-southwest axis, and within the Coosa basin. Thus, cultural interactions between groups living within the Middle Coosa Basin would have been more economical with groups in the Upper and Lower Coosa Basin than with groups to the west.

Climate

The first suggestions of a direct correlation between climate and culture emerged during the 19th century out of a logical positivism that was overly simplistic in both its understanding of human behavior and the complex nature of climate. Thus, early linkages between climate change and cultural change were criticized as overly deterministic in their approach and largely dismissed as "environmental determinism" (Fagan, 2000). Nevertheless, as the 20th century progressed and new evidence emerged worldwide, social scientists began to increasingly recognize climate as one of many potential causal agents that might assist in better understanding cultural change. However, climate (the mean and range of temperature and precipitation prevailing over a defined area of the earth) is complex in both causation and expression (Dincauze, 2000) and reconstruction of past states and conditions requires consideration of multi-proxy evidence at global, regional, and local spatial scales and at differing temporal resolutions due to the variegated nature of climate in space and time (Gunn, 1994; Dincauze, 1996; Anderson, 2001). Even in instances where there is evidence of global climate fluctuation, proxies appear to respond at different rates and scales (Roberts, 2000). Additionally, biofeedback mechanisms exist for many climate proxies (Bradley, 1999). For example, and, as Figure 10 illustrates, oscillations in past atmospheric levels of carbon dioxide can dramatically affect the radiocarbon calibration curve1 as has been observed for the period of transition from the last glacial (Late Pleistocene) to current interglacial (Holocene) (Bjorck, et al., 1996).

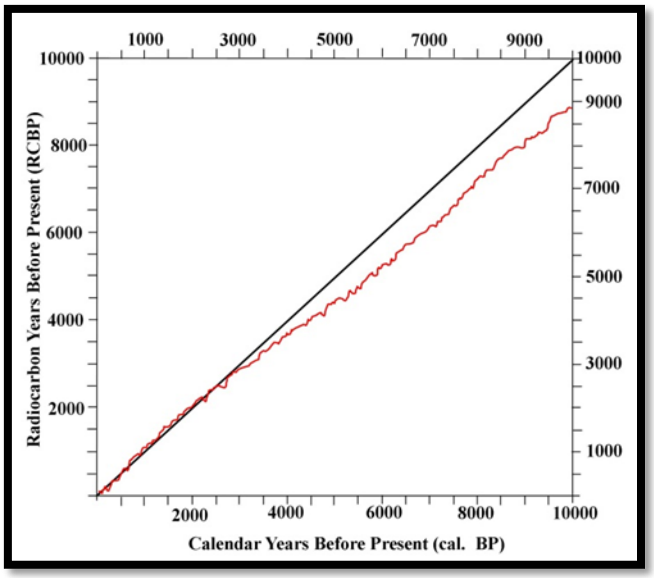

Figure 10. Radiocarbon Calibration Curve
(After Reimer, et. al, 2004 as in Anderson et. al., 2007)

Due to these complexities, evidence of past climate is currently, at best, partial and indirect in its nature and availability (Anderson, et al., 2007). Paleoenvironmental reconstructions, particularly for the Southeast, have thus typically been relatively coarse-grained in both spatial and temporal scale (Davis, 1983; Delcourt & Delcourt, 1981; Webb III, et al., 1993) Additionally, the paucity of calibrated absolute dates for archaeological phases and cultures further complicates the problem due to the necessity of temporally correlating climate change with cultural change (Anderson, 1994; Little, 2000; Banks, et al., 2006; Koerner, et al., 2009). Even in rare instances when climate change has been observed coincidental with cultural change, such coincidence has typically not been sufficient to establish climate as the sole causal factor (deMenocal, 2001). Therefore, the focus of current research on climate and cultural change has largely shifted to identifying and understanding natural and cultural diversity at global, regional and, local scales and both short-term and long-term temporal resolution sufficient for developing testable hypotheses regarding the relationship between climate and culture change (Anderson, 2001). Such high-resolution data is critically needed for understanding the climatic variability experienced by specific human populations and, in identifying the nature and range of human adaptive responses to climate change (Wright, 1996; Dincauze, 1996).

A literature search for high-resolution data from the Late Pleistocene forward indicated that such data is not currently available for the Middle Coosa River Sub-Basin. Jenné (2004) conducted a

1 Radiocarbon calibration has now been extended back into the Pleistocene. However, early radiocarbon data is often reported only as *radiocarbon years before present* (RCBP). It is now generally understood that radiocarbon years diverge significantly from calendar years due to the oscillation of atmospheric carbon levels and it is therefore necessary to calibrate RCBP dates. When possible, RCBP dates reported by previous investigations were calibrated utilizing Calib REV6.0.0 with the Intcal09 data set. For the purposes herein, distinction is made between RCBP dates and calibrated dates, with the latter reported as the range of the earliest and latest 2σ calibrated years BC or AD given as CAL. BC. In some cases, previous researchers reported calibrated radiocarbon dates in calibrated years before present as (cal. BP) where the present is defined by convention as AD 1950. In those instances, the calibrated BP date is given followed by the converted BC. or AD date.

dendrochronological study of four longleaf pine stands in the Talladega National Forest approximately 27 km (17 mi) northeast of the undertakings. However, the study yielded no relevant climate data due to the lack of synchronous growth patterns among the four stands sampled. House (1997) conducted a sediment study at C.C. Pond, located approximately 3.65 km (2.3 mi) south of the undertakings. However, the relatively shallow (260 cm) total depth of the core and lack of radiocarbon dates bracketing the Holocene (the latest reported date was 14,670 +/- 360 RCBP/16,641-15,081 CAL. BC) preclude the study from contributing to the study of human response to changes in the post-glacial climate.

The best available evidence obtained for past climate obtained during the literature review is from a palaeoecological investigation conducted by Delcourt, Delcourt and Spiker (1983) at Cahaba Pond, in St. Clair County. Cahaba Pond is located approximately 69 km (43mi) west of the undertakings. The Cahaba Pond study is well-documented with thirteen (13) radiocarbon dates bracketing significant changes in local pollen zones. To assist in the review of the Cahaba Pond investigation, the RCBP dates reported were calibrated utilizing the Calib 6.0.0 program and the intcal09.14c dataset. Based on the information from reported RCBP dates, the total depth of the core was 766 cm with the earliest radiocarbon date reported as 11,960 +/- 70 RCBP/12,055-11,684 CAL. BC obtained from a depth of 750 cm to 766 cm below the water surface. The latest radiocarbon sample dated to 840 +/- 50 RCBP/1,044-1,274 CAL. AD and was obtained from a depth of 134 cm to 145 cm below the water surface. Figure 11 (at left) graphically illustrates data on the depth of recovery, reported radiocarbon sample numbers, depths and dates, along with calibrated dates for the samples and the pollen assemblage zones identified along with the dominant tree pollen shown as a percentage of total upland pollen and spores from Cahaba Pond Core CPA 79B.

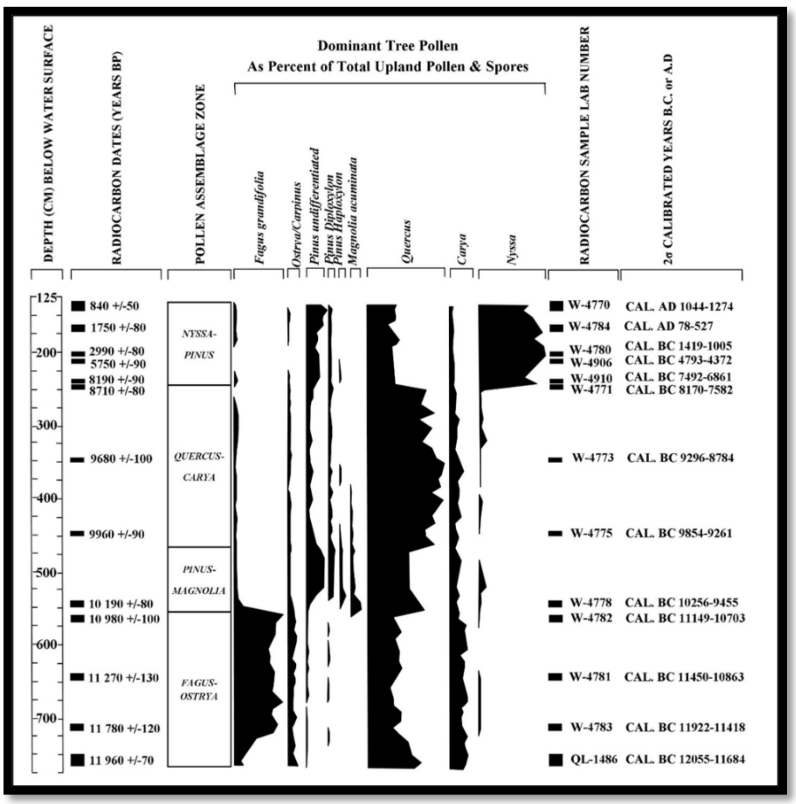

Figure 11. Cahaba Pond Core CPA 79B Selected Data
(After Delcourt, Delcourt & Spiker, 1983).

Proxy records indicate that climate has been dynamic at scales significant to humans (Anderson, et al., 2007) with both short-term and long-term effects caused by abrupt climate change and, by weaker climate trends of millennial scale that are nevertheless significant in cumulative effect (Anderson, 2001; Munoz, et al., 2010). Technically, an abrupt climate change occurs when climate crosses a threshold and transitions into a new state at a rate determined by the climate system and faster than the cause. However, from a human perspective, abrupt climate change is one that takes place so rapidly that natural systems have difficulty adapting to the new conditions (Committee on Abrupt Climate Change, National Research Council, 2002).

Abrupt climate change appears to have played a significant role in cultural change around the world. Although there is a growing body of evidence for human migration into the western hemisphere around the Last Glacial Maximum (LGM) (Stanford & Bradley, 2012; Anderson, et al., 1996), for the present purposes we have limited the discussion to the period from the Bølling-Allerød interstadial (ca. >14,700-12,800 cal. BP or >12,750-10,950 CAL. BC) to the present. The Bølling-Allerød interstadial was a northern hemisphere generally warm and moist period that was punctuated by brief reversals in Europe and North America known as the Older Dryas and Intra-Allerød stadials (Figure 12). The Allerod interstadial was followed by the Younger Dryas stadial (Yu & Eicher, 2001). As a result of dramatic warming during this period of deglaciation, sea levels rose by as much as 30 meters inundating large areas of Pleistocene shoreline which may have forced Paleoindian groups out of the coastal plain and into the

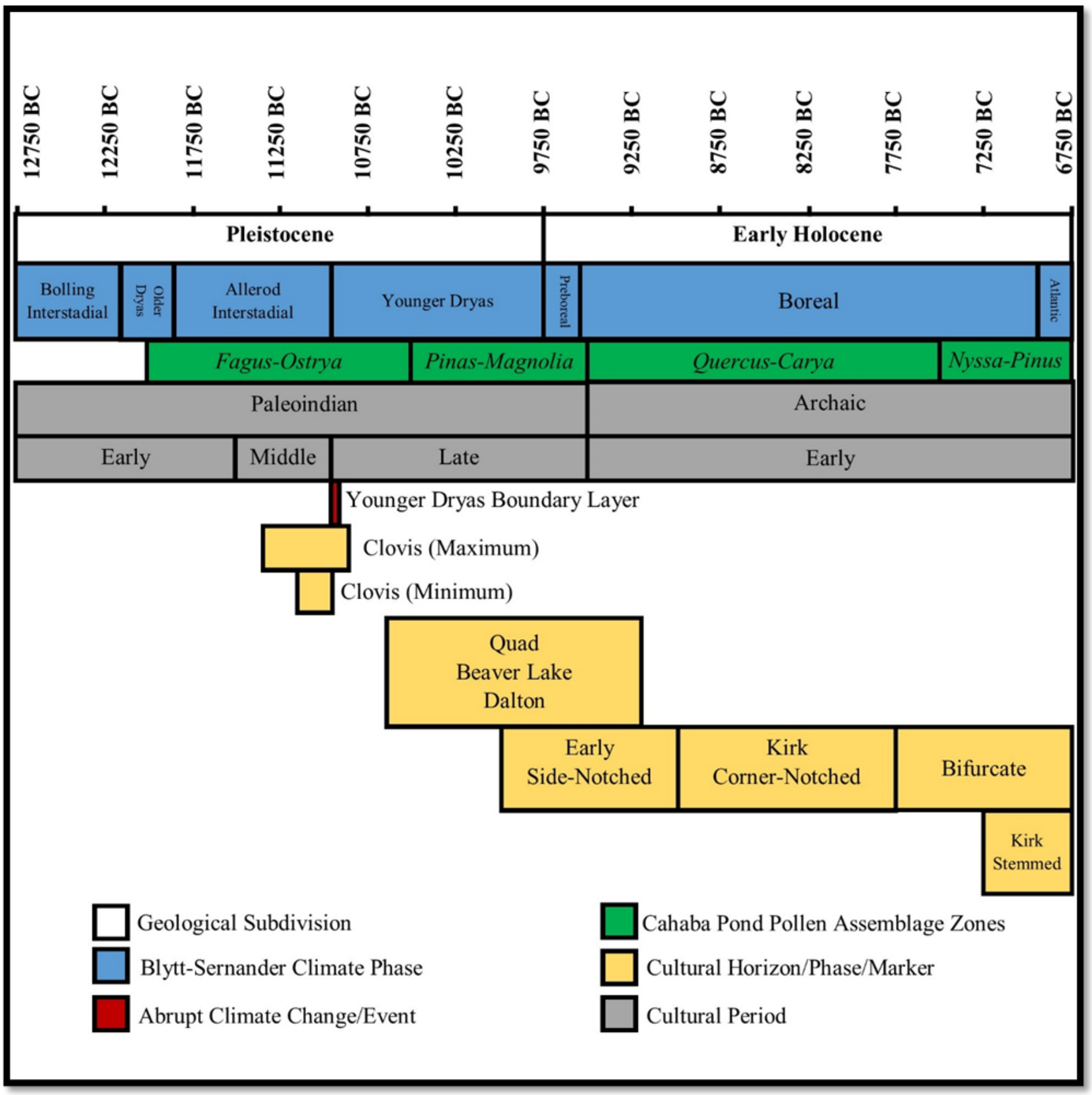

Figure 12. Late Pleistocene to Early Holocene Transition

North American interior (Anderson, 2001). In Europe (and North America as well), glacial retreat opened up new areas for exploitation by Pleistocene megafauna. High-resolution sea-level records in the southern hemisphere indicate the timing of the first glacial meltwater pulse occurred shortly after the onset of the interstadial with eustatic sea-level rise that exceeded 40 mm per year (Deschamps, et al., 2012; Bassett, et al., 2005).

Near the end of the Bølling-Allerød interstadial (during the Intra-Allerød reversal), the Clovis cultural horizon appears in North America for a period perhaps as brief as 200 years (Waters & Stafford Jr., 2007). Radiocarbon dates indicate the horizon spread quickly throughout the interior, although there is no consensus on where it first appeared (Meltzer, 2010). The Clovis horizon is identified by lanceolate projectile points (hafted bifaces) that exhibit flat to weakly indented bases with fluting extending only partly along the blade. Available evidence indicates that the manufacture of Clovis points terminates shortly before or alternatively, shortly after the onset of the Younger Dryas and is replaced by a full-fluted horizon characterized by the Folsom, Gainey, Barnes, Cumberland and Redstone hafted biface types. In the Southeast, identifiable point forms include fluted, basally thinned, and unfluted forms such as Beaver Lake, Clovis Variant, Cumberland, Dalton, Quad, Suwannee and Simpson. These types have been seriated based primarily on stylistic and technological criteria due to the lack of evidence from stratified sites dating to the first half of the Younger Dryas in the Southeast (Anderson, 2001). No Clovis sites have been documented within the Middle Coosa River Sub-Basin.

While some research indicates that Clovis continued briefly into the Younger Dryas, a recent multi-proxy study employing frequency analyses of Paleoindian projectile points reported in the Paleoindian Database of the Americas (PIDBA), assemblage data from quarry sites and summed probability analyses (SPA) of radiocarbon dates obtained from Paleoindian sites suggests that a significant decline and/or reorganization of human populations occurred over large areas of North America at the interface of the Bølling-Allerød interstadial and Younger Dryas (Waters & Stafford Jr., 2007; Anderson, et al., 2011).

The Younger Dryas stadial was an abrupt climate change event that was characterized by rapid cooling in northern hemisphere high latitudes (Alley, et al., 1993). Previous paleoenvironmental reconstructions suggest that wetter conditions than the preceding interstadial may have prevailed in the lower latitudes of North America (Gunn, 1996). However, due to the patchy nature of late glacial biotic communities and lack of modern analogues, interpolations of regional vegetation patterns across large areas of the landscape are tenuous at best. Conditions may have been ameliorated somewhat in the Great Plains and Rocky Mountains (Meltzer & Holliday, 2010) and southern Greenland due to locally high insolation and Föhn effects (Bjorck, et al., 2002). At Cahaba Pond, there appears to have been a major compositional change in the surrounding forest indicative of increasingly dry climatic conditions near this period.[2] However, the change in pollen assemblages at Cahaba Pond, as currently documented and understood, does not appear to be synchronous with other proxy data in North America and Europe that documents rapid climate change at the onset of the Younger Dryas.

Indeed, the cause, onset, duration and, termination of the Younger Dryas varies somewhat among researchers primarily due to the complexity exhibited by multi-proxy evidence (Haynes Jr., 2008) which suggests the event was, "*…unique in the annals of glacial history*" (Meltzer, 2010). The event is also widely

2 Delcourt, Delcourt and Spiker report the shift as occurring between 10,200 and 10,000 RCBP based on a smoothed age-depth curve derived by averaging two radiocarbon dates that bracket a major change in percentage of *Fagus* pollen at 545 cm and 565 cm in depth. The earlier radiocarbon sample (Lab No. W-4782) was dated at 10,980 +/- 100 RCBP and the later sample (Lab No. W-4778) was dated at 10,190 +/- RCBP. If our calibration is correct for these samples, then the 2σ calibrated range for Sample W-4782 dates from 11,149-10,703 CAL BC and Sample W-4778 dates from 10,256-9,455 CAL BC indicating that the change from the *Fagus-Ostrya to Pinus Magnolia* pollen zone occurs well into the Younger Dryas and may not have been as abrupt as the RCBP dates suggest due to the occurrence of a significant plateau in the radiocarbon curve during this period.

thought to coincide with the rapid extinction of the remaining Pleistocene megafauna in North America (Faith & Surovell, 2009; Barnosky, et al., 2004). Current research places the Younger Dryas start at ca. 10,950 CAL. BC and termination at ca.9,750- 9,500 CAL. BC

There is general consensus that an interruption of the Meridional Overturning Oscillation (MOC) played a significant role in the onset of the Younger Dryas. However, the forcing mechanism for the interruption of the MOC or, thermohaline circulation is still debated. The simplest hypothesis is that an ice dam broke as a result of deglaciation during the interstadial and the Pleistocene Lake Agassiz released some 9,500 cubic km of freshwater from the Laurentide Ice Sheet into the North Atlantic (Meltzer, 2010; Bjorck, et al., 1996). However, proponents of this hypothesis have encountered considerable difficulty in locating evidence (such as an outlet channel) to support this hypothesis (Lowell, et al., 2005). Competing hypotheses for the cause of the Younger Dryas include an impact hypothesis (Firestone, et al., 2007) and a solar flare hypothesis (LaViolette, 2011), both of which attempt to address the extinction of the megafauna during this time as well.

While the solar flare hypothesis has generated little interest in the scientific community, the impact hypothesis continues to generate considerable research on both sides of the debate due to the identification of microscopic spherules indicative of intense heat that are associated with a stratigraphic boundary identified at several dozen Pleistocene termination sites. Clovis and megafauna remains appear to terminate at this boundary layer (Haynes Jr., 2008). While critics of the impact hypothesis have suggested that many of the proxies cited as evidence of an impact can arise through processes common to wetland systems (Pigati, et al., 2012), proponents of the impact hypothesis have recently published evidence of impact-related proxies across four continents at the Younger Dryas Boundary (Wittke, et al., 2013). While Clovis sites have not been identified within the Middle Coosa Sub-Basin, sinkholes similar to, and including Cahaba Pond, could contribute important information regarding the debate surrounding the hypothesized Younger Dryas event.

The abrupt end of the Younger Dryas ca. 11,600-11,450 cal. BP/9,650-9,500 CAL BC marks the start of the Early Holocene with a return to warmer and relatively stable climate that persisted until the onset of the Middle Holocene ca. 8,900 cal. BP/6,950 CAL BC. This period is recognized in Europe and North America within the Blytt-Sernander sequence as the Boreal. The global return to warmer conditions (as much as 7° C) appears to have occurred rapidly as ice-core evidence suggests that the change occurred in less than twenty years (Dansgaard, et al., 1989). However, regional climates appear to have been affected differently as the period is marked by a rapid increase in snow accumulation at higher latitudes perhaps caused by a maximum seasonality in solar radiation and enhanced meridional air flows (Alley, et al., 1993; Delcourt & Delcourt, 1984). In the central Appalachians at Brown's Pond, Virginia, the period was marked by warmer conditions (Kneller & Peteet, 1999). At Cahaba Pond, the the *Pinus-Magnolia* assemblage from the Younger Dryas remains dominant through the Preboreal until the onset of the Boreal in the Early Holocene indicating warming and either a decrease in total precipitation or a change in the precipitation/evaporation regime that apparently was later amplified resulting in a shift to a predominantly oak and hickory forest during the Boreal. The *Quercus-Carya* zone was established by 9,500 CAL BC perhaps due to greater evapotranspiration stress than during the years represented by the preceding pollen zone. Increased evapotranspiration stress was possibly caused by either a decrease in absolute precipitation or an increase in summer warmth (Delcourt, et al., 1983).

The Middle Holocene (also referred to as the Hypsithermal, Altithermal, Atlantic or Climatic Optimum) is generally considered to have begun ca. 8,900 cal. BP/6,950 CAL BC and ended ca. 5,700 cal. BP/3,750 CAL BC. This period was once thought to have been dominated by generally warmer-than-present conditions. However, the Middle Holocene is perhaps best characterized as a period of appreciable long and short-term climatic variability due to reasons that are not yet completely understood (Anderson, et al., 2007; Steig, 1999).

The first half of the Middle Holocene is now known to have been punctuated with several significant global climate oscillations. In North America, the transition from the Early Holocene was marked by a minor cooling trend that lasted until ca. 8,400 cal. BP/6,450 CAL BC which was followed by the abrupt onset of a ca. 400-year cold event before a general amelioration in conditions after 8,000 cal. BP/6,050 CAL BC (Anderson, 2001). The abrupt cold event appears to have been global in scale and is referred to in the literature as the 8,200 years BP Cooling Event or the 8.2 kiloyear BP Event (Alley, et al., 1997). The climate reversal may have been triggered by the final disintegration of the Laurentide Ice Sheet and another massive release of freshwater into the North Atlantic similar to that hypothesized for the onset of the Younger Dryas (Clarke, et al., 2003). At Brown's Pond in the central Appalachians, an increase in montane conifers appears centered at 7,500 RCBP or ca. 8,400-8,200 cal. BP/6,450-6,250 CAL BC suggesting a cold reversal was experienced in Eastern North America (Kneller & Peteet, 1999). At Cahaba Pond, sedimentation rates slowed dramatically

As conditions ameliorated after 8,000 cal. BP/6,050 CAL BC, Middle Holocene conditions were significantly different from modern conditions in North America. Seasonal temperature extremes were greater (Ganopolski, et al., 1998) and lake levels were lower, or in many cases completely dry (Webb III, et al., 1993). Sea levels continued to rise, although at a slower pace than during the Early Holocene (Colquhoun & Brooks, 1986), cresting at a level at least 1.7 m higher than present at 7,000 cal. BP/5,050 CAL BC (Lewis, et al., 2008). At Cahaba Pond, the *Nyssa-Pinus* pollen assemblage zone (essentially modern conditions) with a forest composition of increasing sweetgum, with oak, hickory and chestnut dominating the slopes (Delcourt, et al., 1983) was already well-established by the onset of the Middle Holocene. Elsewhere in the lower Southeast, pine forests expanded and cypress swamps developed along river systems (Webb III, et al., 1993; Watts, et al., 1996; Jacobson Jr., et al., 1987).

Around the world, the Middle Holocene (and in some cases, the 8.2 kiloyear BP event in particular) is recognized as a period of dramatic cultural change. In Central Anatolia the event has been associated with settlement change and diversification of subsistence strategies (Biehl, et al., 2010). In southern Mesopotamia cultural changes led to integrated state level societies (Kennett & Kennett, 2007). In North America, the period seems best characterized as a time of interrelated environmental stress (as evidenced by rapid climate fluctuations) and population pressure (as groups moved into resource-rich riverine habitats) that played a significant role in the emergence of the first complex societies (Anderson, 2001; Lovvorn, et al., 2001). As shown in Figure 13 below, cultural markers within the Middle Coosa Sub-Basin have been assumed by previous researchers to generally follow the sequence documented within the Middle Tennessee River Sub-Basin. However, it should be noted that the cultural chronology for this time period in the Valley & Ridge and Piedmont Provinces in both Alabama and Georgia are poorly understood and evidence from north Georgia suggests a persistence of the Morrow Mountain interriverine adaption well into the Subboreal (Sassaman & Anderson, 1995; Stanyard, 2003; Anderson, et al., 2007; Elliott & Sassaman, 1995).

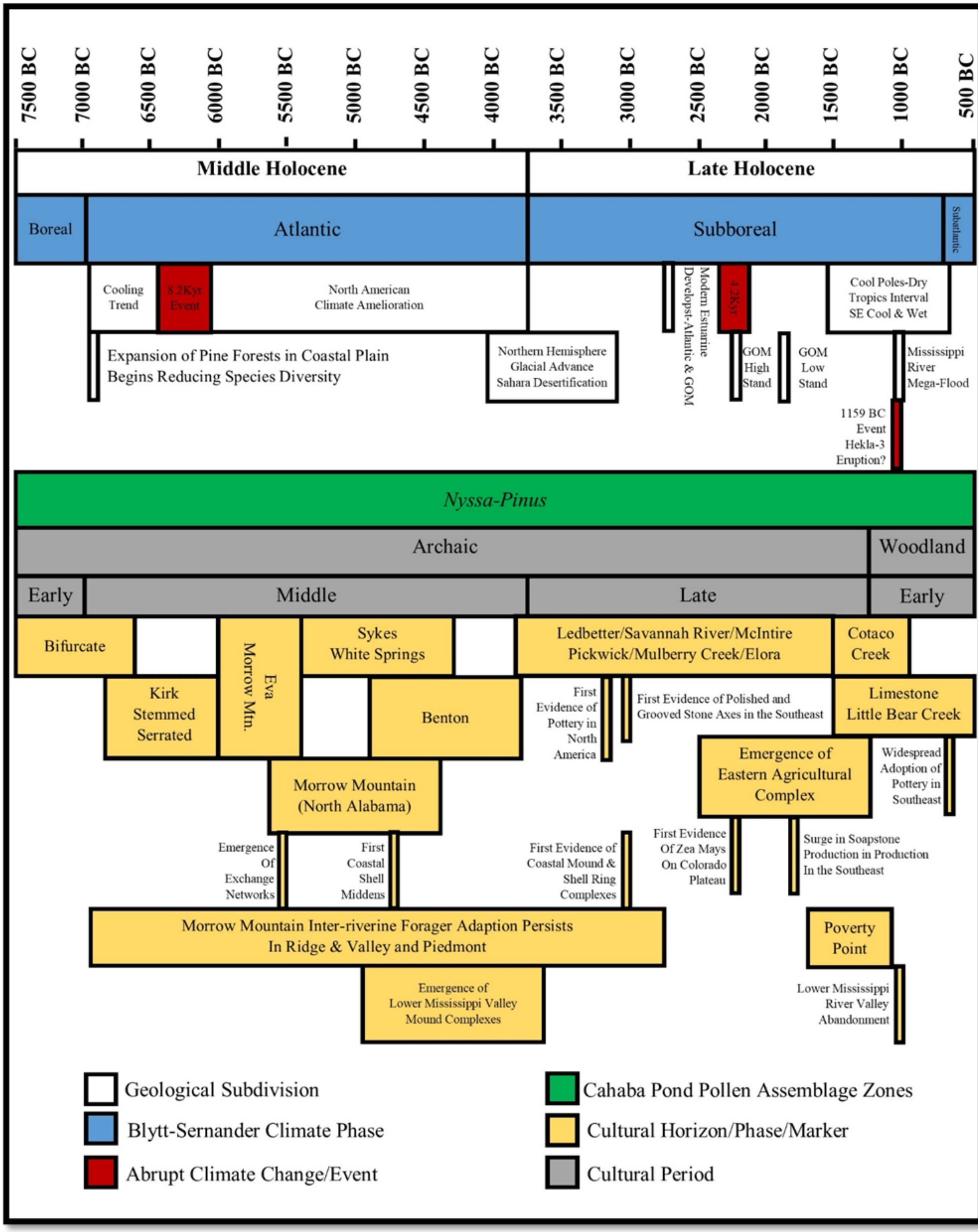

Figure 13. Middle Holocene to Initial Late Holocene Climate and Culture

During the waning centuries of the Middle Holocene and the first seven centuries of what Anderson (2001) defines as the Initial Late Holocene (5,700-3,200 cal. BP/3,750-1,250 CAL. BC), there is some evidence of a millennial long period of abrupt climate change with extended cold conditions (O'Brien, et al., 1995). This period extended from 6,000-5000 cal. BP/4,050-3,100 CAL. BC with evidence of glacial advance in the northern hemisphere (Haas, et al., 1998), ice-rafting events in the North Atlantic (Bianchi & McCave, 1999; Wanner, et al., 2008; Caseldine, et al., 2005; Magny & Haas, 2004), and strengthened westerly winds over the North Atlantic, Siberia and North America (Bradbury, et al., 1993; Meeker & Mayewski, 2002). In the African tropics the Mid-Holocene humid period ends and rapid desertification of the Sahara begins (Brooks, 2006; Claussen, et al., 1999). During this period the northeastern Mediterranean experienced a cooling episode (Gasse, 2001; Rohling, et al., 2002). As noted previously, for the Middle Coosa Sub-Basin, high resolution climate data has not been identified and the relationship between this period of climatic fluctuation and the persistence of inter-riverine forager adaptions (along with other archaeological constructs) in the Ridge & Valley and Piedmont Provinces remains to be explored.

After 5,600 cal. BP/3,650 CAL BC, modern climatic regimes were largely established albeit punctuated by short-term episodes of fluctuation. Notably, one of the hallmarks of the Late Holocene is the distinctively regional basis of climate change (O'Brien, et al., 1995). During the Initial Late Holocene, the Intertropical Convergence Zone (ITCZ) shifted progressively southward as a result of orbital forcing. The shift in the ITCZ was accompanied by a weakening of the monsoon in Africa and Asia resulting in increased desertification in those continents. Associated summer cooling of the northern hemisphere and changing oceanic temperature gradients led to increasing amplitude of the El Niño Southern Oscillation (ENSO) and increasingly negative North Atlantic Oscillation (NAO).

Investigation of Late Middle Holocene and Early Late Holocene cultural developments in the Southeast have been somewhat hampered by truncation and/or deep burial or inundation of the archaeological record by natural phenomena. This is particularly evident along the coast. As sea-level rise slowed, estuarine development began along the Atlantic and Gulf Coasts and, in the interior, floodplains along river drainages stabilized to the new climate regime (Sassaman, 2010; Dye, 1996). While rising sea levels may have inundated the earliest evidence, archaeological investigations have documented that populations along the Atlantic and Gulf coasts began exploiting shellfish by 5,150 cal BP/ 3,200 CAL. BC and shortly afterwards, the first pottery was in use within the Savannah River basin (Sassaman, 1993; Sassaman, 2010; Anderson, et al., 2007).

Against the backdrop of the establishment of essentially modern climate regimes and relatively stable climate, widespread decadal to multi-century scale cooling events are known to have occurred in the northern hemisphere during the Late Holocene (Wanner, et al., 2008). The first significant global abrupt climate change event is often referred to as the 4.2 Kiloyear (ka) BP Event. This climate episode has been identified by researchers in southern Europe (Drysdale, et al., 2005; Giraudi, et al., 2011), North Africa (Gasse & Van Campo, 1994) the Middle East (Bar-Matthews & Ayalon, 2011), the Indus Valley (Staubwasser, et al., 2003), east Asia (Huang, et al., 2011), midcontinental North America (Booth, et al., 2005) and in the Andes (Davis & Thomson, 2006). The 4.2ka BP event has been well documented as a phase of intense aridity in most of these regions with the exception of parts of Asia where the middle reaches of the Yellow River apparently experienced several extraordinary floods. In parts of the European continent significant regional variation has also been documented (Dreslerova, 2012). The event appears to have lasted for about 300 years and, although the specific causes have not yet been identified, its onset in the Middle East coincided with observed North Atlantic climate oscillations referred to as Bond events (Bond, et al., 1997). These events may be associated with cyclical reorganization of atmospheric circulation (Viau, et al., 2002). During the Holocene, climate transitions associated with Bond events appear to have occurred at the decadal to century scale and would have been noticeable within a human lifetime (Adams, et al., 1999).

Investigations in the Nile Valley, Mesopotamia, the Indus Valley and China highlight the variable nature of human adaptive response to the 4.2ka BP event. In the Nile Valley, strontium isotopic tracer studies of sediment transported by the river indicate a significant decrease in White Nile sediment at ca. 4,200 cal. BP/2,250 CAL. BC. Modified paleosols characteristic of sediment that has been subaerially exposed for a prolonged period have also been identified that date to 4,250 cal. BP/2,300 CAL. BC. Historical records from the Old Kingdom dating to this period contain references to extremely low flows of the Nile causing repeated harvest failures and starvation (Stanley, et al., 2003). In Mesopotamia, an increase in aridity led to desertification and population movements out of the Habur Plains that contributed to the collapse of the Akkadian empire (Weiss, et al., 1993; Cullen, et al., 2000). In China, along the Yishu River Basin, paddy-oriented agriculture arising during the early and middle stages of Longshan culture from 4,600 to 4,300 cal. BP/2,650 to 2,350 CAL. BC, began failing due to the onset of climatic cooling at ca. 4,200 cal BP/2,250 CAL. BC. By ca. 4,000 cal. BP/2,050 CAL. BC the Longshan culture in the Shandong province was replaced by the less complex Yueshi culture (Huazhong, et al., 2007; Zhang, et al., 2010). Elsewhere in China populations experienced significant drought (Hunag, et al., 2006) and, towards the end of the event, the Yangtze delta experienced a tremendous flooding event that has been cited as a significant cause of the collapse of the Liangzhu culture (Qiang, et al., 2004). A literature survey by Liu and Feng (2012) indicates that six of seven Chinese Neolithic cultures collapsed as the result of an environmental tipping point being reached at ca. 4,000 cal. BP/2,050 CAL BC. Within the Indus Valley, intense drought is thought to have diminished the intensity of floods and allowed the Harappan or Indus civilization to expand inundation agriculture as it flourished along the Indus and its tributaries (Giosan, et al., 2012).

Evidence of the 4.2ka BP event in North America is scarce. In northwestern Canada an increase in peat accumulation at this time suggests a ca. 200 year wet event (Yu, et al., 2003) while widespread dune reactivation indicative of a mega-drought has been documented in the High Plains from Wyoming to western Illinois (Stokes & Gaylord, 1993; Forman, et al., 1995; Loope, et al., 1995; Stokes & Swinehart, 1997; Forman, et al., 2001). Booth and his colleagues (2005) have documented drought conditions in Michigan and correlated lower Lake Michigan water levels at rates five times that attributable to isostatic rebound with a decrease in flood magnitudes in the upper Mississippi River. Lower lake levels indicative of drought conditions has also been documented in the Mid-Atlantic (Li, et al., 2006). In the Southwest, it has been suggested that an extended period of aridity with a subsequent spike around 4,200 cal. BP/2,250 CAL. BC was at least partially responsible for the introduction of Zea Mays at ca. 4,200 cal. BP/2,250 CAL. BC on the Colorado Plateau (Drake, et al., 2012).

While the 4,200ka BP event appears to have had major short-term effects elsewhere on the continent, data is generally lacking from the Southeast. However, at Cahaba Pond, Delcourt, Delcourt and Spiker (1983) noted that the radiocarbon dates, "*…may be viewed as a possible hiatus in sediment deposition between 5,750 and 3,000 [RC] BP, resulting from desiccation of the pond. However, changes in both the composition of the aquatic plant assemblage and lithology of the sediments indicate rising water levels after 8,400 [RCBP].*" Such a conclusion is perhaps best considered preliminary since sedimentary records of changing lake levels require studies along the margin of lakes (Digerfeldt, 1986) and no such sedimentary studies have been conducted on the margin of Cahaba Pond.

Other proxy evidence for climate fluctuations during this period in the Southeast includes sea-level research. Previous attempts to identify climate fluctuations during the Late Holocene in the Southeast have sought to integrate proxy evidence from sea-level fluctuations in the Gulf of Mexico (GOM) with proxy data such as that from Cahaba Pond and investigations at terrestrial archaeological sites. However, the integration of sea-level data with terrestrial proxies has been somewhat hampered by what Thomson and Worth (2011) characterize as, "the contentious atmosphere of sea level research" due to conflicting data on the timing and magnitude of regressions and transgressions. There has also been debate on whether GOM sea level high-stands significantly above current sea level even occurred during the Holocene (Blum, et al., 2002).

Nevertheless, archaeologists have long-documented marine shell midden sites located a considerable distance from the present GOM shoreline. Applying a multi-disciplinary perspective, Little (2000) reported several Late Archaic shell middens in Northwest Florida approximately 700 meters from the current shoreline and suggested an apparent GOM sea-level high-stand of a magnitude of 1.5 m above current sea level occurred ca. 4,100 RCBP based on uncalibrated radiocarbon dates obtained from these middens. More recently, a comprehensive review of existing sea-level research obtained from 23 different sources indicates a period of GOM transgression peaked at 4,200 cal. BP/2,250 CAL. BC (Balsillie & Donoghue, 2004) which appears to confirm Little's hypothesized GOM high-stand. However, Sanger (2010) notes that at Meig's Pasture (one of Little's Northwest Florida sites), abandonment at ca. 1,720 CAL. BC is difficult to reconcile with existing models of sea-level fluctuation as this date places abandonment some 180 years after an eustatic sea level low stand hypothesized by Gayes, Scott, Collins and Nelson (1992) which would suggest that the site was still being utilized at a time when sea level was lower than the present. However, Russo (2010) notes that the archaeological record from Florida indicates that different cultures adapted different strategies to low and oscillating sea stands. Citing Claasen (1986), who suggested that the onset of marine shellfishing in Florida, Georgia and South Carolina was encouraged by a slowing of marine transgression ca. 4,200-4,000 BP/2,250-2,050 CAL. BC, Little suggested that the same transgression was implicated by the location and occurrence of the Northwest Florida middens.

Little's uncalibrated 4,100 RCBP date is consistent with other archaeological investigations that document populations along the Atlantic and Gulf coasts began exploiting shellfish by 5,150 cal BP/ 3,200 CAL. BC (Sassaman, 1993; Sassaman, 2010; Anderson, et al., 2007). Furthermore, based on the recent work by Balsillie and Donoghue (2004), that documents the occurrence of a peak in the GOM transgression at 4,200 cal. BP/2,250 CAL. BC, it is suggested here that the 4,200ka BP event implicated in cultural change throughout other regions of the globe may have an expression in proxy data in the Southeast. The occurrence of the GOM high stand within a time period when anomalous sediment deposition at Cahaba Pond has been identified further suggests that additional investigation at Cahaba Pond is warranted.

From ca. 4,000 cal. BP/2,050 CAL. BC forward, the general trend towards conditions similar to modern climate continued, albeit with some considerable variability (Little, 2000; O'Brien, et al., 1995; Wanner, et al., 2008). Temperature, precipitation, and lake levels reached conditions similar to the present (Anderson, 2001). In the interior, soil formation and stabilization of valley surfaces occurred as evidenced by Late Archaic sites aligning onto modern stream channels (Schuldenrein, 1996). Within the Lower Mississippi Valley, the Late to Terminal Archaic Poverty Point culture emerged during this time lasting until ca. 3,000 cal. BP/1,050 CAL. BC with unprecedented levels of earthen mound construction and extensive interregional exchange (Kidder, 2006).

There is considerable evidence for a period of worldwide rapid climate changes beginning ca. 3,500 cal. BP/1,550 CAL. BC and continuing until ca. 2,500 cal. BP/550 CAL. BC (Figure 14). Although perhaps an overgeneralization, the time-transgressive trend in Eastern North America towards desiccation that had ad-

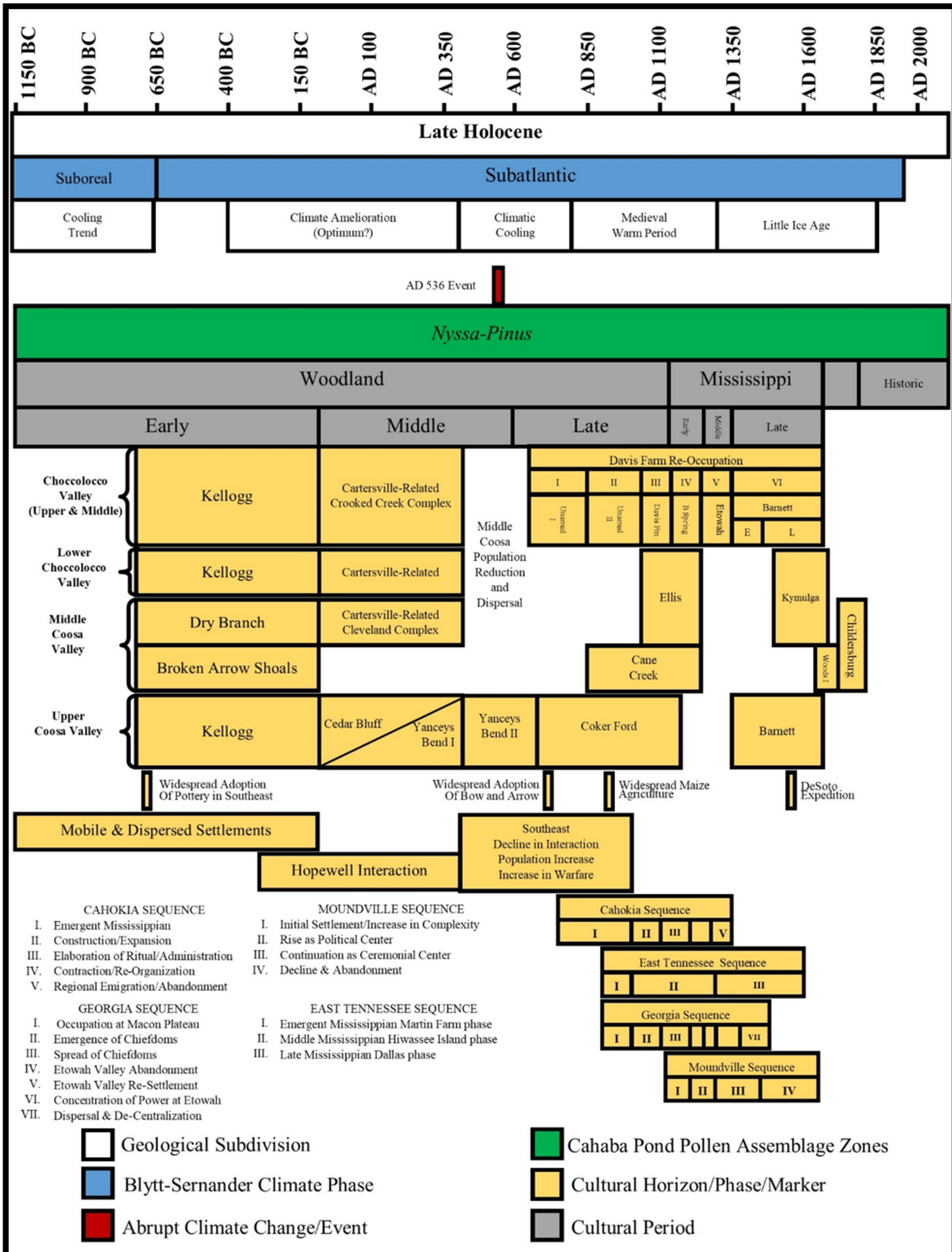

Figure 14. Late Holocene Climate and Culture

vanced southward since the Early Holocene began to reverse ca. 3,000 BP/1,050 CAL. BC (Webb III, et al., 1993). Global climate during this period has been classified as a "cool poles, dry tropics" interval by Mayewski and colleagues (Mayewski, et al., 2004). Within the mid-continent, lake levels and vegetation proxy records indicate a change to a colder and wetter climate regime (Anderson, 1993) and there is evidence of glacial advance during this period (Anderson, et al., 2007).

The cooler and wetter climate interval from ca. 3,500 to ca. 2,500 BP/1,550 to 550 CAL. BC has also been implicated in cultural change within the mid-continent and Northeast as seen in an apparent shift from relatively complex cultures of the Late Archaic to less complex cultures of the Early Woodland (Kidder, 2002; Anderson & Mainfort Jr., 2002; Kelly, 2002; Fiedel, 2001). Kidder (2006) has presented compelling evidence that during this interval increased flood frequencies and magnitudes in the Mississippi River watershed were significant causal factors of cultural and behavioral changes that mark the end of the Late Archaic in parts of eastern North America. Mississippi River "megafloods" are known to have occurred at 3,000 cal. BP/1,050 CAL. BC and 2,500 cal. BP/550 CAL. BC (Brown, et al., 1999) and increased flooding has also been documented within the headwaters of the river. The increase in flooding appears to have resulted in significant landscape reorganization in the Lower Mississippi River valley as the river adjusted to high flows. Populations appear to have abandoned large parts of the basin and widespread cultural transformation has been observed following the period 3,000 to 2,500 cal. BP/1,050 to 550 CAL. BC. While there is general agreement on the timing of the Lower Mississippi River valley landscape abandonment, Gibson (2010) has suggested that Kidder's climate hypothesis is inadequate to fully explain the demise of Poverty Point because the timing of the megafloods appear to be too late and, more importantly, both the uplands and lowlands of the lower Mississippi River valley appear to be devoid of cultural remains from this period. Furthermore, taking a contrarian view to Kidder's hypothesis, Gibson has suggested that the subsequent Early Woodland populations were the direct descendants of the Poverty Point culture and their neighbors.

Anderson (2001) notes that while Early Woodland populations faced cold and wet climatic conditions punctuated by at least two severe short term cold events, Middle Woodland populations experienced a climatic amelioration. From ca. 2,350 cal. BP/ca. 400 BC to ca. 1,550 cal. BP/AD 400 fluctuations in climate were less severe than the previous interval and conditions were as warm or warmer than present (Foster, 2012; Carbotte, et al., 2004). In Europe, this period is known as the Roman Optimum or Roman Warm Period. In North America, this climate episode corresponds to the emergence of the Adena Complex and the Hopewellian interaction sphere characterized by the re-emergence of long-distance trade networks, mound and earthwork constructions (Walthall, 1980; Bense, 2009; Anderson & Sassaman, 2012). Otolith studies from archaeological contexts in Florida indicate that summer rainfall was lower than the present day (Surge & Walker, 2005).

After ca. 1,550 cal. BP/AD 400 northern hemisphere climate took a significant downturn often referred to as the Early Medieval Cool Period, Dark Ages Cool Period or the Vandal Minimum. The cooling trend continued until ca 1,150 cal. BP/ca. AD 800 and was punctuated in most regions by an abrupt climate change event at AD 536 (Anderson, 2001). Evidence from tree-growth rings across the northern hemisphere indicates severely reduced tree growth from AD 536 to AD 550 (D'Arrigo, et al., 2001; Scuderi, 1990; Salzer & Hughes, 2007). While the potential causes of the AD 536 event are still debated, there is considerable historical evidence that an atmospheric dust veil encircled the globe for eighteen (18) months primarily affecting the northern hemisphere (Dewing, 2005; Arjava, 2005; Graslund & Price, 2012). Ice-core evidence from Greenland and Antarctica of elevated levels of sulfates suggest that the dust veil was caused by a volcanic eruption near the equator of a greater magnitude than the AD 1815 Tambora eruption (Larsen, et al., 2008).

The AD 536 event occurred within a ca. 400-year period of global cooling that varied significantly from region to region. Glacial advances are recorded during this period in the Alps, in Norway and in Alaska. Meanwhile, the Mediterranean region and the Arabian Peninsula experienced significant droughts (Lamb, 1982). In North America, pollen-based reconstructions of Holocene climate and tree-ring records indicate a cool period between AD 500 to AD 700 (Trouet, et al., 2013). In peninsular Florida, otolith studies conducted on material recovered from archaeological contexts have indicated that winters were similar to present conditions between AD 450 to AD 500 and warmer than present between AD 500 to AD 550 (Wang, et al., 2013) .

The Early Medieval Cool Period corresponds to a period in Southeastern North America marked by a decline in regional interaction, an increase in the variety and type of material culture found in the archaeological record of this period, evidence of a major increase in population and, an increase in warfare (Anderson, 2001). Although climate has long been implicated as a potential causal factor in cultural change during this period (Griffin, 1961), it is clear that cultural changes involved much more complexity and much more work at the local and regional levels is necessary in order to inform new models. Current research is focused on demographic factors and the role that changing subsistence strategies played during this period.

After ca. 1,150 cal. BP/AD 800, global climate began a warming trend that lasted until ca. 650 cal. BP/AD 1300. This period is known as the Medieval Warm Period (MWP) or Medieval Climatic Anomaly (MCA). Multi-proxy evidence suggests that global average temperatures may have actually been slightly cooler than present due to the variegated nature of climatic conditions by region during this time. Nevertheless, in the North Atlantic, sea surface temperature was approximately 1°C warmer than present (Keigwin, 1996). Within temperate North America, Trouet et al. (2013) date the MCA from ca. AD 750 to AD 1100 based on low-resolution pollen records and note that the 9th and 11th centuries were particularly warm and accompanied by centennial-scale aridity in the West. This is in general agreement with research by Cook et al. (2004) that indicates drier than average conditions in the region from AD 900 to 1300. In the East, cyclical changes in the precipitation regime of approximate 30-year duration were well-developed from AD 1000 to AD 1300 (Stahle, et al., 1988).

The Medieval Warm Period corresponds with the end of the Woodland period and the first few centuries of the Mississippian period in North America. During this period, cultural complexity increased significantly with extensive expansion of, and increased reliance upon agriculture, evidence of hereditary inequality and, an increase in political complexity, Anderson (2001) notes, "*It is probably no coincidence that the spread of Mississippian culture from A.D. 800 to 1300 corresponds to the Medieval Warm Period, a time thought favorable for agriculture, with peak warm temperatures in the northern hemisphere or only slightly less than those of present*." The incorporation of maize agriculture into subsistence strategies facilitated increased population densities focused on political centers that likely arose in part to control and distribute surplus production. However, when examined at annual scale with a focus on potential for agricultural productivity, the Medieval Warm Period in the Southeastern United States was by no means uniformly favorable for agriculture and climatic fluctuations likely played a significant role in cultural change during this period.

Tree ring reconstructions of the Palmer Drought Severity Index (PDSI) have been particularly useful to archaeologists working to understand the role climate played in Mississippian societies. Applying dendrochronological and dendroclimatological research, Anderson (1994; 1995) derived estimates of potential food reserves for the Savannah River Valley chiefdoms and identified time intervals that would have been favorable and unfavorable for agriculture. Anderson suggests that within the Savannah River

Valley, the years A.D. 1005 to 1055, A.D. 1152 to 1200, A.D. 1251 to 1358, A.D. 1378 to 1407 and, A.D. 1477 to 1559 were periods when food reserves were probably sufficient to augment years of deficits while the intervals between A.D. 1056 to 1151, A.D. 1201 to 1250, A.D. 1359 to 1377, and A.D. 1408 to 1476 were periods when crop deficits would have stressed the agricultural economy.

Climate appears to have been a significant factor in other regions as well. In the American Bottom, Benson, Pauketat and Cook (2009) have suggested that climate volatility played a significant role in Cahokia's cultural and demographic development. Between A.D. 1000 and 1100 flooding of the Mississippi River allowed agricultural production in the uplands and increased wetland habitats that assisted in the expansion of Cahokia. However, a series of persistent droughts between A.D. 1100 and 1245 led to desiccation of these wetland habitats and a lowering of the water table in the surrounding uplands led to the demise of the Richland farming complex. Thus, climate appears to have played a central role in cultural change at Cahokia (Benson, et al., 2009).

After A.D. 1300, North American climatic conditions deteriorated significantly from the general trend of optimal conditions experienced during the MCA. Between A.D. 1300 and 1850 northern hemisphere temperatures and precipitation became erratic (Fagan, 2000) and, due largely to the advance of glacial ice along with prominent severe cold periods in Europe and North America the period has been referred to as, "The Little Ice Age." Nevertheless, multi-proxy evidence suggests there was considerable regional variability in climate during this period (Lamb, 1982; Bradley & Jones, 1992).

There is now considerable evidence that climate during both the MCA and the Little Ice Age had a strong influence on cultural change in both Europe and the Americas (Foster, 2012). In the Black Warrior Valley, the Moundville chiefdom was in decline by A.D. 1450 and, by A.D. 1550 most of the secondary mound sites had been abandoned. Maize agriculture appears to have declined during this period and investigations have shown widespread evidence of malnutrition within the population (Knight & Steponaitis, 1998). In the Etowah Valley, the Etowah polity had collapsed and other centers throughout present-day northern Georgia were also in decline (King, 2003). Within the Savannah River Valley, harvest shortfalls were continuous between 1559 and 1569 (Anderson, 1995).

During both the Protohistoric and Early Historic periods in the Southeast, climate also played a significant role in cultural change (Fagan, 2000; Foster, 2012). Anderson (2001), notes that the Guale revolt of 1597, the Yamassee war of 1715 and the Cherokee war of 1760 all occurred following reconstructed droughts. The growing body of ethnohistorical research on this period has been primarily focused on complex socio-political issues of demographic and cultural instability among indigenous populations attributed primarily to contact with Europeans. Nevertheless, as a corollary to this body of research some investigations have been directed to explicitly ecological questions for the period. For example, bald cypress chronologies indicate that the Tidewater region of Virginia and North Carolina experienced the most extreme 3-year growing season drought within an 800-year sequence from 1587 to 1589; prompting the suggestion that extreme drought was a significant factor in the failure of the Lost Colony of Roanoke. Less than two decades later, from 1606 to 1612, the region experienced the worst 7-year drought during the period from 1215 to 1984. During this period, the Jamestown colonists experienced significantly increased levels of mortality due to malnutrition and poor water quality, both of which may be attributed to the severe drought (Stahle, et al., 1998). Future research on Protohistoric and Early Historic sites in the region should contribute additional information on the role climate played in cultural change within the Southeast.

Modern climate in Calhoun County has been described by Hurst and Avary (1908)as mild, with relatively short winters and long growing seasons. Mean annual temperature is 16°C (62°F). The winter mean is 6°C (44°F) and the summer mean is 25°C (77°F). The mean annual precipitation is 127 cm (50 in) and well distributed throughout the growing season. The average date of the last killing frost in the spring is March 27 and the first killing frost is November 7. The average growing season is 226 days (Harlin & Perry, 1961).

Flora and Fauna

Present-day flora and fauna within the vicinity of the undertakings are thought to differ significantly from historic and prehistoric conditions due to a variety of reasons including fluctuation in species diversity and the introduction of invasive species into the landscape by both "natural" and anthropogenic processes. Changes in species diversity are known to have been influenced by anthropogenic processes (for at least the last several thousand years) and, at greater time-scales, by "natural" processes such as climate change (McCarthy, 2003; Beatty, 2003; Gremillion, 2004; Yarnell, 1982).

While botanical remains from the distant past are routinely utilized as proxies for paleoenvironmental reconstruction due to the sensitivity of plant species to climate, ecological communities are short-term, scale-dependent associations of species that are variable in both time and space. Thus, paleoecology as a method of scientific inquiry for identification of past habitats/communities faces significant challenges due to the problems inherent in using process models of living communities as analogs for past communities (Gee & Giller, 1991).

A further complication is that, paleoenvironmental reconstructions at differing spatio-temporal scales present data in fundamentally different ways and with differential intended purposes. Nevertheless, as Dincauze (2000) notes, "human biological and cultural adaptations today and in the past grow out of relationships with plant [and animal] communities at all scales and must be understood in those contexts." Meso-scale (regional) environments are socially relevant to all biological entities as smaller scale habitats are both embedded within the region and constrained by it. Within the interior of North America, raw materials for clothing, structures, tools and food were largely derived from within this spatial scale until the arrival of railroads in the 19th century. Similarly, the local scale is also important. Prehistoric human populations typically subsisted on local plant associations until the advent of maize agriculture. At the micro (site) scale and, when combined with high-resolution chronological control archaeological inquiry, may identify glimpses of human habitats and niche behavior that have long vanished from the landscape.

Regional Scale Data

At the regional scale, Alabama exhibits an exceptional amount of biodiversity documented largely through the work of biologists and botanists that began systematically investigating the region from the latter half of the 19th century forward. Among these investigations, Mohr's (1901) *Plant Life of Alabama* remains the most complete exposition of Alabama flora and, as the culmination of an entire career, his work captured an important perspective of the region's biodiversity prior to the major impacts of the 20th century. During the first half of the 20th century, Harper (1928; 1943; 1944) also made significant contributions and, in his *Forests of Alabama*, documented the demise of old growth forests throughout the region. Current research on regional flora and fauna has focused primarily on smaller-scale studies of threatened and endangered species and several studies on vascular floras have been produced by students at Jacksonville State University. Studies of species of concern have been documented for Dugger (Hutchinson, 1998) and Horse Block Mountain (Hruska, 1997) and the riparian zone of Choccolocco Creek (Weninegar, 2002).

Braun (1950, Reprinted 2001) included the area surrounding the Choccolocco Archaeological Complex within her Oak-Pine Forest Region noting that the Piedmont of Alabama may be considered as the most representative part of the Oak-Pine Forest Region of the Gulf Slope. According to Braun, the Oak-Pine Region within the Gulf Slope is a transition belt where the ranges of the central hardwood forest and the

Southeastern evergreen forest overlap. Species characteristic of the Coastal Plain such as *Magnolia virginiana* (Sweet Bay Magnolia) and *Persea palustris* (Swamp Bay) extend to the north with more typical Appalachian upland species such as *Quercus montana* (Chestnut Oak) and *Castanea dentata* (American Chestnut) once extending far to the south.

The northern portion of Braun's Oak-Pine Forest Region within northeastern Alabama occurs in the Great Valley, which is comparable to Harper's (1943) Coosa Valley region. Here Braun notes that the transition from the oak communities of the Ridge and Valley section of the Oak-Chestnut Forest Region to the oak-pine communities is gradual. At the time of Braun's analysis, the valleys were almost entirely under cultivation and the uplands had been so extensively timbered that little remained of the original forest. Still, Braun notes that the longitudinal ridges of chert and sandstone were occupied by forests comparable to the Piedmont, while the valley floors of Cherokee and Etowah counties were occupied by longleaf pine flatwoods resembling those near the coast. Wharton (1978) lists these longleaf pine areas as one of his hydric systems known as the Coosa Flatwoods and notes that they occurred on higher sandy and gravelly terraces adjacent to the Coosa River floodplain that were frequently inundated during the Pleistocene and Early Holocene due to much higher stream flows during that time. Redmond (1975) notes that Weiss reservoir inundated these longleaf pine forests that occurred within a valley floor underlain by the Conasauga formation. However, Duncan (2013) suggests that most of the flatwoods were converted to pastures and farms before hydroelectric projects altered the hydrology. They are primarily of interest here due to the similarity in geologic and hydrologic conditions between some locations of the Choccolocco Valley (as a major tributary to the Middle Coosa) and the Upper Coosa Valley.

The Piedmont District of Braun's Oak-Pine Forest Region occurs almost immediately to the south of the undertakings. Braun notes that at the upper elevations *Quercus montana* (Chestnut Oak) and *Castanea dentata* (American Chestnut) are (were) in contact with the longleaf pine forests that cover the lower elevations. There is some evidence that the American Chestnut, which today has been so ravaged by an Asian bark fungus that few mature specimens remain, was once more dominant in the area as Mohr (1901) noted that, "the chestnut, originally one of the most frequent trees of these forests, is at present rarely found in perfection….whereas at the beginning of the second half of the [19th] century it was still found abundant and in perfection." Mohr also noted that at its vertical limit, pine is replaced by Mountain Oak, Chestnut and Pignut Hickory. Ravine slopes are occupied by a more mesophytic forest of beech and other hardwoods such as Tuliptree, White Ash, Maple, White Oak, Holly, Redbud, Bigleaf Magnolia and Little Silverbells. The lowland forest is a mixed hardwoods community of oaks (White, Cow, Post, Chestnut, Black, Spanish, Red, Willow and Water), several species of Hickory, Beech, Ash, Tuliptree, Sour Gum, Sweet Gum, Magnolia, Dogwood, Sourwood, Red and Sugar Maple, Blue Beech, Elm, Basswood, Holly, Hornbeam and, River Birch (Braun, 1950, Reprinted 2001).

Local Scale Data

At the local scale, Weninegar (2002), has identified thirteen (13) plant associations or communities along Choccolocco Creek and its floodplain. These include: vascular aquatic beds, borrow pits, bottomland forests, coves, fern glades, islands, levees, low terraces, marshes, lake margins, rock outcrops, ruderal communities, shoals, shrub swamps and wet prairies. Some of the species identified in each of these plant communities are relatively recent additions to the landscape and would not have been present during the prehistoric period. Additionally, Weninegar notes that the study area represented a narrow band of the total drainage area of Choccolocco Creek and thus additional species would have been documented had the entire watershed been surveyed.

Weninegar notes that the creek bed provides habitat for aquatic plants such as *Alternanthera philoxeroides* (alligatorweed), *Callitreiche heterophylla* (water stalwort), *Ludwigia* spp. (seed-box), *Justicia americana* (water-willow), *Najas* spp. (water-nymph), *Orontium aquaticum* (golden club), *Sagitarria latifolia* (broad-leaved arrowhead), *Saururus cernuus* (lizard's-tail) and *Polygonum* spp. (smartweed). Plants associated with borrow pits include *Carex* spp. (sedges), *Oenothera* spp. (evening-primrose), *Cyperus* spp. (flatsedge), *Eleocharis obtusa* (blunt spikerush), *Juncus* spp. (rushes), *Ammannia coccinea* (scarlet ammannia), *Mazus japonicus* (mazus), and *Diodia teres* (rough buttonweed).

While Weninegar notes that little of the bottomland forests survive, common trees include *Acer rubrum* var. *drummondii* (Drummond's red maple), *Acer rubrum* (red maple), *Liquadambar styraciflua* (sweetgum), *Fraxinus pennsylvanica* (green ash), *Nyssa sylvatica* (black gum), *Carpinus caroliniana* (ironwood), *Quercus lyrata* (overcup oak), *Salix nigra* (black willow) and *Ulmus* spp. (elms). While the shrub layer is minimal, the most common shrub is the invasive *Ligustrum sinense* (Chinese privet) although *Cephalanthus occidentalis* (buttonbush), *Toxicodendron radicans* (poison-ivy), *Cornus amomum* (silky dogwood), and *Lyonia ligustrina* (maleberry) may also be found. Lianas (woody vines) include *Metelea gonocarpa* (climbing milkweed), *Smilax* spp. (catbriar), *Lonicera japonicus* (Japanese honeysuckle) and *Berchemia scandens* (rattan-vine).

The coves and fern glades identified by Weninegar are associated with upland forests. Coves, associasted with the mountainous portion of the watershed, support a canopy of *Fagus grandifolia* (American beech), *Betula lenta* (sweet birch), *Magnolia acuminata* (cucumber tree), *Carya* spp. (hickory) and *Liriodendron tulpifera* (tulip-poplar). Beneath may be found *Sanguinaria canadensis* (blood-root), *Monotropa uniflora* (Indian pipe), *Galearis spectabilis* (showy orchis), *Panax quinquefolius* (American ginseng) and *Hexastylis heterophylla* (Ashe's ginger) with a shrub layer that includes *Hydrangea quercifolia* (oak-leaf hydrangea) and *Kalmia latifolia* (mountain laurel). Fern glades of *Athyrium filix-femina* var. *asplenioides* (southern lady fern), Osmundua cinnamomea (cinnamon fern), *Osmunda regalis* (royal fern), *Thelypteris noveboracensis* (New York fern), and *Woodwardia areolata* (netted chain fern) may be found along the ephemeral streambeds underneath *Fagus grandifolia* (American beech), *Quercus* spp. (oaks) and *Pinus taeda* (loblolly pine) while *Polystichum acrostichoides* (Christmas fern) and *Asplenium platyneuron* (ebony spleenwort) occupy the drier slopes.

The creek habitats include islands, levees, low terraces, marshes and lake margins, shoals, rock outcrops, shrub swamps and wet prairies. Islands within relict oxbow areas contain hardy species such as *Salix nigra* (black willow), *Amsonia tabernaeimontana* (blue star), *Senecio glabellus* (butterweed), *Erigeron* spp. (daisy fleabane), *Vinca major* (greater periwinkle), *Acer saccharinum* (silver maple), *Smilax* spp. (catbriar), *Ipomoea* spp. (morning-glory), and *Cephalanthus occidentalis* (buttonbush). Trees found on levees include *Juniperus virginiana* (eastern red-cedar), *Ulmus alata* (winged elm), Quercus nigra (water oak), *Quercus shumardii* (swamp red oak), *Ostrya virginiana* (hop-hornbeam), *Carya cordiformis* (bitternut hickory), *Cornus florida* (flowering dogwood), *Cornus amomum* (silky dogwood) and *Celtis Laevigata* (sugarberry). The shrub layer contains the intrusive *Ligustrum sinense* (Chinese privet) while thick stands of *Arundinaria gigantea* (switch cane) are surrounded by herbs such as *Erigeron* spp. (daisy fleabane), *Eupatorium coelestinum* (mist flower), *Helenium autumnale* (yellow sneezeweed), *Cirsium* spp. (thistle), *Elephantopus carolinianus* (Carolina elephant's-foot), *Melanthera nivea* (snow square-stem), and *Vernonia gigantea* (queen-of-the-meadow). Lianas commonly found on the levees include *Smilax bona-nox* (bulbriar), *Smilax rotundifolia* (common greenbriar), *Parthenocissus quinquefolia* (Virginia creeper), and *Toxicodendron radicans* (poison-ivy).

Low terraces occur frequently along the creek channel. The canopy here is comprised of *Liriodendron tulipifera* (tulip-poplar), *Pinus taeda* (loblolly pine) and, *Nyssa sylvatica* (black-gum) with an understory comprised of *Carpinus caroliniana* (American hornbeam), *Ostrya virginiana* (hop-hornbeam), *Magnolia tripetela* (umbrella magnolia), *Hamamelis virginiana* (witch-hazel) and, *Halesia tetraptera* (silverbell tree). Shrubs found within the low terraces include *Lyonia ligustrina* (maleberry), *Alnus serrulata* (tag alder), *Rhododendron canescens* (Piedmont azalea) and, *Lindera benzoin* (spicebush). Weninegar notes that within more mountainous and protected portion of Talladega National Forest low terraces included species not found elsewhere with the following species growing in association: *Jamesianthus alabamensis* (Alabama warbonnet), *Malaxis unifolia* (green adder's-mouth), *Monotropa hypopithys* (pine-sap), *Epifagus virginiana* (beech-drops), *Goodyera pubescens* (downy rattlesnake-plantain), *Platanthera clavellata* (small green wood orchid), *Corallorhiza odontorhiza* (autumn coral-root) and, *Triphora trianthophora* (three-bird's orchid). At these locations she also observed *Veratrum parviflorum* (small-flowered false hellebore), *Botrychium biternatum* (southern grapefern), *Botrychium dissectum* (cut-leaf grapefern), *Hymenocallis occidentalis* (northern spider-lily) and *Hexastylis* spp. (wild ginger).

Marshes and lake margins occur extensively along the stream channel where there is low velocity perennial flow. Common species such as *Typha latifolia* (common cat-tail) occur with the dominant genera that include *Juncus* spp. (rushes), *Scirpus* spp. (bulrushes), *Carex* spp. (sedges). Other common species include *Erianthuss giganteus* (sugarcane plume grass), *Glyceria striata* (fowl mannagrass), *Eleocharis obtusa* (blunt spikerush), *Hydrocotyl verticillata* (whorled pennywort), *Ptilimnium capillaceum* (hair-like mock bishop's weed), *Ranunculus pusillus* (low spearwort) and *Myosurus minimus* (mouse-tail). Weninegar also notes that the zone between the marshes and wet meadows is inhabited by *Rubus* spp. (blackberries).

Species occurring on rock outcrops within the creek channel differ depending on the exposure to sunlight. *Opuntia humifusa* (eastern prickly-pear) may be found at locations with abundant sunlight. Outcrops on stream margins may also be found under a canopy typically consisting of *Quercus alba* (white oak), *Ulmus alata* (winged elm), *Acer rubrum* (red maple), *Morus rubru* (red mulberry) and, *Platanus occidentalis* (sycamore) with understory species such as *Cercis canadensis* (redbud), *Juglans nigra* (black walnut), *Ostrya virginiana* (hop-hornbeam) and *Carpinus caroliniana* (American hornbeam. The shrub layer at these locations typically consists of *Hypericum frondosum* (golden St. John's-wort), *Itea virginica* (sweet-spires), *Sideroxylon lyciodes* (southern buckthorn) and *Calycanthus floridus* (sweet-shrub). The herbaceous species include *Asplenium platyneuron* (ebony spleenwort), *Pleopeltis polypodiodes* var. *michauxiana* (Resurrection fern), *Selaginella apoda* (Meadow Spikemoss), *Arisaema triphyllum* (Jack-in-the-pulpit) and, *Saxifraga virginiensis* (Early Saxifrage). Often associated with rock outcrops, shoals along the creek offer habitat for hyrdrophytes such as *Hymenocallis coronaria* (Cahaba lily), *Zizaniopsis miliacea* (southern wild rice), *Potamogeton crispus* (curly pondweed), *Justicia americana* (water-willow) and, *Podostemon ceratophyllum* (riverweed).

Shrub swamps along the creek have few canopy trees. Young canopy species include *Salix nigra* (black willow), *Quercus lyrata* (overcup oak), *Nyssa aquatica* (water tupelo), *Carya aquatica* (water hickory), *Quercus michauxii* (swamp chestnut oak), *Acer negundo* (box elder), *Acer rubrum* (red maple), *Taxodium distichum* (bald-cypress) and, *Quercus imbricaria* (shingle oak). Shrubs include *Sambucus canadensis* (elderberry), *Cornus amomum* (silky dogwood), *Vaccinium corymbosum* (highbush blueberry), *Hibiscus mocheutos* (swamp rose mallow) and *Leucothoe racemosa* (sweetbells). The herbaceous layer includes *Carex gigantea* (giant sedge), *Iris virginica* (Virginia blue flag), *Typha latifolia* (common cat-tail), *Scirpus cyperinus* (wool-grass), *Impatiens capensis* (jewelweed), *Cicuta maculata* (water-hemlock), *Alisma subcordatum* (water-plantain) and, *Lobelia cardinalis* (Cardinal flower.

The Wet Prairie habitat identified by Weninegar are meadows with a seasonably high water table used today for pasture and hay field. Grasses common to this habitat include *Cynodon dactylon* (Bermuda grass), *Dactylis glomerata* (orchard grass), *Digitaria ciliaris* (southern crabgrass), *Elymus virginicus* (Virginian wild-rye), *Festuca elatior* (tall fescure), *Paspalum dilatatum* (dallis grass), *Paspalum notatum* (bahia grass), *Poa pratensis* (Kentucky bluegrass), *Schizachyrium scoparium* (little bluestem) and, *Triticum aestivum* (wheat). Other herbaceous species include *Helenium amarum* (bitterweed), *Solidago arguta* (sharp-leaved goldenrod), *Solidago nemoralis* var. haleana (old-field goldenrod) and, *Linaria canadensis* (old-field toadflax).

Ruderal communities are established within disturbed areas along the creek where non-native species often flourish. Trees included *Ailanthus altissima* (tree-of-heaven), *Albizia julibrissin* (mimosa), *Melia azedarach* (China-berry), Morus alba (white mulberry), *Poncirus trifoliate* (trifoliate orange) and, *Sapium sebiferum* (popcorn tree). Shrub species include *Elaeagnus pungens* (elaeagnus), Lagerstroemia indica (crepe-myrtle), *Ligustrum sinense* (Chinese privet) and *Rosa multiflora* (rambler rose). Common herbs included *Cardamine hirsute* (hairy bittercress), *Commelina communis* (Asiatic dayflower), Conium maculatum (poison hemlock), *Daucus carota* (Queen-Anne's-lace), *Duchesnea indica* (mockstrawberry), *Heliotropium indicum* (turnsole) and, *Polygonum caespitosum* var. *longisetum* (Asiatic water-pepper).

Subsistence Research Goals

Throughout Eastern North America, plants played a key role in subsistence economies well into the historic period. For a variety of reasons, it is important for archaeologists to identify contexts in which prehistoric populations utilized plants (i.e., as food, as sources of fiber for textiles, as dyes, as medicine and, for ceremonial or religious purposes) (Gremillion, 2004). However, a more fundamental question that the behavioral ecology approach seeks to answer is why plant domestication in Eastern North America appears to have lagged behind other regions of the world. As Price (2009), has pointed out, this question is closely related to the question of what mechanism(s) caused populations with successful long-term adaptations to resource-rich river valleys to begin to manipulate plants in the first place. Along this line of inquiry, Smith and Yarnell (2009) have suggested that such explanatory frameworks as environmental stress, population growth, landscape-packing, constricted resource zones and carrying-capacity imbalance are all insufficient to explain the pattern of initial plant and animal domestication in Eastern North America. Instead, they suggest that the available evidence indicates that domestication occurred within a framework of stable, long-term adaptations to resource-rich environmental settings. Furthermore, the initial domesticate complexes do not appear to have marked an abrupt developmental break but instead appear to be an integrated additive expansion and enhancement of preexisting hunting and gathering economies.

Current evidence suggests that adoption of domesticates into subsistence economies of eastern North America was somewhat geospatially variegated. Most populations in the Southeast appear to have relied extensively on foraging with only limited small-scale food production until about AD 900. Seasonal variation may have been an important factor in observed geospatial variations in these early farming economies (Gremillion, 2011). In some areas, particularly in the lower Southeast, the short length and relatively mild winter season allowed for a longer growing season thereby potentially decreasing the reliance of populations on stored foods. The Choccolocco Creek Archaeological Complex lies near the southern border of a zone that Gremillion (2002) has identified as "exhibiting little or no pre-maize agriculture." As noted by Gremillion, "patterns of plant-resource variability need to be evaluated to determine whether the abundance of mast or other alternative plant foods limited the dietary role of seed crops." Given its location within an ecotone at this border zone, archaeological sites within the complex could potentially contribute important information to assist researchers investigating the role of seasonal variation as a factor in the spatio-temporal variability of prehistoric farming economies.

Local Scale Subsistence Plant Resources

In order to obtain preliminary information on plant-resource variability near the CCAC, the species listed in Weninegar's (2002), Vascular Flora of Choccolocco Creek were reviewed and cross-referenced with Moerman's (1998) Native American Ethnobotany to identify those species known to have been utilized as food by Native Americans. Although Moerman lists food uses by Tribe, for the purposes of identifying whether or not a species was edible, no such distinction was made and if a species was used as a food by any Tribe it was listed. Weninegar's (2002), Vascular Flora of Choccolocco Creek identified 870 specific and infraspecific taxa representing five (5) divisions, 142 families, and 464 genera. Eighty-one percent of the taxa were reported as native to the region. The remaining 19 percent represents introduced species (n=163) found predominantly in the urbanized Calhoun County portion of the study area. Hemicryptophytes (perennials with perennating buds located at or slightly above ground) constitute 44 percent of the identified flora and phanerophytes (perennial trees, shrubs, and woody vines) constitute 22 percent of the identified flora. Therophytes (annuals) constitute 18 percent, cryptophytes (perennials with perennating buds located below ground) constitute 14 percent and chamaephytes (perennials with winter buds above ground less than 0.5m) constitute the remaining 2 percent of the flora.

In order to determine which of the 707 specific and infraspecific taxa listed as native to the region in Weninegar's (2002), Vascular Flora of Choccolocco Creek were known to have been utilized as food by Native American Tribes, Moerman's (1998) Native American Ethnobotany was reviewed. The search identified 16 percent (n=114) of the listed taxa as known to have been utilized by at least one Native American Tribe as a food source. While Moerman lists thirty-one (31) categories of food uses, taxa that included only uses of two of these (fodder and forage) were excluded from the results. No distinction between the remaining twenty-nine (29) categories of use was noted during the search. Phanerophytes constitute 52 percent (n=59) of the taxa within the Choccolocco Creek study area known to have been utilized as a food source by Native American Tribes. Hemicryptophytes constitute 26 percent (n=30), Geophytes constitute 11 percent (n=13), Therophytes constitute 6 percent (n=7), Chamaeophytes constitute 3 percent (n=3) and Hydrophytes constitute 2 percent (n=2) of the taxa within the Choccolocco Creek study area known to have been utilized as a food source by Native American Tribes.

Data on flowering and fruiting of taxa within the Choccolocco Creek study area known to have been utilized as food sources by Native American Tribes was compiled from the data presented by Weninegar (2002). Edible taxa begin flowering in February and continue through November. The flowering season is at its height in April, May and June. Edible taxa begin fruiting in March and continue through November. The peak months for fruiting are September and October (Figure 15).

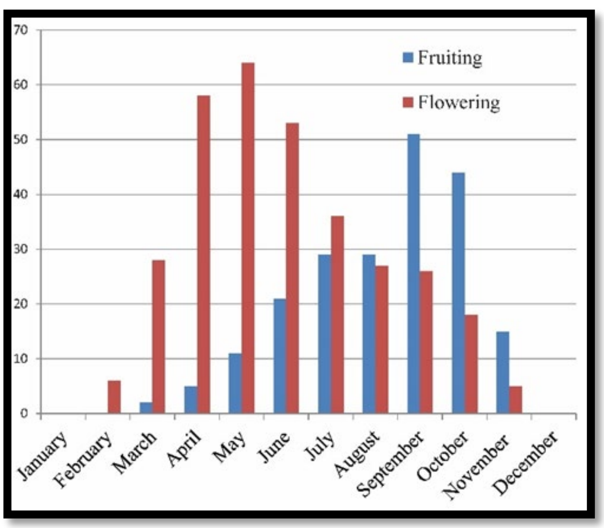

Figure 15. Fruiting and Flowering of Taxa Used as Food

This information is intended to provide context for the data obtained at sites within the CCAC-Davis Farm through the large-scale data recovery and collection of floatation samples. Results of the analytical techniques employed on materials recovered, along with interpretation of results is presented and discussed in detail by Hollenbach in the Laboratory Analysis and Interpretations/Conclusions sections of Volumes 2 and 3.

Mast

The mast bearing trees occurring within the Choccolocco Creek floodplain would have served as important resources for prehistoric populations. These included *Carya cordiformis* (Bitternut Hickory), *Carya illinoiensis* (Pecan), *Carya ovate* (Shagbark Hickory), *Juglans nigra* (Black Walnut), *Fagus grandifolia* (American Beech), *Quercus alba* (White Oak), *Quercus nigra* (Water Oak), *Quercus rubra* (Northern Red Oak), *Quercus stellata* (Post Oak), *Quercus velutina* (Black Oak) and, *Corylus americana* (American Hazel-Nut). Delcourt and Delcourt (2004) note that a 10 km-radius watershed within the eastern deciduous forest can produce as much as 1.9 million kg of acorns and 236,000 kg of hickory nuts per year. Gardner (1997) suggests that just seven (7) hickory trees, each yielding an estimated 20 kg of edible nutmeat could sustain a single person for a year.

Nuts and acorns from these species would have been gathered and stored for later use as a staple food. Harvest of hickory nuts would have occurred during a relatively brief four-week interval following the first killing frost (Talalay, et al., 1984). Nutmeats were an excellent food source, containing nearly all of the essential amino acids and providing more calories than beef (Gardner, 1997). Once hulled, parched and dried, nutmeats could have been stored for up to three years. Known processing techniques of nutmeats involved crushing and boiling with little waste. Oils extracted from the nutmeats were utilized in a variety of ways and boiled liquids were used as a beverage (Moerman, 1998). Delcourt and Delcourt (2004), citing experiments conducted by Talalay, Keller and Munsen (1984) note that processing of mast was also cost-efficient as a single person working eight (8) hours could process enough material to feed an adult for sixteen (16) days.

Archaeological investigations have demonstrated that exploitation of mast and fire management of oak-hickory and chestnut forests has considerable antiquity in Eastern North America. Based on extensive investigations in the American Bottom, Rindos and Johannessen have suggested that Archaic and Early Woodland populations engaged in a conservation strategy to preserve mast bearing trees because firewood remains (wood-charcoal) at sites from this period tend to be of tree types other than hickory, while nut remains indicate hickory nuts were an important food staple. Studies on the nutritional composition of hickory nuts confirm that they could have served as an important source of fat, particularly for early foraging populations consuming lean game (Gardner, 1997). Investigations at sites within the Choccolocco Creek Archaeological Complex have yielded a considerable amount of paleobotanical remains from subsurface contexts, some dating back to the late Archaic period. Following Rindos and Johannesen's lead, material recovered from these sites could potentially contribute information regarding changes in conservation strategies through time by occupants of the area at various time periods.

The correlation between evidence of wildfire in proximity to prehistoric occupation sites is well-documented in the literature. There is also general agreement that many plant communities in the United States are the product of frequent low intensity fires (*See various sources listed by Kay, 2007)*. However, the primary causal agent is still debated. Nevertheless, Kay (2007) and others argue that the frequency of prehistoric wildfires was much higher than can be attributed to the frequency of lightning-caused fires based on known frequencies derived from National Forest data throughout the United States. Therefore, they suggest that fires intentionally set by Native Americans outnumbered naturally-occurring wildfires. Along a similar line of reasoning, Abrams (2010) has argued that in the absence of frequent, low intensity fires, mixed-oak, hickory and chestnut forests would not have persisted into the late Holocene and therefore, Native American populations must have actively engaged in frequent burning of forests.

While the extent of early and middle Holocene Native American management of the landscape by fire as suggested above is still debatable, there is evidence that subsistence patterns changed during the initial Late Holocene ca. 4,800 to 3,000 BP. Climatic changes may have affected mast yields along major rivers and played a role in the dispersal of late-Archaic populations into the uplands and tributaries (Delcourt & Delcourt, 2004). Within the eastern continental interior, archaeological evidence from this time period suggests that ruderal plants became increasingly important as supplements to the mast staple. While cautioning that there is no reason to confine subsistence models to only one type of farming strategy, Gremillion, Windingstad and Sherwood (2008) suggest that populations within the Cumberland Plateau responded to changing environmental conditions by utilizing a flexible strategy of burning uplands and lower slopes to enhance game and mast productivity while also cultivating small plots of seed crops within these topographic settings where favorable soil conditions occurred. Given the depth of time represented by subsurface features present at sites within the Choccolocco Creek Archaeological Complex, paleobotanical analysis could potentially provide important information on the timing and nature of similar changes in subsistence strategies for populations in the Middle Coosa Valley.

Plant Foods

In addition to mast bearing species, other trees, shrubs and woody vines within the Choccolocco Creek study area are also known to have been utilized as a food source by Native Americans. Moerman (1998) notes that the sap from *Acer negundo* (Box-Elder), *Acer rubrum* (Red Maple) and, *Acer saccharinum* (Silver Maple) was boiled and made into sugar and, in addition to the sap, Red Maple bark was dried, pounded and made into a bread.

Fruits from trees, shrubs and woody vines are known to have been used raw, cooked and, dried for future use. Some fruits were also used in beverages. The Chamaephytes are represented by *Mitchella repens* (Partridge-Berry). Geophytes include *Podophyllum peltatum* (May-Apple) and, *Physalis virginiana* (Virginian Ground-Cherry). Hemicryptophytes include *Phytolacca americana* (Pokeweed), *Passiflora incarnata* (Passion-Flower or May-Pops) and, *Aster dumosus* (Bushy Aster). Phanerophytes are represented by *Asimina triloba* (Paw Paw), *Celtis laevigata* (Sugarberry), *Diospyros virginiana* (Persimmon), *Malus angustifolia* (Southern Crab Apple), *Prunus serotina* (Black Cherry), *Prunus angustifolia* (Chickasaw Plum), *Vaccinium corymbosum)* (Highbush Blueberry), *Opuntia humifusa* (Eastern Prickly-Pear), *Rubus argutus* (High Bush Blackberry), *Rubus flagellaris* (Northern Dewberry), *Rubus trivialis* (Southern Dewberry), *Vitis aestivalis* (Summer Grape), *Vitis cinerea var. cinerea* (Downy or Sweet Winter Grape), *Vitis cinerea var. baileyana* (Possum Grape or Bailey's Grape), *Vitis labrusca* (Fox Grape), *Vitis rotundifolia* (Muscadine Grape), *Sambucus canadensis* (American Elderberry), *Viburnum prunifolium* (Black Haw or Nanny-Berry), *Crataegus mollis* (Downy Hawthorn) and, *Smilax herbacea* (Smooth Carrion-Flower).

Roots of species were reportedly used for food in a variety of different preparations. Ash from the root of *Eupatorium purpureum* (Sweet Joe-Pye-Weed) as well as the ground and pulverized root of *Polygonatum biflorum* (Smooth Solomon's-Seal) was used as salt. Both the roots and under-ground fruit of *Apios americana* (Groundnut or American Potato-Bean) and *Amphicarpaea bracteata* (Hog-Peanut) are known to have been utilized for food. The root of *Daucus pusillus* (American Carrot) was eaten cooked or raw and was sometimes dried and stored for later use. Some preparations were particularly complex. For example, roots from *Arisaema triphyllum* (Jack-in-the-Pulpit;Indian-Turnip) were thinly sliced and cooked in a pit oven for three days in order to remove toxins.

Other taxa within the Choccolocco Creek study area with roots known to have been utilized for food by Native Americans include the geophytes *Claytonia virginica* (Virginia Spring-Beauty), *Spiranthes* *sp.*(Ladies'-Tresses) and, *Pteridium aquilinum* (Bracken Fern). Hemicryptophytes with edible roots include *Ipomoea pandurata* (Wild Potato-Vine or Manroot), *Sagittaria latifolia* (Broad-Leaf Arrowhead) and, *Pyrrhopappus carolinianus* (False-Dandelion). Phanerophytes with edible roots include *Sabal minor* (Dwarf Palmetto), *Sassafras albidum* (Sassafras), *Smilax bono-nox* (Saw Greenbriar or Bulbriar), *Smilax glauca* (White-Leaf Catbriar or Saw-Briar) and, *Smilax rotundifolia* (Common Greenbriar or Horse-Briar). The tubers and seeds of the therophyte *Cyperus odoratus* (Rusty Flatsedge) are also known to have been utilized as food by Native Americans.

Seed from some taxa within the Choccolocco Creek study area also known to have been harvested by Native Americans and processed for food. These include the hemicryptophytes *Chasmanthium latifolium* (Wild-Oats), *Solidago nemoralis var. haleana* (Gray Goldenrod), *Agrostis perennans* (Autumn Bentgrass), *Cinna arundinacea*, (Stout Wood Reed) and, *Apocynum cannabinum* (Indian-Hemp). The phanerophytes are represented by *Gleditsia triacanthos* (Honey-Locust), the pods of which were utilized as food and for a beverage. The thereophytes *Ammannia coccinea* (Purple or Scarlet Ammannia) and *Cyperus erythrorhizos* (Red-Root Flatsedge) are other species within the Choccolocco study area which produced seeds known to have been utilized.

In some cases, Native Americans are known to have harvested the leaves and young shoots of a species for food. These were often eaten as greens or cooked. For example, the tender shoots of the chamaephyte *Equisetum* sp. (Horsetail) were known to have been eaten as well as the bulb and fleshy bases of leaves of the geophyte *Allium canadense* (Wild Onion). The leaves of the chamaephyte *Chimaphila maculata* (Spotted Wintergreen or Pipsissewa) were also used for food. Other geophytes used in this manner include *Uvularia sessilifolia* (Sessle-Leaved Bellwort), *Oxalis violacea* (Violet Wood-Sorrel) and, *Athyrium felix-femina var. asplenioides* (Southern Lady Fern). Among the hemicryptophytes, the early sprouts of *Juncus effusus* (Soft Rush) were reportedly eaten raw and the fiddle heads of *Polystichum acrostichoides* (Christmas Fern) and fronds of *Onoclea sensibilis* (Sensitive Fern) and *Osmundastrum cinnamomeum* (Cinnamon Fern) were used as food. Other hemicryptophytes with leaves known to have been used for food include *Pedicularis canadensis* (Lousewort or Wood Betony), *Ranunculus recurvatus*, (Hooked Buttercup), *Lactuca canadensis* (Tall Yellow Lettuce or Wild Lettuce), *Oenothera biennis* (Common Evening-Primrose), *Oenothera fruticosa*, (Common or Narrow-Leaved Sundrops), *Penthorum sedoides* (Ditch-Stonecrop), *Monarda fistulosa* (Wild Bergamot), *Oxalis stricta* (Yellow Wood-Sorrel), *Sisyrinchium angustifolium* (Stout Blue-Eyed Grass), *Rudbeckia laciniata* (Green-Headed Coneflower or Cut-Leaf Coneflower), *Tradescantia virginiana* (Virgina Spiderwort) and, *Chelone glabra* (White Turtle-Head). Among the phanerophytes, the leaves and twigs of *Hamamelis virginiana* (Witch-Hazel) were used to make a beverage and the leaves of *Sassafras albidum* (Sassafras) were used in soups and dried to store for later use. Young buds and twigs of *Tilia americana* (Basswood or Linden) were also cooked as greens or eaten raw. The leaves of two species of therophytes, *Ranunculus abortivus* (Kidneyleaf Buttercup or Kidneyleaf Crowfoot) and *Lepidium virginicum* (Peppergrass or Poor-Man's-Pepper) were also used as food.

Several of the taxa described in Weninegar's (2002), *Vascular Flora of Choccolocco Creek* and listed by Moerman (1998) are referenced as having multiple parts used for food. For example, the mature heads of *Typha angustifolia* (Narrow-Leaved Cat-Tail) were chewed with tallow as gum and the white stalks were eaten raw and pollen was baked. The fleshy interior of *Typha latifolia* (Common Cat-Tail) was eaten raw and young shoots as well as roots and pollen were also harvested for use. The bark and berries of *Rhus glabra* (Smooth Sumac) along with sprouts were eaten and the bobs boiled to make a beverage as were the twigs of *Betula lenta* (Sweet or Cherry Birch). The bark and summer grapes of *Liquidambar styraciflua* (Sweet-Gum) were used to make a tea as was the bark of *Robinia pseudoacacia* (Black Locust). The blossoms of *Cercis canadensis* (Red Bud) were eaten and the cambium layer of *Fraxinus pensylvanica* (Green Ash or Red Ash) was scraped in layers and cooked. Both the fruit and inner bark of *Populus deltoides* (Cottonwood) was used for food. Although Moerman does not go into details he lists both *Liriodendron tulipifera* (Tulip-Poplar or Yellow-Poplar) and *Oxydendrum arboreum* (Sourwood) as having been used to make honey. The stalks of *Parthenocissus quinquefolia* (Virginia Creeper) were cut and the substance between the bark and wood was used for food.

Several of the taxa described in Weninegar's (2002), *Vascular Flora of Choccolocco Creek* and listed by Moerman (1998) are referenced as having been used but no indication of what part of the plant was utilized is given. Taxa falling into this category include *Peltandra virginica* (Arrow Arum), *Pycnanthemum incanum* (Hoary Mountain-Mint), *Bidens laevis* (Smooth Beggar-Ticks or Burr-Marigold), *Quercus phellos* (Willow Oak) and, *Lindera benzoin* (Spicebush or Benjamin-Bush).

Medicinal Use of Plants

In order to obtain preliminary information on medicinal plants potentially utilized by the prehistoric occupants of sites within the complex, the species listed in Weninegar's (2002), *Vascular Flora of Choccolocco Creek* were reviewed and cross-referenced with Moerman's (1998) *Native American Ethnobotany* to identify those species known to have been utilized for medicinal purposes by Native Americans. Although Moerman describes uses by each Tribe, for the purposes of identifying whether or not a species had the potential for prehistoric use, no such distinction was made and if the species was listed as a medicine by any Tribe it was included. The search identified 42 percent (n=296) of the listed taxa as known to have been utilized by at least one Native American tribe as a medicine.

Information on medicinal, ceremonial and religious use of plants for historic populations that inhabited the region is available through several ethnohistoric sources. Swanton (1928) lists 105 plants identified during his review of early (pre-20th century) ethnographic sources and his later work in Oklahoma. However, some the plants described by Swanton appear to be duplicates and others could not be tied to a known species. Greenlee (1944) identified several medicinal plants utilized in the 20th century by Florida Seminoles. Hudson (1976), drawing on many of the same sources as Swanton provides detailed context for ceremonial use of plants by the various tribes of the Southeast and his edited volume on the black drink (1979) remains the most complete work on the subject. Howard and Lena (1984) present context for medicinal and ceremonial use of plants by the Oklahoma Seminoles. In perhaps the most comprehensive work on the subject, Moerman (2009) has compiled medicinal uses of more than 3,000 plants by 218 Native American Tribes.

David Lewis Jr., working with Ann T. Jordan (2002) decribed modern Muskogee medicinal uses for twenty-five (25) of the plants listed by Swanton. One of these, Prairie or Upland Willow, is listed twice. Genus and species of two (2) of the plants were not given. When given, genus and species of these plants was cross-referenced to the United States Department of Agriculture, Natural Resources Conservation Service (NRCS) Plants Database to determine nativity and known occurrences. Of the medicinal plants listed, fifteen (15) are known to occur within Calhoun County, and all but one are known to occur within Alabama. The one plant listed by Lewis and Jordan not known to occur in Alabama is *Angelica atropurpurea* (Purplestem Angelica or Masterwort) and the closest known occurrence of this species is Tennessee.

Salix humilis (Prairie or Upland Willow) while not listed in Weninegar's Vascular Flora of Choccolocco Creek is native to Calhoun County and the closely-related *Salix carolinia (*Coastal Plain Willow) was observed by Weninegar within the Choccolocco Creek floodplain. Lewis and Jordan (2002) confirmed previous accounts that *Salix humilis* was not only used for medicinal purposes but also as a 'black drink' for the Green Corn Ceremony in place of *Ilex vomitoria*. During the current research, this was further confirmed by members of the Arbeka (Abihka) ceremonial ground who indicated that *Salix humilis* is still in use today as a constituent of black drink.

Halberstein (2005), notes that *Salix carolinia* and related species possess acetylsalicylic acid which is a major component of aspirin. Thus, it is conceivable that both species had similar uses. Recent research conducted on ceramic residues suggest that either *Ilex vomitoria* or *Ilex cassine* was utilized by populations at Cahokia in the American Bottom well beyond its native range (Crown, et al., 2012) so it is certainly possible that both could have also been obtained through trade at sites within the CCAC-Davis Farm. Given the demonstrated occupation of the area by ancestors of the Arbeka during the historic period and information that neither of these species is currently known to occur locally, together with evidence of long-term occupation of the site during the prehistoric period along with widespread evidence of the antiquity of the importance of Black Drink ceremonialism (Fairbanks, 1979), research at sites within the complex could provide important information to assist in the creation of a regional history of Black Drink consumption.

Ecoregion

USEPA has designated ecoregions as areas of general similarity in ecosystems and in the type, quality and quantity of environmental resources. The Western Ecology Region of USEPA further notes that ecoregions are identified through the analysis of the spatial patterns and the composition of biotic and abiotic phenomena that affect or reflect differences in ecosystem quality and integrity. As noted previously herein, this approach is similar to the cultural ecology perspective first advocated by Steward (1955) that considers cultures and environments as part of a total web of life in which environmental conditions such as physiography, geology, soils, hydrology, climate, flora and fauna significantly influence the character and nature of the archaeological record left behind by human populations. Mapping of current-day ecoregions has recently been completed at scales that may assist archaeologists in the application of the ecological framework of reference, at least for Late Holocene sites occupied within the modern climate regime. While much work remains to determine the applicability of the ecoregion frame-

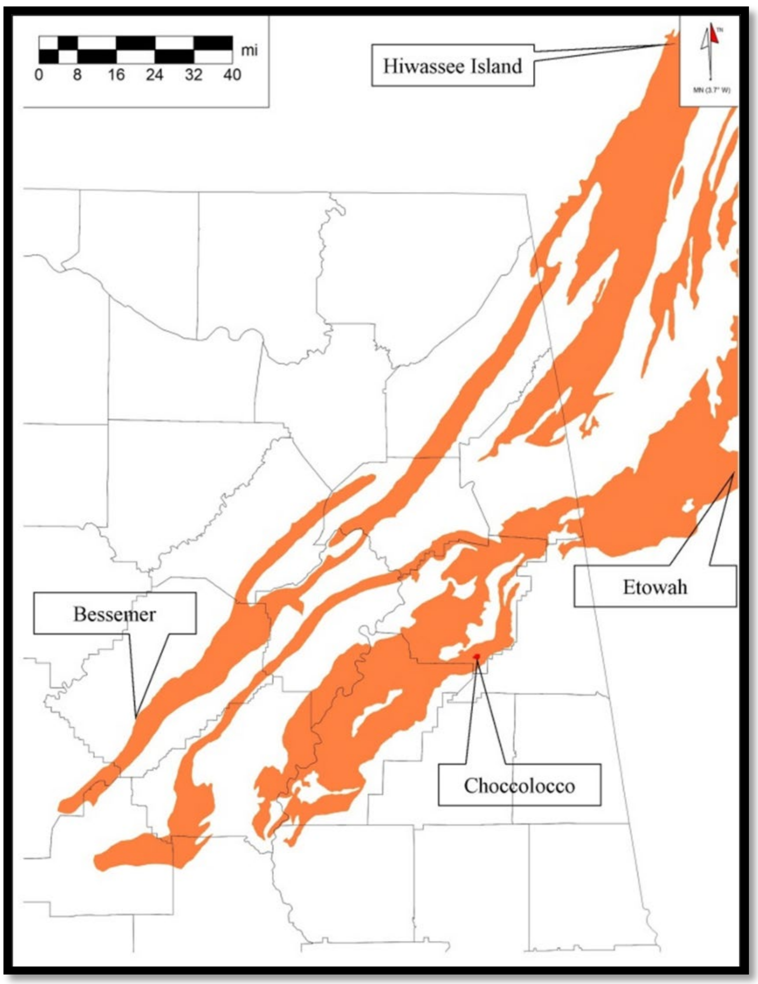

Figure 16. Southern Limestone/Dolomite Valleys and Low Rolling Hills Ecoregion

work to archaeological inquiry, during the present research the ecoregion within which the Choccolocco Creek Archaeological Complex is located was mapped and utilized as a geospatial guide to identify well-documented Late Holocene archaeological sites within the ecoregion.

The Choccolocco Creek Archaeological Complex lies within an area that USEPA has classified as the Southern Limestone/Dolomite Valleys and Low Rolling Hills Level IV Ecoregion (Figure 16). This ecoregion spans several different river basins, and may be described geospatially as a subset of the Ridge and Valley Physiographic Province. The ecoregion contains several well-documented Late Holocene archaeological sites which include the Bessemer Site in central Alabama, the Etowah Site in northwestern Georgia and the Hiwassee Island Site in eastern Tennessee. The Southern Limestone/Dolomite Valleys and Low Rolling Hills forms a heterogenous region composed predominantly of limestone and cherty dolomoite. Landforms are mostly undulating valleys and rounded ridges and hills, with many caves and springs. Soils vary in their productivity and modern land cover includes oak-hickory and oak-pine forests, pasture, intensive agriculture as well as urban and industrial areas. Along the Coosa River floodplain, biota more typical of coastal plain regions can be found due to the valley and riverine connection to the Southeastern Plains ecoregion.

CULTURAL CONTEXT

Method and Theory

Contemporary archaeologists, particularly those engaged in compliance work within the United States, are tasked with providing difficult answers to problem-oriented questions affecting public policy. As "non-renewable" resources, archaeological sites represent exceedingly rare opportunities for the acquisition of empirical data at fine-grained spatio-temporal scales that can contribute to public policy decisions on topics ranging from climate change to the rights of descendant communities. However, the achievement of the level and scale of understanding needed to answer relevant public policy questions requires detailed and large-scale studies not only of, "who did what, when and how" but also "why" (Pauketat, 2001).

Thus, modern archaeological inquiry in North America seeks not only to illuminate the past in the descriptive terms of "cultural" history but to identify the processes at work that led to changes observed in "material culture" over a vast expanse of time. Without written records, such inquiry necessarily involves the development of theoretical constructs, assumptions and, argument by analogy from an incomplete record based largely on material remains alone. While they have served the field well, the progression and expansion of archaeological inquiry has led to re-conceptualization of many of these theoretical constructs and approaches due to fundamental epistemological concerns regarding proximate causes of the material record of past human behavior or practice.

Central to these concerns is the construct of "culture" which has proven both difficult to define and to manage as a unifying concept for archaeological inquiry even for well-documented populations of the recent past. For example, Hudson (2002), in a volume focusing on cultural transformation among Native Americans of the Southeast during the historic period suggested that:

> *"In spite of almost a century of research by social and cultural anthropologists, they have not devised ways of conceptualizing or measuring degrees of cultural difference. And despite a great deal of effort, they have not developed good ways of explaining or even describing cultural change…The concept of culture cannot be the analytical tool we use to analyze and explicate the history of the Indians of the Southeast in this early period. Moreover, I would venture to say that it has little analytical utility in any period of time."*

The problem is compounded for archaeologists working wholly with data derived from an incomplete and indirect record of human behavior or practice. Hudson's criticism echoes the frustration of pre-processualists (McKern, 1935) processualists (Willey & Phillips, 1958) and post-processualists (Renfrew & Bahn, 2000), who have retained a rational skepticism that archaeological "cultures" represent real entities, along with the view that ethnic units or "peoples" can be recognized from the archaeological record by equation with these notional cultures. While oversimplified, Galloway (2002) has distilled the complexity of the problem into simple terms noting that, *"Archaeologists have been patiently building up sequences of pottery types for more than a hundred years, calling wells of similitude peoples*." Further noting that changes in artifact patterning are assumed to represent changes in worldview, she asks, "…*where is the guarantee of that*?" Thus, contemporary researchers recognize that archaeological research and the conclusions drawn from such effort must be conducted through the multi-disciplinary pursuit of multiple avenues of inquiry and types of evidence. In recognition of the indirect nature of archaeological evidence, Willey and Phillips (1958) long ago cautioned that it is the archaeologist's job to be aware of the arbitrary nature of [cultural] unit concepts and, at the same time, alert to the possibility of making them less arbitrary. Thus, modern archaeological inquiry is also necessarily an iterative process through which theoretical constructs must continually be tested and evaluated against new empirical evidence.

In addition to the potential for arbitrariness, archaeological unit concepts may also carry inherent biases. Along this line of reasoning, Sassaman (2010) cautioned that the simple concept of "prehistory" carries an inherent bias of "primitiveness" that almost seems predetermined by evolutionary models of cultural change. While such constructs have provided the scaffolding for the advancement of archaeological inquiry for nearly a century, new discoveries made as a result of questions prompted by conceptualizing such constructs, have challenged orthodox and rigid views such as evolutionary stages of cultural development. Knight (2011) has noted that many of the problems of most interest for chronology are, *"ill-served by phase chronologies that encourage us to think in blocks of static time with transitions in between."* Thus, most archaeologists working in the Southeast now understand that "primitiveness" is a term more suitably applied to our own understanding of prehistoric peoples than it is a description of the subjects of such inquiry. For all of these reasons, one of the first challenges in establishing a modern cultural context for the Middle Coosa Sub-Basin is in reconciling old constructs with new evidence.

A second challenge in establishing a modern cultural context for the Middle Coosa is the historical lack of systematic problem-oriented research. Most archaeological investigations within the sub-basin have been conducted in support of federally funded, licensed or permitted undertakings requiring compliance with the National Historic Preservation Act (NHPA). Therefore, the majority of locations subjected to archaeological survey within the Middle Coosa have been selected on a somewhat arbitrary basis. Furthermore, since NHPA compliance investigations have typically focused on relatively small geographical areas for a variety of different clients at different periods in time, few individual investigations have supported the relatively high transaction costs associated with the development of a modern cultural context for the sub-basin.

The current investigations at the CCAC-Davis Farm have offered a rare opportunity to conduct problem-oriented research on the archaeology of Choccolocco Valley and the Middle Coosa Sub-Basin. The context provided was specifically written to inform site investigations at the CCAC-Davis Farm which included sites as diverse as mid-19th century charcoal production locations for the nearby iron furnaces, two large Late Holocene multi-component prehistoric sites with evidence of monumental architecture and several small and ephemeral Early Holocene resource extraction sites. Both Late Holocene prehistoric sites exhibited evidence of catastrophic flooding and sinkhole collapses; events that may have been recorded in the oral histories of the Upper Creeks. The material presented herein draws upon the insights gained through work conducted by many others and is multi-disciplinary in scope.

To the extent possible, the direct-historical approach first outlined by Steward (1942) has been utilized in order to identify specific problems in, and opportunities for, linking 19th century Native American inhabitants of the region with material remains representing notional archaeological cultures. Consequently, the material is presented from the most recent and well-known past and proceeds to the more distant and less-known past. As archaeologists increasingly turn to historical processes and paradigms to inform epistemological claims (Pauketat, 2001; Sassaman, 2010), such an approach is appropriate for the Middle Coosa Sub-Basin.

Organization

Following the direct-historical approach, information is first presented on the most recent history of Davis Farm. This includes a discussion of how the landscape has changed since the Antebellum period particularly during the most recent period of urbanization. This late period is when the most severe impacts have occurred to the prehistoric archaeological sites at Davis Farm. Under the sub-heading "Industrialization," context is provided on the late 19th-century iron furnaces in order to demonstrate that these industrial activities created impacts to the landscape far beyond the locations where the actual furnaces stood and that these impacts historically reached Davis Farm. The Antebellum roots of Davis Farm are also discussed.

Prior to the current investigation, very little research had been conducted on pre-removal Native American towns in the Choccolocco Valley. Utilizing data from the General Land Office of the Bureau of Land Management, the boundaries of pre-removal Creek towns are presented. These boundaries are derived from the individual allotments reserved by members of each town. Outlier allotments may be seen in the data for individuals who identified with one town by birth but lived in another town. This data is then integrated with place-name research, original surveys and ethnohistorical documentation to gain a better understanding of pre-removal settlement patterns following the basic assumption that in the years prior to removal, these towns would have acted to select locations for allotments that were of most importance to them.

Relevant research on Creek oral traditions is next presented under the heading "Flood Myths of the Upper Creek People." Research on pre-removal Creek towns and place-names, along with the archaeological evidence of catastrophic flooding and sinkhole collapse at Davis Farm led to the question, "do Creek oral histories contain evidence of catastrophic events involving sinkholes and floods?" The evidence for these types of events collected by Smithsonian Institute ethnographers in the late 19th and early 20th centuries is then presented.

As a corollary to the "myths" presented in the previous section, which reference the Great Serpent so common in Mississippian period iconography selected myths of the Creeks and the Cherokees are examined as epistemological claim for historical events. This section presents evidence of how the Great Serpent appears in surviving Cherokee and Muskhogean myths. Following the work of others on the use of symbols as mnemonic devices that cue storytelling memory (Roberts & Roberts, 1996), and potentially encode knowledge presented within the cosmological framework of the Native American ideological systems of eastern North America (Reilly III, 2011), these myths are examined as potential historical narrative of significant past events. The Cherokee myth of the "Daughter of the Sun," in which the Great Serpent plays an important role is discussed in detail within the context of the theory of "Coherent Catastrophism."

Davis Farm

The CCAC-Davis Farm as originally conceived by Holstein, was located within the agricultural holdings of Harold Glenn Davis. It is important to note that "Davis Farm" as a place has changed significantly through time. At present only 100 +/- acres (40ha) of the Davis estate remain intact. However, the land area of the farm once encompassed approximately 3 square miles (7.98 km^2) of land on both sides of Choccolocco Creek and spanned nearly the entire valley floor (Figure 17).

Figure 17. Davis Farm Historical Boundaries

Urbanization

When the Davis family acquired the property in 1943, land use within the Choccolocco Valley was predominantly agricultural with a few multi-family developments scattered along the valley that provided housing primarily for federal workers at nearby Anniston Ordnance Depot and Fort McClellan. Two federal projects were instrumental in transforming the landscape by the end of the 20th century.

In 1955, the importance of Fort McClellan and the Anniston Ordnance Depot to the national defense infrastructure led planners to route an east-west line of the Dwight D. Eisenhower National System of Interstate and Defense Highways through the valley. Work was authorized on the interstate system in 1956 and the four-lane highway designated U.S. Interstate 20 was completed through Choccolocco Valley by 1972. When completed, U.S. Interstate 20 cut an approximate 82-acre swath through the middle of Davis Farm. Since an existing secondary road (Boiling Springs Road) traversed through the farm from north to south, construction of the I-20 corridor required construction of an overpass to allow continued use of the secondary road.

By 1972, approximately 263 acres (106 ha) of Davis Farm had already been converted to commercial and industrial use. Change in land use between 1956 and 1972 occurred primarily along the U.S. Hwy 78 corridor although approximately 61 acres along the eastern boundary of the farm and south of U.S. Interstate 20 had been converted to quarrying of construction aggregate. Along the northern boundary of the farm, approximately 43 acres (17.2 ha) had been converted to residential use.

Urbanization south of Choccolocco Creek increased dramatically between 1972 and 1990. Within this area, multi-family residential neighborhoods expanded from the west along State Route 21 to the east within the uplands south of I-20. By 1992, this eastward expansion of residential neighborhoods occupied the southernmost 500 acres of what was once Davis Farm. With the increase in residential development came pressure to relieve congestion at the SR-21 interchange and in 1990, the addition of an interstate interchange at the intersection of I-20 and Boiling Springs Road ultimately led to rapid urbanization at Davis Farm.

In order to relieve traffic on the existing SR-21 and U.S. Hwy 431 route through downtown Anniston, transportation planners utilized the interchange at Boiling Springs Road as the southern terminus of the proposed Anniston Bypass. By 2006, the Golden Springs Connector had been extended south of I-20 providing the residential districts in the uplands south of Choccolocco Creek with rapid access to I-20 and U.S. Hwy 78. The pace of growth of additional residential and commercial districts in the area south of Choccolocco Creek has continued to increase and is forecast to continue into the future.

Industrialization

While the completion of U.S. Interstate 20 through the Choccolocco Valley greatly facilitated late 20th century commerce and economic development in the region, these improvements came near the end of a 170-year period of industrial expansion in the United States. The Industrial Revolution, which was characterized first by the development of heavy industries such as coal and iron, had begun in Europe after 1780. The United States, with vast natural resources and an egalitarian democracy rose to dominate the industrialized world economy by the 1950s (Wright, 1995). However, post-World War II growth in manufacturing and production employment in the United States peaked in 1980 and has been in steady decline since that benchmark year (Hughes & Cain, 2007).

Industrialization in the Choccolocco Valley began during the decade following the Civil War with the reconstruction of charcoal-fueled iron furnaces at several locations that had produced iron for the Confederacy during the Civil War. Most northern iron producers had already shifted to the more cost-efficient anthracite or coked bituminous coal furnaces by this time (Eggert, 1994). However, these technologies required a skilled labor force, extensive capital investment and transportation infrastructure, little of which were available in any quantity in the post-war South (Engerman & Sokoloff, 2000; Rogers, et al., 1994). On April 13, 1873 the Woodstock Iron and Steel Company put its first charcoal furnace into blast at the former location of the Civil War era Oxford Furnace. The present-day City of Anniston later developed around the industrial facilities of the Woodstock Iron and Steel Company. Six months later the Alabama Iron Company put its first charcoal furnace into blast at the former location of the Civil War era Salt Creek Furnace near the present-day town of Munford (Armes, 1910, Reprinted 1972; Woodward II, 1940, Reprinted 2007).

The 19th century industrialization of the Choccolocco Valley centered at the Woodstock Iron Company and Alabama Iron Company furnaces provided important part-time employment opportunities for tenant farmers in the area, including those residing within the land occupied by the 20th century Davis Farm. Prior to its acquisition by H.G. Davis in 1943, the farm had been owned by the descendants of Thomas Caver, who had acquired the homestead from Fleming Freeman in 1840 (Gentry, 2016). When Thomas Caver died in 1872, his daughter, Augusta, and son-in-law, John Floyd Smith, moved into the home and managed the farm, which at the time included eight tenants. One of these tenants was named Washington Caver, a former slave of Thomas Caver. In 1921, Washington Caver recounted cutting wood for charcoal production at the Woodstock Furnace (Anniston Star, 1921). Several charcoal production sites were identified during REPA's investigations at Davis Farm.

The production of pig iron at the Woodstock Iron Company and Alabama Iron Company furnaces required vast amounts of charcoal. Although no previous research on charcoal production for these facilities was identified during the present review, Phillips (1896) published a technical survey of the industry in Alabama in 1896 and noted production capacities for charcoal furnaces in the state. Phillips also noted that charcoal was produced using the pit method instead of the more efficient kilns at all of the surveyed facilities except for Round Mountain in Cherokee County. Charcoal iron sold at double the price of coke iron with the entire production consumed by manufacturers of railroad car wheels and specialty manufacturers. Supplemental information on production capacities was also published in 1887 in an information brochure by the City of Anniston and both Armes (1910) and Woodward II (1940).

Of particular interest to the current investigation is the amount of charcoal that was required for the Woodstock and Alabama Iron furnaces in order to determine if it was probable (or not) that charcoal production facilities were once located in lands encompassed by Davis Farm. Estimates of forest depletion rates for charcoal furnaces may be calculated based on production capacities. Although the formula for such calculations is relatively simple, assumptions must be made on iron production, charcoal production yields, and woodland timber yields. Straka (2014) has published recent research on the subject and noted that during the Civil War an average of 150 to 200 bushels of charcoal were required for each ton of iron produced. However, by 1870 technological innovation had lowered the furnace burden to 108 bushels of charcoal per ton. Utilizing the published production capacities for the Woodstock Iron Furnaces, between the years of 1873 and 1892, total iron production may have achieved as much as 346,400 tons, which would have required 37,411,200 bushels of charcoal.

Estimates of production at the Alabama Iron Furnaces in Munford include successor companies. Production at the Alabama Iron Furnaces between 1873 and 1881 is estimated at 5,756 tons and for the period between 1882 and 1893, which includes all of the furnaces operating in the Munford area under the successor Clifton Iron Company, production is estimated at 181,135 tons. Between 1894 and 1901, the Clifton Iron Company was operated as the Jenifer Furnace Company with estimated production of 36,000 tons. Total production by the various operating companies between 1873 and 1901 is estimated at 222,891 tons of iron, which would have required 24,072,228 bushels of charcoal.

The amount of charcoal produced from a stock of timber utilizing the pit method was subject to several variables such as wood density, size, condition of the wood, as well as the condition of the ground where the pit was constructed. Straka (2014) notes that, "the ground needs to be perfectly dry, solid, level and free from draft." The pit method of charcoal production involved carefully laying multiple layers of wood on a circular prepared hearth 30-40 foot in diameter around a centrally-located fagan pole and chimney. Once a conical pile of wood about 14 feet high had been constructed, the pile was covered with leaves and then "dusted" with soil to a depth of one foot at the head. To fire the pit, small wood and coals from a campfire were placed down the chimney and the pit was tended for 10 to 14 days until all that remained of the wood was carbon (Kemper III, 1941). Straka's (2014) research indicates that the average yield for a charcoal pit was 27 bushels of charcoal per cord of wood. Based on this information, the amount of wood required to produce charcoal for the Woodstock Iron Company during its operation is estimated to have been 1,385,600 cords. The Alabama Iron Company (and its successor companies) would have required 891,564 cords.

Woodland yields for timber land also vary based on many factors. In 1875, the U.S. Commissioner of Agriculture reported that approximately 17 percent of Calhoun County was heavily timbered, primarily with long-leaf pine and forested land yields ranged from 25 to 75 cords per acre (United States Department of Agriculture, 1875). Straka's (2014) research indicated that the preferred fuel for charcoal furnaces was dense hardwood and that the average eastern hardwood stands yielded 30 to 35 cords per acre. Utilizing Straka's maximum estimate of timber yield at 35 cords per acre, the Woodstock Iron Company is estimated to have required 39,588.57 acres of timber to fuel the charcoal furnaces for iron production or approximately 61.85 square miles of timber land. The Alabama Iron Company (and its successor companies) would have required 25,473.25 acres or approximately 39.8 square miles of timber land.

Due to the fact that transportation costs associated with harvesting timber and production of charcoal increase with distance from the furnace, forests tended to be depleted within a radius surrounding the facility. The estimated forest depletion radii of 61.85 square miles for the Woodstock Iron Company and 39.8 square miles for the Alabama Iron Company (and successor companies) are illustrated in Figure 18. The estimated depletion radius for the Woodstock Iron Company encompasses nearly half of the lands occupied by the 20th century Davis Farm, suggesting that it is highly probable that timber within these lands would have been harvested for production of charcoal at the Woodstock Iron Company.

Civil War and Antebellum Period

The post-war industrialization of the Choccolocco Valley had its roots in the antebellum exploration of the natural resources of the valley. Before the Civil War the presence of ore deposits had been noted by Tuomey (1858), but it was not until after secession that conditions developed for exploitation of these resources. In April of 1863, the Oxford Furnace was put into blast. This small furnace had a capacity of 15 to 20 tons per day and was constructed with the assistance of the Confederate government. The army provided skilled labor which was supplemented with slaves hired from local plantations (Armes, 1910, Reprinted 1972; Woodward II, 1940, Reprinted 2007).

By December of 1863, the furnace at Salt Creek had also been put into blast. The capacity of Salt Creek Furnace was 5 to 6 tons per day and it was also operated with skilled labor from the army and slave labor hired from local plantations. During the frenzy of construction of the Salt Creek and Oxford furnaces, the Knight Furnace was also constructed. This furnace was located approximately three miles west of the Salt Creek Furnace and went into blast in early 1864 with a capacity of 5 to 7 tons per day.

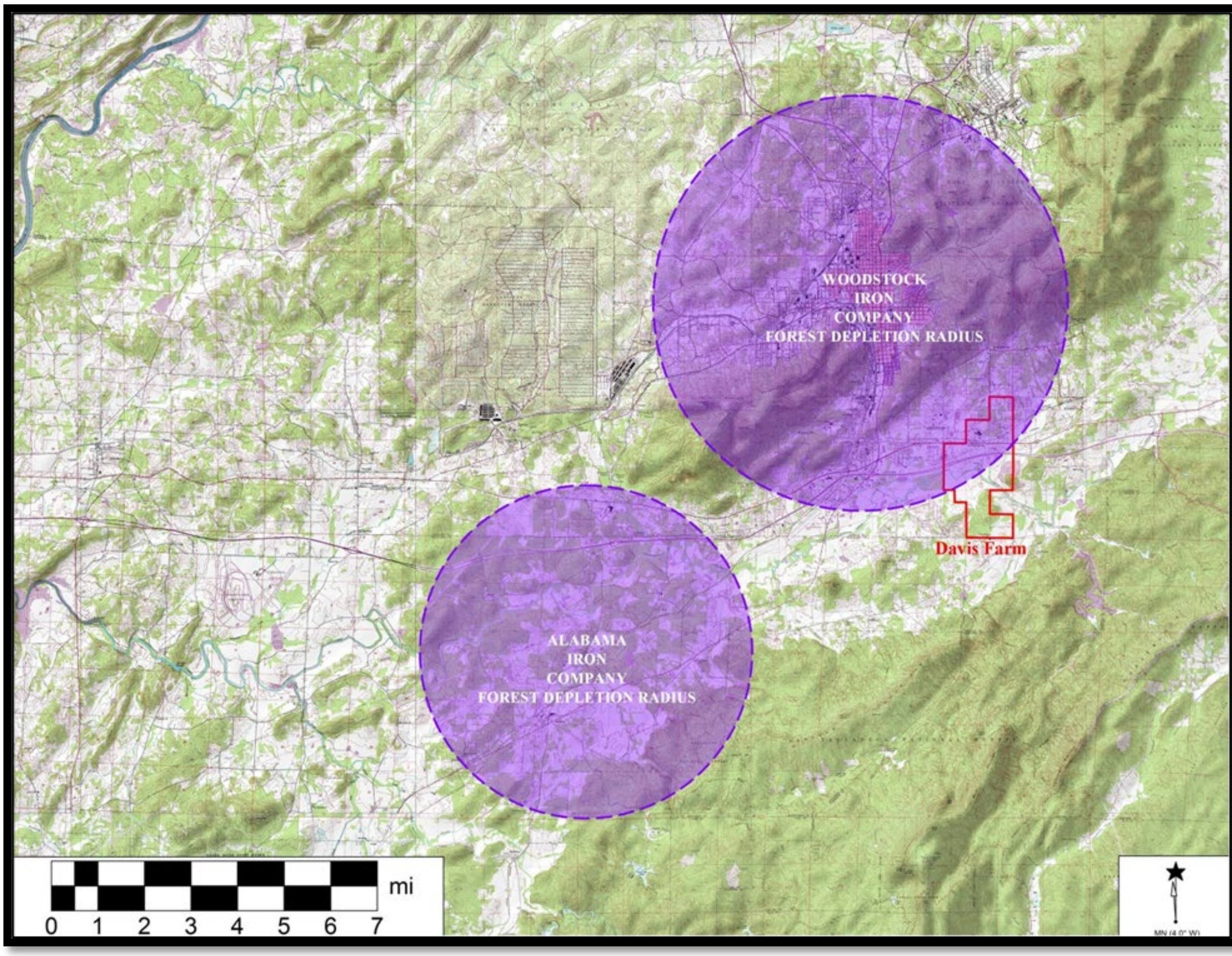

Figure 18. Late 19th Century Estimated Forest Depletion Radii for Choccolocco Valley Furnaces

Production from all three furnaces went primarily to the arsenal at Selma via the Alabama and Tennessee River Railroad which had been completed between Selma and Blue Mountain in 1862. All three furnaces were destroyed during Croxton's raid in April of 1865. Utilizing the stated production capacities and estimated total production at each facility, the forest depletion radii are estimated at 4.18 square miles for the Oxford Furnace and 510 acres each for the Knight and Salt Creek Furnaces (Figure 19). Operation of the blast furnaces in the Choccolocco Valley during the Civil War probably had little effect on the lands encompassed by the 20th century Davis Farm.

As noted above, the lands encompassed in the 20th century by Davis Farm once belonged to Thomas John Caver, who had acquired the property in 1840 from a man named Fleming Freeman. During the antebellum period, Caver operated a general store and served as postmaster at Boiling Springs. He married Eliza Davis the same year that he acquired the property at Boiling Springs (Figure 20). Census data for 1840 indicates that the Thomas Caver household included one free white male aged 30 to 39, one free white male aged 20 to 29 and one free white male aged 5 through 9 and one free white female aged 15 through 19. The household also included two male slaves aged 10 through 23; two female slaves aged 10 through 23 and two female slaves who were under 10 years of age (United States Bureau of the Census, 1840). Based on later censuses, the free white male aged 20 to 29 was likely Joel Caver, the brother of Thomas Caver. The identity of the free white male aged 5 through 9 in the Thomas Caver household is unknown, but raises the possibility that Thomas Caver had been previously married. In 1860, Caver owned thirty-two (32) slaves.

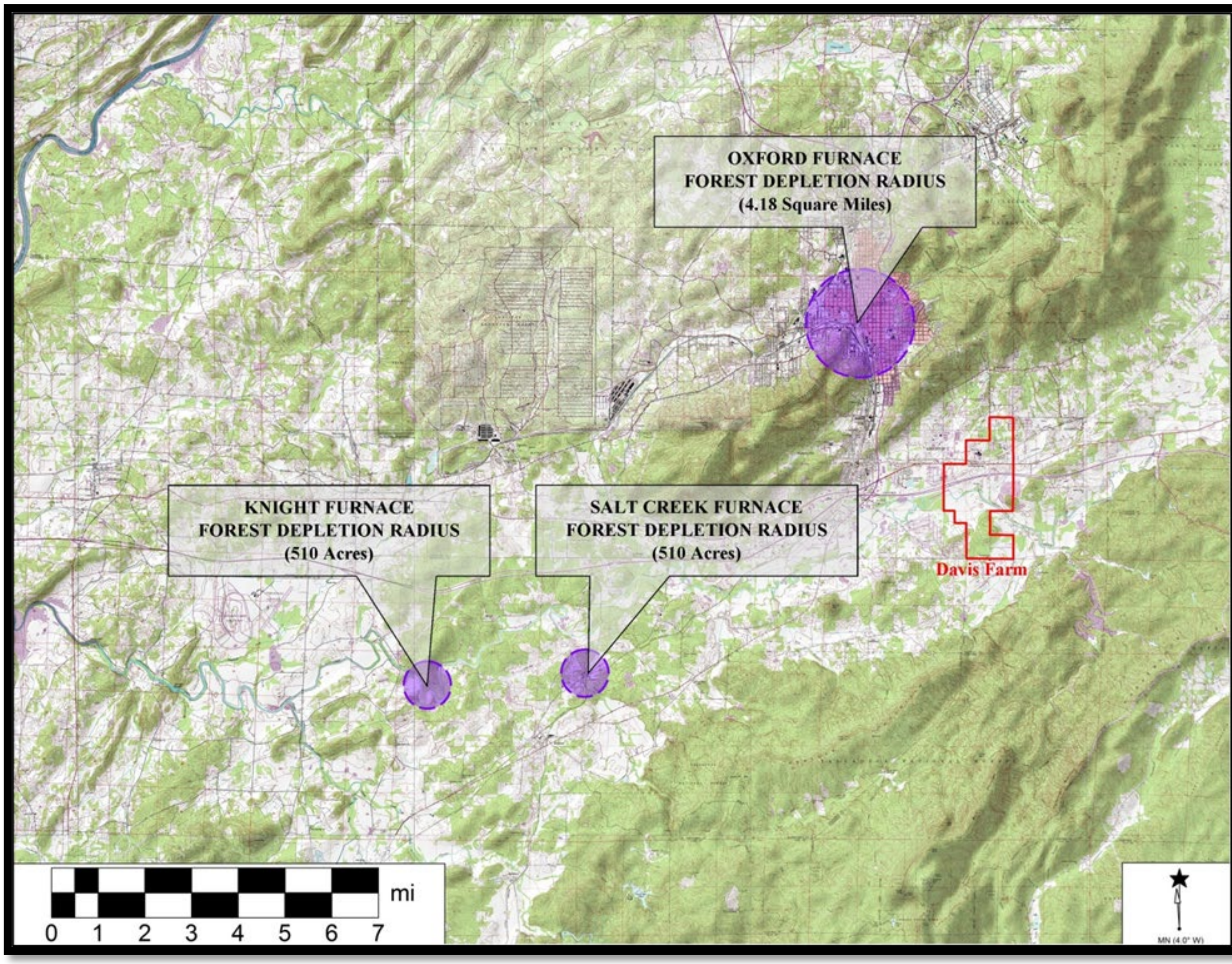

Figure 19. Estimated Forest Depletion Radii for Civil War Choccolocco Valley Furnaces

Research conducted in support of the current investigations at the CCAC-Davis Farm produced compelling evidence that the Caver home and property were known during the 19th century as "Eastaboga." The marriage certificate for Augusta Caver lists her place of birth as "Eastaboga." Born in 1847, Augusta was the third child of Thomas and Eliza Caver in 1847. Six of the Caver children are buried in the family cemetery to the west of the house. Their first child was still born and listed simply as "Daughter died 1841." Their second child Mary was born in 1843 and died in 1846 and their fourth child Alabama was born in 1849 and died in 1853. Given that Augusta was born in 1847 and the two previous children were buried in the family cemetery behind the house as well as her younger sister, Alabama, it is a reasonable inference that Augusta was also born in the house. Thus, the reference to "Eastaboga" as Augusta Caver's birthplace on her marriage certificate represents one of the earliest known references to the term "Eastaboga" and directly associates the Freeman-Caver-Christian property with a place-name of significance to the history and prehistory of the Muscogee (Creek) Nation. Martin and Mauldin (2000) list Eastaboga as the anglicization of the Muskhogean word "Istokpoga" which means, "person in water or a low place + being gone or dying…. said to be named for a group of people swallowed by swirling water."

Figure 20. Freeman-Caver-Christian (Davis) Farm ca. 1935

The Formative Period

While local historian Bessie Coleman Robinson, writing at the end of the 19th century, attributed initial construction of the two-story residence at Davis Farm to Fleming Freeman, it is not known whether Caver expanded upon an existing structure or constructed the original residence on an earlier home site. Freeman's association with the property is unclear based on the documents reviewed for this report.

Fleming Freeman was a Methodist minister who moved to Alabama in 1816. Freeman is known to have resided in Talladega County at the time of his death in 1875 (Talladega County Probate Office, 1989). Having entered the ministry in 1826, Freeman may have been a circuit preacher among the Muscogee (Creek) Nation inhabitants of the Choccolocco Valley. The history of Methodist "missions" among pre-removal Muscogee (Creek) Nation towns in the Middle Coosa is unclear for the turbulent period between 1830 and 1840. While traditional social histories for the state have not adequately considered the subject (Rogers, et al., 1994), Abernethy (1922;1965 Reprint) noted that the Methodist society was, *"…peculiarly fitted to the frontier…with its 'free-for-all' ideas regarding the ministry [in which] men could be drawn into the service of the church whose lack of education was atoned for by a zeal which strengthened them to endure the hardships of the wilderness…"*.

Tash Smith (2012) has noted that dozens of Methodists congregations existed among Native American Tribes in the east prior to removal. Camp (1882, 2010 Reprint) recorded the conversion of several Native American residents of the Choccolocco Valley to the Methodist faith, including Selocta Chinnabee's brother Coffee. One of the larger camp meeting places in the entire valley was at Chinnabee's home. There were efforts as early as 1836 to secure property at Boiling Spring for establishment of a Methodist church (West, 1893) and removal of the Native American inhabitants was not complete until 1838. In fact, there is considerable evidence that at least some Native American residents of the Choccolocco Valley never removed.

Figure 21. Boiling Springs ca. 1935, Freeman-Caver-Christian Home in Background

Muskhogean Sovereignty Period

The historic period boundaries of Davis Farm are located wholly within a cluster of allotments reserved under the Creek Indian Treaty of 1832 for the inhabitants of Chockolocko (Choccolocco) Town. The Creek Census of 1832 enumerated 463 inhabitants (221 males, 235 females, and 7 slaves) of Choccolocco Town that was comprised of 109 individual households. Each household was entitled to reserve 320 acres of land under the treaty. Utilizing these land allotments, it is possible to illustrate the "corporate" boundaries of Choccolocco Town relative to the current City of Oxford (Figure 22). The current investigations are located within tracts of land that were reserved by four (4) different households of the pre-removal Choccolocco Town. The West Half of Section 27, Township 16 South, Range 8 East, of the Huntsville Meridian was reserved for Pow-he-lus-tie-hadjo and the East Half of Section 27 was reserved for Se-yo-lo-gey. Each allotment was purchased by John Gooden for $500 dollars. The West Half of Section 34, Township 16 South, Range 8 East, of the Huntsville Meridian was reserved for Cho Yoholo and purchased by Joseph D. McCann and Alvis L. Nicks for $50 dollars. The East Half of Section 33, Township 16 South, Range 8 East, of the Huntsville Meridian was reserved for Is-war-he and purchased by Elijah C. Walker for $85 dollars. The South Half of Section 28, Township 16 South, Range 8 East, of the Huntsville Meridian was reserved for Wath-lar and purchased by John Gooden for $650 dollars (Abert & Bright, 1834).

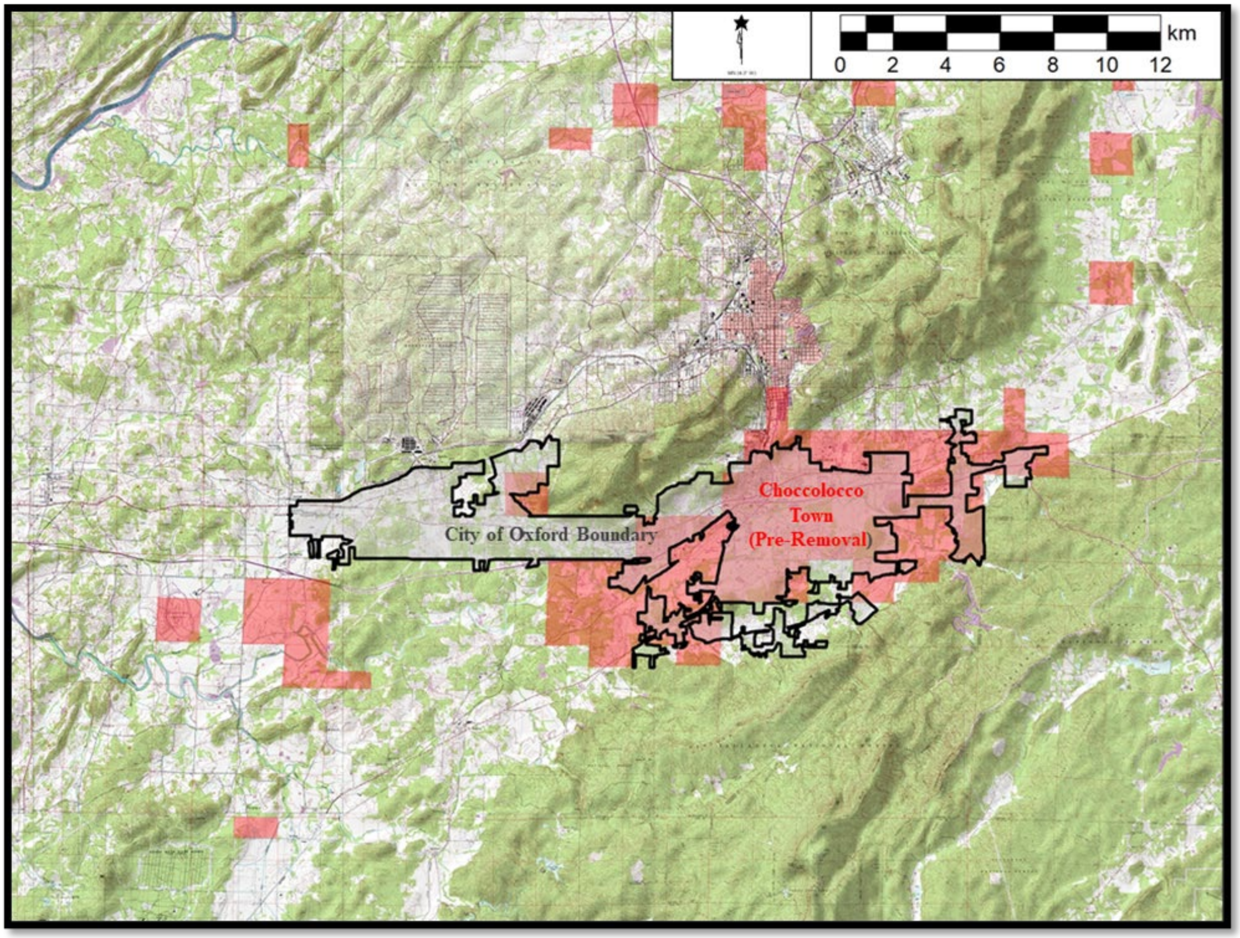

Figure 22. Choccolocco Town and the Present-Day City of Oxford

The Creek reserves listed above were cross-referenced with the 1832 Creek Census to obtain demographic information on each household. The census enumerates five (5) males and one (1) female in the household for Pow-he-lus-tie-hadjo and two (2) males and two (2) females in the household for Se-yo-lo-gey. Cho Yoholo's household consisted of three (3) males and four (4) females. Is-war-he's household consisted of two (2) males and three (3) females and Wath-lar's household consisted of one (1) male and one (1) female (Parsons & Abbott, 1832).

The Creek Census of 1832 provides only minimal details of the inhabitants of Choccolocco Town. Moreover, the years following the census represent one of the darkest periods in American history as the injustices, depredations, and cruelties inflicted on the Creek inhabitants of Alabama and Georgia before and during their removal to lands west of the Mississippi have been well-documented (Foreman, 1932; 1952 New Edition; Debo, 1941;1979 Reprint; Satz, 1979; Wallace, 1993). Of particular interest for the present purposes is the question of whether or not any of the inhabitants of the pre-removal Choccolocco town can be linked to a particular post-removal town in Oklahoma. While such questions would seem to be fairly straightforward in theory, in reality it is quite difficult even to correlate pre-removal towns with post-removal towns for a variety of reasons.

The greatest difficulty encountered in the current attempt to correlate pre-removal towns with post-removal towns is the lack of documentation. Recent research by Haveman (2009; 2018) provides important context for removal but lacks details on post removal re-organization. A review of Haveman's work indicates that

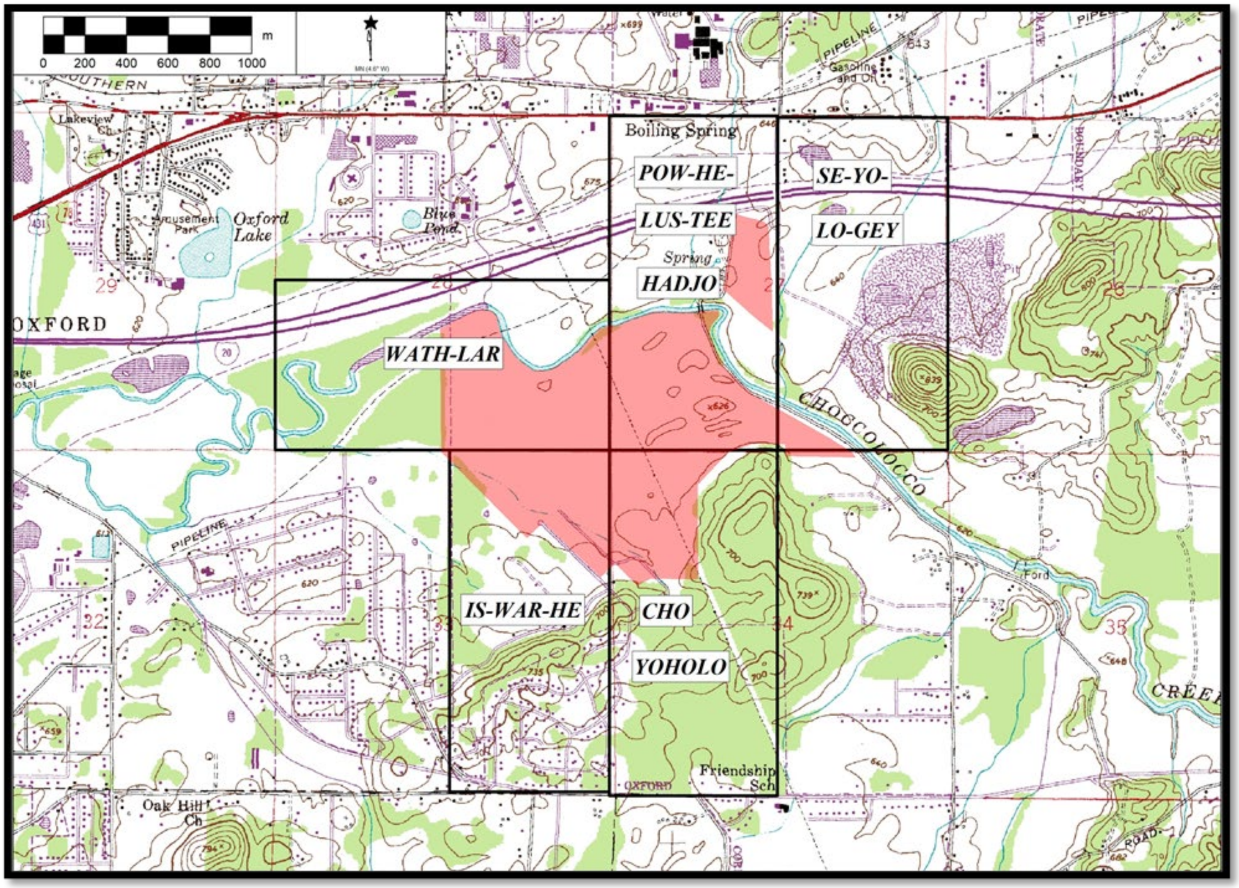

Figure 23. Original Creek Patentees of Lands Encompassing Project Areas

most members of Choccolocco town were likely included within Detachment 4 of what Haveman characterized as "t*he coerced relocations, 1836-1837*." Detachment 4 was based four miles north of Talladega and consisted of the Upper Creeks living north of the Tallapoosa River to the Cherokee line. The relocation was conducted by William A. Campbell on behalf of the Alabama Emigrating Company with Lieutenant Edward Deas serving as military oversight. While Haveman (2018) notes that no journal or supplemental letters have been identified for Detachment 4, a close inspection of the supplemental letters for Detachment 3 indicate that Lieutenant Deas consolidated Detachments 3 and 4 in August of 1836 and began sending them north to Gunter's Landing to join almost a thousand Creeks who were captured among the Cherokee. The consolidated group of Creeks numbered 2,818 and arrived in the Indian Territory on January 23, 1837 (Stephenson, 1837). However, no muster roll could be located for this group.

It is largely through the diligence to duty provided by Lieutenant Edward Deas that an administrative record of the pre-removal of inhabitants of Choccolocco town survives today. Upon completion of his duties as military overseer of the removal of Detachments 3 and 4 in 1837, Lieutenant Deas was tasked to apprehend "refugee Creeks" that had fled into the Cherokee Nation to avoid removal. By May of 1837 Lieutenant Deas had gathered over 500 of these refugees at Gunter's Landing (Haveman, 2018). Over 30 percent of these individuals (n=164) were inhabitants of Choccolocco town. A comparison of the names of the household heads within this group of 164 refugees with the heads-of-household enumerated in the 1832 census identified eighty-three (83) individuals within the refugee group that had similar names to those enumerated in the 1832 census of Choccolocco. These refugees were removed via the river route and arrived at the Creek Agency in the Indian Territory in June of 1837.

Based on the above, it appears that at least 35 percent of the inhabitants enumerated in the 1832 census of Choccolocco resisted removal by fleeing into the sparsely inhabited, mountainous region between Talladega, Alabama and the upper reaches of the Coosawatee River in Georgia. Haveman (2018) notes that:

> *"Only one small party of refugees from the Cherokee country made the journey to the West. The remainder-imbedded among the Cherokee people through marriage or hard to collect due to the remoteness of their camps-were allowed…to remain."*

Although scholars have traditionally considered the "Removal Era" to have ended by the early 1840s, Haveman (2018) provides evidence that "reunification emigrations" continued into the late 19th century. For example, Cochamy, who became principal chief of the Muscogee (Creek) Nation in 1876, worked tirelessly to re-unify refugee Creeks, some of which had been enslaved in Alabama with their relatives in the West. The stories of these refugee Creeks remain to be told, as do the stories of those who never removed from their ancestral lands.

The experience of "refugee Creeks" in Alabama does appear to have been somewhat variegated. Although admittedly anecdotal, Lower Creeks that stayed in their ancestral lands were treated more harshly than Upper Creeks. This pattern may be attributed to several factors. First, Lower Creeks tended to reside in areas that were heavily controlled by plantation culture while Upper Creeks resided in the mountainous areas of northeastern Alabama where subsistence farming was much more prevalent. Moreover, the origins of the Anglo-American settlers of these regions were distinctly different. The Coastal Plain inhabited by Lower Creeks was settled predominantly by Georgians whereas the Valley and Ridge and Piedmont lands of the Upper Creeks were settled primarily by Tennesseans (Vandiver, 1954; Rogers, et al., 1994; Abernethy, 1922;1965 Reprint). Many Upper Creeks fought with Jackson during the Creek Indian War of 1813-1814, the Battle of New Orleans and the First and Second Seminole Wars. Thus, strong bonds were formed between Upper Creek warriors and members of the Tennessee militia with whom they had served (Camp, 1882, 2010 Reprint).

Evidence of "refugee" Upper Creeks that never removed, while somewhat fleeting, may nevertheless be found. For example, in St. Clair County, Creek burial houses dating to the 1920s have been documented by the author (Figure 24). More recently, Holstein (2020) has documented the existence of stone "memorial" mounds at several churches in northeastern Alabama with oral histories that attribute these features to a tradition of carrying "burden stones" in remembrance of lost loved ones. At least one of these churches, Rabbit Town Missionary Baptist Church, was founded within a pre-removal Creek town and the first services were held in a brush arbor (Wilson, et al., 1973). While not widely known, the Upper Creeks did have a tradition of rock constructions that was documented by Swanton (1928), citing a 1755 letter from a French officer stationed at Fort Toulouse, who noted:

> *"They pretend that their first father having escaped with two male children from a universal deluge, for they all declare that there was one, went to consult the oracle. This told him to ascend a designated mountain covered with stones, some white and others black and collect as many as both kinds as he could before sunset, he and his two children, and carry them over their lands and the next day they would find as many men and women as they had carried stones."*

Figure 24. Creek Burial Houses at Cane Creek Baptist Church Cemetery ca. 2012

Camp (1882, 2010 Reprint) vividly documents the plight of one refugee Creek, Coffee Chinnabee, brother of Selocta Chinnabee:

> *"A brother of Gen'l Chinnobee by the name of Coffee…and several other Indians, after they had agreed to emigrate, and had been taken one hundred miles from their homes to Wetumpka…broke…and took to the hills. Coffee and his party…came into Joseph Coker's (my half-brother) very nearly starved. They had nothing to eat from the time they left Wetumpka…we established a campground…and it was called Chinnobee Campground. Hundreds were converted there…*
>
> *One Sunday night…at Chinnobee…I heard a beautiful song…I went down to the stand, and there was Coffee prostrate on his knees in the altar with an altar full of penitents. The old Indian was weeping as though his heart would break and smiting his breast saying, "Enokequa sulga"-my heart is sick. I never had such sympathy for anyone in life. To think that his people were all in the West and he with his wife and few others left behind…"*

Thus, age-old Creek traditions, such as the carrying of burden stones, may have come to be manifested among "acculturated" populations in northeastern Alabama through Christian churches.

Even more fleeting, but nevertheless present, is evidence that traditional Creek religion was practiced well into the 19th century in at least one community in northeastern Alabama. For example, Vandiver (1954) reported that a ceremonial ground was removed in 1873 on Talladega Creek. To those intimately familiar with the history of the region, this is not surprising, as Camp (1882; 2010 Reprint) documented the fact that many former Tennessee militia settled and rose to positions of power in the area and thus felt obligated to shelter many "refugee" Creeks from removal due to the strong bonds formed during their various campaigns together.

Selocta Chinnabee (*Soletawv CettoYvpe*), Coffee's brother, perhaps best personifies what it meant to be an "Upper Creek" during the years before Removal (Figure 25) Selocta was the son of Chinnabee, "the Great Natchez Warrior" who had married a woman of Choccolocco. Selocta was born before 1800 and married into Cheahaw town. Chinnabee, and Selocta's friend Jim Fife both belonged to Choccolocco town and all played important roles during the Creek Indian War of 1813-1814. The details of the Creek Indian War of 1813-1814 have been treated extensively elsewhere (Halbert & Ball, 1895; Remini, 2001; Perry, 2004) and are not revisited here.

Figure 25. Soletawv CettoYvpe, The Horned Snake Soldier

Like many Upper Creeks, Selocta and his family tried not to be involved in what was initially a Creek Civil War. However, after the massacre at Fort Mims, Andrew Jackson marched into the Creek lands and the Red Sticks threatened Selocta and his family if they did not join their cause. Besieged at Talladega, local legends suggest that Selocta shape-shifted to escape the Red Sticks and ride to Jackson's encampment for help. Written accounts of the action vary, for example Camp (1882, 2010 Reprint) notes:

> *"Chinnabee and Jim Fife…stole out after dark by throwing a bearskin over them and putting on bells. They went grunting and rooting along like so many hogs. The Indians then kept their hogs belled."*

Pickett (Pickett, 1851;2003 Reprint) was unsure of who was involved but noted:

> *"He threw over him the skin of a large hog, with the head and legs attached, and placing himself in a stooping position, went out of the fort and crawled about before the camps of the hostiles, grunting and apparently rooting, until he slowly got beyond the reach of their arrows."*

Woodward (1859) claimed, *"the story of the hog skin over the Indian was all a hoax"* but Camp (1882; 2010 Reprint) knew Selocta Chinnabee personally and recounted that during a trip to Washington, then President Jackson had pointed to him and stated, *"there stands the bravest man I have ever seen."* Indeed, Selocta had saved Jackson's life several times.

Selocta was just one of a poorly-known group of Upper Creeks that refused to remove to the West. He died on February 7, 1835 at full gallop during a race home from Mardisville with his lifelong friend Jim Fife, who had also refused to leave his ancestral lands. Camp notes:

> *"The citizens of Mardisville purchased a shroud and fine coffin and wished to bury him with the honors of war, but his family objected and brought him home and buried him in their house. His remains now lie on Cheahaw, nine miles northeast of Talladega, on Colonel Thomas McElderry's place, within two hundred yards of his residence."*

McKenney (1872), noting that Selocta had always been an outspoken advocate of Creek sovereignty, and who had appealed repeatedly to his friend Andrew Jackson to leave the Creeks in peace in their ancestral lands said of Selocta:

> *"There were, indeed, none whose voice ought sooner to have been heard than Selocta's. None had rendered greater services, and none had been more faithful. He had claims growing out of his fidelity that few others had."*

Still, in nearly two hundred years of historians writing of the fidelity and bravery of Selocta Chinnabee, not one ever thought to ask, "What does his name mean?" We now know that he was *Soletawv CettoYvpe*, the Horned Snake Soldier. He died as he lived his life; not bending his way onward, but fearlessly moving forward at a full gallop.

Stories of *Soletawv CettoYvpe's* shapeshifting have historically been interpreted as fanciful tales within largely ethnocentric historical narratives. However, his behavior, his life story, and even his name reveals a deeper, underlying current of meaning that has long been hidden to the casual antiquarian. Like many modern Creeks, he lived and practiced cultural and religious traditions that were writ large upon their ancestral lands.

Ethnohistory of the Middle Coosa Sub-Basin

For at least the 120-year period prior to the establishment of United States sovereignty over the region, the Middle Coosa Sub-Basin served as a *refugium* for a diverse group of Native Americans known generally as the "Upper Creeks." While a detailed description of the complexities of the social organization of the Creeks is beyond the scope of the current task, Knight (1994b) defined them as, "*a polyethnic confederation of tribes*." According to Knight's perspective, the Muscogee (Creek) Nation that emerged in the late 18th century was essentially a conditional politico-military alliance among previously independent provincial polities of the Abihka, Tallapoosas and Coweetas (Apalachicolas), each of which had allowed immigrants from other areas to settle among them. During the 17th and early 18th centuries, each of these polities represented the largest political units in the Coosa, Tallapoosa and Chattahoochee valleys respectively, and each polity is thought to have been centered on a head town with several subordinate towns (Figure 26). Each represented the remnant 17th century descendants of earlier 16th century Mississippian chief-

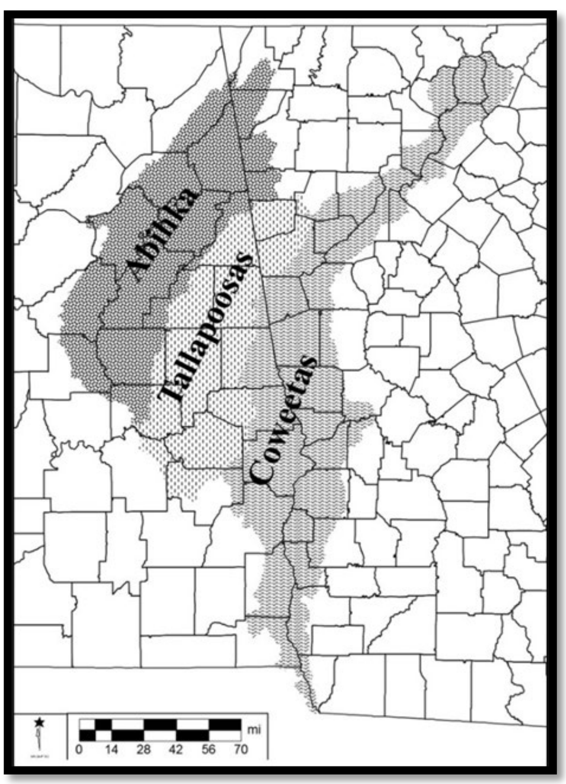

Figure 26. Provincial Polities of the 18th Century Creek Confederacy

doms. Thus, as the 18th century independent towns of the Coosa Valley began to act in concert with those of the Tallapoosa Valley towns and later the Alibamo towns, they became known historically as the "Upper Division" of the Muscogee (Creek) Nation (Knight, 1994a; Knight, 1994b).

Within the Middle Coosa, the indigenous inhabitants were the Coosa-Abihka people (Waselkov & Smith, 2000; Knight, 1994b). Smith (2000) notes that the 18th century Abihkas were the remnants of the 16th century Coosa Paramount Chiefdom that was visited by de Soto. The 16th century Coosa paramount chiefdom extended from present-day Childersburg, Alabama to Knoxville, Tennessee. Based on early geographic references, the Eufaulas appear to have also had a close relationship with the Coosa-Abihka (Swanton, 1922). At various intervals during the historically-documented period, groups of Chickasaw, Natchez and Shawnees settled among the Coosa-Abihkas (Swanton, 1922; Wright Jr., 1986; Waselkov & Smith, 2000; Galloway & Jackson, 2004). Some of these groups were absorbed into existing Coosa-Abihka towns. The Shawnee and Chickasaw associations were particularly strong and a large group of Natchez were also known to have fully assimilated into Creek society (Stiggins, 1989). Further illustrating the diversity of tribal groups present in the region is the fact that by the time of the 1730 immigration to the Middle Coosa region, the Natchez had already assimilated remnants of various Mississippi River groups (Smith, 1994; Galloway & Jackson, 2004).

Pre-Removal Native American Towns

With the election of Andrew Jackson to the presidency in 1828, removal of the Native American inhabitants of the Southeast to lands in the west became a national priority due to the potential constitutional crisis the issue of Native American sovereignty raised between a limited federal government and individual state governments. In 1824, the Creeks in council at Tuckabatchee had sworn to not consent to any further land cessions and to adopt the skills necessary to remain in their ancestral lands. However, the federal government had made certain concessions regarding lands with the Georgians and they in turn had exerted intense pressure on the federal government for another Creek land cession. In 1825 at Indian Springs a treaty was signed by William McIntosh ceding all Creek lands in Georgia. McIntosh agreed to the cession despite a warning from Opoethle Yahola and the Tukhabatchees that the action was illegal under Creek law. Subsequently, McIntosh was sentenced to death by the Creek Council and the treaty was abrogated by the federal government. Nevertheless, to appease the Georgians, the Creeks signed a new treaty in January 1827 and made an additional cession in November forcing the inhabitants east of the Chattahoochee to either relocate west of the Mississippi River or to the remaining Creek lands in Alabama. However, by 1828, even the Creek inhabitants in Alabama were under intense pressure to emigrate (Foreman, 1932; 1952 New Edition; Debo, 1941;1979 Reprint; Satz, 1979).

In 1830, after what has been described as one of the bitterest debates in its history, Congress passed the Indian Removal Bill (Foreman, 1932; 1952 New Edition). Yet, the federal government failed to secure a formal removal treaty with the Creeks and the Jackson administration subsequently negotiated the Creek Treaty of March 24, 1832 opening the lands of eastern Alabama to American settlement while reserving certain land allotments for Creek chiefs and heads of families. Under the terms of the treaty, a census was completed in 1833 of the Upper Creeks enumerating a population of 13,697 members and 445 slaves residing within 46 towns. Concurrent with the census, commissioners verified improvements on Creek allotments and locations of towns were recorded and enumerated by individual allotment within two ledgers filed under the title, Indian Allotments, Locations: Under the Creek Treaty of 1832, Volumes 1 and 2. The land allotment survey was administered by the General Land Office, Division of Cadastral Survey for the Bureau of Land Management of the United States Department of Interior.

Based on this information, eight (8) of the 46 Upper Creek towns enumerated in 1832 were either wholly or partially located within the Middle Coosa Sub-Basin (Figure 27). These towns included Chearhaw, Chockolocko, Concharte, Ekundutske, Kiamulga, Tallaseehatchee, Talledega and, Rabbit Town. Given the cultural diversity reportedly present within the Creek Nation during the 120 years or so of its documented history in the region before removal, along with the chaotic events associated with the Creek Indian War of 1813-1814 and, the Treaty of Indian Springs of 1825, any linkage between material culture and historically documented groups must consider the complex history of Creek towns in the region.

Utilizing the 1832 land allotments as the starting point for locating Creek towns within the Middle Coosa is somewhat problematic. It is no coincidence that the period for which the best documentation exists for the Middle Coosa towns is also the period when Creek individuals were under the greatest pressure to abandon traditional practices and assimilate into American culture. Much of the documentation available on Creek inhabitants of the Middle Coosa during this period comes from the bureaucratic records of the courts and federal agencies tasked with implementing federal policy. Assuming these individuals acted according to the principal of rational self-interest, selection of culturally-significant land tracts for ownership would likely have been given priority.

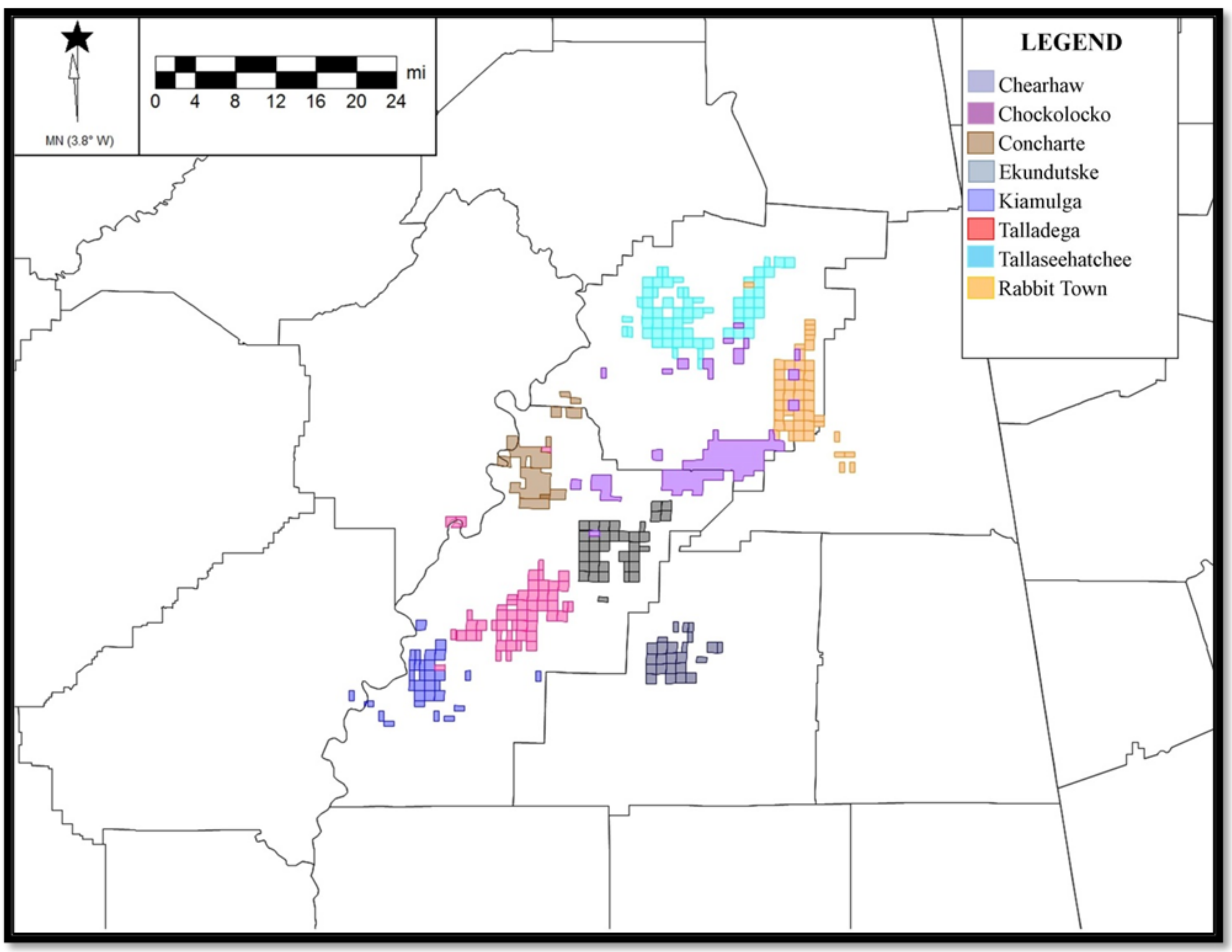

Figure 27. 1832 Creek Patented Lands for Middle Coosa Towns

Historically, there has been a general lack of consensus on which of the various Pre-Removal Middle Coosa towns may be definitively associated with the Coosa-Abihka. Gatschet (1901), in his list of towns, listed only Chearhaw (Chiaha, Tchiaha, Chehaw), Choccolocco (Tchúka "láko), and Concharte (Kantchate, Kantchati, Kanshade), although he notes elsewhere that Kayomalgi (Kiamulga, Kayomulga, Kymulga) was one of five towns established in the west by the Abihka after removal. The other four (4) post-removal towns that Gatschet ultimately associated with the Abihka included two different towns named Abi"hka, one named Kantchati and, one named Tchúka "láko or "Great Cabin of the public square." Swanton (1922) enumerated only Talladega (Taladigi) and Kan-tcati (Kån tcáti, Red Ground) as branch towns of the Abihka and was skeptical of Gatschet's association of Tchúka "láko and Kayomalgi as Abihka towns. Amos Wright Jr. (2003) lists all of the towns enumerated in 1832 as only "Upper Creek" with the exception of Kiamulga which he considered a Shawnee town and Concharte, which he considered an Alabama town.

Chearhaw (Cheaha)

The origin of the town of Chearhaw documented in the land allotments for the Middle Coosa Sub-Basin is a point of discordance for researchers. There is general agreement that the Chiahas were first encountered by De Soto as the northernmost in a series of towns within the 16th century province of Coosa. At the time of the De Soto expedition the Chiaha are believed to have been located in present-day eastern Tennessee at Zimmerman's Island on the French Broad River (Hally, 1994). Available evidence suggests the Chiaha spoke Koasati, a dialect of Muskhogean (Booker, et al., 1992; Smith, 2000). Martin (2004) notes that Alabama-Koasati and Hitchiti-Mikasuki language groups appear to have gone through periods of contact with and separation from the two larger Muskhogean groupings of Choctaw-Chickasaw and Creek. The linguistic analysis of Muskhogean has tended to be somewhat confused and it is unclear how strong the evidence is that the Chiaha were a Koasati speaking group. Part of the problem is that nothing is known of their history from the 16th century until the early 18th century when they appear on the Ocmulgee briefly around 1713 before moving to the Chattahoochee River (Smith, 1987).

Wright, citing Kappler (1904), notes that the first reference found to Chiahas among the Upper Creeks, was in 1796 to a group known as the "Upper Cheehaws."[3] Since the Kappler reference is to a signature on a treaty, it provides no location data for the Upper Cheehaws in 1796. However, Swanton (1922) admits that there may have been a body of Chiaha residing among the Upper Creeks distinct from the group that settled first with the Yamasee and then with the "Lower Creeks" on the Chattahoochee. In fact, Swanton also suggests that there may have been a population on the Chattahoochee before the settlement on the Ocmulgee in 1713.

Analysis of the names of heads of families listed on the 1832 Upper Creek Chearhaw town roll confirms the association of several inhabitants of this town with the known late towns of Talladega, Concharte and Chockolocko. Perhaps the best example is that of So-lock-ie, one of the principal chiefs of Chearhaw town enumerated in 1832 who was better known as Selocta Chinnabee (Camp, 1882, 2010 Reprint). Selocta, the son of Chinnabee, the Great Natchez Warrior, achieved some notoriety for having escaped the Red Stick siege of Leslie's Fort at Talladega during the Creek Indian War of 1813-1814 and having served with distinction in Jackson's army for the rest of the campaign (McKenney & Hall, 1838).

3 Wright states that Chinnabee was their chief. However, the document referenced by Wright was the Treaty of 1796 and, in that document, Chinnabee was actually listed as a chief of the Natchees (Natchez) while the signature for the chief of the Upper Cheehaws was that of Spokoi Hodjo.

Chockolocko (Choccolocco)

The origin of the Chockolocko town documented in the land allotments for the Middle Coosa is primarily a point of discordance on the interpretation of the etymology of its name. Gatschet (1884; 1901) lists two (2) pre-removal towns (one Lower Creek and one Upper Creek town) under the name of Tchŭka 'láko which he defined as "Great Cabin of the public square." However, in his 1901 list of post-removal towns in the Indian Territory associated with the Abihka he lists a Tchaxki "la'ko or "Big Shoal." Based on this discrepancy, Swanton asserted that Gatshchet's interpretation of the meaning of the Muskogee term as "big house i.e., square ground" was mistaken and the proper name of each was Tcahki łako or "Big Ford." According to Swanton's view, Gatschet appears to have confused "cuko-rakko," (Tchŭka 'láko) which means, "stomp, or ceremonial ground" with the similar sounding Cahkē-Rakko. Wright (2003) notes that the 1815 Moravian Map places "Big Shoals" on the east bank of the Coosa River opposite the mouth of Kelly Creek in Talladega County and the Creek Census of 1825 placed a "Big Shoals" town on both banks of the Chattahoochee between Broken Arrow and Coweta in Russell County. Martin and Mauldin (2000) list Cahkē-Rakko as meaning "Big Shoals" and note that it was a Creek Tribal Town, although they do not specify whether it was an Upper or Lower town.

The inhabitants enumerated in the land allotment registers for the pre-removal Middle Coosa Chockolocko town included both Jim Fife and Chinnabee, the father of Selocta Chinnabee, who also fought with Jackson and was referred to by him as "Old Chennuby" (Moser, et al., 1984; Woodward, 1859). This was likely the same Chinnabee who signed the 1790 Treaty of New York and was also known as, "The Great Natchez Warrior" (Patrick, 2002; Pickett, 1851;2003 Reprint). Although the record is far from clear, Selocta's father may have been the same Chinnubbee who reportedly died on October 15, 1834 (Chinnubbee v. Nicks, et al., 1836). Chinnabee, the Great Natchez Warrior, patented land within the present-day City of Oxford. Moreover, the Alabama Department of Archives and History (ADAH) "Historic Sites in Alabama," published in the *Alabama Historical Quarterly Vol 14, Nos 3 and 4*, places Chinnabee, the Great Natchez Warrior and his Creek Indian War of 1813-1814 fort within, or in proximity to, the CCAC-Davis Farm. The ADAH entry notes:

> *"Six miles due east of Oxford, about twelve miles south of Jacksonville, on the north bank of Big Shoal Creek near the influx of Wolfskull Creek on the south, there was erected in 1813, by Chief Chinnabee a fort called by his name as a defense against the hostile Red Sticks."*

References to Jim Fife in the historical record are somewhat clearer than the references to the Chinnabees although the available information is sparse. According to Wright (2003), Jim Fife, was descended from a European trader and a half Natchez and Creek mother. Dorsey Fife, the grandson of Jim Fife, noted that Jim Fife had been a member of Arbeka (Fife, 1927). The editors of Andrew Jackson's papers note that he was also known as "Tuskena Hutka" although no reference to that name could be found during the present research (Moser, et al., 1991). Fife was reportedly buried at his residence, which was later known variously as the Brick Store, the Elston Place and Simmons Mill on Choccolocco Creek (Vandiver, 1954). The affidavit by Dorsey Fife, affirming that Jim Fife was a member of Arbeka Ceremonial Ground directly associates the pre-removal Chockolocko (Choccolocco) town with the present-day Arbeka Ceremonial Ground of the MCN.

Concharte

There is general agreement on the late association of the Concharte or "Red Ground" enumerated in the land allotments for the Middle Coosa with the Abihka. Both Gatschet (1884; 1901) and Swanton (1922) list the town and while Gatschet notes the existence of a post-removal town of the same name in the Indian Territory, Swanton notes that this ceremonial ground was "soon given up." Wright (2003) disagrees with both Gatschet and Swanton on the origin of Concharte, suggesting it was an Alabama town that was earlier located below the forks of the Alabama River and forced to relocate after the land cession granted in the Treaty of Fort Jackson in 1814. Given the strong association of individuals from Concharte with other Abihka towns (particularly Choccolocco and Talladega), Wright's interpretation seems unlikely, although it is quite possible that the town consisted of refugees from the Alabama River towns who had intermarried with neighboring Abihka towns by the 1830s. The Alabamas had a history of strong association with the Koasatis. Nevertheless, if a poorly documented group of Koasati-speaking Chiahas settled in the Middle Coosa among the Abihkas during the early eighteenth century perhaps a group of the Alabamas did as well. If this is the case, then the 1832 Concharte town may have been more closely associated with the nearby Chearhaw town located on Cheaha Creek.

Ekundutske

The town name of Ekundutske enumerated in the 1832 land allotments for the Middle Coosa is problematic for several reasons. Gatschet (1884; 1901) does not list this town. Swanton (1922) lists the town but suggests that it was located in Montgomery County with an etymology derived from ēkvn-tvc-kv meaning "boundary line." Swanton's suggestion that the town was located in Montgomery County may be an indicator that this town was also forced to relocate into Abihka territory after the Treaty of Fort Jackson in 1814. If this is the case, it is interesting that Swanton's assessment of the original meaning for the town was still applicable in 1832 as the town is situated on the margin of the Coosa and Tallapoosa watersheds. Wright (2003) notes that the town appears only on the 1832 Bright map but its location in the land location registers is in the vicinity described by Vandiver (1954) as a boundary between the Abihka towns and the Hillabee towns.

Kiamulga (Kymulga)

The town name of Kiamulga enumerated in the 1832 land allotments for the Middle Coosa is also problematic. Gatschet (1884; 1901) does not list the town. Wright indicates the town appears on seven (7) maps from 1744 to 1832 along Talladega Creek. Swanton (1922) suggests the town derives its name from the Muskogee words kē for "mulberry" and omvlkv for "all." Swanton also notes that Hawkins applied the name to the upper reaches of Natchez Creek near Sylacauga.[4] While admitting that Sylacauga was the only documented Shawnee settlement in the vicinity, and apparently in an attempt to reconcile this fact with reports that the Shawnee settlement was brief, Swanton suggested that the 1832 Kiamulga town was perhaps a Creek name for an earlier unknown Shawnee town that was applied by the 1832 enumerators to a later Creek settlement. Adding to the confusion, Swanton suggests the word Sylacauga was Creek for "where buzzards are plentiful." However, it is more likely that Gatschet's interpretation of "ce-lok-ho-kvlke" for "those who speak a different language" is the correct interpretation for the meaning of Sylacauga.

The various Native American occupations reported in the vicinity of the 1832 land allotments for Kiamulga make it difficult to link material culture with a known group or town. Smith (2000) notes that most of the recorded archaeological sites in this vicinity are known primarily from reconnaissance-level survey work. The surveys were conducted by Auburn University (Waselkov, 1980) and, the University of Alabama (Knight, et al., 1984; Knight, 1985) and little or no information has been reported on these sites since they were initially identified thirty years ago. Nevertheless, the area surrounding Kiamulga does exhibit a fairly

4 Natchez Creek is listed on contemporary maps as Tallaseehatchee Creek.

dense cluster of occupations dating from the seventeenth through the early nineteenth centuries at a locality where the historical record indicates various groups of refugees settled throughout the eighteenth century.

Given the difficulty Swanton encountered with Kiamulga, perhaps an alternative explanation for the origin and persistence of the name "Kiamulga" may be in order. While the premise of Hodge's (1912) suggestion that Kiamulga may have been derived from the word "Okmulgee," and that it referred to, "an ancient Creek town in East Georgia" is perhaps no longer valid, his observation on the similarity between "Kiamulga" and "Ocmulgee" which according to Gautschet means "bubbling, boiling water," warrants consideration if for no other reason than the abundance of springs at a locality known to have been inhabited in the 18th century by a disparate group of refugees who spoke different languages. Recalling Swanton's admission that there may have been a group of Chiaha on the Chattahoochee prior to their appearance on the Ocmulgee in 1713, it seems equally plausible that a group of Chiaha may have also settled near the Abihka along with other refugees on the upper reaches of Natchez Creek which was differentiated as Kiamulge Creek in 1799. If this was indeed the case then it would explain both the presence of the Upper Cheehaws and the persistence of the term Kiamulga in the region.

Talladega

Gatschet (1901) suggests that the name Talladega (sp. Talatigi) is derived from the Muskhogean "talwa" meaning town and "atigi" meaning at the end; on the border. Swanton (1922) enumerated Talladega (Taladigi) as an Abihka town. Martin and Mauldin (2000), identify Tulladega [Tvlvtēke] as a Creek tribal town with the name meaning tribal town at the edge or border. Citing Swanton's (1937) review of Read's (1937) *Indian Place Names of Alabama*, Martin and Mauldin (2000) suggest that this town was a border town against the Cherokee and Chickasaw. Wright's (2003) review of sources led him to suggest this was a late town. Vandiver (1954) was skeptical that a Creek town ever existed at the location of present-day Talladega and suggested that it was nothing more than a trading post.

During the current research, the earliest reference found to Talladega was in 1813 when Andrew Jackson wrote a letter to his wife concerning the battle in which he referred to the site as "Tulladego or Leslie's Fort." Reference to the town was also found in an 1826 letter from Opoethle Yoholo inquiring as to the status of claims of friendly Creeks for losses during the Creek Civil War of 1813-1814. Both Talladega and Upper Eufaula appear in this list although only two claims were made by individuals from Upper Eufaula while 31 individuals from Talladega registered claims.

As noted above, Talladega enters the historical record as the site of the "Battle of Talladega" during the Creek Indian War of 1813-1814. On November 9, 1813, Andrew Jackson marched to the relief of a friendly Creek fort at the trading post of Alexander Leslie which was reportedly besieged by a party of "Red Sticks." During the battle, Jackson's force of approximately 1,200 infantry and 800 cavalry engaged an estimated 1,000 Red Stick warriors, driving them from the field of battle and killing 299 of the combatants.

Historical documents regarding Alexander Leslie associate the Leslie family with three different Creek towns that were located close together and, in the case of Talladega and Upper Eufaula, at the same location, albeit at different periods of time. Alexander's father is thought to have been James Leslie, a fur trader living in the Creek Nation among the Upper Eufaula (BIA, 1804). While Jackson noted that he marched to relieve Leslie's Fort at Talladega, Alexander is listed as a claimant residing with the Upper Chehaws in the claims list for losses sustained by friendly Creeks in the Creek Indian War of 1813-1814 (BIA, 1826).

Due to its association with such a well-known figure as Andrew Jackson, documentation relating to the Battle of Talladega offers a unique glimpse into the early 19th century Native American cultural landscape of the Middle Coosa Sub-Basin. Galloway and Jackson (2004) have suggested that the Natchez living among the Creeks participated in the Creek Indian War of 1813-1814 as "Red Sticks." However, a close inspection of the facts and circumstances surrounding the Battle of Talladega indicate that this was not necessarily the case. Jackson's success during the entire Creek campaign relied heavily on Jim Fife, Chinnabee and his son, Selocta all of whom were of at least part Natchez descent.

According to Camp (1882, 2010 Reprint), Jackson crossed Choccolocco Creek near Jim Fife's residence in Section 9, Township 17 South Range 6 East of the Huntsville Meridian and made camp on the north bank of Cheaha Creek at the future site of the English plantation near S.M. Jemison's place. In fact, Camp (1882) notes that Jackson spent the night *".... on one of the mounds in Mrs. English's field."* During the present research an informant indicated that he had camped on a mound along Cheaha Creek as a child during Boy Scout outings. Vandiver (1954) notes that Robert Jemison and his siblings settled along Cheaha Creek and LaTourrette (1837) places Jemison's mill near the confluence of Kelly's Creek with Cheaha Creek (Figure 28).

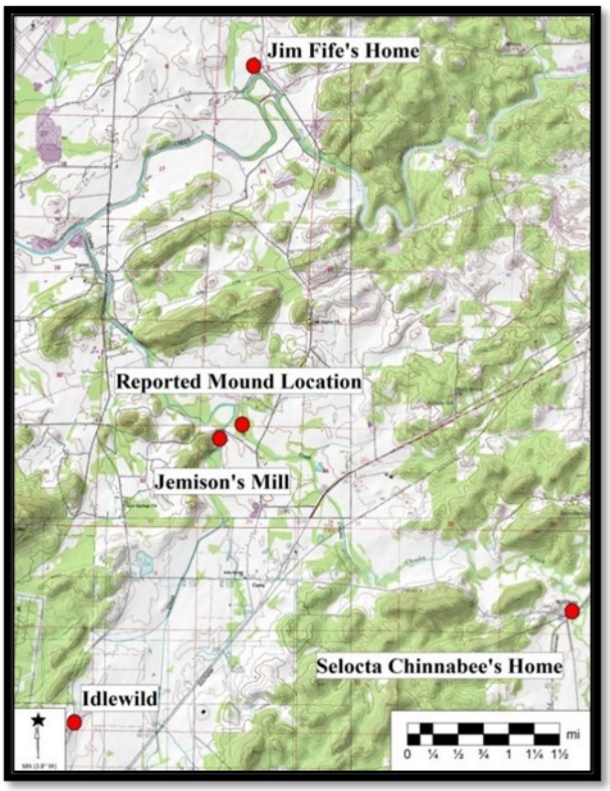

Figure 28. Locations Discussed in Text

According to Vandiver (1954), prior to removal the Natchez inhabited a town, *"...in the beautiful valley fringing the road to Turner's Mill, near the McClellan place and between there and Jemison's Mill place, from four to six miles northwest {northeast} of Talladega*." The McClellan place that Vandiver refers to is the home of William B. McClellan, known today as Idlewild Plantation (Bowman & Betz, 1993) and located within the southeast corner of Section 18, Township 18 South and Range 6 East of the Huntsville Meridian. According to the land allotment registers, the tract had originally been allotted to Klos-lit-ko of Chearhaw. Jemison's Mill was located on Kelly's Creek just above the confluence with Cheaha Creek within the northwest corner of section 33, Township 17 South and Range 6 East of the Huntsville Meridian (LaTourrette, 1837) on lands originally allotted to O-si-yoholo of Chearhaw. The Jemison Mill went into operation in 1834 and both Robert and S. M. Jemison acquired extensive land holdings from the Creek inhabitants of Chearhaw town.

Recalling that Selocta Chinabee was the principal chief of this town and that he was at least half-Natchez, Chearhaw town appears to have had a strong association with the Natchez prior to removal as does Chockolocko town. Thus, Jackson's indirect route to the Battle of Talladega, as described by Camp, may have been designed to traverse territory controlled by Jim Fife and the Chinnabees in order to achieve the element of surprise over the Red Sticks besieging Leslie's Fort. As to whether or not a Creek town existed within the present-day City of Talladega during the famous battle, the historical literature is silent. Nevertheless, as discussed in the "Analysis of Pre-Removal Towns" section below, there is considerable historical evidence for an earlier Native American town located at the same location of the pre-removal land allotments for individuals residing in Talladega town, albeit known historically as "Eufaulahatchee."

Tallasseehatchee

The town of Tallaseehatchee enumerated in the 1832 land location registers appears to have its origin at this location as a result of the Creek Indian War of 1813-1814. Gatschet (1901) is silent regarding this town. Swanton (1922) lists it only as an "Upper Creek" town. Wright associates the town with the "Tallahatchi" that appears first on the 1766 DeBrahm map on Talleseehatchee Creek in Talladega County, further noting that a town at the same location appears as "Talise" on the 1780 Roberts map until 1806 when the name appears as "Tallassehas." Wright suggests that part of the settlement moved north to Tallasseehatchee Creek in Calhoun County where it was destroyed by Jackson in 1813. Wright's analysis fits well with historic descriptions of movement by a "Red Stick" faction into this area found within Jackson's correspondence and the analysis of Waselkov and Wood (1986) on changes in settlement patterns during this period. However, excavations by JSU at Tallasseehatchee (1Ca162) have produced evidence of late 18th and early 19th century occupation of the site.

Rabbit Town

Rabbit Town appears to have also been a late town. Swanton (1922) notes that his informants suggested to him that this was probably a nickname as the rabbit is always a subject of jest among the Creeks. Wright (2003), citing Brannon (1952) suggests that the town was named after Chief Rabbit. Brannon's interpretation may be correct as the land allotment registers list a resident of the town under the name of Rabbit. However, several of the allotments within this town were rejected because the individual was not a member of the Creek Nation at the time of the treaty. Further complicating the history of this town, an undated document found within the records of the Bureau of Indian Affairs (BIA) reported that the entire town had, "gone far into the Cherokee Nation" (BIA, 1801-1952) in resisting removal.

Analysis

Research on the pre-removal towns documented within the Middle Coosa Sub-Basin provides a method to link living communities that are descendant from pre-removal Muskhogean towns in the region with the material culture of their ancestors. The analysis responds to the call from Waselkov and Smith (2000) for details of the settlement patterns of particular towns (*tvlwvs*) and attempts to further refine the syntheses of Smith (2000) and Knight (1994a). The analysis combines extensive ethnographic documentation with the map method first proposed by Ian W. Brown and later utilized by Dimmick (1989) and Lolley (1996) for Upper Creek towns. Worth (2000) has conducted similar research for Lower Creek towns and noted that during the 18th century there was an overall demographic rebound that generally led to an increasing number of out-settlements with short-distance relocations punctuated by some very long distance moves in response to a variety of factors.

Several previous researchers have noted the lack of documentation for a pre-removal Coosa Town or a pre-removal Arbeka Town. Swanton (1928), citing Adair (1775), suggested that by the late 18th century Coosa had been, *"reduced to a small, ruinous village."* Smith (1987; 1994; 2000) has suggested that the 16th century paramount chiefdom of Coosa encountered by De Soto, which included, Itaba, Ulibahali, Apica and Piachi, as well as several unnamed towns, experienced massive depopulation beginning in the late 16th century. Depopulation likely began shortly after De Soto's expedition as a result of the introduction of European diseases and continued throughout the 17th and 18th century through interaction and conflict with European colonists and tribes such as the Cherokee and the Westos (Swanton, 1922). Smith (1987; 1994; 2000) suggests conflict and disease ultimately resulted in a series of migrations of the Coosa towns down the Coosa drainage into present-day Alabama.

While there is considerable evidence that both conflict and disease were contributing factors to cultural change within the towns associated with the former paramount chiefdom of Coosa, little consideration has been given to the ethnographic accounts from 19th century descendants compiled by Gatschet (1901) and Swanton (1922; 1928) that describe the demise of Coosa. These are discussed in a later section of this report.

The close relationship between the Coosa and Abihka has been noted by several researchers. Most modern scholars simply refer to both groups as the "Coosa-Abihka" to denote the difficulties inherent in differentiating between the two groups within the historical record. Swanton (1922) while distinguishing Abihka apart from the several towns descended from Coosa, notes that the Abihka's relationship was:

> *"…most intimate with the Coosa Indians. Hamilton quotes a Spanish manuscript of 1806 in which it is said that the Abihka and Coosa were as one pueblo divided into two by swift rivers."* Swanton (1922) further notes that, *"Although Abihka sometimes appears on maps, it is curious that as soon as we have a specific town it is called Abihkutci. This appears first, so far as I am aware, on the De Crenay map of 1733."*

Perhaps one of the most significant findings of the current analysis is that the principal town of the pre-removal Abihkas was Choccolocco Town not Abihkutci. Genealogical research on the Fife family in Oklahoma demonstrates the correlation of the pre-removal Choccolocco Town with the post-removal Arbeka (Fife, 1927). Both BLM-GLO records and the Creek Indian Census of 1832 indicate that Jim Fife was a member of the pre-removal Choccolocco Town. This information, was cross-referenced with an affidavit given by Dorsey Fife in 1927, who indicated that his grandfather (Jim Fife) had been a member of Arbeka Town and had died before the Civil War. This interpretation is further reinforced by research conducted by the Alabama State Planning Board during the Works Project Administration (WPA) and published by the Alabama Department of Archives and History (ADAH) (1952) in the *Alabama Historical Quarterly* that notes the following for the town of Choccolocco:

> "… [Choccolocco] *was an Upper Creek town that was friendly to the whites during the Creek War, 1813-1814. The chief of the village was Chinnabee, who with Jim Fife, another chief and about 120 of their people were besieged at Lashley's Fort by hostile Red Sticks."*

The WPA-era research also corrected earlier information regarding the Creek Indian War of 1813-1814 location of Chinnabee's Fort. Both Gatschet (1901) and Swanton (1922; 1928) placed it incorrectly at the Ten Islands on the Coosa based on rather general descriptions given by earlier sources. While this correction has often been overlooked by modern scholars, it clearly places Chinnabee's Fort in proximity to the locality known today the CCAC-Davis Farm. The ADAH entry states:

> *"Six miles due east of Oxford, about twelve miles south of Jacksonville, on the north bank of Big Shoal [Choccolocco] Creek near the influx of Wolfskull Creek on the south, there was erected in 1813, by Chief Chinnabee a fort called by his name as a defense against the hostile Red Sticks."*

The ADAH reference to "Big Shoal" Creek reflects the disagreement between Swanton (1922; 1928) and Gatschet (1901) on how the Muskoghean term should be translated. Wolfskull Creek no longer appears on modern USGS maps. However, the unnamed tributary entering Choccolocco Creek 1.15 km east of the Leon Smith Parkway bridge at the CCAC-Davis Farm is listed on the original land survey as "Wolf Scull Creek" leaving little doubt that Chinnabee's Fort was located in the general vicinity of the CCAC-Davis Farm and not at the Ten Islands of the Coosa River.

All of the Middle Coosa towns were "multi-ethnic" in composition in the years just prior to removal. For example, known inhabitants of Choccolocco Town included Chinnabee and Jim Fife, both of whom were allies of Andrew Jackson during the Creek Indian War of 1813-1814 against the Red Sticks. Chinnabee was also known as the "Great Natchez Warrior" and Fife was part Natchez, Creek and Scot. The author of the 19th century *Creek Indian History,* George Stiggins was born near Talladega and reportedly descended of a full-blooded Natchez mother. Similarly, Chinnabee's son, Selocta lived within Chearhaw town, at least some of the inhabitants of which may have been descended from early 18th century Chiaha refugees from eastern Tennessee. Additionally, pre-removal towns within the Middle Coosa included slaves of African descent. In fact, the present-day town of Talladega is centered upon a 320-acre tract of land that was reserved for Joseph Bruner, a former slave that lived among the Upper Creeks and served as interpreter for Jackson during the war (Vandiver, 1954).

The finding that the locality from present-day Talladega down to Tallaseehatchee Creek appears to have been a focal point for refugee groups into the Creek heartland further confirms the work of previous researchers suggesting that material culture from 18th century sites in that vicinity could contribute greatly to the understanding of late prehistoric and early historic settlement patterns in the region. However, the current analysis identified the documented 18th and 19th century occupation of a poorly-known group of Eufaulas located on Talladega Creek and within the location of 1832 land allotments for Talladega Town.

As noted in the discussion on Talladega, previous researchers have questioned the antiquity of a Native American town known by the name Talladega. Vandiver (1954) makes the following claim:

> *The public square of Eu-faula-hatchee, the town situated 3 miles from the present city of Talladega, on the Terry farm on the north side of Talladega Creek….in 1800 consisted of four square buildings of the same size and shape….Mr. George W. Cruikshank, editor of the Birmingham-Ledger, writes that he saw the posts of the council house of this town taken out of the ground, in a comparatively good state of preservation in 1873, and that the posts were afterward accidently burned. The frame of these buildings were of wood, but plastered inside and out with mud, except two feet all around under the eaves, left open to admit light and air. One of these square buildings was the council house…..This building was enclosed on three sides, while a partition from end to end divided it into two apartments, the rear apartment being totally dark, having only three arched holes large enough for a man to crawl through.*

Hawkins, in his 1848 *Sketch of the Creek Country in the Years 1798 and 1799*, notes that, *"Eu-fau-lau-hat-che is fifteen miles up that creek on a flat of half a mile, bordering on a branch."* Caleb Swan listed an "Upper Ufalas" as the uppermost of the Upper Creek towns located on the Coosa River in 1790 (Schoolcraft, 1856). Wright (2003), notes that the town's location among the Upper Creeks was illusive despite the fact that references to it appear early in the historic record. Citing Feest (1974), Wright (2003) notes a town of "Youfallers" appears in the Middle Tallapoosa Province and a town of "Great Youfallers" appears among the "abekeers or upper province" on the Charlesworth Glover Census of 1725. Waselkov and Wood (1986) place the 1813 location of the Upper Eufaula town approximately six miles due east of the location reported by Hawkins and list it as one of the towns destroyed during the Creek Indian War of 1813-1814.

The distance between Hawkins' 18th century location for Eufaulahatchee and Vandiver's late 19th century location for the Eufaulahatchee is less than one mile and these references to the town bracket the time period when Waselkov and Wood (1986) have reported that the talwa was destroyed. The discrepancy between Hawkins' and Vandiver's location for Eufaulahatchee and that illustrated by Waselkov and Wood (1986) may be due to the fact that Eufaula, along with the town of Coosa that they place on the same stream were both towns that split into factions during the Red Stick War. This view, suggested by Waselkov and Wood (1986) suggests the Red Sticks removed themselves from the peace faction within their towns and established separate encampments. However, it is suggested here that the inhabitants of Talladega before and after the Creek Indian War of 1813-1814 consisted of a group that established a new town from the Abihka mother town of Choccolocco and included Natchez and former slaves of African descent. This view is supported by evidence within the BLM-GLO records that Joseph Bruner, under the Creek Treaty of 1832 was granted a patent for the land upon which present-day Talladega is situated.

Moreover, there is considerable ethnographic evidence that suggests the 18th century Upper Eufaulas located on Talladega (Eufaulahatchee) Creek were, from a very early period, strongly associated, or synonomous with Coosa and Abihka. Swanton (1922) discounted conflicting late 19th century reports by informants that the Eufaula branched from Kialedji or Hillabee and suggested instead that from the earliest records they were an independent town. Mooney's (1900) list of Cherokee place-names derived from names associated with the previous Creek occupants of Bartow County, Georiga indicates that the tributary to the Etowah River known as Euharlee Creek is a corruption of the Cherokee word "Yuhali" for the Creek tribal name "Eufaula." Swanton (1922) believed that this was the home of the Eufaulas before the Yamasee War of 1715 and that such a placement suggested an association of the Eufaula with Coosa.

For a variety of reasons, the etymology of the term "Eufaula" points to an origin within the complex cultural landscape of the Choccolocco Valley of the Coosa Basin. Martin and Mauldin (2000) list Eufaula as "Yofalv" and define it as a tribal town or talwa. In his discussion of native legends, Swanton (1928) noted a source told him that the name derived from a myth told of Eufaula warriors once surprising an enemy encamped on the opposite bank of a stream by circling behind them and forcing them over a bluff into the water below. From this circumstance the place came to be called *"isti aktaski"* for *"where people jumped down in"* or perhaps *"isti aklatki"* for *"where the people fell down in."* Swanton's definitions are consistent with the definitions given by Martin and Mauldin for the Muskoghean terms *"aklvtketv"* and *"aktasketv"* although according to their research, both specifically reference falling into water. Since neither of these terms resembled "Eufaula" Swanton suggested that the name "Eufaula" is an English translation which was applied to the inhabitants indigenous to the particular place being referenced by the event; perhaps first by English traders and then Cherokee and only later adapted by the Creeks to refer to the group that inhabited the place.[5]

Swanton's (1922) interpretation of the origin of the Eufaulas is supported by the fact that the Abihkas, the Eufaulas and the Coosas were located in proximity to each other since at least the 16th century. Moreover, Swanton (1928) observed that one of his informants noted that Coosa was sometimes called by other Creeks, "Taloksumgi" for *"tvlwv aksomketv"* or "town-lost-in-the-water" and that it had sunk into the water until nothing could be seen of it except the ball post. Another informant told him the town had been swallowed by an earthquake. The Anglicized term "Clamahumgeys" appearing as early as 1725 may be a mondegreen similar to Swanton's "Taloksumgi" for the Muskoghean "*tvlwv aksomketv"* meaning Town-lost-in-the-water." Wright (2003) notes that the town appears on ten maps from 1733 to 1785 variously on Tallaseehatchee Creek, the headwaters of Choccolocco Creek and Talladega Creek near present-day Talladega. Given the similarity between Swanton's sources that noted that Coosa was referred to as the *"tvlwv aksomketv"* and Mooney's sources that noted that "Euharlee" was the Anglicization of the Cherokee

5 This interpretation seems consistent with other reports of the Creeks adopting Anglicized terms to refer to themselves {See Saunt **Invalid source specified.** for various references to this fact}.

"Yuhali" for the Creek tribal name "Eufaula," along with Swanton's sources that indicated "Eufaula" referenced "*isti aktaski"* for *"where people jumped down in"* or perhaps *"isti aklatki"* for *"where the people fell down in,"* it is reasonable to suggest that Eufaula may simply be another name for Coosa or a distinct group once closely associated with Coosa. Such a view is supported below by ethnographic data obtained by Swanton (1922; 1928) and detailed below.

Flood Myths of the Upper Creeks

Swanton (1922; 1928) recorded several flood myths involving Coosa although these have generally been disregarded by modern researchers as fictional narratives. For example, Lankford (1987) noted:

> *There is no historical record of the destruction of Coosa, by an underwater panther or any other agency. If the legend of the Coosa flood reflects any actual event, it can never be known, since it had to predate the historical era. All that can be concluded safely is that the legend of a destructive flood was early attached to Coosa, a town placed by the migration legends in the Southeast before the migration of Kasihta and Coweta.*

In light of the current research reported herein, Lankford's dismissal that these myths cannot record an actual destruction of Coosa by flood appears to have been premature. Scientific skepticism must be tempered with an understanding that "myths" and "legends" can function as historical narrative and as important references for understanding human experience. As such, historical events would be incorporated into, and understood within, the framework of a group's cosmology through encoded myths and legends (Masse, et al., 2007).

Underscoring this point is the fact that the flood myths of the Coosa are of interest to the current investigations precisely because of evidence of catastrophic flooding and prehistoric sinkholes identified during the investigations at the CCAC-Davis Farm. Indeed, the Choccolocco Site (1Ca196) was extensively flooded twice during the current field investigations and at the Boiling Springs Site (1Ca190) multiple prehistoric sinkholes were identified and three (3) large sinkholes were encountered during construction (Figure 29). It was, in fact, empirical observation of, and evidence within the archaeological record that prompted the question, "Is there any ethnohistoric evidence of catastrophic flooding and subsidence that affected Native American populations in the Choccolocco Valley?"

Figure 29. Sinkhole Collapse at Site 1Ca190

One source of such evidence may be found in place-names. Swanton (1922) and Read (1937;1984 Reprint) citing Gatschet (1901) note that Eastaboga (Istapoga, Estaboga) was an Upper Creek Town in Talladega County with the name meaning *"where people reside."* Yet, Wright (2003) found no original sources for such a town nor was it located on any of the maps he reviewed. As demonstrated previously, one of the earliest known references for the term "Eastaboga" is as the birthplace of Augusta Caver who was born in the Freeman-Caver-Christian (Davis) home. Martin and Mauldin (2000) list Eastaboga as the anglicization of the Muskhogean word *"Istokpoga"* which means, *"person in water or a low place + being gone or dying…. said to be named for a group of people swallowed by swirling water."* While the Martin and Mauldin reference includes Lake Istokpoga in Highlands County, Florida and Eastaboga creek, a tributary to Choccolocco Creek in Alabama a group of Eufaulas were known to have re-located to peninsular Florida north of the vicinity of "Lake Istokpoga as early as 1761 (Romans, 1775;1998 Reprint) and there is additional evidence that places Eastaboga within the vicinity of, or at the CCAC-Davis Farm.

Skinner's "Swallowing Earthquake"

Skinner's (1896) *Myths and Legends of Our Own Lands*, contains a myth entitled, "The Swallowing Earthquake" that clearly documents a catastrophic event in the vicinity of the CCAC-Davis Farm. Skinner reports:

> *"The Indian village that in 1765 stood just below the site of Oxford, Alabama, was upset when the news was given out that two of the [women] had given simultaneous birth to a number of children that were spotted like leopards…the women….were at once tried and sentenced to death at the stake….The whole tribe, seventeen hundred in number, assembled to see the execution, but hardly were the fires alight when a sound like thunder rolled beneath their feet, and with a hideous crack and groan the earth opened up and nearly every soul was engulfed in a fathomless and smoking pit….the hollow afterward filled with water and was called Blue Pond."*

Blue Pond is located just west of present-day Davis Farm and is not listed in the Geologic Survey of Alabama's database of known sinkholes. Robinson (1891) noted that there are two other versions of this legend; one of a son of a chief being tortured when the land suddenly sank, and one of a maiden having thrown herself in the pond that opened up. A similar story that appeared in the *Anniston Star and Hot Blast* in August of 1917 specifically references the present-day Davis Farm:

> *On the farm of Captain John Floyd Smith [present-day Davis Farm] ... According to tradition, there was born to the Indians of a village about a mile away, two spotted children, which were wholly displeasing to the tribe…and it was resolved to get rid of them…A big green corn dance was called at the site where Blue Pond now is…but suddenly while the dance went on…the earth gave way under their feet and enveloped the whole dancing party in a deluge of earth and water, the dancers disappearing beneath the flood that rose from the open ground.*
>
> *Since the above recorded happenings, it was discovered that a great cave or natural cavity exists under the earth at that place. The discovery was made by the attempt to sink a well for Jim Monger…with ropes the well diggers let themselves down through the opening and…set out to explore the cave…but were unable to determine the full extent.*

Skinner's (1896) "Swallowing Earthquake" and Robinson's (1891) notes on similar myths pre-date Swanton's (1922; 1928) publication of several Muskhogean myths by two decades and are told from a notably Anglo-American point-of-view. Nevertheless, when read in association with the various myths related to a catastrophic flood that involved the Coosa people a remarkable similarity may be observed.

Woksi Micco's Story of Coosa

Swanton (1928) obtained the following from Woksi Micco of Hilibi:

> "*An unmarried woman in the town of Coosa went to draw water from the spring and was afterward found to be pregnant. When her child was born it was spotted. Then her*

> *brothers and some of her relatives thought this was the offspring of a water tiger (wi katca), which the Muskogee now identify with the leopard, became angry with her, and wanted to kill it. But she had some old relatives who opposed them and finally prevailed. The busk ground and 'hot house' where they councilled about this stood near the river, and the girl ran to the water tiger and said 'There is an effort being made to kill my child, but they have not killed it yet.' Then the water tiger said 'Let those who are disposed to defend the child move away from the rest.' The woman told them what the water tiger had said, so they moved away from the town, and that night the water tiger brought on a great inundation which covered Coosa, with its square ground and all, but for years after people could see there the main timbers that braced the old tcokofa."*

Legus Perryman's Story of Tulsa

Additional evidence given to Swanton by Legus Perryman links both Coosa and Eufaula with the origins of Tulsa. After traveling east in search of a home for a long period:

> *"…they settled permanently and, became very numerous, and established square grounds…. One night, a long time afterward, a dance was held at which all persons were present except a newly married couple who were in some manner delayed. When these arrived at the square, late at night, they found nothing there but a lake. They remained on the shores of the lake watching and noticed that the birds which tried to fly across fell in and were drowned. One big crane, however, flew all the way over. It said 'koos, koos, koos,' and they thought that that was its name. As time went on this couple had children and their descendants formed another big town; and because the bird did fly over the submerged village in safety they named the town after it, saying 'We shall be called Coosas.' And in the town orations to-day their descendants, the people of Tulsa, begin by saying 'We are the Coosa people.'*

Caley Proctor's Legend of Coosa

Yet another origin myth given to Swanton was by Caley Proctor. This oral legend is repeated here as written by Swanton, almost in its entirety due to its significance:

> *Cosa, according to this legend, was the original name of the Muscogees, two of whom, at a very early day, went away from home on a hunting expedition in the wild woods as was the habit of the people in those times. Having gone as far as they cared to travel the first day, they encamped near a stream of water. Near their camp stood a large tree, from a certain part of which the men noticed that drops of water occasionally fell. Regarding this as a rather strange phenomenon, one of the men determined to investigate it, and he climbed the tree to ascertain the cause, while his companion awaited the result below. He found the tree to be hollow at a certain point, containing a considerable quantity of water collected therein from rainfall, from which descended the drops of water they had observed. In this water were a number of fishes. With his hands he caught some of these which he brought down, cooked and ate against the protests of his companion who said, 'We have always been counseled not to undertake to do anything unusual without the advice or consent of persons older than we and of greater experience, and I think you should not eat the fishes taken in so strange a manner lest something terrible befall you.' But the young man could not undo his rash act, and soon its effects began to show clearly; in a little while, that same evening, his human head and face changed into the head of an immense snake, while his arms and legs also changed, completing his metamorphosis into a large serpent of horrible appearance.*

Next morning, he bewailed his plight to his companion, saying: 'you in all friendliness advised me not to eat of the fishes lest evil befall me, but, not regarding your friendly caution, I ate them and am now suffering the consequences of my obstinacy. Go now and inform my parents of my plight, tell them how it came about, and say to them if they desire to see me, to come here. I will be in the creek nearby. When they come let them discharge a gun as a signal of their arrival and I shall come out of the water to meet them.'

So saying he entered the waters of the creek and disappeared, leaving his friend alone in camp. The latter thereupon returned to the town of Cosa, and to the parents and relatives of the now metamorphosed man he related all that had occurred and told how he had been deputed by his unfortunate friend to relate the story of his mishap and they might once more see him if they desired.

The parents and relatives and all others who had heard the story were greatly concerned and, assembling in full force, repaired at once to the place indicated where they discharged the gun as their friend had directed. On hearing this signal the snake man came forth from the creek and stretched himself affectionately across the laps of his parents as they sat in the midst of the assemblage. Upon this they gave way to their grief and set up a great wahketa,[6]expressive of sorrow for the loss of their son. The monster said sadly: 'You see me in this pitiable condition, the circumstances of which have, I presume, been explained to you so that you understand how it came about. I now suggest that my relatives and friends return to their homes and on the fourth day from the present gather at the Tcook-u-thlocco ("Big House"-i.e. the Square Ground) where I will meet them later.' Saying this, the snake-man returned to the water and his relatives and friends went back to their homes.

On the fourth day the relatives and friends of the snake-man gathered at the Tcook-u-thlocco, as had been requested, and many others came near but remained on the outside. Presently the snake-man made his appearance, coming from the stream in which he had taken refuge, and he was followed by a stream of water. When he entered the grounds occupied by the public buildings they all sank, along with the people gathered there, and this was the origin of Coosa River.

Those who did not enter the Square Grounds with the friends and relatives of the snake-man were not destroyed but gathered themselves together and became what was subsequently known as Cosa town, the members calling themselves Cos-is-tuggees, 'people of Cosa town,' though the name is more properly Cos-ulgee. The residue of the Cosa people, having thus formed a town, bitterly lamented on account of the calamity that had thus robbed them of so many of their valuable citizens. In grievous distress they cried out, 'Woe is our nation! We were the greatest of all the nations; our tus-e-ki-ya[7]s were numerous, reaching out and known and dreaded the world over. But it is not so now. We have lost even our Tcook-u'-thlocco[8], and a great number of our common people and great is the humiliation that has fallen on us. Shame and humiliation is now our portion. We can occupy only the place of the e-yas-ke (the humble, lowly, weak; unpretending).' The

6 Here Swanton notes that Wahketa is a lamentation for the dead. In modern Muskhogean the term is "yvhiketv" and means "song."

7 "Tvsekvyv;" member of a tribal town.

8 "Cuko rakko;" square ground, ceremonial ground.

> *Cosas indulged in other similar jeremiads*[9]*and changed their name to Tulsee, "ulsee" signifying in the Muscogee language 'to be ashamed, bashful,' while from it may be derived ul is ke ta, 'shame, disgrace,' but how the letter 't' could have become prefixed to ulsee is neither explained nor conjectured.*

Analysis

Myths and legends derived from disparate sources describe a Native American town that was once destroyed by either a flood or the catastrophic collapse of a sinkhole. Swanton (1922; 1928) recorded several similar myths associated with Coosa from Muskhogean sources. Place-names of Muskhogean origin within the Choccolocco Valley suggest that within the valley, a group of people were once, *"swallowed by swirling water."* Local legends specifically mention Blue Pond and the farm that is known today as "Davis Farm." Thus, there is strong documentary evidence indicating that a catastrophic flood and/or subsidence event affected the population within the CCAC-Davis Farm at some point in the past. This documentary evidence is consistent with the archaeological record at the CCAC-Davis Farm.

Local legends and Muskhogean oral histories also agree on the agency involved in the catastrophic flooding and subsidence. Two of the local legends specifically reference children that were born spotted and one specifically mentions the word "leopard." Woksi Micco's story of Coosa describes a child that was born with spots and notes that the child was considered to be the offspring of a water tiger or *leopard*. Thus, in both the local and Muskhogean narratives the catastrophe that befell the town was caused by a water tiger. However, Caley Proctor's story references the metamorphosis of a man into a snake and in his version, it is the snake-man that causes the catastrophe. On this point there is evidence that the water tiger described in local legends and by Woksi Micco are the same entity described by Caley Proctor as a snake-man as Grantham (2002) notes that the Horned Serpent of the Coosa flood myths was closely associated or synonymous with the lion or cougar and both are the embodiment of the Chaotic Force responsible for floods and destruction.

The transformative power of the snake-man in Caley Proctor's legend may also be reflected in local place names. The local legends specifically mention Blue Pond which may be hydraulically connected to one of the drainages within the Choccolocco Valley known as "Blue Eye" Creek. Therefore, the etymology of Blue Pond may be related to the etymology of Blue-Eye Creek. Local legends note that Blue-Eye Creek was named after a Creek chief with one blue eye. However, the original survey recorded the name of this creek as "Alcachuska." Working with Arnold Taylor of Arbeka, the current research suggests that "Alcachuska" is the anglicization of the Muskhogean *"Ue-ki-pu-ca-se"* which means "spring owner" or a mythical being believed to own a spring or well (Martin and Mauldin, 2000). The mythical being in this case is thought to be the "*Ue-pu-ca-se"* or a large, <u>blue</u> tie-snake that can transform itself. Some Muskhogean sources equate the tie-snake with the horned serpent but others maintain that they are distinct entities (Grantham, 2002).

The similarity of Caley Proctor's legend with other New World myths is explored in depth within Grantham's (2002) <u>Creation Myths and Legends of the Creek Indians</u> and the widespread distribution of the horned serpent myth is noted by several researchers as evidence for its antiquity. Grantham and

9 This term is not widely used today. Wikipedia defines it as a long literary work, usually in prose, but sometimes in verse, in which the author bitterly laments the state of society and its morals in a serious tone of sustained invective, and always contains a prophecy of society's imminent downfall.

Lankford (1987) both note that Conzemius (1932) reported a myth among the Mayangna[10] of Nicaragua that exhibited such remarkable similarity to the Creek snake-man myth that it prompted Rands (1954) to suggest, *"In view of the similarities, there can be no doubt that the stories are historically related."* Nevertheless, beyond noting seven (7) distinct aspects of each myth that were identical, Rands provided no evidence for such an historical relation. However, Lankford (1987), who noted, *"Despite the distance, the Mayangna[11] legend is extraordinarily close to the Creek texts, and there can be little question of a relationship,"* suggested that both legends are part of a much larger oicotype of Water Serpent myths that includes the Menomini, Seneca, Creek, Hitchiti, Cherokee, Yuchi and the Sumu. Lankford also noted that the snake-man story appears to be a compound that includes a flood legend that merits close attention due to the fact that several of the flood texts identify the flooded town as Coosa.

Serpent Symbolism in the Eastern Woodlands

Given the existence of an oicotype for the horned serpent myth that includes disparate Native American cultural and linguistic groups, investigation of the horned serpent described in myths of these groups is a necessary line of inquiry. Lankford's comprehensive review of Native American emergence and earth-diver legends led him to conclude that there were two major origin traditions; an Earth-Diver Tradition and an Emergence Tradition. Lankford's research demonstrated a continental geographical distribution between these two distinct traditions. Moreover, Lankford noted that the Emergence Tradition is also known as a strong Mesoamerican theme. Within the continental United States, the distribution was particularly distinct for the Eastern Woodlands and Plains where the Earth-Diver Tradition is persistent among groups that occupied the northern area and the Emergence Tradition is persistent among groups that occupied the southern area. For example, the Muskhogeans all have variants of the Emergence Tradition while it is notably absent among the Cherokee and Yuchi both of which have Earth-Diver Traditions. Thus, Lankford's analysis led him to ask:

> *"The widespread distribution of the flood legend in the Southeast…argues that the flood is an old tradition there. By contrast, the few appearances of the earth-diver, once linked to the flood, pose a problem: Why are the Muskogeans lacking in this ancient motif?"*

The origin traditions for the Muskhogeans often include the Emergence Tradition within a migration legend. This fact led Lankford to suggest, *"The Muskogean connection with the Southwestern/Plains Emergence Tradition is supported by their [Muskogeans] legends of migration from the west into the Southeast."* The various migration legends of the Creeks are well-known. However, of particular relevance for the current discussion of the horned serpent is the association of this mythological entity with a particular Muskhogean clan. Swanton (1922) references this within an emergence myth related to him by one of his sources that lived in Hilibi:

> *"The people of a certain Creek town came out of a mountain cave. At the mouth of this cave was a root extending across it in such a manner that egress was to be had on either side, and half of the people emerged on one side, half on the other side; those who came out on one side were the Aktayatci; those who came out on the other the Woksi. A part of the Aktayatci, who were behind the others, had horns, and for this reason those who had first emerged closed the hole in the mountain, shutting them in permanently."*

10 Conzemius uses the term "Sumu" but Wikipedia notes the preferred autonym is Mayangna as "Sumu" is a derogatory term used by the Miskito to refer to the Mayangna.

11 Lankford references "Sumu" as in the note above.

Swanton (1922; 1928) was somewhat perplexed by the Aktayatci clan as he noted the name was uninterpretable. However, one of his Seminole informants interpreted the term to mean "something traveling about" with reference being intended for the water moccasin. Martin and Mauldin (2000) list *Aktvyahcvlke* as an Archaic term referring to the Aktayahche clan and note that it was thought to refer to a water snake or water tiger. Thus, the horned serpent featured in the myths of Coosa appears to be strongly associated with this particular clan. This relationship has even more relevance in light of Swanton's research on clan associations which led him to note that:

> *"Among the purer Muskogee divisions, we find that the Aktayatci is most conspicuous among the Hilibi, the Eufaula, and in the Wiogufki groups of towns…. the Aktayatci provided chiefs in Hilibi, Upper Eufaula, Wiogufki and possibly Pakan Tallahassee."*

A common clan, the Akatyahce, links the Hilibi, Upper Eufaula, Wiogufke and Pakan Tallahassee towns. There are other compelling linkages as well. For example, Swanton noted that the modern Creeks believed the Pakana had separated from the Abihka although Stiggins had earlier suggested the Abihka tradition was that the Pakanas had been a separate people during ancient times. The close association of the Abihka with Coosa has already been established. Interestingly, Swanton notes that his best sources among the older men linked the Wiogufke of the Wakokai as a branch of the Eufaula. Although several of Swanton's other sources partially contradicted this claim, it is clear that Swanton thought that Wiogufke had once been a branch of the Eufaula in the remote past. Thus, if it is accepted that Wiogufke was a branch of the Eufaula and the Pakana separated from the Abihka, then all of the Creek towns where the principal chief was selected from the Aktayahche clan appear to have descended from towns associated with the 16th century paramount chiefdom of Coosa.

The historical record connects the Aktayahche clan with two pre-removal residents of the Abihka town of Choccolocco. The anglicized name "Chinnabee," one of Choccolocco's most famous early 19th century residents, is easily derived from the Muskhogean *"cettoyvpe"* for snake horns or horns of a mythical snake used as a charm (Martin and Mauldin, 2000). In this case, it would appear from the previous discussion that the mythical snake would be the Water Tiger. The association between Choccolocco and the Aktayahche is further buttressed by an interview conducted by Bessie Coleman Robinson in 1891 of an early gold prospector named Gideon Riddle. Robinson documented that Riddle observed ground subsidence near Blue Pond and was taken to see an "Oaktacki" woman who lived at Boiling Spring who told him that, *"…the Indians had met there to burn a woman and her child…. the ground sank and caught all but two who escaped…"* Again, the anglicized "Oaktacki" is easily derived from the Muskhogean "Aktayahche" referring to the Water Tiger clan. Further evidence of the antiquity and strong association of the Water Tiger with the CCAC-Davis Farm and the descendants of the 16th century paramount chiefdom of Coosa is presented within following sections of this report.

Antiquity of the Horned Serpent

The Horned Serpent is one of the most recognizable expressions of Mississippi period iconography found at archaeological sites throughout the Southeast. However, horned serpent symbolism is also found as a landscape feature within the eastern Woodlands and the best-known example is that of the Great Serpent Mound in Ohio. Recent investigations at the Great Serpent Mound have documented its antiquity (Fletcher, et al., 1996) and nearly continual use for some 2,300 years (Herrmann, et al., 2014). The Great Serpent Mound, appears to have been initially constructed by the Adena culture (ca. 800 BC to AD 100) and is widely considered the best surviving example of a prehistoric effigy mound in North America. It may also be the earliest expression of the Horned Serpent as the recent research of Herrmann and others (2014) suggests that the belief system represented in the monument was in place half a millennium earlier than Hopewell. In 1991, Fletcher and others (1996) demonstrated that the Great Serpent Mound was repaired and reconfigured by Fort Ancient people around AD 1000 leading Herrmann and others (2014) to note:

> *"…it was used, repaired, and possibly reconfigured by local groups for more than 2000 years, which may imply at least some level of long-term cultural continuity in the use of this iconic monument."*

The cosmology reflected within the Great Serpent Mound has been the subject of considerable research and is only briefly reviewed here for its implications for the current investigation. While Power (2004) noted the Great Serpent Mound exhibits features reminiscent of a plumed serpent which might suggest a possible Mesoamerican influence, Lankford's (2007) research makes a strong argument that the feathers or wings (or horns) are locatives indicating that the Great Serpent, as represented, is in its celestial manifestation.

Lankford (2007) and others have noted that the Great Serpent is an important figure in the religious belief system of the Eastern Woodlands that extends back to at least Hopewell times and that encodes astronomical beliefs within myths and iconography. Early research (Hardman & Hardman, 1987; Fletcher & Cameron, 1988) explored the possibility that certain features of the Great Serpent Mound were aligned with summer solstice sunset and possibly winter solstice sunrise. However, these efforts lacked cultural context, chronological data on mound construction and, astronomical data to support such an interpretation (Romain, 1987). An alternative interpretation was subsequently developed (Romain, 1988b) that suggests the Great Serpent Mound depicted an ancient solar eclipse but this interpretation is highly speculative. More importantly for the current research, Romain (1988b) concluded that several features of the Serpent Mound are similar to the mythical Uktena described in historic Cherokee myths and legends. More recently, the Uktena has also been considered by others as a regional manifestation of the Great Serpent in Eastern Woodlands religion (Lankford, 2007).

In Cherokee mythology the Uktena is associated with both the underworld and the sky. The connection with the celestial world is found in the Cherokee myth recorded by Mooney as "The Uktena and the Ulûňsû'tĭ." The myth notes that, *"Long ago…when the Sun became angry at the people on earth…the Little Men changed a man into a monster snake, which they called Uktena, 'The Keen-eyed,' and sent him to kill her."* It is this aspect of the legend that Romain used in support of his solar eclipse interpretation. Romain (1988a) photographed a rattlesnake biting a metal disc to show the remarkable similarity to the partial phases of a solar eclipse.

Romain's work at the Great Serpent Mound identified the presence of geological features that also appear to associate the site with the Uktena. Previous researchers had already suggested that the Great Serpent Mound Ridge resembles an enormous snake lifting itself up out of Brush Creek (Holmes, 1886; Willoughby, 1919). However, Romain, citing Mooney's "The Red Man and The Uktena" where the scales of the Uktena are described as reflecting the sun, observed that outcrops of calcite above Brush Creek and along Serpent Mound ridge, *"glitter, like sparks of fire, as they reflect the light of the setting sun."* Romain's mapping at the Great Serpent Mound demonstrated that a line passing through the center of the coiled tail of the Great Serpent and the apex of the triangle at the serpent's head described the meridian transit (noon) of the sun when shadows cast are at their shortest. Romain noted that the significance of such an astronomical alignment has an unmistakable association with the Uktena as central to the legend is the Ulûňsû'tĭ, which is described as a bright, blazing crest, like a diamond upon the Uktena's forehead (Mooney, 1900). Citing Adair's (1775) description that the Ulûňsû'tĭ had the power to *"sully the meridian beams of the sun,"* Romain noted that the meridian alignment of the coiled tail and the triangle in the head of the serpent occurs precisely where the Ulûñsû'tĭ would be if the Great Serpent Mound was meant as a representation of the Uktena.

The association of the Great Serpent with the celestial world has been made by other researchers as well. Lankford (2007), apparently unaware of the work of Romain on the subject, noted:

> *"Mooney recorded several Cherokee myths about the Uktena…described in a way that made its connection with the Great Serpent very likely, but…also consistently located on earth. There is a single reference which indicates otherwise…. In the Cherokee…myth, 'the Uktena grew angrier all the time and very dangerous…so they sent him up to Galun'lati [the sky][12], and he is there now.' The Great Serpent is, surprisingly, connected in some way with the celestial world."*

If the Great Serpent Mound is a physical manifestation of the Uktena as suggested by Romain and Lankford and both the Serpent Mound and Uktena are connected to the celestial world, the simplest explanation is that both represent the same entity. Lankford associates the Uktena with the constellation Scorpio and the Ulûñsû'tĭ with the Chickasaw's "eye-star" of this constellation and its relationship within the Eastern Woodland cosmological world view. Yet, this interpretation begs the question, "how is this constellation responsible for the specific catastrophic events attributed to the Great Serpent in Eastern Woodland oral traditions?"

The Uktena and the Daughter of the Sun

Both Romain's and Langford's treatment of the Uktena in Cherokee narratives lack important details and context regarding the celestial nature of the Uktena that are found in other Cherokee myths. The story of why the Uktena was created is fully developed in the myth of "The Daughter of the Sun." To appreciate the significance of the Uktena, it is necessary to understand that the "Little Men" presented within these myths are supernatural beings that were sometimes called "Thunder Boys" and who lived in the west above the sky vault and were the sons of Kana'ti, the Great Thunderer of the whirlwind and hurricane. It is also important to note that the "Thunder Boys" were quite different from the "Little People" who lived in caves and who were responsible for the short, sharp claps of thunder associated with normal rainstorms (Mooney, 1900).

The major aspects of "The Daughter of the Sun" myth as recorded by Mooney (1900) are presented below:

> *"The Sun lived on the other side of the sky vault, but her daughter lived in the middle of the sky, directly above the earth, and every day as the Sun was climbing along the sky arch to the west she used to stop at her daughter's house for dinner...every day when she got near her daughter's house she sent down such sultry rays that there was a great fever and the people died by hundreds, until everyone had lost some friend and there was fear that no one would be left…*
>
> *They went for help to the Little Men…who made medicine and changed two men into snakes, the Spreading-Adder and the Copperhead, and sent them to watch near the door of the daughter of the Sun to bite the old Sun when she came the next day. [but they failed] …*
>
> *So the people still died from the heat…and the Little Men made medicine again and changed one man into the great Uktena and another into the Rattlesnake and sent them to*

12 Mooney defines gălûn'lătĭ as "above, on high."

> *watch near the house and kill the old Sun when she came to dinner...but the Rattlesnake was so quick and eager…when the Sun's daughter opened the door to look out for her mother, he sprang up and bit her and she fell dead in the doorway. He forgot to wait for the old Sun, but went back to the people and the Uktena was so very angry that he went back too…*
>
> *When the Sun found her daughter dead, she went into the house and grieved, and the people did not die any more, but now the world was dark all the time, because the Sun would not come out. They went again to the Little Men, and these told them that if they wanted the Sun to come out again they must bring back her daughter from the Ghost Country…The Sun had been glad when they started to the Ghost country, but when they came back without her daughter she grieved…and wept until her tears made a flood upon the earth, and the people were afraid the world would be drowned…They sent their handsomest young men and women to amuse her so that she would stop crying…but for a long time she kept her face covered and paid no attention, until at last the drummer suddenly changed the song, when she lifted up her face, and was so pleased at the sight that she forgot her grief and smiled."*

If the Great Serpent Mound and the Cherokee Uktena both represent a celestial manifestation of the Horned Serpent as maintained by Romain and Lankford, it is still somewhat difficult to view the Cherokee "Daughter of the Sun" myth as referencing a mere eclipse of the sun. Indeed, the "Daughter of the Sun" myth cannot be read without coming to the conclusion that something of much more significance happened in the ancient skies of North America and that this event caused so many people to die that, *"…there was fear that no one would be left..."* This celestial event involved something in the sky that was directly overhead at mid-day and was associated with such extreme heat that it led to many people dying until both it and the sun disappeared. Moreover, after the event, *the world was dark all the time, because the sun would not come out."* This period of darkness was followed by a brief respite until the sun realized that the Little Men did not bring her daughter back and so she, "*wept until her tears made a flood upon the earth, and the people were afraid the world would be drowned…"* There is only one type of known celestial event that could cause these types of effects on earth and that is a close encounter with, or impact by, a meteor or comet.

Centaurs, Climate and Culture Change

Meteors and comets have long been recognized and feared by cultures around the world. However, it is only in the last several decades that significant research has been conducted on the hazards that comets and asteroids present to earth. Early research focused on the impact hazard and assumed that the population of near-earth objects was in a steady state. More recent research has shown that "centaurs" (giant comets derived from the trans-Neptunian region of the solar system with diameters greater than 1 km) are periodically perturbed into earth-crossing orbits at an estimated rate of one per 20-30,000 years. Based on analysis of known orbits, a centaur is thought to have arrived within the inner solar system approximately 24,000 years ago. As this giant comet approached the sun, it shed, in addition to small particles, large fragments that resulted in a debris trail of varying concentration associated with four well-known meteor showers known as the Taurid Complex, as well as at least a dozen asteroid-sized objects and the Comet P/Encke. (Asher, et al., 1994). Research on the variable densities of objects within the Taurid Complex debris field led Clube and Napier (1982) to suggest that *"a few dozen sporadic impacts in the tens of megatons, and a few in the 100 to 1,000 megaton range must have occurred in the past 5,000 years."* Thus, it appears quite possible that prehistoric Native Americans could have witnessed one or more Tunguska-sized impacts[13] over the span of the Holocene.

Large-scale (hemispheric, continental and/or global) population collapse and societal disruptions evident in the archaeological record at ca. 12,900 BP (Anderson, et al., 2011), ca. 4,200 BP (Baillie & McAneny, 2015) and ca. AD 536, are associated with identified changes within the proxy data for climate during these periods. Evidence has been presented by some that these observed climate and culture change events may be either wholly or partially attributed to cosmic impact events (Firestone, et al., 2007; Hagstrum, et al., 2017; LeCompte, et al., 2012; Weiss, et al., 1993; Courty, et al., 2006; Masse, 2007; Abbott, et al., 2014). The evidence of an impact at the onset of the Younger Dryas has been reviewed in the previous section of this report and is not repeated here.

Research directed towards understanding the causes of the abrupt climate change centered at 4,200 BP first led to the suggestion of its linkage with evidence of a cosmic impact event (Weiss, et al., 1993; Courty, 1998; Courty, et al., 2006; Masse, 2007). Pieser (1998), has compiled references of collapse during this time of the Old Kingdom in Egypt, the Akkadian Empire in Mesopotamia, the Early Bronze Age societies in Anatolia, Greece and Israel, as well as the Indus Valley, present-day Afghanistan and the Hongshan culture in China and notes:

> *The strongest evidence for historical impact events derives from ancient written documents and traditions…frequently reporting extraordinary fireball events and major disasters, often both …linked together.*

A cosmic impact has also been suggested for a global climate downturn centered at ca. AD 536. While still debated, a fragment of the Centaur progenitor of the Taurid Complex has been suggested as the cause of this event (Rigby, et al., 2004). Additional evidence supporting one or more oceanic impacts has also been presented (Abbott, et al., 2014; Abbott, et al., 2009). Complicating such studies is the finding of a correlation between impacts and increased volcanism (Napier, et al., 2015) as both have been implicated in the AD 536 event. Dull, Southon and Sheets (2001) have produced evidence that the Tierra Blanca Joven eruption of the Ilopongo caldera in El Salvador occurred at ca. AD 536 resulting in a large-scale demographic collapse within the realm of the southern Maya.

The archaeology of cosmic impacts is a relatively new area of research. Nevertheless, Barrientos and Masse (2014) have recently argued that cosmic impacts are a category of natural catastrophe that is neglected or misunderstood by most archaeologists in reconstructions of past human population dynamics. Based on currently available evidence that is thought to significantly underestimate the population of small objects in near-earth orbit, Barrientos and Masse (2014) note that Tunguska-sized events occur on average once at intervals between 100 and 1, 500 years and release energy in the 4 to 15 megaton range (200-750 times that of the Hiroshima/Nagasaki blasts) while events of less than 10 megatons (500 times that of the Hiroshima/Nagasaki blasts) appear to be much more frequent and would have, *"…profound psychological, behavior, cultural and occasional lethal ramifications for the individuals and societies that experienced the event."* Thus, the hypothesis that the Great Serpent Mound and Uktena myth reference at least one regionally-significant cosmic impact is not unreasonable.

Masse (1995) has argued that celestial events observed in the sky created an important "otherworld" for virtually all cultural groups. Cosmic events occurring during their cultural history may be encoded in the mythologies of these groups:

13 The term "impact" as used herein refers to both airbursts and surficial impactors.

> "*Myth is a structured narrative…derived from oral transmission, and typically created…and perpetuated by knowledge specialists who use supernatural elements…in order to categorize and explain observed natural phenomena and events that are of perceived vital importance…"* (Masse, et al., 2007).

Firestone, West and Warwick-Smith (2006) have presented myths from eight (8) North American tribes that they suggest describe cosmic impacts and flood events associated with the hypothesized ca. 12,900 BP cosmic impact event at the onset of the Younger Dryas. McCafferty and Baillie (2005) have argued that records of prehistoric comets are encoded within Celtic mythology. Baillie and McAneney (2015) have suggested potential impact sites for the 4,200 BP impact event and noted that the event is referenced in the Annals of the Four Masters in Ireland and a Chinese myth dating to the same period in which a nine-year flood was caused by a great serpent after ten suns appeared in the sky which burnt up all of the crops.

Deculturation Revisited

Prehistorians have only recently recognized that the oral traditions of some Native American groups have preserved knowledge of natural events that occurred thousands of years in the past. Barrientos and Masse (2014), citing others note:

> *"…Echo-Hawk* (2000) *has cogently argued that some Native American migration traditions capture aspects of transition between Pleistocene and Holocene climatic conditions; and it is widely recognized that Klamath and other Northwestern myths capture cataclysmic eruption of Oregon's Mount Mazama and the formation of Crater Lake more than 7,500 years ago."*

This perspective contrasts with earlier views in which deculturation played an important role in the models of past cultural change in the Southeast. For example, Henry Dobyns' (1983) research on the magnitude and scale of the impact of European pathogens on Native American communities led him to suggest that significant depopulation during the early post-Columbian contact period sufficiently disrupted Native American "culture" so that:

> "*…. ethnographic studies conducted in the nineteenth century cannot accurately report populous, class-structured polities of the early sixteenth century prior to depopulation*."

Dobyns' hypothesis on depopulation was followed by the work of Smith (1987), who suggested that the chiefdom of Coosa experienced massive depopulation due in large part to the introduction of European pathogens in the 16th century. Smith's review of the archaeological record associated with the paramount chiefdom of Coosa suggested a reduction in chiefly organization, craft specialization, and a cessation of public works during subsequent intervals into the 17th century and he asserted that all of these were indicators of a process of "deculturation" of the once powerful paramount chiefdom. According to Smith, the process of "deculturation" together with external pressures resulting from European influences on neighboring regions caused a banding together for mutual defense by remnants of several once powerful Southeastern chiefdoms into what would become known as the Creek Confederacy.

More recent scholarship has looked beyond epidemic disease for other causes of demographic collapse in the region. While the introduction of European pathogens remains a factor, it has become clear that other causes also played a significant role in the transformation of pre-contact Mississippian cultures. Moreover, the degree to which specific causal factors contributed to demographic collapse appears to have varied across the region. Citing a lack of evidence for catastrophic population loss among the indigenous inhabitants of Spanish Florida due to well-documented episodes of epidemic disease, Ethridge (2009) has proposed a "shatter zone" framework that examines culture change within the post-contact Southeast from the world-systems perspective advanced by Wallerstein (1974).

The work of Ethridge (2009) and others has also demonstrated that while demographic collapse and regional instability must have led to a certain amount of transformation and reorganization of pre-contact Southeastern chiefdoms it is not the case that such a process precluded 19th century populations from retaining knowledge of previous social institutions. While the changes to the Mississippian world were transformative, post-contact social organizations retained many of the institutions, practices and knowledge of pre-contact Native American life (Ethridge, 2009). As evidence of this fact, we need only consider the lamentations of the Coosa in Caley Proctor's legend:

> *"In grievous distress they cried out, 'Woe is our nation! We were the greatest of all the nations; our tus-e-ki-yas [Tvsekvyv] were numerous, reaching out and known and dreaded the world over."*

The lamentations of Coosa are entirely consistent with the evidence derived from archaeological sites in the region.

Similarly, Galloway (2002) has demonstrated through her work that, in many instances, "*Native tradition is still capable of revealing where people came from, what their aspirations were, and how they lived*." Galloway's observations are echoed by Grantham (2002) and others. According to Grantham, the particular historical and social context within which "Creek" mythology and beliefs evolved necessitates an understanding that the resulting belief system involved the blending of beliefs from differing social groups that became communal property. Furthermore, Grantham suggests that the assumption of a single heritage between these disparate groups has not only complicated understanding but also led to misinterpretation and diminishment in the perceived research value of such information. Grantham's work suggests at least two distinct mythological/cosmological traditions exist within contemporary Creek society. The first is identifiable as an "Eastern Creek Tradition" derived from the Yuchi, the Hitchiti and the Tuskeegee. The second is identifiable as a "Western Creek Tradition" derived from the Muskogee, the Alabama and, the Koasati.

Within the southern Appalachians the process of "*blending of beliefs from differing social groups*" identified by Grantham (2002) must have included complex interactions between the ancestors of present-day Creeks, Shawnee, Chickasaw, Natchez, Cherokees along with other Southeastern groups that did not survive the contact period intact. Just as the Muscogee (Creek) Nation that emerged in the 18th century has been described by Knight (1994b) as, "*a polyethnic confederation of tribes*" several of the lower Cherokee towns of the 18th century appear to have been plural as well. Mooney (1900) noted that in addition to the Cherokee, the Lower Towns consisted of, "*…Creeks, Shawanos and white Tories."* Both Mooney (1900) and Swanton (1928) noted that the connections between these historic groups was of great antiquity. Moreover, it is clear that both the Cherokee and the Creeks shared many aspects of material culture to include similar styles of decorative motifs on pottery and it seems quite apparent that they also shared a similar cosmology. The shared serpent symbolism of the Upper Creek "*Aktvyahcvlke*" and the Southern Iroquoian (Cherokee) "Uktena" is just one example of the antiquity of such a connection.

The difficulties associated with oral histories notwithstanding, if the story of the post-16th century Coosa people can be linked through time to the beginning of the 18th century based on the archaeological manifestations at a relatively few known sites along the margin of the river that bears their name (Smith, 1987; Smith, 2000), then it takes no stretch of imagination to link them to a broader cultural landscape that seems to be reflected in the myths and legends of their 19th and 20th century descendants. Caley Proctor's legend of the snake-man indicated that the snake-man emerged from a stream followed by a torrent of water that sank the "cuko-rakko." Given the importance of this myth, along with the documented presence of the *Aktayahche* within the pre-removal town of Choccolocco where multiple local legends report a Native American town was swallowed by water, it is hardly surprising that we find a large serpent effigy pavement constructed of rock (1Ca157) located on Choccolocco Mountain and overlooking a surface water drainage that joins Choccolocco Creek precisely at the location of an earthen mound (1Ca196), a stone mound (1Ca636) and, a densely populated village centered on Boiling Springs (1Ca190) (Figure 30).

That the Upper Creeks had a tradition of rock constructions specifically associated with a catastrophe involving water was documented by Swanton (1928), citing a 1755 letter from a French officer stationed at Fort Toulouse, who noted:

> *"They pretend that their first father having escaped with two male children from a universal deluge, for they all declare that there was one, went to consult the oracle. This told him to ascend a designated mountain covered with stones, some white and others black and collect as many as both kinds as he could before sunset, he and his two children, and carry them over their lands and the next day they would find as many men and women as they had carried stones."*

Thus, the archaeological context of the CCAC-Davis Farm, with its associated stone serpent effigy and stone and earthen mounds may assist both in placing Upper Creek oral traditions within geographical and temporal context and in understanding the complex cultural history of the region.

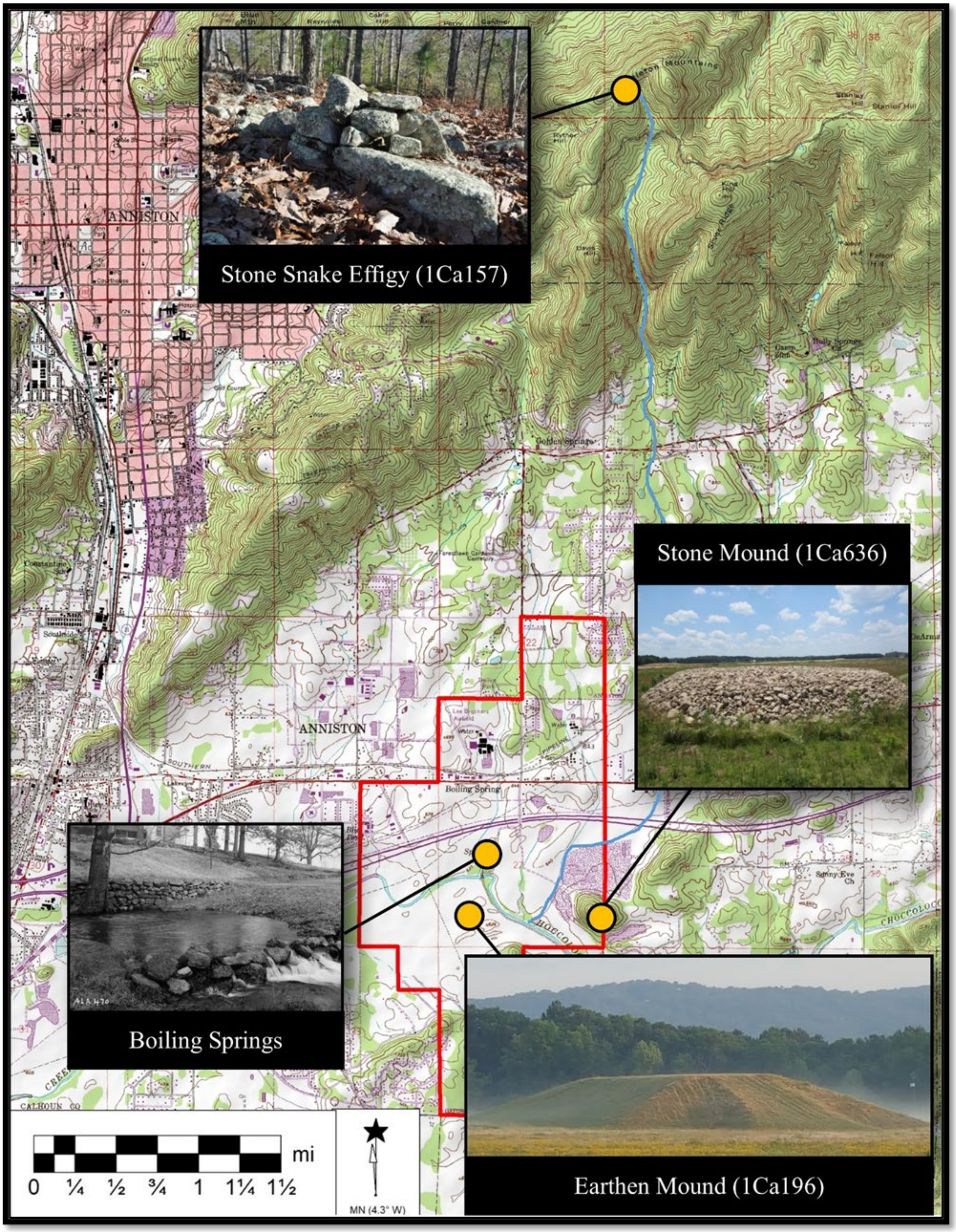

Figure 30. Major Cultural Landscape Features of the CCAC-Davis Farm

ARCHAEOLOGICAL CONTEXT

Discussion of the Paleoindian Period and Archaic Period Cultural Chronology for the Middle Coosa Sub-Basin has been limited to inclusion within Figure 31 outlining complex and/or horizon markers due to the lack of new information on these Stage/Periods obtained during the current investigations. The relevant phases for the Woodland Period to the Historic Period are discussed in detail and the findings of the current investigations are introduced and situated within the existing cultural framework. The discussion is centered on ceramic chronology as comparative data on subsistence and settlement patterns is still lacking for the Middle Coosa Sub-Basin. As discussed previously, the Late Historic Creek period (1780-1838) has been largely ignored by archaeologists and pottery assemblages from the few known sites have not been fully analyzed. Archaeological phases for the preceding Protohistoric Period (1650-1780) are currently only defined for the sites in proximity to the Coosa River and little is known of sites from this period in the Choccolocco Valley.

Ceramic Chronology

Archaeological ceramic sequences and cultural units have been only partially defined for the Middle Coosa region. For the purposes of the discussion below, units of time have been organized into discrete periods similar to that outlined by Griffin (1952). It should be noted that Jenkins and Krause (2009) have suggested that the use of temporal periods creates a bias against understanding that Mississippian and Woodland societies coexisted and *"predisposes the analyst to think in terms of sequent developments [because]…periods are strict serial orders [and] period A must always precede period B."* Accordingly, the periods utilized herein are strict serial orders only to the extent that they reference the flow of time, which is unavoidably experienced as a unilinear series of events within an empirically-observable world. The extent to which cultural unit or stage descriptors (i.e., Woodland or Mississippian) for these time periods adequately describe the empirically-observable world is the very subject of archaeological inquiry. Therefore, within these time periods, archaeological unit constructs (i.e., "phases") are situated with calendrical dates in parentheses and which in some cases overlap the broader time periods. This is particularly the case in instances where Woodland and Mississippian material remains appear to be coeval. It should also be noted that the situation in northeast Alabama is similar to that described by Markin and Knight (2017) for the Woodland period in northwest Georgia; archaeological phases are too broadly defined due to a reliance on diagnostic artifact typologies (i.e., ceramic types) that have historically been difficult to seriate for a variety of reasons. Therefore, the discussion below focuses primarily on ceramic chronology as a foundation for more detailed discussion of archaeological phases, to include other aspects of material culture indicative of cultural development, which is provided more fully in subsequent volumes of this report and addressed in recommendations for future research.

The Coosa and Tallapoosa River drainages have historically presented what Knight (1998) called "a special mystery" regarding both the late Woodland and subsequent Mississippi periods. Of particular concern to previous researchers has been what appeared to be a genuine lack of Mississippian settlement prior to the Late Mississippi Kymulga and Barnett phase (Lamar) ceramic assemblages. However, the excavations conducted at the Boiling Springs Site (1Ca190) have now produced evidence of a large Early Mississippi occupation along Choccolocco Creek. While there appears to be considerable evidence of a genuine lack of large Mississippian villages with associated mounds along the Coosa River proper, this is not the case along eastern tributaries to the river, particularly along Choccolocco Creek where several mound centers have now been identified. Moreover, recognition of Mississippian influences within the Middle Coosa has also been inhibited by the presumption that Mississippian assemblages are dominated by shell-tempered pottery. Given that the issue of tempering of ceramics is central to the discussion, existing ceramic

Middle Coosa Valley and Choccolocco Valley Cultural Chronology

AGE	STAGE	PERIOD	COMPLEX, HORIZON, OR PHASE: Middle Coosa Knight, Jr. (1985; 1993)	Middle Coosa Little (2008; 2010)	CCAC-Davis Farm Perry (This Volume)
	Historic	Recent	American	Historic	Late Historic Creek
1700		Colonial	Childersburg Woods Island		Early Historic Creek
		Early	Kymulga	Kymulga Barnett	? Late Barnett
1500	Mississippian	Late	?		Early Barnett
1300		Middle	Wilbanks/Sav.?	Etowah	Etowah
1100		Early	Etowah II-III	Ellis/Cane Creek	Boiling Springs Davis Farm
900	Woodland	Late	West Jefferson-Like	Extension of Cleveland?	Unnamed II Diversity in Pottery Assemblage
700			Lightwood Complex (Dead River/Baytown)		Unnamed I Weeden Island Mulberry Creek Cartersville-Like
500					Apparent Occupational Hiatus
300		Late Middle	Coarse Plain Pottery Bradley/Flint River Spike	Cleveland	Cartersville-Related Crooked Creek
100 AD		Early Middle	Cleveland Complex Greeneville		
BC 100	Archaic	Gulf Formational	Dry Branch/Flint Crk	Dry Branch/Broken Arrow	Kellogg
1,000		Late	Gypsy/Late Savannah River/Ledbetter		
2,000					
3,000			Savannah River		
4,000			Sykes/White Springs		
5,000		Middle	Morrow Mtn-Like?		
6,000			?		
7,000		Early	Kirk Stemmed/Crawford Crk Kirk Big Sandy/Autauga		
8,000	Paleoindian	Late	Dalton/Hardaway		
9,000		Early	?		
10,000					

Figure 31. Middle Coosa Valley and Choccolocco Valley Cultural Chronologies

chronologies are presented below and modified where appropriate. Following the direct-historical approach utilized in the previous section, the discussion proceeds from the more recent to the more distant past.

Historic Creek

No formal archaeological phases have been identified for the Middle Coosa after the preceding Childersburg phase. The Historic Creek Period utilized here is temporally the same as Knight's "Recent" and "Colonial" periods.

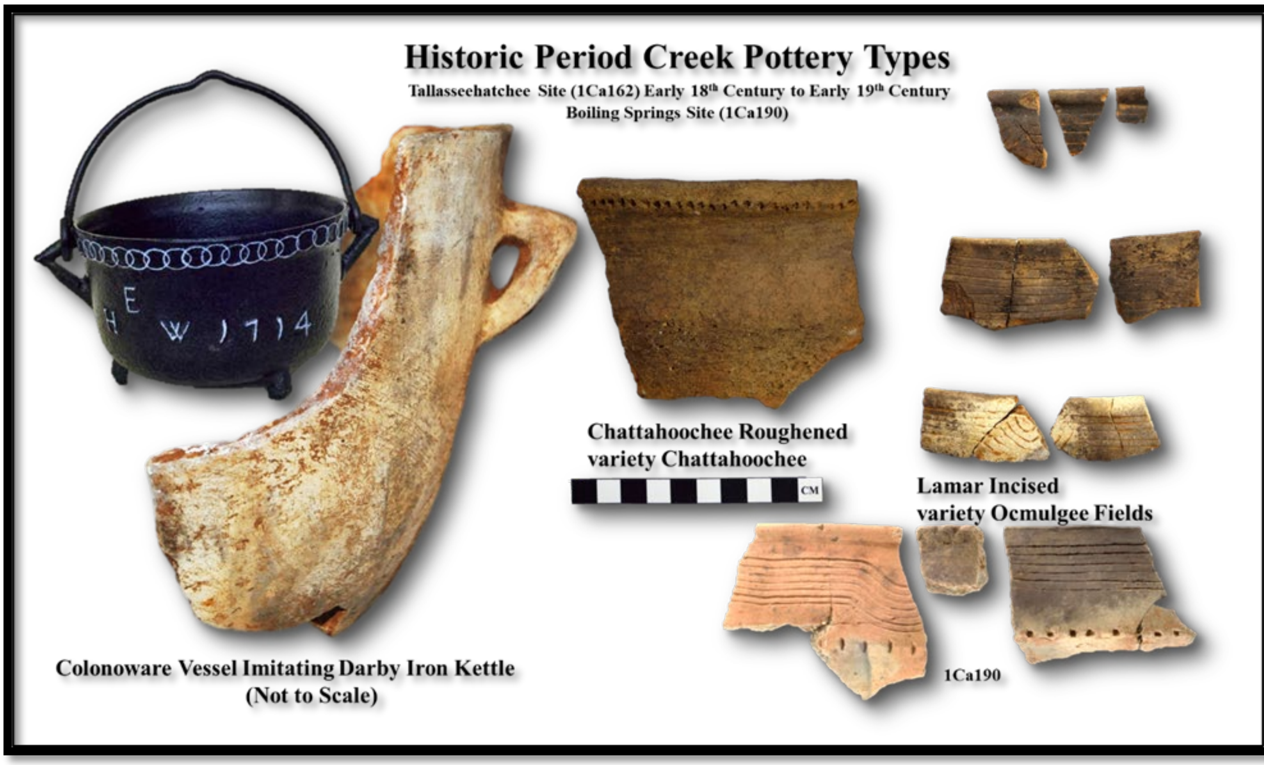

Figure 32. Middle Coosa Historic Creek Period Pottery

Late Historic Creek (AD 1780-1838)

The pottery complex for the historic Creek population is known from just a few sites in the Middle Coosa. Knight (1997) reported that Creek pottery accounted for only about 70 sherds at the early 19th century trading post known as Fort Leslie in present-day Talladega. The Fort Leslie ceramic tempers appeared to Knight (1998) to be more similar to Creek ceramics from the Tallapoosa River. Specific features of the Fort Leslie assemblage included a predominance of non-shell tempering, finely controlled, well-executed, closely spaced, multiple line incising and an apparent late increase in the proportion of the burnished wares. The assemblage included the dominant (34 percent) coarse tempered brushed ware, Chattahoochee Roughened, var. Chattahoochee and two (2) plain coarse-tempered classes, distinguished by the presence or absence of exterior burnishing. Also present was Lamar Incised var. Ocmulgee Fields with very closely spaced multiple parallel incised lines. Rim sherds from burnished vessels exhibited lip notching on either flattened or rounded lips. Vessel shapes included the cazuela bowl and the flared-rim jar.

Pottery assemblages similar to that identified at Fort Leslie have also been found at several other sites along Choccolocco and Tallasseehatchee Creeks in Calhoun County. Excavations at the Boiling Springs Site

(1Ca190), where historical documentation indicates that a member of the "*Aktayahche*" clan resided in the 1830s Choccolocco Town of the Abihkas, identified a single (n=1) feature that produced a rim and shoulder fragment of a cazuela bowl that was typed as Lamar Incised var. Ocmulgee Fields. A single (n=1) rim fragment of this type was also identified in JSU surface collections from Site 1Ca185. Several of the named types associated with the historic Creek occupation of Fort Leslie were also identified within JSU's collections from the Tallasseehatchee Site (1Ca162) where both Chattachoochee Roughened var. Chattahoochee and Lamar Incised var. Ocmulgee Fields are present. In addition to these types is a colonoware vessel that appears to imitate the widely-traded Darby iron kettle (See Figure 32, above).

The historic period Creek pottery recovered from these sites is predominantly sand, grit- and/or grog-tempered. This finding stands in stark contrast to Smith's (2015) observation that by the early 17th century shell tempering replaced grit tempering on the Coosa River. With respect to both temper and decorative treatment, historic Creek pottery from the upland tributaries east of the Middle Coosa is more similar to the preceding Late Mississippian Barnett phase than the shell-tempered ceramics recovered at protohistoric sites along the Coosa proper.

Early Historic Creek (ca. 1650-1780)

The Early Historic Creek Period within the Middle and Upper Coosa Sub-Basins is characterized by large-scale population movements, demographic collapse and the rise of plural communities. Various causes have been proposed for cultural change observed during this period and include the introduction of European pathogens, regional intensification of the slave trade, and an increase in interaction with colonial Anglo-American settlers. Early historic Creek ceramics are primarily known from only sites adjacent to the Coosa River. Early historic Creek ceramics from the Choccolocco Valley are not known. However, this is likely the result of survey bias and not due to any lack of sites.

Childersburg Phase (ca. AD 1715-1780)

The early historic Creek ceramics of the Middle Coosa are characterized by the dominance of shell-tempered McKee Island Plain, McKee Island Incised and, McKee Island Brushed pottery types identified at the Childersburg Site (1Ta1) in Talladega County. Minority types within the Childersburg assemblages include Childersburg Plain and Incised, which are sand-tempered types similar to the Tallapoosa phase on the Tallapoosa River.

Woods Island Phase (ca. AD 1650-1715)

Childersburg phase ceramics in the Middle Coosa are preceded by a similar ceramic assemblage identified at the Woods Island Site (1SC40). The Woods Island assemblage includes the types Mckee Island Plain, McKee Island Incised, McKee Island Brushed and, McKee Island Cord-Marked. Knight notes that the absence of McKee Island Cord-Marked in the Childersburg phase is one means of distinguishing Childersburg assemblages from Woods Island assemblages, which exhibit similarity with the varieties of the McKee Island culture found upriver where brushed and cord-marked types are much less frequent due to chronological differences in age between the earlier Weiss Basin sites and the Woods Island Site. This view is consistent with Smith (2015) who noted that the appearance of cord marking can "probably" be tied to a migration of people from the Tennessee River Valley. In light of the mixed temper assemblages at upland sites during both the later historic period and the preceding Late Mississippian Kymulga phase sites adjacent to the Coosa River, and Barnett phase sites in the Choccolocco Valley, the increase in shell tempering during this period might be best viewed as the result of an influx of people from the Tennessee River Valley. In addition to the shell-tempered pottery, the Woods Island assemblage shares continuity of the plain, brushed and incised decorations along with vessel forms, appendages and rim decoration with the preceding Kymulga phase ceramics.

Mississippi

Few researchers have taken on the problem of the Mississippi period in the Coosa Valley since Knight (1990) first noted that the Mississippi period in the Middle Coosa was very much an open question but appeared to begin with an Etowah II-III complex followed by, "*an extremely sparse showing of Wilbanks/Savannah as occurs in northern Georgia*." In his 1994 contribution to Ocmulgee Archaeology edited by David Hally, Knight labeled the period preceding the Kymulga phase "Unoccupied." Knight (1993) placed the Kymulga phase within his Early Historic period. Within Knight's temporal framework, Little's (2008) Barnett phase would also fall in the Early Historic although at the CCAC-Davis Farm this period has remained undefined. In his 1998 contribution to the *Journal of Alabama Archaeology*, Knight noted that the Savannah/Wilbanks pottery present in the northwest Georgia sequence between Lamar and Etowah was largely absent in east Alabama except for a single site in Cherokee County, one in Randolph County and one in Talladega County.

Late Mississippi/Early Historic (ca. AD 1350-AD 1650)

For consistency with Knight's earlier framework, the Kymulga phase known from sites adjacent to the Coosa River as well as the Barnett phase known from the Choccolocco Valley have been placed within loosely defined Late Mississippi/Early Historic Period (ca. AD 1350-1650). At the CCAC-Davis Farm there is some evidence that the Barnett phase may date to as late as AD 1650. As noted above, and based on the work of Little (2008) in the Middle and Upper Coosa Valleys, the Late Barnett phase has been restricted to ca. AD 1550 and an early historic phase has not been defined for the Choccolocco Valley.

Kymulga Phase (ca. AD 1500-1600)

The Kymulga phase was defined by Knight to situate late Lamar ceramics identified from excavations at the Hightower Village Site (1Ta150) and the Rodgers-CETA Site (1Ta171) near the Coosa River. Knight (1994b) noted that the Kymulga phase Lamar ceramic assemblage, with an apparent blending of western Lamar with South Appalachian and Middle Mississippian characteristics is ancestral to the Abihka towns and noted that additional research was needed to determine the relationship between the Kymulga phase and roughly contemporaneous Barnett phase assemblages in the Upper Coosa Sub-Basin where the clay and grog tempering in the Kymulga Lamar was apparently absent. Little (2008) reviewed data from thirteen (13) Kymulga phase sites in the Middle Coosa and noted that, "Kymulga pottery is set aside by the use of shell, grog and sand/grit and various admixtures of them…regardless of decoration types that crosscut temper categories." He also noted that brushed, simple-stamped, cob-marked, cord-marked and check-stamped decorations represent minorities in assemblages. Several Kymulga phase sites also contain European artifact assemblages Complex I and II.

Knights' view that Kymulga phase ceramics are ancestral to the Abihka towns may now be qualified in light of the current research. Kymulga phase boundaries are still poorly defined and appear to be limited to sites in proximity to the Coosa River and centered on Tallaseehatchee Creek and Talladega Creek. During the Historic Creek Period, this area is known to have functioned as a refugium for various groups. As discussed below in the sections on earlier cultural manifestations in the Middle Coosa, the same geographic area that has been loosely defined as the Kymulga phase has produced distinctly different ceramics from those observed at sites within the Upper Coosa Sub-Basin and the Choccolocco Valley as far back as far as the Early Middle Woodland. The clay/grog-tempered pottery found within the Kymulga phase may have its origins in the Terminal Woodland Ellis phase. Jenkins has demonstrated that the origin of the Coosa Valley Ellis phase may be found in the West Jefferson phase of the Black Warrior River. Moreover, clay/grog-tempered pottery has yet to be found in any significant quantities in either the Upper Coosa Sub-Basin or the Choccolocco Valley. Similarly, the sand/grit tempered component within Kymulga phase assemblages appears to have its origin within the Lamar pottery of the Barnett phase of the Upper

Coosa Sub-Basin and Choccolocco Valley. Thus, the Kymulga phase may be best viewed as a late manifestation (post-De Soto) that included disparate groups seeking refuge among the Abihka.

<u>Late Barnett Phase (ca. AD 1450-1550)</u>

The Barnett phase was initially defined by Hally (1970) based on excavations at several sites along the Coosawattee River and the Coosa River in northwestern Georgia. Barnett phase assemblages are predominantly represented by Lamar Plain, Lamar Bold Incised and Lamar Complicated Stamped pottery with shell-tempered types constituting as much as 25 percent of the assemblage. Minority decorative types include cord-marked, cob-marked, brushed and check-stamped.

Little (2008) examined twenty-four (24) Barnett phase sites in northeastern Alabama and northwestern Georgia and noted that check-stamping appears to be more important at the Alabama sites and there may be distinct differences in shell-tempered incised types as well. Barnett phase occupations are also distinguished by exclusively Complex I European artifacts. Little (2008) terminates the Barnett phase at AD 1550 based on Smith's (1987) observation that the end of the Barnett phase in northwest Georgia coincided with the appearance of Weiss phase sites exhibiting predominantly plain shell-tempered pottery and European Complex II artifacts. While no European artifacts have yet been identified at the Choccolocco Site (1Ca196), radiocarbon dating of JSU's 1983 Feature 6, which produced Barnett phase ceramics, has confirmed that the Barnett phase occupation of the site was coeval with De Soto's expedition into the interior Southeast (Figure 33.)

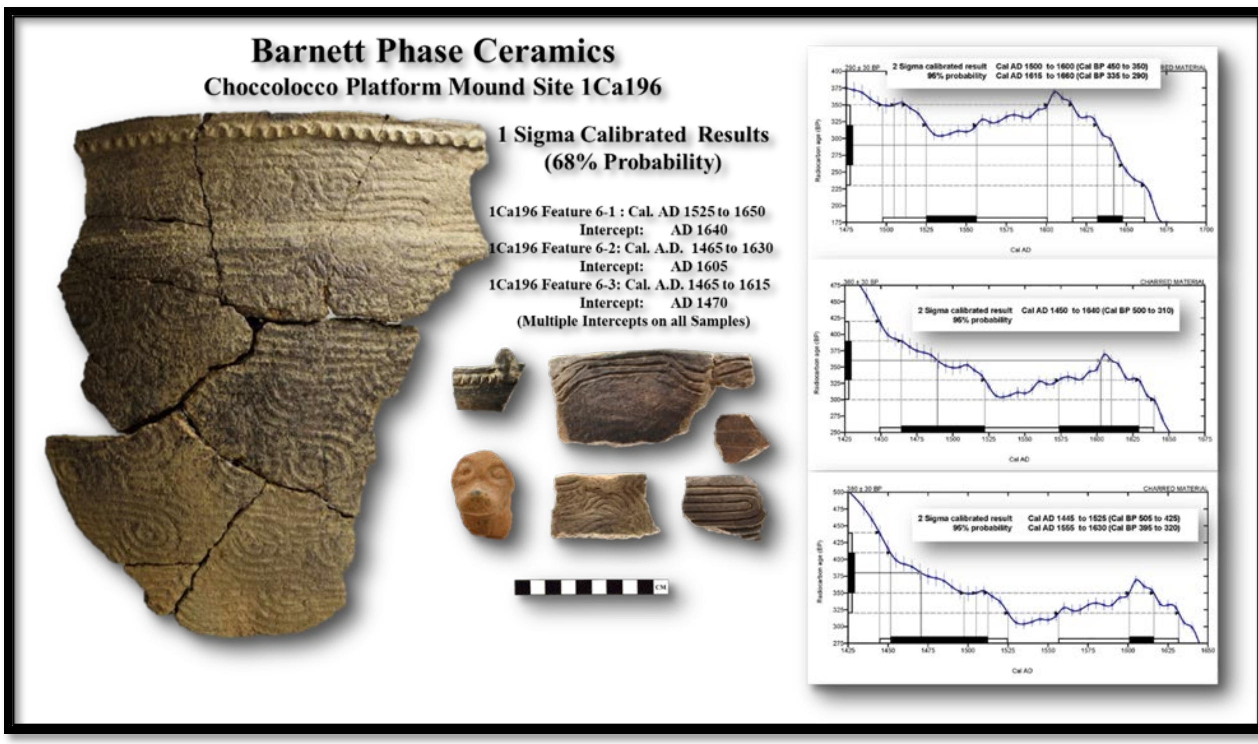

Figure 33. Barnett Phase Ceramics at Site 1Ca196

Several preliminary observations may be made regarding the Middle to Late Mississippi Period for the Choccolocco Valley based on recent radiocarbon dating of REPA's excavations at the Choccolocco Site (1Ca196) along with materials recovered from JSU's 1983 investigations at 1Ca196 and JSU's 2001 investigation at 1Ca198. First, radiocarbon dates for materials recovered at Sites 1Ca196 and 1Ca198 appear to largely fill the temporal gap between the earlier Etowah manifestation and later Kymulga and Barnett phases. Second, the late Lamar ceramics at Sites 1Ca196 and 1Ca198 are more similar to the Barnett phase than the Kymulga phase. The dominant types are sand/grit-tempered Lamar Plain and Lamar Complicated Stamped although Mississippi Plain and Bell Plain are present. Grog-tempered sherds were not present within the assemblage recovered from the current excavations at Site 1Ca196. Finally, the range of dates obtained from Sites 1Ca196 and 1Ca198 suggest that a 17th century assemblage is present at the CCAC-Davis Farm that is indistinguishable from the earlier Barnett phase.

Early Barnett Phase (ca. AD 1350-1450)

The earliest Lamar assemblage at Site 1Ca196 contains sherds that could be classified as Savannah Complicated Stamped except for specialized rim treatments that are more similar to Lamar. The specimens recovered during the current excavations at Site 1Ca196 are predominantly coarse sand-tempered plain with a pinched or appliqué filleted rim (Figure 34). Fragments of effigy adornos similar to those found in East Tennessee in Late Hiwassee Island/Early Dallas phase contexts were also recovered at Site 1Ca196 (See Figure 33) but these appear to date to the Late Barnett phase. Wauchope (1966) does not list filleted rims as a rim treatment for Savannah or Wilbanks pottery nor do any of his illustrations show filleted rims. Moreover, Caldwell in his 1955 manuscript on survey and excavations within the Allatoona Reservoir, (only recently published) (Caldwell, 2011) notes, *"...notched rim fillets do not appear in northwestern Georgia until Lamar times."* Knight (1990), in his initial sketch of the region, suggested a Savannah/Wilbanks phase for the Middle Coosa ca. AD 1250-1400 based on a few sherds of uncertain context from Talladega County. Recent research by Lulewicz (2017, 2018) suggests that the Wilbanks phase may be partially contemporaneous with the Late Etowah phase in northwest Georgia. However, the specimens recovered from Sites 1Ca196 and 1Ca198 do not appear to pre-date the mid-14th century.

The apparent lack of Savannah/Wilbanks pottery at the CCAC-Davis Farm may be related to a cultural boundary appearing in northwest Georgia during this time period. Hally and Langford (1988) note that:

> *"The Etowah and Coosawattee Valleys appear to diverge from one another ceramically during the Middle Mississippi period. The Wilbanks phase assemblage from Etowah has very few Mississippian features…. the Bell Field site assemblage, on the other hand, is predominantly Mississippian in character. Complicated stamping accounts for only 15% of the assemblage, while most of the pottery types characteristic of the Dallas component at Hiwassee Island are present and in the same relative frequencies….to the extent that the pottery collection from Bell Field and Etowah are representative of late Middle Mississippi period ceramic complexes in the respective regions, we can conclude that the inhabitants of the north[west]ern portion of the study area had stronger stylistic ties to the Tennessee River Valley, while the inhabitants of the south[east]ern portion of the study area had stronger ties to the Georgia Piedmont. This stylistic divergence continues into the Late Mississippi period."*

Based on all of the above, the current chronological data from CCAC-Davis Farm supports the suggestion of an earlier inception of the Barnett phase in the Choccolocco Valley dating to shortly after ca. 1350 that exhibits stronger influences from the Tennessee River Valley than the Etowah Valley. Moreover, Site 1Ca190 at the CCAC-Davis Farm produced distinctly Mississippian vessels with both peaked rims and noded rims that apparently pre-date their occurrence in the Etowah and Coosawattee Valleys. Thus, it should be noted that it is not clear that the observed differences between Etowah and Bell Field assemblages described by Hally and Langford (1988) are not the result of sampling bias at the Georgia sites. Further support for this interpretation may be found in Cable, Raymer and Abrams (1994), who note that, *"…it would seem that the presence of both peaked rims and nodes as separate elements in the Lake Acworth sample admits to the real possibility that this type of vessel existed prior to the Wilbanks phase."*

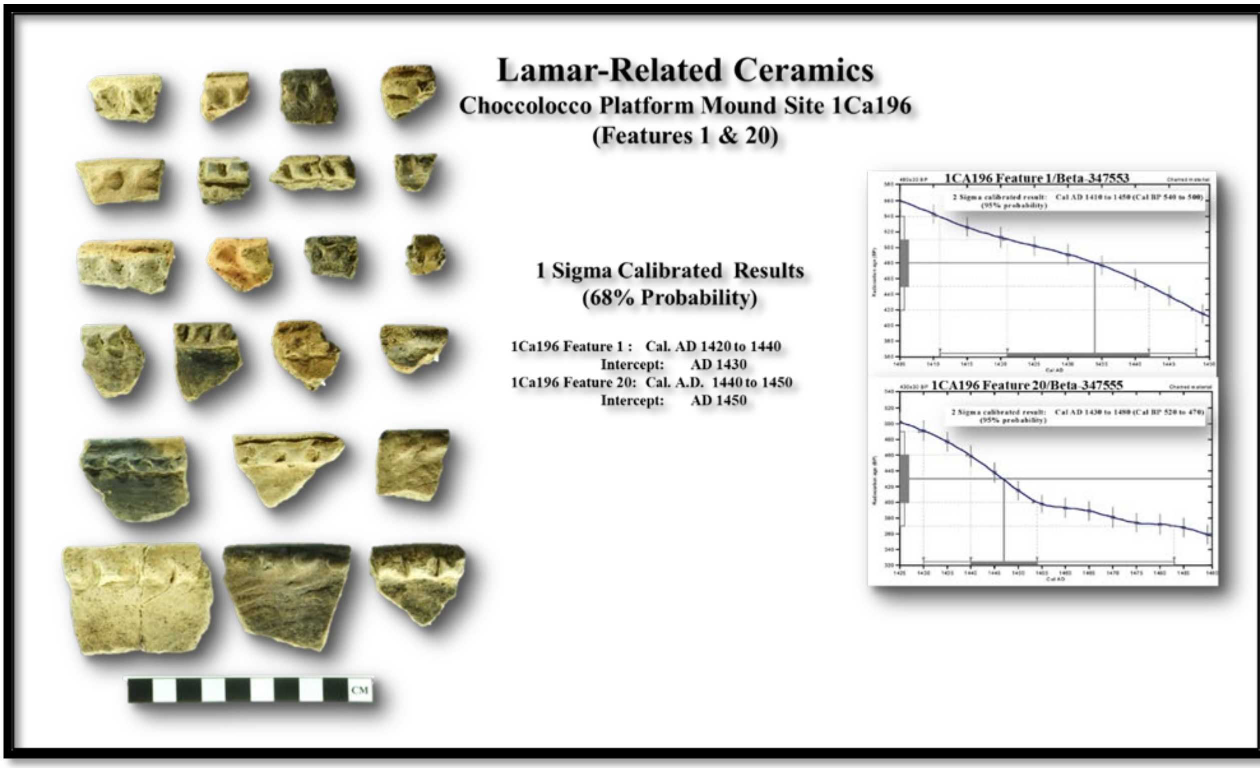

Figure 34. Early Barnett Phase Ceramics at Site 1Ca196

Middle Mississippi

The Mississippi period within the Middle Coosa was once thought to begin with an Etowah phase assemblage similar to that defined by Sears (1958) as Etowah II-III (Knight, 1990). Named types found within the Middle Coosa are reported by Knight (1998) to include Etowah Plain, Etowah Burnished Plain and Etowah Complicated Stamped, with line-block, ladder-base diamond, one-bar diamond, one-bar-cross diamond, two-bar diamond and filfot cross. In Georgia, Hally and Langford (1988) re-organized Sears' Etowah complex into early and late phases. King (2003) noted that in the Early Etowah phase, the ladder-base diamond is the predominant motif and shell is the most common tempering agent while two-bar diamonds and grit-tempering are more common in Late Etowah phase collections. According to King, the filfot cross motif, Etowah Incised and Hiwassee Island Red on Buff first appear in the Late Etowah phase.

Etowah Phase (ca. 1250-1350)

Recent research has suggested the probable need for chronological refinement of the Early and Late Etowah phases in northwest Georgia. King (2003) placed the Early Etowah phase between AD 1000 and AD 1100 followed by the Late Etowah phase from AD 1100 to AD 1200 with an apparent hiatus in the Etowah Valley sequence before the beginning of the subsequent Early Wilbanks phase at AD 1250. More recently, Lulewicz (2017; 2018) has conducted Bayesian modeling of a large data set of the northwest Georgia ceramic sequence and has suggested that Etowah and Wilbanks may be partially contemporaneous traditions. While several alternative chronological models were produced by the analysis depending on different assumptions applied to the data, Lulewicz favored a model in which, "*…the bulk of the use of Etowah complicated stamping…is modelled to span between AD 1135 at the earliest and AD 1310 at the latest and this stamping tradition could have fallen out of popularity by AD 1275 at the earliest, at least 75 years after what is suggested by the extant chronology.*"

At the Boiling Spring Site (1Ca190), the current excavations produced two dated contexts for Etowah Complicated Stamped with the three-bar diamond motif. Feature 311, a rectangular wall-trench structure produced a 2-Sigma calibrated result of Cal AD 1210 to 1275 (Cal BP 740 to 675) with an intercept of the radiocarbon calibration curve at Cal AD 1255 (Cal BP 695). Feature 213, a large subsurface pit, produced a 2-Sigma calibrated result of Cal AD 1155 to 1260 (Cal BP 795 to 690) with an intercept of the radiocarbon calibration curve at Cal AD 1215 (Cal BP 735). In addition to the Etowah Complicated Stamped 2-bar diamond sherds on coarse sand/grit paste, Feature 213 also produced several Etowah Complicated Stamped 2-bar diamond sherds on a metasiltstone grit-tempered paste that has been provisionally identified as the Choccolocco Series. Based on the dated contexts from Site 1Ca190, the Etowah phase in the Choccolocco Valley appears to date from ca. AD 1250 to 1350.

Early Mississippi

Prior to the current investigations, no sites dating to the Early Mississippi period were known to occur within either the Middle Coosa Sub-Basin or the Choccolocco Valley.

Boiling Springs Phase (ca. AD 1150-1250).

The Boiling Springs phase (ca. AD 1150-1250) is defined herein to describe Early Mississippi manifestations within the Choccolocco Valley. Data recovery at the Boiling Springs Site (1Ca190) identified the presence of a grit-tempered (metasiltstone) pottery complex that has been provisionally named the Choccolocco series (Figure 35). At Site 1Ca190, this was the dominant pottery type identified

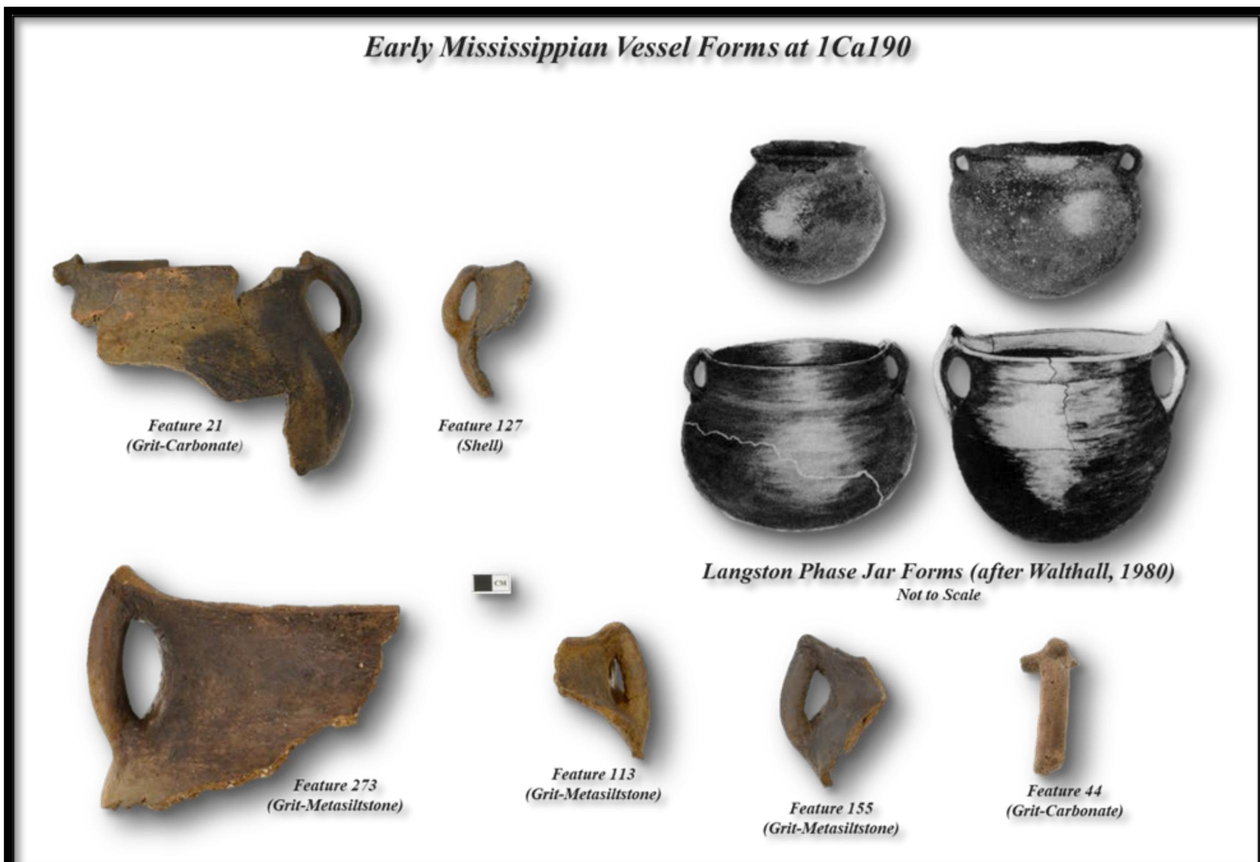

Figure 35. Early Mississippian Vessel Forms at Site 1Ca190

in association with evidence of increased maize production, elite status burial and sub-mound wall-trench architecture. Petrographic investigations supported by radiocarbon dating of collections recovered from Site 1Ca190 in addition to samples from the Morgan Mountain Village Site (1Ca42) and several Ellis phase sites on the Coosa River have confirmed the presence of the Choccolocco series pottery during this time period throughout the Choccolocco Valley. The Boiling Springs phase is characterized by the predominance of grit-tempered (metasiltstone) Choccolocco pottery on globular jars and bowls. Surface decoration is rare although rectilinear complicated stamping in motifs similar to the Etowah Two-Bar Diamond appears late in the phase. Red-filming on hooded water bottles is a rare occurrence at the Boiling Springs Site (1Ca190) although it should be noted that a significantly higher number of water bottle fragments have been identified at the site when compared with other Early Mississippi sites in the region. Minor amounts of shell-tempered, grit-tempered (carbonate) and coarse sand-grit tempered pottery are also present in the assemblage.

Woodland

Terminal Woodland

Little (2011) has provided the most recent synthesis of research on pre-Mississippian ceramic complexes for both the Upper and Middle Coosa Valley. He has suggested elsewhere (Little, 1999) that the presence of minority ceramic types that cross each of four coeval Terminal Woodland groups in northeastern Alabama and northwestern Georgia, known archaeologically as the Coker Ford, Cane Creek, Ellis and Woodstock phases, is evidence that the Etowah chiefdom emerged through cooperative, non-violent interaction as a defensive mechanism against armed aggression.

REPA's excavations at the Boiling Springs Site (1Ca190) have resulted in new evidence for consideration regarding Terminal Woodland interactions within the Choccolocco Valley. The identification of grit-tempered (metasiltstone) pottery of the Choccolocco series present at 1Ca190 has indicated the need to re-evaluate sites within the region where grog-tempered pottery has been identified and assigned to the Terminal Woodland Ellis phase. Based on a preliminary review of collections at JSU, most of the pottery originating from sites within the Choccolocco Valley and identified as grog-tempered appears to be the grit-tempered (metasiltstone) Choccolocco series. REPA confirmed the presence of Choccolocco series pottery within the collections of the Wright Farm Site (1Ca18) and the Blue Hole Site (1Ca421). Collections from these two large multi-component sites represent the bulk of field school investigations conducted by JSU since 1979.

As a result of the identification of Mississippian vessel forms on grit-tempered (carbonate) bodies (see Figure 35) at the Choccolocco Site (1Ca190) previous interpretations of the Terminal Woodland assemblage from Wright Farm (1Ca18) must now be reconsidered. Little (2011) placed the Cane Creek phase in the Terminal Woodland based on a maize concentration recovered within Feature 54 at Wright Farm. While this feature did produce exclusively sand-tempered and grit- tempered (carbonate) pottery, it was only partially excavated and the analyzed sherd assemblage yielded no information regarding vessel morphology. Other features at Wright Farm produced both shell-tempered pottery and grit-tempered (metasiltstone) pottery. At the Boiling Springs Site (1Ca190) mixed temper assemblages persisted after the introduction of Mississippian vessel forms. Given this information, along with the fact that no report has ever been published on JSU's multi-year excavations at Wright Farm, and the fact that those excavations produced ninety-three (93) cubic feet of material, most of which has never even been analyzed, the available evidence no longer supports the interpretation that the Terminal Woodland Cane Creek phase extends into the Choccolocco Valley.

Additionally, a recent review of JSU collections suggests that an apparent boundary exists during the Terminal Woodland within the Choccolocco Valley between the Ellis phase and the newly-proposed Davis Farm phase (Figure 36). Collections from the Ellis Site (1Ta44), Site 1SC31, and Site 1Ta90 at the Erskine Ramsay Repository confirmed through petrographic analysis that portions of the pottery assemblage identified at Site 1Ta44, previously identified as grog-tempered, is actually grit-tempered (metasiltstone). The assemblage from Site 1SC31 appears to be a pure grog-tempered assemblage and the pottery from Site 1Ta90 appears to be a mixture of grog and grit (unspecified). Charcoal from Feature 1 at 1SC31 produced a 2-Sigma calibrated result of Cal AD 1020 to 1155 (Cal BP 930 to 795) with an intercept of the radiocarbon calibration curve at Cal AD 1035. Dated animal bone from Feature 6 at Site 1Ta44, which yielded Choccolocco series pottery produced a 2-Sigma calibrated result of Cal AD 1035 to 1215 (Cal BP 915 to 735) with an intercept of the radiocarbon calibration curve at Cal AD 1155 (Cal BP 795).

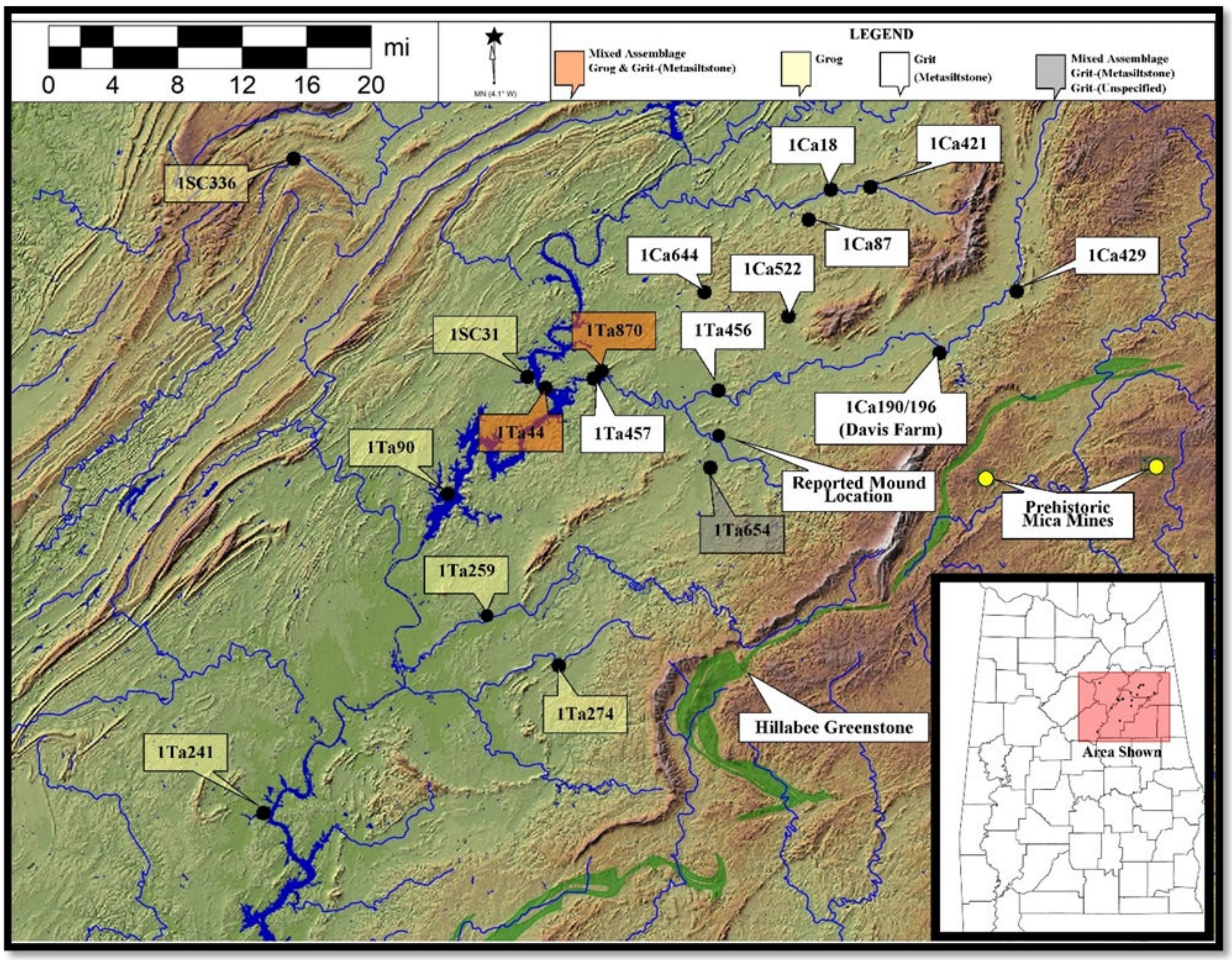

Figure 36. Selected Terminal Woodland Sites

At Site 1Ta870, materials within a surface collection appeared to be exclusively grit-tempered (metasiltstone). Investigation of the site by OAR identified grog-tempered, grit-tempered (carbonate), and grit-tempered (metasiltstone) pottery within several excavated features. Nutshell (Beta-445274) from Feature 4, in which a large grit-tempered (metasiltstone) vessel was recovered produced a 2-Sigma calibrated result of Cal AD 1045 to 1220 (Cal BP 905 to 730) with an intercept of the radiocarbon calibration curve at Cal AD 1165 (Cal BP 785).

While datable material from Sites 1Ta44 and 1SC31 produced radiocarbon dates consistent with existing Ellis phase age estimates, an understanding of the interactions between the predominantly grog-tempered Ellis phase assemblages on the Coosa River proper and the grit-tempered (metasiltstone) assemblages located further upstream on Choccolocco Creek must await further investigations in the Choccolocco Valley.

Davis Farm Phase (ca. AD 1050-1150)

The Davis Farm phase (ca. AD 1050-1150) is defined herein to describe Terminal Woodland material culture in the Choccolocco Valley. Previously, Little (2011) has identified the Cane Creek phase as the Terminal Woodland phase for the entire Middle Coosa region. Excavations at the Boiling Springs Site (1Ca190) indicate that a substantial change occurs in pottery assemblages by ca. AD 1050. At that time, shell-tempered pottery first appears contemporaneously with the grit-tempered (metasiltstone) although the grit-tempered (metasiltstone) pottery was recovered in contexts dating as early as the 10^{th} century. Davis Farm phase assemblages include rare examples of shell-tempered pottery along with substantial amounts of Choccolocco series pottery in quantities that are otherwise dominated by nearly equal amounts of sand-tempered plain pottery and carbonate-tempered plain pottery. Red-filming is present on a variety of temper types.

Review of collections from the Choccolocco Valley housed at JSU indicated that the Choccolocco series had previously been identified at several other sites as grog-tempered pottery and associated with Ellis phase sites found at the confluence of Choccolocco Creek with the Coosa River. These sites included the Mudd Street Site (1Ca644), the Kelly Springs Site (1Ta654), and unnamed Sites 1 Ta457, 1Ta456, 1Ca87, and 1Ca429. Petrographic analysis of pottery from four (4) Ellis phase sites on the Coosa River, (Sites 1Ta44, 1Ta90, 1Ta870, and 1SC31) confirmed that minor amounts of the Choccolocco series pottery was present at 1Ta44 and 1Ta870.

Several radiocarbon dates support the Terminal Woodland Davis Farm phase. At the Boiling Springs Site (1Ca190), Choccolocco series pottery has been found in association with minor amounts of shell-tempered pottery in contexts that indicate a shift in site organization. The earliest dated context for Choccolocco series pottery is in association with a circular wall-trench structure designated Feature 317 (Structure 5). Charred nutshell from Structure 5 produced a 2-Sigma calibrated result of Cal AD 895 to 925 (Cal BP 1055 to 1025) and Cal AD 940 to 1020 (Cal BP 1010 to 930) with an intercept of the radiocarbon calibration curve at Cal AD 985 (Cal BP 965). The circular wall-trench structure was constructed overlapping the footprint of two previous circular post-mold structures and marks a shift in architectural type at Site 1Ca190 from post-mold structures to the rectangular wall-trench structures typically associated with Mississippian communities.

Change in subsistence and storage is also evident at 1Ca190 during the Davis Farm phase. Increased evidence of agriculture, including production of maize, was observed within subsurface features that produced Choccolocco series pottery. One of these large subsurface pits, designated as Feature 21, produced minor amounts of Choccolocco series pottery in association with minor amounts of shell-tempered pottery. Charcoal from Feature 21 produced a 2-Sigma calibrated result of Cal AD 1025 to 1190 (Cal BP 925 to 760) with intercepts of the radiocarbon calibration curve at Cal AD 1050 (Cal BP 900), Cal AD 1080 (Cal BP 870), and Cal AD 1150 (Cal BP 800). The averaged median probability for the dated materials from Feature 317 (Structure 5) and Feature 21 is AD 1038.

Ellis Phase (ca. AD 1050-1250)

The Ellis phase was initially defined to describe the Late Woodland-Mississippian transition within the Middle Coosa River Valley (Little, et al., 1997). Ellis phase ceramic assemblages are characterized by a predominance of grog-tempered (Baytown Plain) pottery with minority types consisting of shell-tempered (Mississippi Plain and Bell Plain) and grit-tempered (carbonate) (Mulberry Creek Plain) pottery. Red-filming on both grog (Larto Red Filmed) and sand-tempered (Laws Red Filmed) pottery is also present as minority types.

Jenkins and Sheldon (2014) have provided important context for understanding the Ellis phase which is thought to represent West Jefferson groups moving out of the Cahaba or Black Warrior River Valleys between AD 1050-1100. Based on the identification of numerous greenstone preforms at an Ellis phase site on Weoka Creek (1Ta274), along with evidence that the source of greenstone at Moundville was from the nearby Hatchet Creek and Gale Creek outcrops (Gall & Steponaitis, 2001), Jenkins and Sheldon (2014) have suggested that the Ellis phase represents displaced West Jefferson groups that may have moved into the region to procure raw materials for trade.

At the Lightwood Shell Midden Site (1Ta241) there is evidence of interaction between an Ellis phase group with a Hope Hull-related group (Knight, 1986). Jenkins and Sheldon (2014) note that Hope Hull people may have had a near monopoly on Hillabee Greenstone and other metamorphic rocks of the adjacent Coosa Valley. The Hope Hull phase is the Terminal Woodland expression of a ceramic tradition that was centered on the Lower Tallapoosa and Upper Alabama rivers and spanned the Woodland period. Jenkins and Sheldon (2014) have defined this ceramic tradition as the Elmore variant. The relationship between the Ellis phase and the Hope Hull-related group at the Lightwood Shell Midden is not currently understood.

Cane Creek Phase (ca. AD 900-1100)

The Cane Creek phase was initially defined to describe Terminal Woodland cultural manifestations within the Middle Coosa Valley based on materials recovered from the Wright Farm Site (1Ca18) and the Blue Hole Site (1Ca421) (Little, et al., 1997). The dominant ceramics within these assemblages is limestone-tempered plain and sand-tempered plain. Minority types include red-filming on both sand and carbonate-tempered pastes. Little, Holstein, Hill & Jones (1997) noted that an important marker in identifying the phase was the presence of shell-tempered ceramics. However, based on the data obtained at the Boiling Springs Site (1Ca190) and a review of the JSU collections from the Wright Farm Site (1Ca18) and the Blue Hole Site (1Ca421), both sites which provided data for definition of the Cane Creek phase, it is has been confirmed that the rare occurrences of shell-tempered pottery recovered from those sites were found in association with Choccolocco series pottery. Based on the recent work at the CCAC-Davis Farm and a review of collections from other sites in the Choccolocco Valley, the Cane Creek phase appears to have been restricted to Cane Creek and points northward into the Upper Coosa Sub-Basin although there appears to have been extensive interaction with the Terminal Woodland Davis Farm phase of the Choccolocco Valley.

Late Woodland

The Late Woodland within the Middle Coosa Sub-Basin has been poorly understood (Walthall, 1980; Knight, 1998; Little, 2011). Walthall (1980) noted that in the Weiss Basin the beginnings of the Late Woodland are marked by the appearance of Flint River pottery after A.D. 600, but he was silent on developments within the Middle Coosa Sub-Basin. Knight (1998) noted that the available data suggested a diffusion of modes of pottery decoration and manufacture common in the Tennessee Valley, but in combinations perhaps unique to the Middle Coosa Sub-Basin. Little (2011), based on the presence of Madison and Hamilton projectile points within the Dry Creek Site (1Ca522) assemblage, suggested that the earlier (Middle Woodland) Cleveland phase may have continued into the Late Woodland, at least at the Dry Creek Site, while some features at the Blue Hole Site (1Ca421) produced an assemblage of decorated types dominated by Swift Creek Complicated Stamped pottery.

Data from the current investigations at the CCAC-Davis Farm produced a high-resolution chronology for Site 1Ca190 that may be applicable to other areas of the Choccolocco Valley and Middle Coosa Sub-Basin. At Site 1Ca190, the Late Woodland begins with a re-occupation of the site after an apparent Late Middle Woodland occupational hiatus. Occupation I at Site 1Ca190 was dated from data obtained from Feature 335, which produced a ceramic assemblage that was dominated by Weeden Island pottery with a minority of Mulberry Creek pottery. Nutshell from Feature 335 produced a 2-Sigma calibrated result of Cal AD 570 to 655 (Cal BP 1380 to 1295) with an intercept of the radiocarbon calibration curve at Cal AD 620 (Cal BP 1330). The averaged median probability for the dated material from Feature 335 was AD 617. Occupation II at Site 1Ca190 was dated from data obtained from Feature 6, which produced Mulberry Creek Plain as the dominate pottery. Feature 6 also produced a significant minority of Napier Complicated Stamped pottery. Nutshell from Feature 6 produced a 2-Sigma calibrated result of Cal AD 775 to 975 (Cal BP 1175 to 975) with an intercept of the radiocarbon calibration curve at Cal AD 890 (Cal BP 1060). The averaged median probability for the dated material from Feature 6 was AD 889.

Middle Woodland

Aside from the evidence noted by Little (2011) for the Dry Creek Site, the late Middle Woodland is perhaps best characterized by what Knight (1998) described as an enigma due to a lack of evidence from securely dated contexts in the region. Nevertheless, there is some evidence that suggests ceramic assemblages for the Middle Woodland period in the Middle Coosa Valley differ from succeeding Late Woodland assemblages primarily in the dominance of sand-tempered wares. Little (2011) suggests that the Middle Woodland period in the Middle Coosa Valley may be chronologically separated (with some overlap) into the Cleveland phase and the Yanceys Bend phase.

Only three radiocarbon dates for the Middle Woodland period have been reported within the Middle Coosa Valley. Little (2011) reported two radiocarbon dates from the Cleveland component at the Dry Creek Site (1Ca522). Sample Beta-84887 produced a conventional date of 1540 +/- 60 BP and a 2-Sigma calibrated result of Cal. AD 400-600. Re-calibration of the conventional date utilizing Calib 7.10 and the IntCal13 calibration curve (Reimer, et al., 2013) produced a 2-Sigma calibrated result of Cal. AD 404-633 with a median probability of AD 508. Sample Beta-84886 produced a conventional date of 1680 +/- 90 BP and a 2-Sigma calibrated result of Cal. AD 130-560. Re-calibration of the conventional date utilizing Calib 7.10 and the IntCal13 calibration curve (Reimer, et al., 2013) produced a 2-Sigma calibrated result of Cal. AD 135-555 with a median probability of AD 359.

For the Yancey Bend phase, a single date has been reported. At the Blue Hole Site (1Ca421), Little (2011) reported a Yancey Bend component sample (Beta-84885) produced a conventional date of 1730 +/- 60 BP and a 2-Sigma calibrated result of Cal AD 130 to 430. Re-calibration of the conventional date utilizing Calib 7.10 and the IntCal13 calibration curve (Reimer, et al., 2013) produced a 2-Sigma calibrated result of Cal. AD 137-418 with a median probability of AD 303. Suggested calendrical date ranges for the Cleveland and Yanceys Bend phases have thus been revised to reflect the results from the latest radiocarbon calibration dataset.

Cleveland Phase (ca. 100 BC-AD 550)

Knight (1998) distinguished the ceramic assemblage from Talladega and Tallaseehatchee Creeks from other Middle Coosa Valley assemblages to the east that appeared more closely related to Cartersville on the basis of tempering constituents. The Cleveland phase assemblages exhibit a coarse sand or fine grit tempered dominant ware of tan-orange color. Knight (1998) notes that the grit temper appears to be finely crushed dolomite. Little (2011), noted that the principal decorations include cord-marked, checked, simple and complicated stamped including Early Swift Creek. Knight (1998) noted that the recognizable Early Swift

Creek motifs typically have a bolder stamp and simpler design elements than in Georgia with concentric circles and spirals apparently the main Cleveland designs. He also suggested that the bold complicated stamped pottery may be related to the central Alabama type Cobbs Swamp Complicated Stamped. The inception date for the Cleveland phase has been revised to ca. 100 BC based on new dating obtained by Keith (2010) for Cartersville pottery from the Leake Site in the Etowah Valley.

The current excavations at the CCAC-Davis Farm produced pottery that is similar to the Cleveland phase although tempering with dolomite is notably absent. A review of collections from Cleveland phase sites along with a review of collections from Crooked Creek phase sites in the Tallapoosa Valley indicates that the collections from CCAC-Davis Farm are more similar to the Crooked Creek ceramics of the Tallapoosa Valley than the Cleveland phase of the Middle Coosa Sub-Basin.

Yanceys Bend Phase (ca. 100 BC-AD 500)

Walthall (1980) defined the Yanceys Bend phase based on investigations in the Upper Coosa Sub-Basin. He noted that the Yanceys Bend phase is marked by the diffusion of sand-tempered paddle-stamped ceramics into the region from an apparent association with Cartersville populations in present-day northern Georgia. The dominant decorations present on Yanceys Bend phase vessels include check-stamped and a simple-stamped motif of parallel lines. Walthall (1980) noted that evidence from the Cartersville Site (9H164) suggests that simple-stamping may have been a late addition to the Yanceys Bend ceramic assemblage. Knight (1998) notes that in addition to the plain sand-tempered ceramics, the sand-tempered assemblage includes Cartersville Check Stamped, Cartersville Simple Stamped and Dunlap Fabric Marked. Minority wares include the limestone-tempered Mulberry Creek Plain, Long Branch Fabric Marked and Bluff Creek Simple Stamped. The inception date for the Yanceys Bend phase has been revised to ca. 100 BC based on new dating obtained by Keith (2010) for Cartersville pottery from the Leake Site in the Etowah Valley.

Crooked Creek Phase (ca. BC 100-AD 400)

Early Middle Woodland assemblages at the CCAC-Davis Farm are dominated by sand-tempered (Sand-2) plain pottery with Cartersville Check Stamped and Swift Creek Complicated present as minority types. Several subsurface features at Site 1Ca196 also included rare examples of grit-tempered (carbonate) Flint River Cord Marked pottery indicating contact with Tennessee Valley populations as early as ca. AD 100. Excavations at Site 1Ca196 produced only a single sherd (n=1) of Cartersville Simple Stamped pottery. Radiocarbon-dating of the pottery assemblage from Site 1Ca196 suggests that the occupation was coeval with the Post-Kellogg phase and Leake I phase in the Etowah Valley and the Crooked Creek Complex defined by Knight (1980) for the Tallapoosa Valley.

Further buttressing the association between the Middle Woodland Crooked Creek Complex and the Middle Woodland components at the CCAC-Davis Farm is the fact that in his initial analysis of the Crooked Creek Complex, Knight (1980) noted that the sand-tempered assemblage at the Boozer Site (1Ca5), located approximately 1.3 miles (2.13km) downstream on Choccolocco Creek from the CCAC-Davis Farm, showed a strong relationship with the Crooked Creek Complex ceramics. While the Boozer Site (1Ca5) has never been formally included within the CCAC-Davis Farm, the Middle Woodland pottery reported from the site (Grace, 1974) appears to be identical to that recovered from sites within the CCAC-Davis Farm. Although the majority of the pottery assemblage identified at the Boozer Site (1Ca5) is best viewed as a continuation of the same Terminal Woodland/Early Mississippian settlement identified at the CCAC-Davis Farm Boiling Springs Site (1Ca190), the Middle Woodland pottery assemblages from both sites produced very little Cartersville Simple Stamped pottery which is also rare within Crooked Creek assemblages (Knight Jr., 1980; Hubbert & Wright, 1987). Cartersville Simple Stamped pottery is also rare within Cleveland Complex assemblages located on the margins of the Coosa River in Talladega County (Larson, 1959). Moreover, given the apparent association of Tallapoosa Valley Crooked Creek sites with fish weirs and their proximity to known sources of greenstone and mica, the Tallapoosa Valley sites may be best viewed as short-term resource extraction sites utilized by a Crooked Creek phase population centered at the CCAC-Davis Farm in the Choccolocco Valley. Based on the current evidence, the lack of features producing large amounts of Cartersville Simple Stamped pottery within the Crooked Creek Complex and at the CCAC-Davis Farm suggests that the Crooked Creek Complex is situated chronologically within the early Middle Woodland.

Early Woodland

Early Woodland ceramic assemblages in the Middle Coosa exhibit characteristics of both the Gulf and Middle Eastern Traditions (Caldwell, 1958; Knight, 1998). The Gulf tradition is locally expressed by the Alexander pottery complex which is characterized by incised, pinched, rocker-stamped and brushed wares with geometric, zoomorphic and anthropomorphic designs (Caldwell, 1958; Bense, 2009). Alexander pottery is not known within the Choccolocco Valley although it has been identified along the Middle Coosa River within the Dry Branch and Broken Arrow Shoals phases (Walling & Schrader, 1983; Meredith, 2007). The Middle Eastern tradition is first expressed regionally in assemblages dominated by fabric-marked pottery on sand-tempered wares (Caldwell, 1957; Knight, 1998) and defined as the Kellog phase. Aside from the Alexander-related phases, Little (2011) identified the Cedar Bluff phase of the Weiss Reservoir and the Kellog phases of the Middle Coosa Sub-Basin as all being at least partially contemporaneous. For the current purposes, the Cedar Bluff phase has been placed in the Middle Woodland due to its inclusion of complicated stamped pottery. However, there is considerable evidence that the fabric-impressed component of the Cedar Bluff phase exhibits greater antiquity.

In unreported excavations at the Hammond Site (1Dk71), three (3) features that produced Long Branch Fabric Marked pottery as the dominant type have been radiocarbon-dated. Feature 2554 produced (Beta-213249) produced a conventional date of 2300 +/- 60 BP and a 2-Sigma calibrated result of Cal. BC 420-200. Re-calibration of the conventional date utilizing Calib 7.10 and the IntCal13 calibration curve (Reimer, et al., 2013) produced a 2-Sigma calibrated result of Cal. BC 523-199 with a median probability of BC 365. Feature 1993 produced (Beta-213251) produced a conventional date of 2460 +/- 50 BP and a 2-Sigma calibrated result of Cal. BC 790-400. Re-calibration of the conventional date utilizing Calib 7.10 and the IntCal13 calibration curve (Reimer, et al., 2013) produced a 2-Sigma calibrated result of Cal. BC 716-414 with a median probability of BC 600. Feature 3110 (Beta-208040) produced a conventional date of 2460 +/- 40 BP and a 2-Sigma calibrated result of Cal. BC 770-400. Re-calibration of the conventional date utilizing Calib 7.10 and the IntCal13 calibration curve (Reimer, et al., 2013) produced a 2-Sigma calibrated result of Cal. BC 673-415 with a median probability of BC 604.

<u>Kellogg Phase (ca. 700BC-AD100)</u>

As noted above, the Early Woodland assemblage for the Choccolocco Valley appears to be most closely related to the Kellog phase of northwestern Georgia. Kellog phase ceramic assemblages are dominated by sand-tempering that exhibits primarily fabric-impressed surface treatments. Although Caldwell (1957) noted that the Kellog phase in Georgia was characterized by the nearly exclusive use of sand-tempered Dunlap Fabric-Marked pottery, Little (2011) notes that some Kellog sites in northwestern Georgia also include substantial proportions of limestone-tempered fabric-impressed pottery. Meredith (2007) identified a Kellog phase component at the Fishing Creek Site (1SC77) near the confluence of Choccolocco Creek with the Coosa River. Feature 3 produced sand-tempered fabric-marked pottery. A single radiocarbon sample (GX-32707) produced a conventional date of 2470 +/- 60 BP. Re-calibration of the conventional date utilizing Calib 7.10 and the IntCal13 calibration curve (Reimer, et al., 2013) produced a 2-Sigma calibrated result of Cal BC 771-413 with a median probability of BC 609.

THE CHOCCOLOCCO CREEK ARCHAEOLOGICAL COMPLEX: SUMMARY

At Davis Farm, intensive agriculture and urbanization during the 19th and 20th centuries severely impacted and obscured a significant prehistoric archaeological complex that spans the entire Holocene. The ethnohistory of the Middle Coosa Basin links pre-removal towns of the present-day Muscogee (Creek) Nation (MCN) to enigmatic monumental stone constructions found at Davis Farm and elsewhere within the Choccolocco Valley through a tradition of carrying "burden stones" in remembrance of those lost in a great flood. While stone constructions exist in a bewildering array of morphologies within the region two classes of these may be linked to the presumed prehistoric ancestors of the Upper Creeks at Davis Farm; serpentine stone walls and stone mounds. The serpentine stone walls are associated with the serpent symbolism found within Upper Creek myths involving the *"Aktvyahcvlke."* A linkage with the myth of the Uktena of the Cherokee has been proposed by others for similar serpentine stone walls in northern Georgia (Loubser & Frink, 2010), and the Great Serpent Mound in Ohio of Adena age (Romain, 1988b).

The Muskhogean "*Aktvyahcvlke"* may be linked to the Southern Iroquoian (Cherokee) "Uktena" in several interesting ways but there are also important differences. These two words appear to be cognates. Both refer to the same thing; the Great Serpent in Eastern Woodlands cosmology. Both groups contain myths in which a man is transformed into the Great Serpent. Similarly, in both groups the Great Serpent is often associated with water and the underworld. In northwest Georgia, at least one serpentine wall has been associated through oral tradition with a Cherokee trader named Yahola. While Yahola is a common name within the Eastern Cherokee it is of Muskhogean origin and in its purest form refers to one of four spiritual beings central to Muskhogean religion.

In contrast to the Upper Creek myths in which the Great Serpent is generally viewed as a friend or family member and often associated with a catastrophic flood, in the Cherokee myths the Great Serpent was created by supernatural beings known as the "Thunderers" to play an important role in killing the sun during a significant celestial event. In one of the Cherokee myths, the Great Serpent grew angry on earth and was ultimately killed by a Shawnee shaman. Even though the Great Serpent is one of the most iconographic symbols of the Mississippi period ancestors of the Upper Creeks, there appears to be no such celestial role for the Great Serpent in the surviving myths for the Creeks. The serpentine walls in northern Georgia are located at "portals to the underworld" and one such wall has been dated to the Mississippi period (Loubser and Frink, 2010). In contrast, the Serpent Mound in Ohio is located within a 300-million-year-old impact crater and has been dated to Adena age.

The antiquity of the Great Serpent symbolism is apparent in its wide dispersion throughout the western hemisphere. The Cherokee "Daughter of the Sun" myth, in which the Great Serpent plays an important role, exhibits many of the same features of myths cited by Firestone, West and Warwick-Smith (2006) of eight (8) North American tribes which they claim reference a ca. 12,900 BP impact event above or on the Laurentide Ice Sheet near present-day Lake Michigan. While such an association is tenuous at best, it is interesting that all of the myths cited by Firestone, West and Warwick-Smith (2006) are from languages most strongly associated with the northernmost latitudes of North America; Siouan, Algonquian, Iroquoian, Athabaskan and Penutian. Mooney (1900;2006 Reprint) recorded a tradition that the Cherokees migrated from the Great Lakes region in ancient times.

Recent linguistic research suggests that Southern Iroquoian (Cherokee) and Northern Iroquoian diverged from Proto-Iroquoian between 3,965 BC to 1,283 BC (ca. 6,000 BP to 3,200 BP) (Schillaci, et al., 2017). Whyte (2007) has suggested that the adaptation to the mast forests of the Appalachians ca. 4,000 BP may date the divergence of the Southern and Northern divisions of Proto-Iroquoian. Thus, according to this interpretation, Cherokee-speaking people were present in the Appalachians by the end of the Archaic. This raises the question as to whether the ancestors of the present-day Cherokee or the present-day Creeks are responsible for construction of the enigmatic stone monuments within the southern Appalachians.

The available evidence indicates that the answers to such questions are complex. During the contact period polities associated with the paramount chiefdom of Coosa occupied the region of Georgia and Alabama where many stone constructions have been identified. However, in the two centuries following contact, Southern Iroquoian (Cherokee) groups gained control of much of the region. Identities such as “Cherokee” and “Creek” are relatively recent (post-contact) products of a much deeper cultural landscape within which Muskhogean-speaking and Iroquoian-speaking individuals experienced a wide range of social interactions for at least the last 1,000 years and probably much longer into the past. The prehistory of these present-day groups is inexorably linked to events and choices made at the individual, clan and town level over the vast span of time during which their ancestors interacted within the southern Appalachians. It is one of the goals of archaeology to identify and illuminate these interactions through the record of material culture these ancient ones left behind.

The CCAC in Environmental and Cultural Context

The combination of ethnohistorical, linguistic and, archaeological data for the Choccolocco Valley presents a compelling argument that both the Boiling Springs Site (1Ca190) and the Choccolocco (Davis Farm) Site (1Ca196) were part of a broader cultural landscape of sites within the Middle and Upper Coosa valleys with similar characteristics, some of which appear to date to the Early Middle Woodland period (Figure 37). Early investigations at Sites 1Ca190 and 1Ca196 (Holstein & Little, 1986) resulted in both being included in a “Davis Farm Archaeological Complex” that was later expanded into a “Choccolocco Creek Archaeological Complex” to include the Boiling Springs Mountain Stone Mound (1Ca636) and several other sites within the former boundaries of Davis Farm. Based on the ethnohistoric context presented above, the complex should be expanded to include the Skeleton Mountain Snake Effigy (1Ca157).

It is also clear from the data that the pattern exhibited at Davis Farm is expressed in at least one other location within the valley. At Morgan Mountain, the Village Site (1Ca42) included an earthen mound and a large Early Middle Woodland occupation, both of which are overlooked by the Morgan Mountain Mound Site (1Ca32), which consists of five (5) stone mounds situated atop Morgan Mountain. Therefore, as currently understood, the Choccolocco Creek Archaeological Complex is comprised of at least two (2) multi-component aggregation/ceremonial centers located respectively in the vicinity of the former Davis Farm and in the vicinity of Morgan Mountain. Both of these prehistoric population centers include an initial Early Middle Woodland occupation associated with an earthen mound in the floodplain and one or more stone mounds atop a nearby ridge or hill. At Davis Farm, the complex also includes the Skeleton Mountain Snake Effigy (1Ca157). To differentiate these two centers, they are referred to herein as the “Choccolocco Creek (Davis Farm) Archaeological Complex (CCAC-Davis Farm)” and the “Choccolocco Creek (Morgan Mountain) Archaeological Complex (CCAC-Morgan Mtn).” When referred to collectively, herein the reference is simplified to the “CCAC.”

The pattern exhibited at the CCAC has also been identified in at least two other locations to the north and east of the Choccolocco Valley. Along the upper reaches of Terrapin Creek at its confluence with Nances Creek, which drains the divide between the Choccolocco watershed and the Terrapin Creek watershed, the multi-component Polecat Ford Village Site (1Ce308) also contained an earthen mound in the floodplain and was overlooked by two (2) stone mounds (1Ce354). Further afield, in Bartow County, Georgia, near

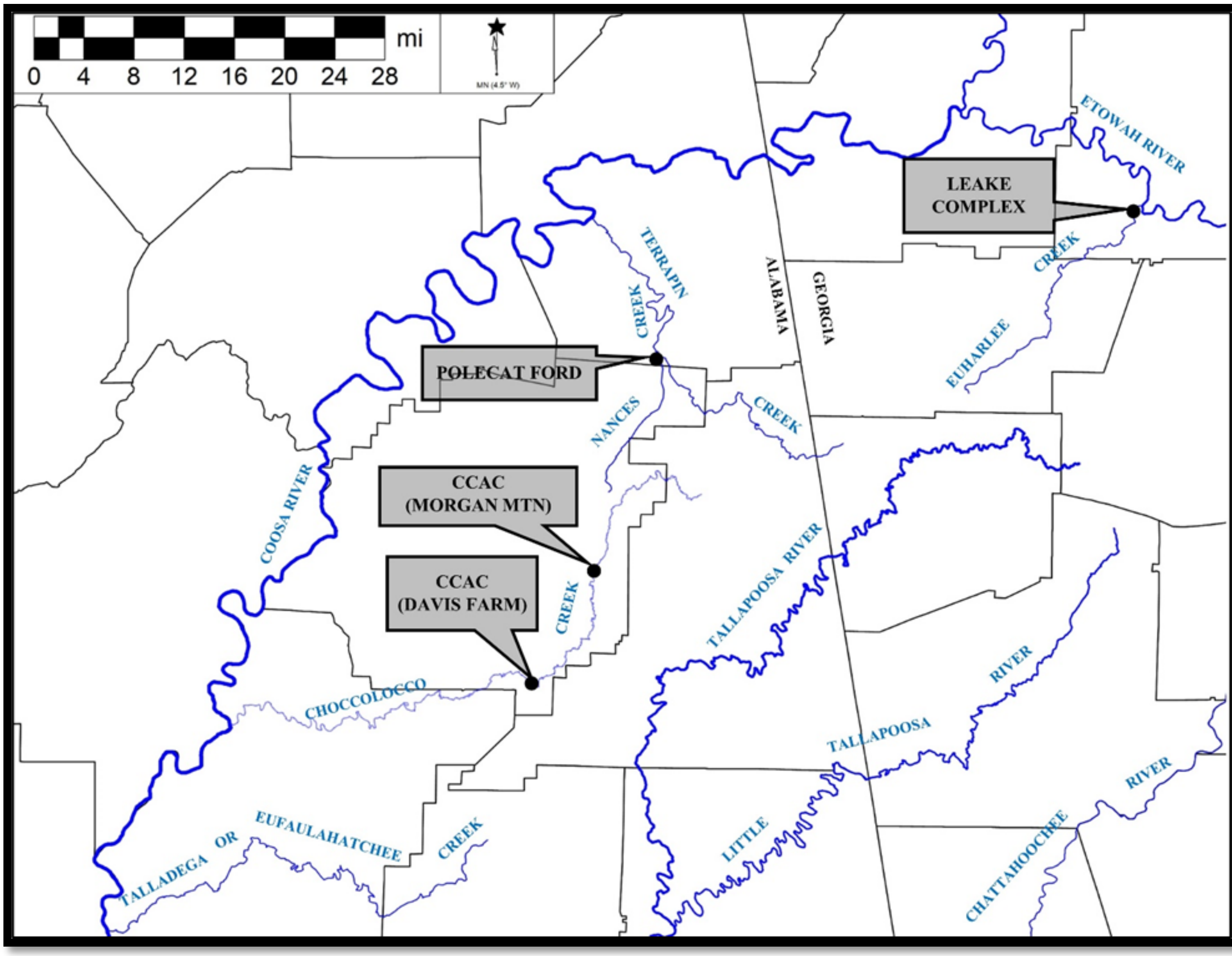

Figure 37. Middle Woodland Sites with Similar Cultural Manifestations

the confluence of Euharlee Creek with the Etowah River, Keith (2013) has identified a similar pattern at a major Early Middle Woodland aggregation/ceremonial center known as the Leake Site Complex. Although not currently included within the Leake Site Complex, it is noteworthy that the floodplain location is overlooked by the Mount Alto stone walls identified by Smith (1962).

Not only are there similarities in the archaeological remains of the Leake Site Complex and the CCAC, but there is also a striking similarity in the origin of the Native American place-names. Mooney's (1900;2006 Reprint) list of Cherokee place-names derived from names associated with the previous Creek occupants indicates that Euharlee Creek is a corruption of the Cherokee word "Yuhali" for the Creek tribal name "Eufaula" which, Swanton suggested was derived from the English "You Fellers" for a group of Muskhogeans with a name that English speakers could not pronounce but referenced, *isti aktaski"* for *"where people jumped down in"* or perhaps *"isti aklatki"* for *"where the people fell down in."* As Talladega Creek in Alabama was called Eufaulahatchee Creek during the 18th century, both Talladega Creek in Alabama and Euharlee Creek in Georgia may mark the 18th century boundaries for a Muskhogean group that is closely related to, if not entirely synonymous with, the Coosas and Abihkas. This interpretation is further bolstered by modern place-names within the Choccolocco valley such as "Eastaboga" which is derived from the Muskhogean *"Istokpoga"* which means, *"person in water or a low place + being gone or dying…. said to be named for a group of people swallowed by swirling water"*

(Martin & Mauldin, 2000) and a 19th century reference that indicates the Freeman-Caver-Christian Home at Boiling Spring was known as Eastaboga.

The Early Middle Woodland pattern of lowland aggregation/ceremonial centers adjacent to ridgetop stone mounds identified at the Davis Farm, Morgan Mountain, Polecat Ford and the Leake Sites are located within the region described by Knight (1994b) as the 18th century Abihka polity, one of the three core groups of what would become the Creek Confederacy. With perhaps as much as 1,500 years (and quite possibly more) separating the initial occupation and commencement of monumental constructions at these sites and the documented Abihka occupation of the area, confirmation of an association between the two must ultimately require a better understanding of cultural change within this time interval. Importantly, such an understanding, if it is to be rooted within empirical science, is only achievable through archaeological investigation. Nevertheless, Swanton (1928) did note that during the 18th century the Abihka had a tradition of piling stones in remembrance of ancestors lost in a flood. Moreover, specific references are made in several Muskhogean myths to a town that was lost in the water, and in at least two of these myths, the catastrophic event is tied to a water tiger.

Historical documents link the "*Aktayahche*" (Water Tiger) clan to the Boiling Springs location and 19th century local folk legends describe a town swallowed by a catastrophic sinkhole and attribute its location to nearby Blue Pond. An interview conducted by Bessie Coleman Robinson in 1891 of a prospector named Gideon Riddle who visited the area in 1831, documents that Riddle observed ground subsidence in the valley and was taken to see an "Oaktacki" woman who lived at Boiling Spring. The anglicized "Oaktacki" is thought to be derived from the Muskhogean "*Aktvyahcvlke*" referring to the Water Snake or Water Tiger clan (Martin & Mauldin, 2000). Furthermore, the Snake Effigy Site (1Ca157) located on Skeleton Mountain overlooks the surface water drainage that joins Choccolocco Creek at the Boiling Springs Site (1Ca190) and the Choccolocco Site (1Ca196). One of Swanton's sources also reported that part of the Aktayahche clan had horns and one of the most prominent pre-removal residents of Choccolocco Town was "Chinnabee" or "*Cetto-Yvpe*" for Snake Horn, or perhaps the Horned Snake.

All of this evidence suggests deep connections between the Muskhogean myths, the Abihka and the monumental constructions at the CCAC. Nevertheless, linkage between these apparent Early Middle Woodland features and the Muskhogean flood myths hinges in part on whether the origin myths describing a Muskhogean migration into the area from the west are consistent with the archaeological record. Linguistic evidence suggests that Proto-Muskhogean diverged ca. 2,000 years ago which is consistent with Knight's (1994b) observation that the archaeological record favors local, in-place Muskhogean development during the late prehistory. However, Lankford (1987) has suggested a much shorter divergence interval of ca. 1,000 years placing it at roughly the same time as the widespread appearance of shell-tempered pottery in the region. More recent scholarship based on archaeological evidence suggests that both interpretations are consistent with the archaeology of the region.

Jenkins (2009) has proposed that the Upper Creeks of the historic period were formed from Mississippian period interactions between a Wilbanks Variant group, a Moundville Variant group and a central Alabama Terminal Woodland population that fused with the intrusive Lamar Variant group. According to his interpretation, the Cusseta migration legend documents the movement of Late Moundville III people to central Alabama from the Warrior valley. In central Alabama this Late Moundville III complex is known taxonomically as the Big Eddy phase. Part of the Big Eddy phase group moved to the central Chattahoochee River valley where the group is known archaeologically as the Abercrombie phase. Notably, Jenkins (2009) places Casiste (Cusseta) on the lower Tallapoosa (1MT25) at the time of the De Soto entrada.

Development of the ancestral Upper Creeks within the Choccolocco Valley north of Jenkins' central Alabama study area appears to have differed only slightly from that proposed by Jenkins (2009). Little (1999) identified the presence of minority ceramic types that cross each of four coeval Terminal Woodland groups, known archaeologically as the Coker Ford, Cane Creek, Ellis and Woodstock cultural complexes. According to Little's interpretation of the evidence, the Etowah chiefdom emerged through cooperative, non-violent interaction as a defensive mechanism against armed aggression. The current investigations at the Choccolocco Site (1Ca196) and the Boiling Springs Site (1Ca190) have resulted in a refinement of Little's (1997;1999;2011) ceramic chronology that assists in understanding the increase in social complexity; not only during the Terminal Woodland/Mississippian transition but also the preceding Middle and Late Woodland transition.

Early Middle Woodland

The data presented in Volumes 2 and 3 of this report lead to several significant findings. First, the increase in social complexity at the CCAC-Davis Farm began during the Early Middle Woodland with the beginning of earthen mound construction within the floodplain of Choccolocco Creek at the Choccolocco Site (1Ca196). Based on previous research at the CCAC-Davis Farm, the earthen mound at Site 1Ca196 had long been considered to date to the Late Mississippi period. The current investigation presents the first evidence that mound construction began over a millennium earlier than previously thought. The Early Middle Woodland inhabitants of Choccolocco were descendant from the previous Kellogg population and occupied the broad floodplain that is known today as Choccolocco Park. By ca. AD 100 the inhabitants began to exploit mica and greenstone deposits within the mountains to the south and participated in economic and cultural exchange with the Copena population of the Tennessee Valley. These inhabitants are known archaeologically as the Crooked Creek phase of the Choccolocco and Tallapoosa Valleys. Closely-related groups are known as the Cleveland phase of the Middle Coosa Sub-Basin and the Yanceys Bend I phase of the Upper Coosa Sub-Basin (Figure 38).

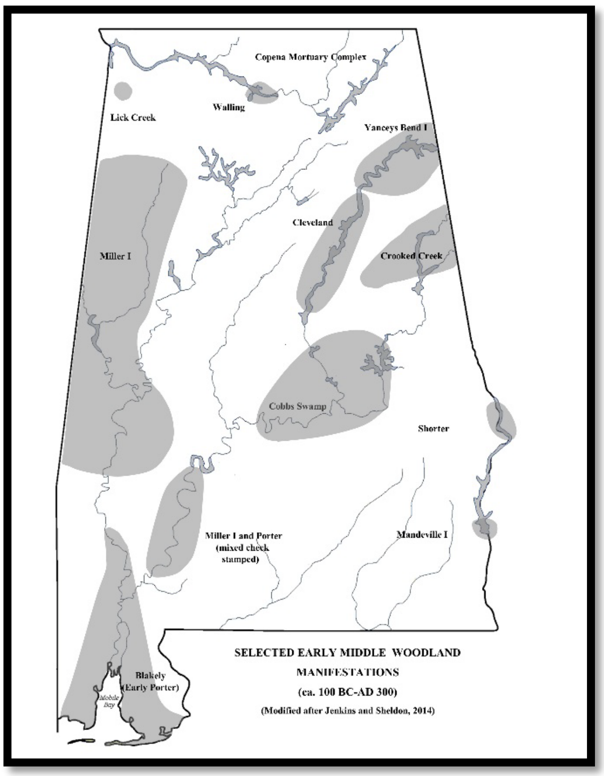

Figure 38. Early Middle Woodland (ca. 100 BC-AD 300)

Evidence recovered during the current investigations indicates that the Crooked Creek phase inhabitants of the Choccolocco Valley and the Cleveland phase inhabitants of the Middle Coosa Sub-Basin were engaged in exchange with inhabitants of the Tennessee Valley. These groups participated in the "Copena Mortuary Complex." Based on Larson's identification of the Cleveland pottery assemblage at Site 1Ta9 as grit-tempered (carbonate) types, along with discovery of Copena burials at nearby Kymulga Cave (1Ta105), Walthall and DeJarnette (1974) considered the Cleveland Complex to be a single component site unit intrusion into the Middle Coosa Sub-Basin by a Tennessee Valley "Copena" group engaged in resource extraction of steatite and greenstone. At the time their article was published, there was no other evidence of Copena sites in the Middle Coosa Sub-Basin.

The interpretation of the Cleveland Complex as a site-unit intrusion from the Tennessee Valley seems less likely today for several reasons. First, after reviewing Larson's collection from Site 1Ta9, Knight, Cole and Walling (1984) noted that the temper inclusions did not react to a solution of 5 percent hydrochloric acid leading them to place the sherds from Site 1Ta9 within their "Temper Group 1" which was a sand/grit paste type. Based on their analysis of the pottery from Site 1Ta9, and the results of their reconnaissance, the Cleveland series was retained as a distinctive local ceramic complex but differentiated from Cartersville Check Stamped pottery in Talladega and Coosa Counties only on the basis of observed differences in paste characteristics with Cleveland Plain and Cleveland Check Stamped occurring on a paste with coarser inclusions than Cartersville Check Stamped. Second, both Crooked Creek phase and Cleveland phase sites include small minorities of complicated stamped pottery types with early Swift Creek motifs stylistically similar to Cobbs Swamp phase pottery of central Alabama (Knight Jr., 1998). Third, since Walthall's and DeJarnette's 1974 article several Middle Woodland conical mounds (Knight Jr., et al., 1984), and an additional Copena burial cave with no known associations with any Cleveland Complex site (Holstein, 2019) have been identified in the eastern Middle Coosa Sub-Basin.

Late Middle Woodland Decline/Hiatus

Another of the significant findings at the CCAC-Davis Farm is the lack of feature contexts dating to the period between ca. AD 400 to AD 600 (Figure 39). While it cannot be ruled out that the lack of identified subsurface features dating to this time period is the result of historical agricultural impacts at Site 1Ca196 or the result of a possible bias in the data due to the fact that the site was largely avoided during the development of Choccolocco Park, the lack of simple-stamped pottery as a dominant type at other sites in the region suggests that significant cultural changes occurred within the Choccolocco Valley and the eastern Middle Coosa Sub-Basin during the late Middle Woodland. The nature of this change is poorly understood. While no evidence of a late Middle Woodland occupation at Site 1Ca196 was recovered during the recent investigations, pottery types consistent with late Middle Woodland occupations in other regions was present in features excavated at Site 1Ca190 as rare minority types. However, specimens tended to be small and ubiquitous as minority incidental inclusions within feature contexts that date to the Late Woodland, Terminal Woodland or Early Mississippian.

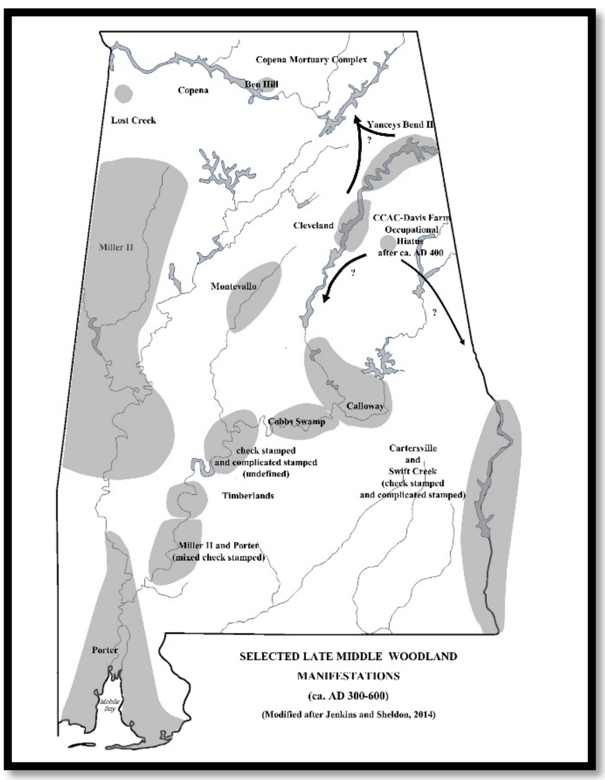

Figure 39. Late Middle Woodland (ca. AD 300-600)

Based on the current evidence, it appears that the floodplain occupation centered on the earthen mound at Site 1Ca196 was abandoned ca. AD 400 and not re-occupied until the Late Mississippian occupation. At Site 1Ca190 some form of use may have continued after ca. AD 400 although it either did not include excavation of storage pits or, alternatively, storage pits dating to this period were simply obliterated by subsequent occupations of the site. Late Middle Woodland activities at Site 1Ca190 may have been restricted to mortuary ritual. Floodplain abandonment at the CCAC-Davis Farm coincides with a general decline in population and interaction with Cartersville populations as evidenced by pottery assemblages from nearby upland sites within the eastern Middle Coosa Sub-Basin. This may have been precipitated by the rise of the Leake Site in the Etowah Valley as an important regional hub for exchange. By ca. AD 350, local pottery assemblages are characterized by the predominance of plain sand-tempered (Sand-2) and grit-tempered (carbonate) pottery, the absence of check stamping and simple stamping, and rare specimens of complicated stamped (Swift Creek), incised and brushed pottery. The lack of a dated context for the period between ca. AD 400 and AD 600 at the CCAC-Davis Farm precludes any definitive identification of a late Middle Woodland pottery assemblage. However, based on the data from upland Sites 1Ca421 and 1Ca522, assemblages likely included both plain, grit-tempered (carbonate) and, plain, sand-tempered pottery as co-dominant types with Swift Creek Complicated Stamped occurring as an important quasi-diagnostic minority type.

The interpretation of an apparent hiatus at the CCAC-Davis Farm is consistent with data from other regions. Decline in ceremonialism, inter-regional interaction and hiatus appears to have characterized large areas of the interior during the Middle to Late Woodland transition (McElrath, et al., 2000). While settlement data is sparse for the Middle Coosa Sub-Basin, currently available evidence also suggests an apparent population decline during the late Middle Woodland which correlates with data from the Etowah Valley where Lilly and Webb (2000) have noted that, *"Intensive occupation during the early Middle Woodland…is followed by an apparent population decline during the late Middle Woodland and then a period of near abandonment…during the Late Woodland."* To the south of the CCAC-Davis Farm, within the Harris Reservoir of the Tallapoosa Valley, Knight (1980) noted that no recognizable Late Woodland complex following the early Middle Woodland Crooked Creek Complex (see discussion above) could be identified.

The apparent late Middle Woodland population decline within the Middle Coosa and Tallapoosa Valleys coincides with an observed shift downriver in settlement locations for the Central Alabama Cobbs Swamp phase and the initial appearance of the Calloway phase at the confluence of the Coosa and Tallapoosa Rivers in Elmore County ca. AD 300-600. Jenkins and Sheldon (2014) suggest that both the Cobbs Swamp phase and the Calloway phase originated from populations to the north (i.e., the Middle Coosa and Tallapoosa Sub-Basins home to the Crooked Creek phase). Cobbs Swamp phase pottery is similar to the Crooked Creek phase while the Calloway phase pottery exhibits similarity with minority types recovered at the Anneewakee Creek Mound along the Upper Chattahoochee in Georgia (Knight & Markin, 2014). Thus, during the late Middle Woodland a shift in settlement appears to have occurred via population movement from the Valley and Ridge and Piedmont physiographic provinces into the Coastal Plain where no such population decline is evident and the waning of Hopewellian influence coincided with increased interactions between the Cobbs Swamp phase, the Calloway phase and, indigenous Coastal Plain groups (Walthall, 1980; Willey, 1985; Jenkins & Sheldon, 2014).

Much work remains to be done regionally to illuminate the timing of the apparent Late Middle Woodland movement from the Valley and Ridge and Piedmont into the Coastal Plain. Existing regional ceramic chronologies need to be refined. This is most apparent in the differential dating of Weeden Island ceramics that continues to be utilized among some archaeologists. As recently as 2018, the inception of Weeden Island ceramics was still being dated to between AD 250 and AD 450 (See Pluckhahn & Thompson (2018)) by researchers in Georgia, despite convincing evidence that Weeden Island ceramics are a post-AD 600 development (Smith, 2014; Smith & Stephenson, 2018) arising out of the western Gulf Coast Santa Rosa/Porter complex (Jenkins, 2020). The confusion surrounding the inception of Weeden Island I ceramics possibly has chronological implications for the Etowah Valley Leake Site where Keith (2010) has placed the terminal period to between ca.AD 400 to AD 650 partially based on, "*an increase in Gulf Coastal style wares in the Weeden Island tradition."*

Early Late Woodland

At the CCAC-Davis Farm, the apparent Late Middle Woodland occupational hiatus ended ca. AD 600 with the Late Woodland occupation of the Boiling Springs Site (1Ca190) by groups making Weeden Island and Mulberry Creek Plain pottery (Figure 40). On the lower Alabama River and Central Alabama, the Late Woodland is characterized by an increase in sites and site size (Jenkins, 2020). The Middle Coosa Sub-Basin also experienced a significant increase in population during the early Late Woodland which appears to have been the result of Coastal Plain and Tennessee Valley groups re-settling marginal areas of the Middle and Upper Coosa Sub-Basins that had been abandoned during the 6th century climatic deterioration centered around AD 536. These populations were perhaps partially descended from the Middle and Upper Coosa Sub-Basin inhabitants that had largely abandoned the area during the Late Middle Woodland and had likely remained in contact with small, semi-isolated groups that chose to stay in the Middle Coosa Sub-Basin. Further evidence of the apparent 6th century population movement into the Gulf Coast region may be found in Willey (1985), who noted that no Late Middle Woodland decline appears to have occurred in areas such as the Lower Mississippi Valley and Gulf Coast where the waning of Hopewellian influence appears to have coincided with the rise of the Weeden Island ceremonial and sociopolitical complex (Walthall, 1980).

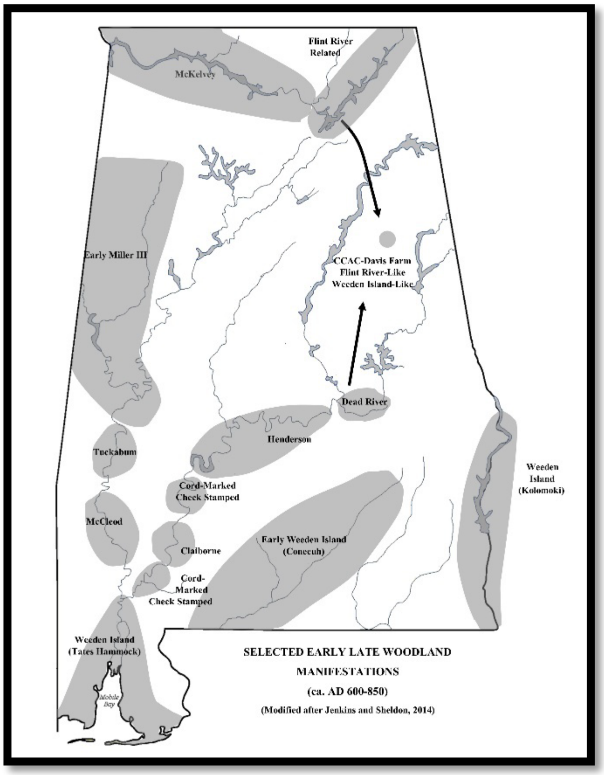

Figure 40. Early Late Woodland (ca. AD 600-850)

The establishment of a high-resolution ceramic chronology for the Late Woodland is another of the significant findings of the current investigations at the CCAC-Davis Farm. Little (2011) tentatively suggested that the Cleveland phase may have extended into the Early Late Woodland for parts of the lower Choccolocco Valley and the Middle Coosa Sub-Basin. However, the literature review for the current investigation indicates that Cleveland phase sites lack feature contexts that produce predominantly simple stamped pottery. In fact, Knight, Cole and Walling (1984) note that out of thirty-two (32) Woodland component sites identified in their survey, only two (2) sites, 1Ta115 (n=6) and 1Ta184 (n=1), produced simple stamped pottery. Out of 175 sites identified during Knight's (1985) survey of East Alabama and, seventy (70) sites identified by Holstein and Little (1986) in their survey of northeast Alabama, not a single sherd of simple stamped pottery was reported. While investigations at the Dry Creek (1Ca522), Wright Farm (1Ca18) and, Blue Hole (1Ca421) sites suggest that the apparent absence of simple stamped pottery at known sites within the Middle Coosa Sub-Basin may be partially attributed to survey bias, feature contexts at the Dry Creek Site (1Ca522), the site with the highest occurrence of simple stamped pottery, failed to produce simple stamped pottery in frequencies greater than 7.04 percent (n=25), and simple stamped pottery was identified within only two (2) features at the site. Thus, based on the available evidence, Middle Woodland simple stamped pottery appears to be rare within the Middle Coosa Sub-Basin, suggesting that the Cleveland phase is restricted to the early Middle Woodland.

In contrast, the current findings at the CCAC-Davis Farm support a modified version of the hypothesis first proposed by Little et. al (1997) that the Late/Terminal Woodland Cane Creek phase developed out of the local late Cartersville-related phases. A central component of that hypothesis was that carbonate-tempering increased gradually over time as the Cane Creek phase developed from the earlier Cartersville-related complex. However, this hypothesis was not supported by statistical analysis conducted on the assemblage recovered from the Dry Creek Site (1Ca522) and, in fact, the statistical analysis suggested that, *"Post AD 500 Cartersville phase manifestations in northeast Alabama produce proportionately less carbonate-tempered pottery than those of either earlier Cartersville or later Cane Creek contexts."* Nevertheless, data from the CCAC-Davis Farm may support both the hypothesis and the findings of the statistical analysis conducted on the assemblage from the Dry Creek Site (1Ca522) if it is accepted that that the Dry Creek assemblage likely represents a 6th century remnant Cartersville population centered on Coldwater Spring that welcomed kin-based groups back into the Middle Coosa Sub-Basin from the Tennessee Valley and Gulf Coast at the beginning of the 7th century. Such an interpretation is supported by evidence from the Boiling Springs Site (1Ca190) that suggests that the Middle Woodland pottery temper (Sand-2) continues to appear within dated feature contexts through ca. AD 850.

Late Late Woodland

During the Late Woodland period from ca. AD 850 to AD 1050, pottery assemblages from the Boiling Springs Site (1Ca190) continued to exhibit considerable diversity with multiple tempering traditions in use at the site at the same time. Late Woodland pottery assemblages at the Boiling Spring Site during the early part of this period became dominated by plain, grit-tempered (carbonate) pottery and a plain, coarse sand-grit (undifferentiated) pottery gradually replaced the Middle Woodland (Sand-2) pottery. The gradual shift from the Middle Woodland sand-tempered pottery to coarse sand-grit tempered pottery is perhaps best understood as the result of increasing interaction with potters of the grit-tempered (carbonate) tradition which was the dominant temper type present at the site until the Terminal Woodland. It is not known if other sites within the Middle Coosa Sub-Basin follow the Late Woodland trend although the pottery assemblage is quite similar, if not identical to the assemblage described by Little et. al (1997) for the Cane Creek phase.

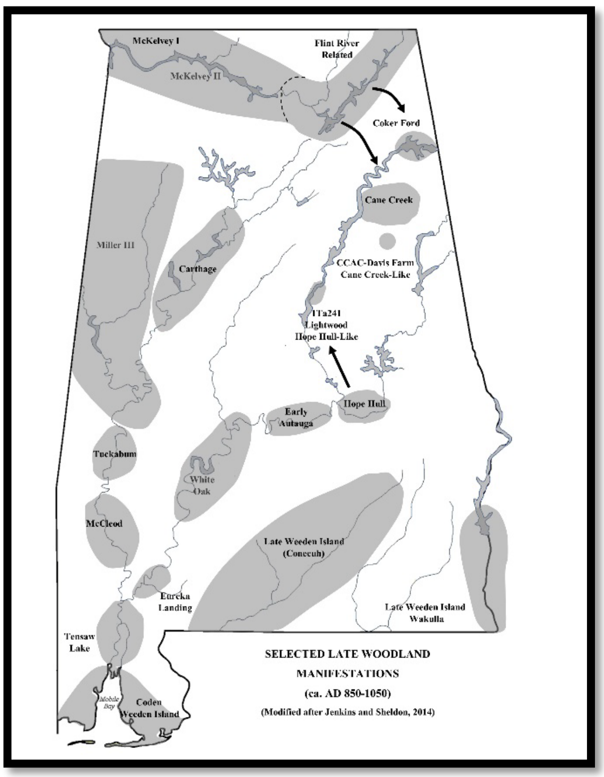

Figure 41. Late Woodland (ca. AD 850-1050)

The settlement pattern at the Boiling Spring Site (1Ca190) during the Late Woodland was that of a densely nucleated village surrounding an arm of Boiling Spring. No evidence of palisading was observed. Although few post-molds survived the 20th century industrial agricultural use of the site, evidence of a single Late Woodland structure indicates that habitations were of circular, post construction. Subsistence data indicates that foraging continued to be an important subsistence activity and the wide variety of plants and animal remains recovered suggests a population under some dietary stress. Mortuary practices during this period were ad-hoc in nature and utilized open pits and/or sinkholes as repositories for the deceased with no evidence of status differentiation.

Terminal Woodland

Models of in situ evolution by Late Woodland populations, migration/population replacement, and cultural diffusion from a Mississippian heartland in the American Bottom have all been advanced since the 1950s to explain the rise of Mississippian "culture" in the Southeastern United States. Robust radiocarbon datasets have now started to contribute refinements to the previous chronological sequences needed to evaluate these models. Populations transitioning from Late Woodland lifeways to more complex Mississippian lifeways have sometimes been described as "Emergent Mississippian" or "Terminal Woodland" in the literature. While somewhat of a simplification, such constructs depended largely on how changes were recognized and interpreted; either as the result of in situ evolutionary processes or the result of migration and/or diffusion. There have also been rather broad swings in the various theoretical frameworks applied to the question in attempts to correct perceived biases in the interpretation of the data. For example, mid-20th century frameworks tended to cite migration as a major cause of observed cultural changes but opponents argued that such arguments were not well-supported by the data available at the time. More recently, theoretical frameworks have favored in situ models of cultural development. However, recent research such as that of Jenkins and Krause (2009) has demonstrated that, *"While it was once possible to argue that population movement was relatively unimportant in the Eastern Woodlands…such a perspective is no longer widely accepted, not only in the Late Prehistoric and Contact periods…but also during much earlier periods [of prehistory]"* (Anderson, 2017). One of the most-recognizable features of Terminal Woodland populations in the Middle and Upper Coosa Sub-Basins is population movement.

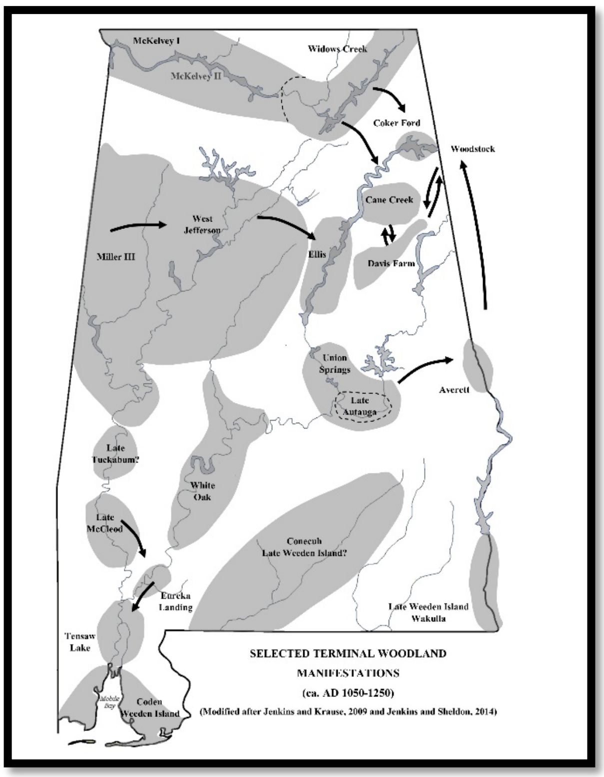

Figure 42. Terminal Woodland (ca. AD 1050-1250)

As a result of the current investigations, it has been necessary to propose an additional Terminal Woodland phase for the Choccolocco Valley due to the identification of the grit-tempered (metasiltstone) Choccolocco series pottery. Technologically, Choccolocco pottery is distinctly different from the grit-tempered (carbonate) and the coarse sand-grit-tempered pottery of the Cane Creek phase and the grog-tempered pottery of the Ellis phase. While the current data from the Boiling Springs Site (1Ca190) suggests that Choccolocco series pottery appears at the site perhaps as much as a half-century earlier than grit-tempered (shell) pottery this may be simply the result of sampling bias. The median probability for the earliest dated context that produced Choccolocco pottery was AD 976 while the median probability for the earliest dated context that produced grit-tempered (shell) pottery was AD 1097. A middle-range view of the data indicates both types of pottery were present at the site by the mid-11th century. Nevertheless, Choccolocco pottery dating to the Terminal Woodland transition is characterized by undecorated Late Woodland vessels (large conical jars). Mortuary treatments remain the same as in the Late Woodland while maize makes the first appearance at the site and there is an increase in greenstone debitáge suggesting a resumption of the greenstone trade.

Early Mississippi

As discussed earlier, the Cane Creek phase is quite similar, if not identical with, the unnamed Late Woodland manifestation at the CCAC-Davis Farm. The placement of the Cane Creek phase as a Terminal Woodland manifestation was based primarily on limited analysis of the Wright Farm Site and the Blue Hole Site north of the Choccolocco Valley where ephemeral evidence of shell-tempered pottery in Cane Creek assemblages does suggest that it is a Terminal Woodland phase (Little, Holstein & Hill, 1997). Additional radiocarbon dates are needed from secure contexts at more Cane Creek sites in the region in order to establish the temporal limits of this phase. Evidence of increased maize agriculture has been identified at the Cane Creek phase sites north of the Choccolocco Valley but evidence of Mississippian vessel forms in collections from those sites is ephemeral, nor has there been any evidence published for an increase in the diversity of mortuary treatment or changes in architecture typically associated with Early Mississippian communities.

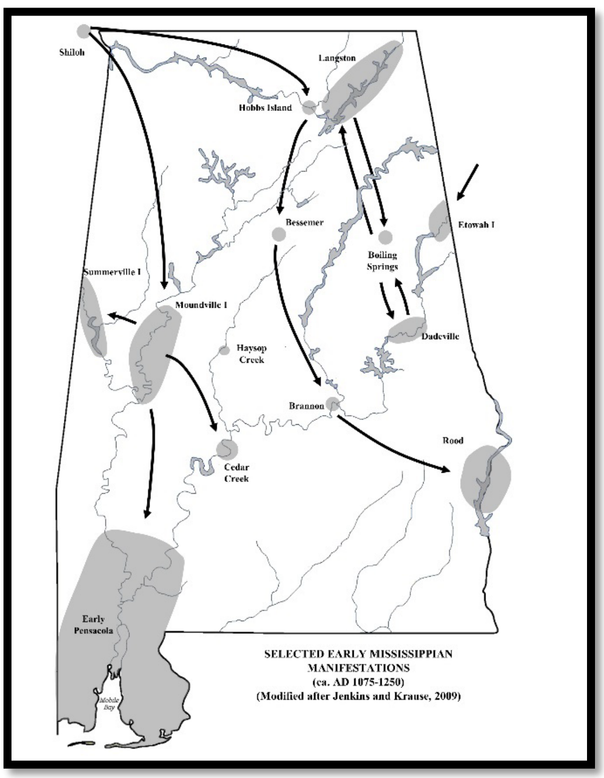

Figure 43. Early Mississippian (ca. AD 1075 to AD 1250)

In contrast, Mississippian vessel forms appear within the pottery assemblage of Site 1Ca190 by ca. AD 1100 along with an increase in maize agriculture, social complexity, diversity in mortuary treatments and changes in architecture. The 12th century Boiling Springs phase at the CCAC-Davis Farm is best characterized as a period of dramatic transformation. Data recovered from the Boiling Springs Site (1Ca190) indicates that the Terminal Woodland population at the CCAC-Davis Farm was transformed within the span of no more than 100 years into an Early Mississippian community. This finding stands in contrast to the coeval Terminal Woodland Cane Creek phase north of the Choccolocco Valley and the Ellis phase population in the lower Choccolocco Valley and at sites adjacent to the Coosa River.

The Ellis phase is viewed as a site unit intrusion into the Middle Coosa Sub-Basin by West Jefferson phase people from the Black Warrior River Valley. Previous research has placed the Ellis phase chronologically between ca. AD 1100 to AD 1300 (Little, 1999; Jenkins, 2003). Recent radiocarbon dates obtained by Thompson (2012) at the Little Canoe Creek Site (1SC336) in St. Clair County suggest that the Ellis phase appears in the Coosa Valley during the same interval of time for which considerable overlap of radiocarbon dates has been observed between the West Jefferson phase and the Moundville I phase in the Black Warrior River Valley. Noting that greenstone is the most common non-local craft material that appears within the Black Warrior River Valley during this period and that several Ellis phase sites within the Coosa Valley produced evidence of greenstone industry, Jenkins (2003) has suggested that the Ellis phase represents displaced West Jefferson people engaged in procurement of greenstone for Moundville elites.

The current investigations further support Little's (1998) and Jenkins' (2003) work on the role that the greenstone trade played in the cultural transformations within the Middle Coosa Sub-Basin during the Terminal Woodland to Early Mississippi periods. The Terminal Woodland CCAC-Davis Farm phase population was uniquely situated to control access to the Hillabee Greenstone and mica deposits in the Piedmont. At the Boiling Springs Site (1Ca190), evidence was recovered indicating that the greenstone industry intensified as the population adopted Mississippian attributes. Just as Ellis phase populations appear to have sourced greenstone for the inhabitants of Moundville, the CCAC-Davis Farm phase population appears to have sourced greenstone for inhabitants of the Tennessee Valley and beyond. At Moundville, no evidence of greenstone production has ever been identified and greenstone artifacts appear to have arrived at the site in finished form. A small cache consisting of a polished greenstone celt, a greenstone spade and a quartzite discoidal were reported by Ensor at a Terminal Woodland West Jefferson phase site (1Ja34) further supporting the suggestion by Jenkins (2003) that access to greenstone at Moundville was via the West Jefferson phase and the Ellis phase. The current investigations at the Boiling Springs Site (1Ca190) produced little evidence of contact with either the Ellis phase or the Moundville I group. In contrast, Early Mississippian vessel forms such as jars with peaked rims and blank-faced effigy bottles were common occurrences at the site.

As population growth put pressure on resources within the greater Cahokia region and the raw materials for celt production were centrally-controlled by Cahokia, Mississippian "frontier" populations in the Cumberland and Tennessee River Valleys may have sought an alternative source. Evidence supporting this interpretation was found at the Kincaid Site, where a greenstone celt recovered from a domestic context was visually identical to objects sourced from the Hillabee Greenstone at other Mississippian sites (Crow, 2014). South and east of the Kincaid Site, greenstone celts are common at Mississippian sites. In fact, the frequent occurrence of finished greenstone celts in domestic contexts at the Henry Island Site (1Ms55) in the Guntersville Reservoir of the Tennessee River led Webb and Wilder (1951) to suggest that the inhabitants were engaged in greenstone trade. The interpretation that Mississippian residents of the Henry Island Site were engaged in greenstone trade with the Boiling Springs phase inhabitants of the CCAC-Davis Farm via the Cane Creek phase inhabitants of the Upper Middle Coosa Sub-Basin is strengthened by least-cost analysis. The Cane Creek phase Blue Hole Site (1Ca421) and the CCAC-Davis Farm are both situated along the least-cost line between the Henry Island Site and the nearest known outcrops of the Hillabee Greenstone and known prehistoric mica mines.

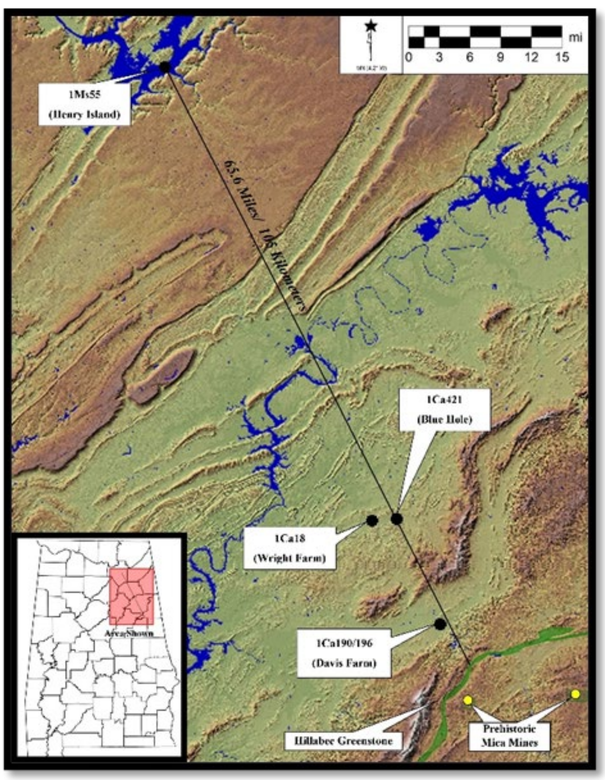

Figure 44. Least Cost Path Between Henry Island and the Hillabee Greenstone

The current investigations also produced the earliest evidence of a distinctly "Mississippian" increase in social complexity within the Choccolocco Valley and the Middle Coosa Sub-Basin with the identification of a series of structures superimposed upon others (Figure 45), and the identification of a stone-lined tomb at the Boiling Springs Site (1Ca190). It seems probable that these features survived intensive 19th and 20th century agricultural impacts partially intact only because they had once been in sub-mound contexts. The series of possible sub-mound structures exhibit remarkable similarity to those identified by Lewis and Kneberg (1946) at Hiwassee Island and probably served a similar ceremonial/civic function. Unfortunately, datable material recovered from the various structures was limited to wood charcoal subject to large uncertainties due to the difficulties inherent in dating long-lived species. While the four charcoal samples submitted for dating exhibited considerable temporal overlap, it was possible to infer that these structures date from the late 12th century at the earliest to the late 13th century at the latest with Structure 7 (Feature 320) as the earliest and Structure 2 (Feature 311) as the latest iterations. Structure 4 (Feature 315) and Structure 8 (Feature 338) may have been coeval with Structure 7 (Feature 320).

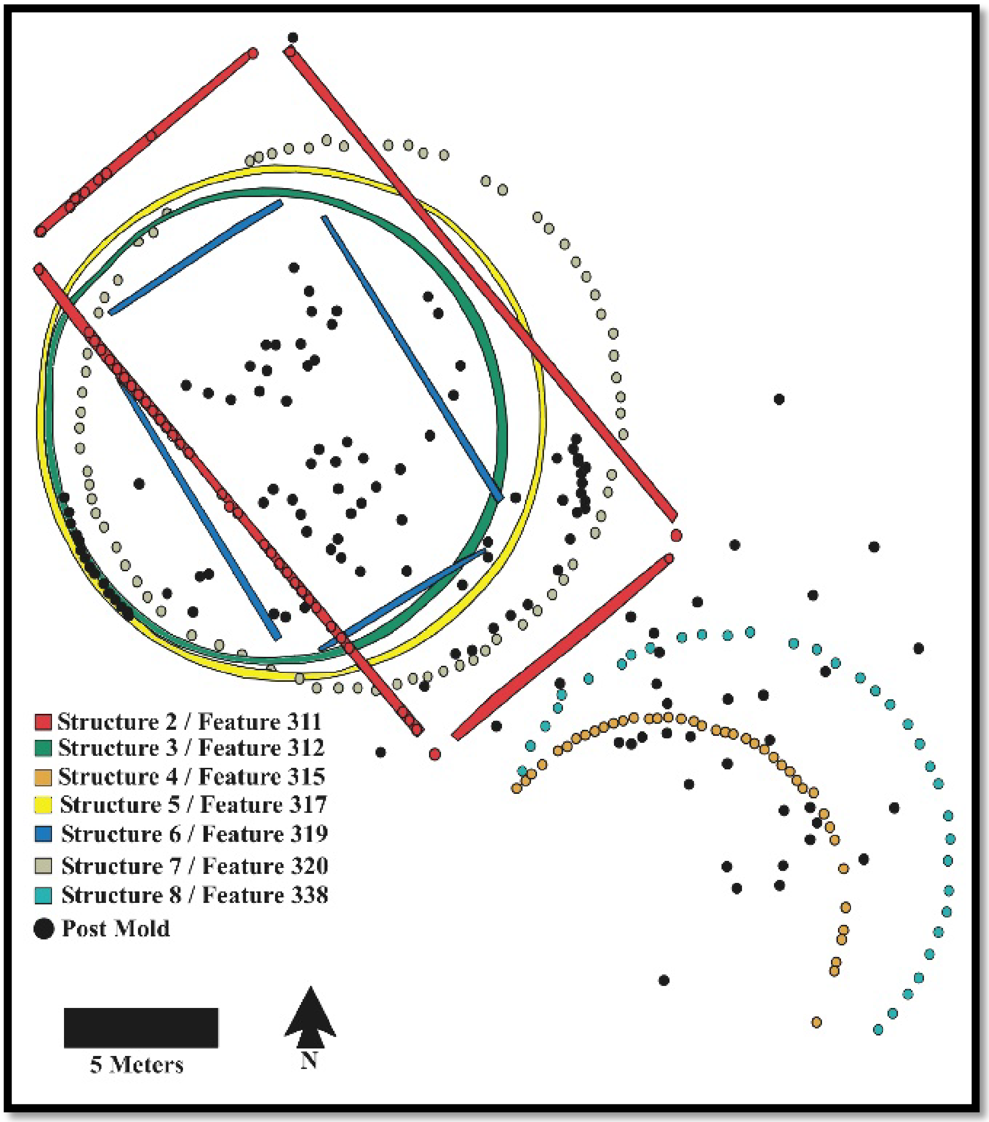

Figure 45. Site 1Ca190 Ceremonial/Civic Structures

Middle Mississippi

Based on the radiocarbon-dated samples from the ceremonial/civic structures and several other subsurface features at the Boiling Springs Site (1Ca190), the Boiling Springs phase is replaced ca. AD 1250 by the Etowah phase within the Choccolocco Valley. The pottery assemblage at the Boiling Springs Site (1Ca190), indicates that the Etowah 2-Bar Diamond complicated stamped motif first appears on both grit-tempered (metasiltstone) and coarse-sand grit-tempered sherds during the first half of the 13th century marking a dramatic decline in the popularity of the grit-tempered (metasiltstone). Around AD 1250, pottery fashioned from a coarse sand-grit paste becomes the dominant ware found at Site 1Ca190. There is also a dramatic lack of subsurface pits at the site suggesting that the practice of utilizing large, underground storage pits was abandoned in favor of above-ground storage; a practice consistent with an increased reliance on maize agriculture.

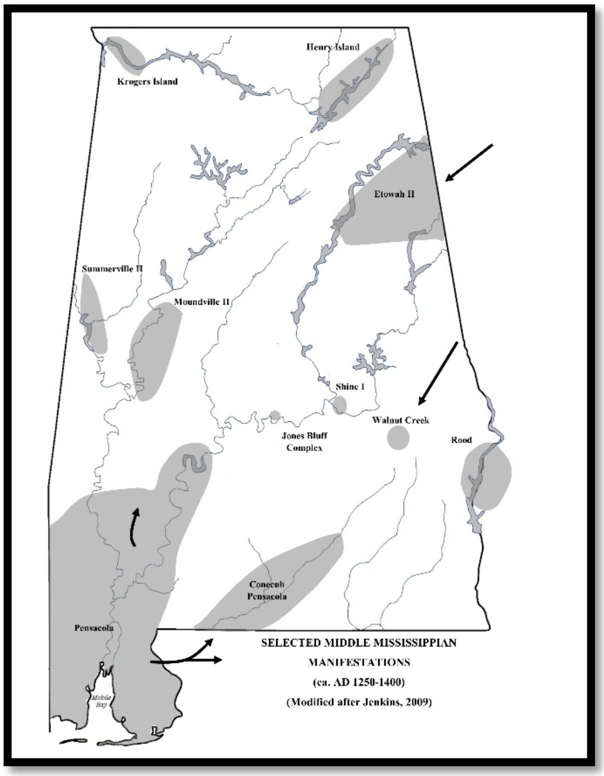

Figure 46. Middle Mississippi (ca. AD 1250-1400)

Although the Early Mississippian ceremonial/civic structures at Site 1Ca190 suggest cultural affinities with Hiwassee Island, both the Etowah Complicated Stamped pottery and the discovery of a stone-lined tomb suggests strong cultural affinities with the Etowah Site (9Br1) in Georgia. Few stone-box burials have been documented in Alabama. While a stone-lined grave was reportedly excavated from a Mississippian context by David DeJarnette at 1Tu1 in Tuscaloosa (Oakley, 2014) it is not described in any of the published literature reviewed. Further to the east, Dejarnette and Wimberly (1941) identified a stone-box burial at the Bessemer Site in Jefferson County. The nearest reported occurrence of a stone-box burial in Alabama relative to Site 1Ca190 is one reported by Clark (1921) in the vicinity of Arbacoochee in Cleburne County. This particular stone-box burial was observed during Clark's investigations into the *Mica Deposits of Alabama* and although his suggestion that the interred individual was Cherokee has no merit, his observations were detailed enough to conclude that the occurrence was a stone box and not a stone mound. While the exact location was not given, Clark places it near the Chulafinee and Arbacoochee localities, noting:

> *"…in the grave of a Cherokee Indian which the writer saw opened up, the skeleton was found completely enclosed in a stone box made altogether of large blocks of mica, forming the floor, top and sides. These blocks, or sections of split crystals, were most of them amber muscovite mica of good grade, extremely light in color, and necessarily of very unusually large size for the purposes stated."*

Although subject to considerable survey bias, current data suggests that stone-lined graves or stone-box graves occur more frequently in north Georgia than northeast Alabama. In their synthesis of the Mississippi Period sites in the Georgia Valley and Ridge, Hally and Langford (1988) listed stone box cemeteries as a significant site type. Smith (1988) suggested that the temporal placement of some stone-box burials in the Georgia Valley and Ridge may date to the "emergent" Mississippian. In the response to Smith's review of their synthesis, Hally and Langford, acknowledged that stone-box graves represent a gap in knowledge of the Mississippi period in the northwest Georgia Valley and Ridge Province. They also noted that stone-box graves in the region are generally devoid of diagnostic artifacts though they appear to be associated with the late Etowah phase at the Baxter Site (9Go8) and with the Wilbanks phase construction of Mound C at the Etowah Site (9Br1).

The stones lining the tomb at the Boiling Spring Site (1Ca190) were identified as Heflin phyllite which originated from several kilometers to the south of the site. While no associated funerary objects had been interred with the individual within the tomb, the size and construction of the tomb, along with the use of extra-local lithic material known to be associated with celt production supports the interpretation that the individual interred within the stone-lined tomb at Site 1Ca190 occupied a high status. Moreover, the strong association with some of the earliest mortuary practices at the Etowah Site (9Br1) underscores the importance of the greenstone trade during the Early and Middle Mississippi periods as both sites are uniquely situated to access greenstone outcrops of the Hillabee Greenstone in Alabama and its equivalent unit in Georgia, the Pumpkinvine Creek formation (Figure 47).

Late Mississippi

Evidence of the transition period between the Etowah phase to the Barnett phase at the CCAC-Davis Farm is incomplete due to the truncation of the Boiling Springs Site (1Ca190) during the late 20th century. Nevertheless, the current investigations indicate that perhaps as early as ca. AD 1350 the floodplain south of Choccolocco Creek had been re-occupied. The Barnett phase occupation of the CCAC-Davis Farm is known primarily from excavations at the Choccolocco Site (1Ca196) surrounding the earthen mound and an ancillary homestead to the east known simply as Site 1Ca198. Due to the 20th century truncation and severe disturbance of the upper strata at the Boiling Springs Site (1Ca190), it is unclear if it was also occupied during the 14th and 15th centuries. Excavations conducted by JSU during the late 20th century did recover sparse amounts of Lamar pottery within the extreme northeastern portion of Site 1Ca190 although

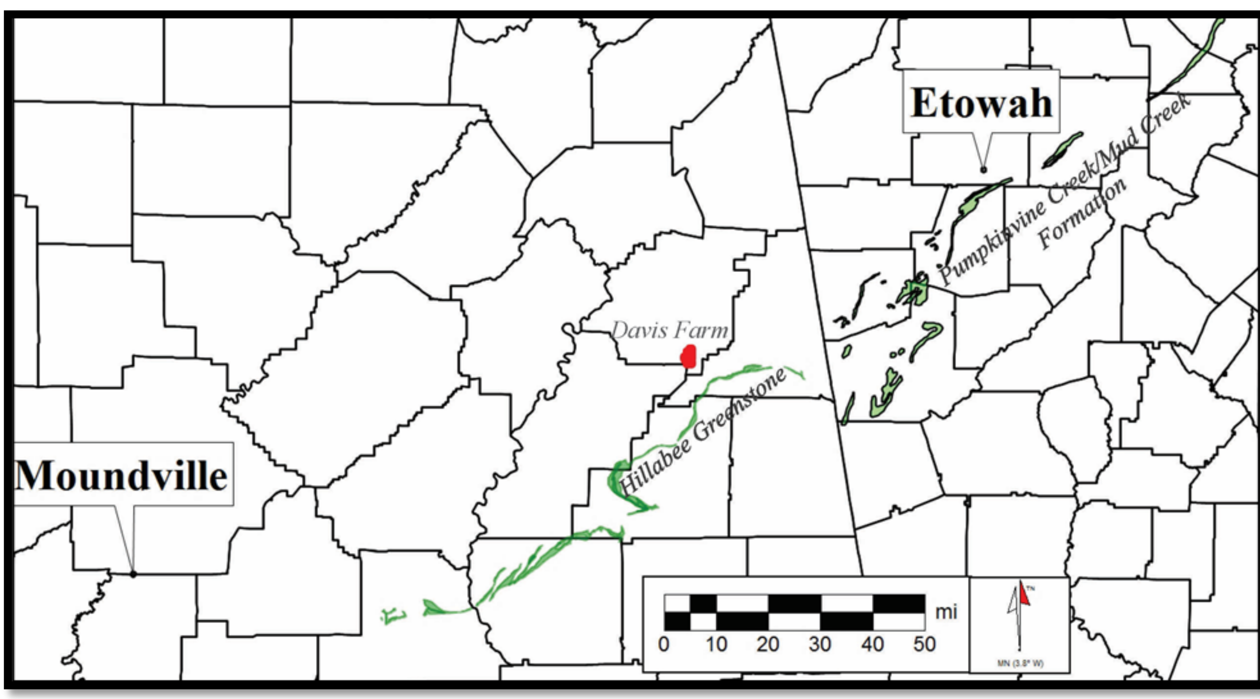

Figure 47. Mississippian Sites Relative to Greenstone Sources

these finds were limited to plowzone contexts. After 1991, Holstein abandoned his excavations at Site 1Ca190 because he believed the site had been completely destroyed by intensive agricultural terra-forming activities. Notably, the current investigations at Site 1Ca190 produced no Lamar pottery and the current investigations at Site 1Ca196 and Site 1Ca198 produced no Etowah pottery so little can be added to the discussion regarding the developmental sequence of Etowah pottery into first Savannah/Wilbanks and then Lamar pottery. Based on the current evidence, Lamar pottery simply appears at the CCAC-Davis Farm during the late-14th/early-15th century and remains the dominant pottery type into the 16th century.

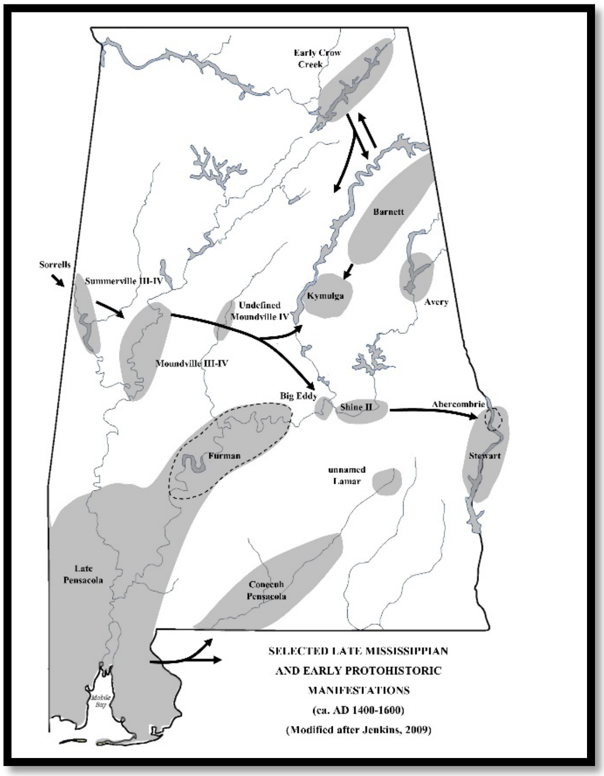

Figure 48. Late Mississippi/Early Protohistoric (ca. AD 1400-1600)

While the current investigations at the CCAC-Davis Farm produced little evidence of subsistence, additional data on the architecture of domestic structures was acquired. At Site 1Ca196 a complete square wattle and daub domestic structure was identified along with interior supports and partitions. Post-mold patterning indicated that this structure was located in proximity to several other similar structures for which only partial evidence had survived the impacts caused by the late 20th century commercial sod farm. Notably, no evidence of palisading was observed at Site 1Ca196.

Based on new radiocarbon assays conducted on materials recovered during JSU's 1983 and 2001 excavations, it appears that the primary occupation at the CCAC-Davis Farm shifted to the broad floodplain south of Choccolocco Creek at the end of the 14th century or beginning of the 15th century. As the Boiling Springs Site (1Ca190) on the north side of the creek was truncated by agricultural impacts and produced no dated contexts after ca. AD 1275, the possibility cannot be ruled out that there was an occupational hiatus at the CCAC-Davis Farm during the last quarter of the 13th century to the first half of the 14th century. Nevertheless, the identification of Savannah-like pottery (fine grit-tempered complicated stamped) with Lamar rim modes within the Barnett phase assemblage at the Choccolocco Site (1Ca196) suggests cultural continuity from the preceding Etowah phase as does the fact that shell-tempered pottery represents a distinct minority.

The inferred shift in occupation from the upland Boiling Springs Site (1Ca190) to the floodplain Choccolocco Site (1Ca196) may have occurred for several reasons. As droughts became more common after AD 1300 and the floodplain became less prone to floods, an increased reliance on maize agriculture may have simply made the floodplain a better option for crop management. The regional 14th century increase in sociopolitical complexity may have also been a factor in the re-occupation of the floodplain. In the north Georgia Piedmont, Hally and Rudolph (1986) have noted that there was a shift from the construction of earth lodges to platform mounds that was primarily associated with the Late Etowah phase or the Savannah-related Wilbanks phase (Savannah/Wilbanks). As the Choccolocco Site (1Ca196) already had an earthen mound dating to the Middle Woodland, the inhabitants may have chosen to build their community centered on the mound. The apparent shift in occupation at the CCAC-Davis Farm also appears to have occurred as the CCAC-Davis Farm's role in regional exchange was diminished by the rise of the Etowah Site (9Br1) as a regional power. For example, King (2007), notes that the use of material symbols as indicators of ranking appears after ca. AD 1250 at Etowah. The current investigations at the Boiling Springs Site (1Ca190) conspicuously lack such evidence. However, JSU documented several examples of material symbols in private collections reportedly originating from the earthen mound at the Choccolocco Site (1Ca196) and tentatively dated to the 15th or 16th centuries.

The location of the Etowah Site (9Br1) in proximity to the resources of both the Ridge and Valley and the Piedmont as well as its proximity to headwaters of navigable waterways that drain to both the Atlantic and Gulf Coasts as well as the Tennessee River has been noted by previous researchers. The similarities in other material culture, particularly of "prestige goods" and linkages through trade with other regions is well-documented. For example, Leader (1988) has suggested that copper at Etowah was obtained from deposits at the headwaters of the Ocoee River and was utilized for both internal and external consumption. He has also linked specimens originating at Etowah with the Lake Jackson Site of the Apalachicola River in Florida. Scarry (2007) has suggested that it was the Lake Jackson chiefdom that controlled access to the trade in marine shell into the interior of the continent. While very little research has been conducted specifically on the greenstone trade at the Etowah Site (9Br1), it is located at the confluence of Pumpkinvine Creek with the Etowah River. In Georgia, the geological equivalent of the Hillabee Greenstone is the Pumpkinvine Creek formation. All of these factors likely contributed to Etowah's rise as a major Mississippian center with multiple subordinate centers (such as the CCAC-Davis Farm) between ca. AD 1250 and ca. AD 1550.

European Contact

Previous investigations suggest that the Spanish "conquistador" Hernando De Soto visited the 16th century Barnett phase inhabitants of the CCAC-Davis Farm. However, different interpretations of which archaeological phases actually constitute the towns mentioned in the narrative accounts of De Soto's expedition preclude any attempt to correlate the Late Mississippian town centered on the earthen mound at the Choccolocco Site (1Ca196) with a specific town visited by De Soto. Nevertheless, it is generally accepted that the site was one of several towns subordinate to the paramount chiefdom of Coosa. At issue is which site, of several possible 16th century candidates within the archaeological record, is actually the site of the principal town of Coosa. The leading candidates are the Little Egypt Site (9Mu102) proposed by Hudson, Smith, Hally, Polhemus and DePratter (1985) and the Etowah Site (9Br1), proposed by Little (2008) who has noted that the interpretation of the Little Egypt Site (9Mu102) as the principal town of Coosa is only tenable if the Etowah Site (9Br1) was abandoned prior to De Soto's appearance in the region. Underscoring Little's (2008) point is the fact that the chronology of Etowah remains plagued by inconsistencies with recent data from the region {See: (Cable, 1994), (Lewis III, et al., 2012), and (Lulewicz, 2017)}.

Smith (1987; 1994; 2000) has suggested that the 16th century paramount chiefdom of Coosa encountered by De Soto, which included, Itaba, Ulibahali, Apica and Piachi, as well as several unnamed towns, experienced massive depopulation beginning in the late 16th century. According to Smith's interpretation, conflict and disease ultimately resulted in a series of migrations of the Coosa towns down the Coosa drainage into present-day Alabama to the vicinity of Childersburg. The relevant Middle Coosa archaeological phases include the Woods Island phase and the Childersburg phase although the Kymulga phase should probably also be included. While most researchers have tended to accept that the Kymulga phase (ca. AD 1500-1600) represents a manifestation of De Soto's and De Luna's Apica or Abihka, this is likely an oversimplification. It seems more likely that the Kymulga phase represents a community coalescing with Abihka during a particularly turbulent period following contact with the De Soto expedition. Along these lines, Nelson's (2020) ceramic analysis at the Kymulga phase Hightower Village Site (1Ta150) identified two "communities of practice" at the site; one of which was distinctively Lamar-like and one that exhibited significant differences in tempering and decoration.

Historic Creek

Perhaps the most significant finding of the current investigations at the CCAC-Davis Farm is the diversity exhibited within the recovered ceramic assemblages, irrespective of the temporal period represented. These consistently diverse ceramic assemblages may be interpreted as the material expression of a "community of practice" arising from a world view in which individuals were welcomed into clan-based groups through intermarriage or clan association. This "community of practice" was likely governed by a clan-based system of values of considerable antiquity as evidenced by the oral histories or "myths" recorded by the BAE reports of the late-19th and early-20th centuries in which modern Muskhogeans related details of events and practices that have now been specifically tied to the landscape archaeology of the CCAC-Davis Farm.

The importance of clans within Native American communities is well-established. Clan authority has also been cited as having played an important role in pre-contact Mississippian polities (Steponaitis & Scarry, 2016). The authority of the clan system in the pre-removal Muskhogean Southeast is evident in the literature from the 18th and mid-19th centuries (Wright, 1986; Knight Jr., 1994) and supports Butler's, Hunt's and Wendt's (2020), view that the clan system may have had an important role in managing trade and economy in antiquity. In fact, it has been argued that as late as the 19th century, clan authority rivaled that of the National Council (Barber, 1985). While this period remains largely unexplored by modern scholars, beginning in the 18th century, Scottish fur traders began marrying into Muskhogean clans and many of these marriages ultimately resulted in trade alliances that imparted a competitive advantage to both parties by facilitating access to resources (Cashin, 1992; Holland-Braund, 1993; Piker, 2004). Such alliances constitute one type of the "bottoms-up processes" sought by Kowelewski and Thompson (2020), through which people made, exchanged and consumed different things. More importantly, the process of people making, exchanging and consuming different things can, and often does, become an avenue of cultural transformation. This was certainly the case in the pre-removal Muskhogean Southeast when, in AD 1813, the Red Stick War was caused, in part, by individuals acting in ways that conflicted with traditional values and the authority of the clans.

In retrospect, previous interpretations of cultural transformation in the Choccolocco Valley and the Middle Coosa Sub-Basin caught only glimpses of what was there to be seen. For example, the literature review conducted for the current investigations failed to identify any previous discussion of the etymology of the word "Choccolocco" that involved anyone fluent in Muskhogean other than the early work of Gatschet and Swanton. Yet, during the current investigations, at the first meeting with members of the traditional town of Arbeka, the mention of "Choccolocco Valley" drew the response, "*cuko rakko* means ceremonial ground." Thus, the literal translation is "Valley of the Ceremonial Ground." Genealogical research that identified the Fife family of post-removal Arbeka as descendants of Jim Fife of the pre-removal Choccolocco has now established that the pre-removal town of Choccolocco was <u>the</u> ancestral *cuko rakko* of the present-day Arbeka.

The 19th century location of the *cuko rakko* of the Arbeka appears to have been occupied nearly continuously for at least 2,000 years. That it was in the same location during the late-18th century may be inferred from the fact that the Creek Indian War of 1813-1814 "Chinnabee's Fort" was located within, or in proximity to, the historic boundaries of the Davis Farm property. Moreover, the recognition that the anglicized "Chinnabee" is derived from the Muskhogean "*"cettoyvpe"* for snake horns or horns of a mythical snake (a Water Tiger) used as a charm (Martin and Mauldin, 2000) links this individual with the

"*Aktayahche"* or Water Tiger clan. The link between the CCAC-Davis Farm and the *Aktayahche* clan has been further established by the discovery of an interview conducted by Bessie Coleman Robinson in 1891 of an early gold prospector named Gideon Riddle. Robinson documented that Riddle observed ground subsidence near Blue Pond and was taken to see an "Oaktacki" woman who lived at Boiling Spring and who told him that, *"...the Indians had met there to burn a woman and her child.... the ground sank and caught all but two who escaped..."* The anglicized "Oaktacki" is easily derived from the Muskhogean *"Aktayahche."*

Two of the Muskhogean narratives recorded by Swanton specifically attribute the "*tvlwv aksomketv"* or "Town-lost-in-the-water" to a Water Tiger. The unnamed stream that drains from the Serpent Effigy Site (1Ca157) joins Choccolocco Creek at the Boiling Springs Site (1Ca190) where Gideon Riddle met the woman of the *"Aktayahche"* clan. A central theme that runs throughout the literature reviewed is that the inhabitants of an important ceremonial ground were "swallowed by swirling water." The current investigations have produced compelling evidence that this "*este ak pokv"* or "Eastaboga" (place where people were swallowed by swirling water) was located within, or in proximity to, the CCAC-Davis Farm. The reference to "Eastaboga" as Augusta Caver's birthplace on her marriage certificate represents one of the earliest known written references to the term "Eastaboga" and directly associates the Freeman-Caver-Christian (Davis Farm) home with the "*este ak pokv."*

The historical references are supported by the archaeological evidence obtained during the current investigations at the Boiling Springs Site (1Ca190) in which the remnants of a semi-circular shallow refuse-filled ditch were identified at the site. These types of features have often been interpreted by archaeologists working in the region as moats associated with defensive palisades. However, no posts were identified with the shallow refuse-filled ditch and the area it would have enclosed would have been far too small to enclose even a small village. The recovery of cow and pig remains during excavations from selected locations of the ditch indicate that this was one of the latest archaeological features on the site. Moreover, the dimensions of the semi-circular ditch at Site 1Ca190 are comparable to the dimensions of the present-day Arbeka ceremonial ground where the "*tvce"* or furrow encircling the dance area of the ceremonial ground measures approximately 160 feet (49m) along the north-south axis and approximately 130 feet (40m) along the east west axis. The dimensions of the semi-circular ditch at Site 1Ca190 measured 415 feet (126m) along the north-south axis and approximately 347 feet (106m) along the east-west axis. Thus, if it is accepted that the shallow, refuse-filled ditch at Site 1Ca190 represents the archaeological manifestation of a "*tvce"* then it would have been approximately three times larger than the "*tvce"* at present-day Arbeka. Such a reduction in size in the post-removal ceremonial ground at Arbeka relative to the suggested pre-removal ceremonial ground at Site 1Ca190 is remarkably consistent with available historical records that indicate that only 30 percent (n=164) of the documented 463 inhabitants of the pre-removal Choccolocco Town could be accounted for in removal records.

The probable "*tvce"* identified at Site 1Ca190 is centered on a prehistoric sinkhole of indeterminate age. Interviews with individuals knowledgeable of the landscape history of Davis Farm indicated that Mr. Davis acquired a bulldozer shortly after World War II and filled a low-lying area of the field to the east of the house with material pushed from directly in front of the house and the surrounding field. In 1970, a new sinkhole opened up within this area after the gravel quarry located to the east began de-watering operations. The 1970 sinkhole is illustrated relative to the "*tvce"* identified at Site 1Ca190 in Figures 49 and 50 below.

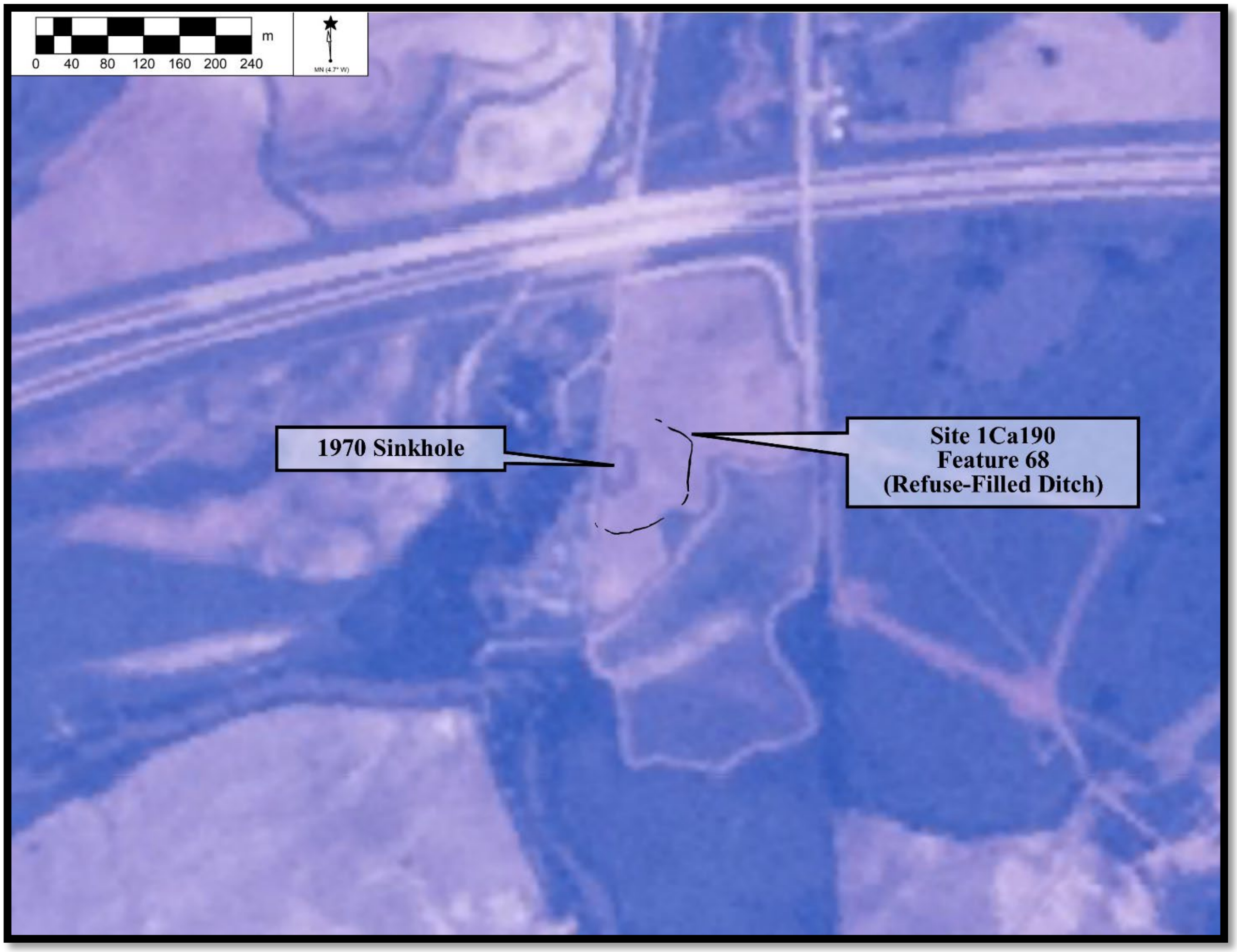

Figure 49. Site 1Ca190 Feature 68 Relative to 1970 Sinkhole

Further evidence that the shallow, refuse-filled ditch represents a probable "*tvce*" is the fact that no historic Creek pits were excavated within the area circumscribed by the feature. However, only one subsurface pit (Feature 31) produced historic Creek pottery at the site and the pit had been severely intruded by tree roots so no radiocarbon assay was conducted on the associated materials. Smith (2000), notes a return to the use of refuse-filled pits in the Upper Coosa Sub-Basin during the Weiss phase so the earliest plausible date for Feature 31 at the Boiling Springs Site (1Ca190) would be ca. AD 1585-1600 although the identification of European trade beads in a private collection that reportedly originated from the Choccolocco Site (1Ca196) and date to the 17th century suggests that the primary occupation at the CCAC-Davis Farm was still within the floodplain at that time. Thus, the historic Creek pottery from Feature 31 and the probable "*tvce*" likely dates to the 18th century or later. This is consistent with reporting by Swanton (1922) that by the 18th century, the Coosas (and by extension the Abihkas) were sometimes called by other Creeks the, "Taloksumgi" for *"tvlwv aksomketv"* or "town-lost-in-the-water."

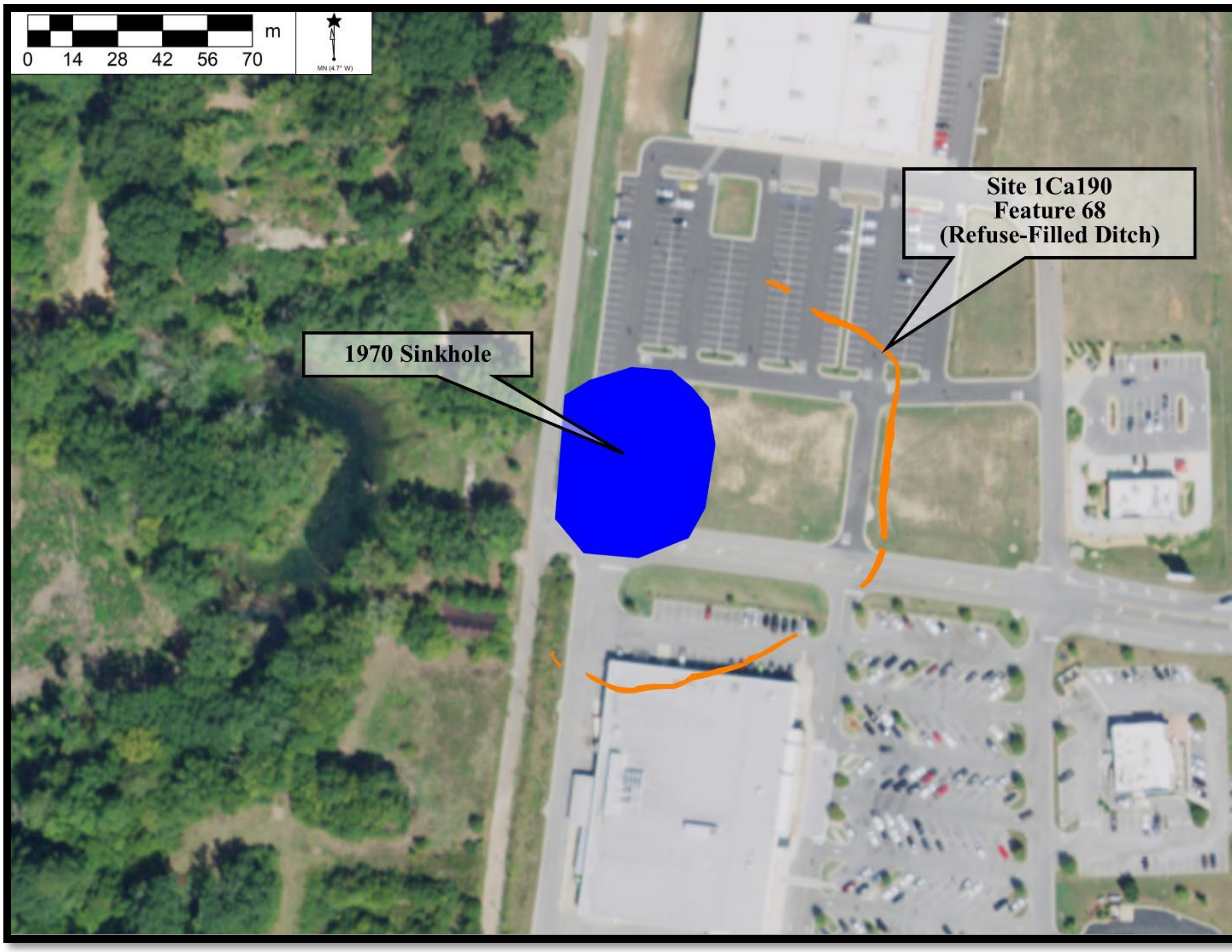

Figure 50. Site 1Ca190 Feature 68 Relative to 1970 Sinkhole in 2019

The Boiling Springs Site (1Ca190) not only exhibits features characteristic of what may be interpreted as the archaeological manifestations of a Muskhogean ceremonial ground with a sinkhole of indeterminate age within the center but it also exhibits probable manifestations of the clan which historical references specifically associate with the catastrophic event. This area was largely preserved-in-place during the recent development and subsequently was not subjected to complete data recovery. However, in one instance, human remains were identified within a refuse-filled pit at the site that had been laid-upon, and then covered with stones. This stone cairn within a refuse-filled pit may perhaps be interpreted as the archaeological manifestation of mortuary ritual associated with the "*Aktayahche"* or Water Tiger clan as Swanton (1922) noted that within an emergence myth for the clan, "*A part of the Aktayatci… had horns, and for this reason those who had first emerged closed the hole in the mountain, shutting them in permanently."* Cultural materials recovered from within the refuse-filled pit indicate that this feature may be dated to the Terminal Woodland Davis Farm phase occupation of the site. Thus, the current investigations suggest that the "*Aktayahche"* or Water Tiger clan's presence within the Choccolocco Valley is of considerable antiquity and may be also linked with the report of an 18th century French officer that noted the Upper Creeks observed a tradition of creating stone constructions in remembrance of those lost in a "universal deluge" (Swanton, 1928).

The Upper Creek tradition of creating stone constructions is most evident within the Choccolocco Valley and adjacent mountains where Holstein has identified hundreds of stone walls, pavements and mounds. Two types of stone structures, (a stone mound and a stone pavement/wall) represent the most readily-identifiable components of the CCAC-Davis Farm. These two types of structures have also been identified in association with sites of similar age and material culture in a geographic band that extends from the southwestern portion of the Choccolocco Valley into the Etowah Valley in northwestern Georgia. The Serpent Effigy Site (1Ca157) at the CCAC-Davis Farm represents one of the best-preserved examples of these stone constructions and the Signal Mountain Stone Mound (1Ca636) represents the largest example of a stone mound in Alabama. Furthermore, historical references to Native American accounts associated with these types of structures as well as local place-names strongly associate the CCAC-Davis Farm with these archaeological manifestations and the events which they were intended to memorialize.

Stone mounds and pavements have remained enigmatic archaeological landscape features within the Choccolocco Valley and are generally considered to date to the Middle Woodland. Thus, if the Muskhogean myth of the "*tvlwv aksomketv"* or "Town-lost-in-the-water" refers to an early historic event that occurred within the pre-removal Choccolocco Town, the linkage between the "*tvlwv aksomketv"* and the Middle Woodland stone structures appears to be most direct through the *"Aktayahche"* clan and suggests that this clan's presence within the Choccolocco Valley extends into the Middle Woodland period, if not earlier. Swanton (1922; 1928) was somewhat perplexed by the "Aktayatci" clan as he noted the name was uninterpretable. However, one of his Seminole informants interpreted the term to mean "something traveling about" and thought that the reference might have been intended for a water moccasin. Martin and Mauldin (2000) list *Aktvyahcvlke* as an Archaic term referring to the *Aktayahche* clan and note that it was thought to refer to a water snake or water tiger. Thus, the horned serpent featured in probable Adena-age monumental constructions, later Mississippian iconography, and the historic-period oral histories of the Muskhogeans appears to be strongly associated with Muskhogean cosmology, the *Aktayahche* clan and the CCAC-Davis Farm.

The CCAC in Archaeoastronomical Perspective

Although the *Aktayahche* clan no longer exists within the present-day Arbeka Ceremonial Ground of the MCN, modern Muskhogean (Creek) religion retains knowledge of two types of horned serpents that may be linked to the *Aktvyahcvlke*. While a discussion of religion is beyond the current scope, when viewed through the lens of empirical science,[14] descriptions of the different forms of the horned snakes in published accounts of Muskhogean (Creek) religion (Chaudhuri & Chaudhuri, 2001) exhibit remarkable similarity to astronomical features of, and events in, the night sky that would have been much more prominent in the distant past than at present. For example, the Great Horned Snakes that hold up the four corners of the world may reference the zodiacal lights that, while still present today, would have been much more prominent prior to ca. 1,000 BC as the result of the disintegration of the astronomical centaur (a small solar system body or giant comet) progenitor of the present-day comet 2P/Encke, numerous near-earth objects, and the Taurid Complex. This astronomical centaur has recently been calculated to have been approximately 120 km (75 miles) in diameter when it entered the inner solar system ca. 24,000 years ago and its primary debris field, known collectively as the "Taurid Complex," has been implicated in catastrophic impacts and bolide events that affected human populations, in some instances globally (Clube

14 The approach taken here has been that, "*Myth is a structured narrative…derived from oral transmission, and typically created…and perpetuated by knowledge specialists who use supernatural elements…in order to categorize and explain observed natural phenomena and events that are of perceived vital importance…"* (See: Masse, Barber & Barber, 2007).

& Napier, 1982), as far back as the Younger Dryas (Firestone et al, 2007), and as recently as the 1908 Tunguska event (Ferrin & Orofino, 2021).

The second form of horned serpent represented in Muskhogean (Creek) religion appears to interact in human affairs and may reference the *Aktvyahcvlke* which perplexed Swanton and his sources (1922; 1928). If so, then the monumental constructions in Ohio thought to represent the Cherokee Uktena, and its cognate in the southern Appalachians, the Muskhogean *Aktvyahcvlke*, may encode knowledge necessary for the annual prediction of when earth is about to pass through what has proven to be a particularly dangerous component of the Taurid Complex. Previous researchers have associated the Great Serpent Mound in Ohio with the Cherokee Uktena; Lankford (2007) suggested that the Great Serpent Mound is associated with the constellation Scorpio, while Romaine (1988a;1988b) noted that the most straightforward of the celestial alignments is that the head of the serpent is aligned with the summer solstice sunset. These previous researchers appear to have been unaware of the fact that the Great Serpent Mound was constructed on the ring graben of a 250-million-year-old impact crater and that the head is oriented in the direction that the Beta-Taurid meteor shower, (which begins a few days before, and ends a few days after the summer solstice), travels relative to earth. Because the Beta-Taurids appear from the direction of the sun at the summer solstice, tracking the sun's position relative to this point would have been one way of identifying when the earth was passing through this particularly hazardous portion of the Taurid Complex. Further evidence that Native Americans possessed a sophisticated understanding of astronomy and were specifically associating celestial serpents with impacts to earth may be found in a report by Newton (1897) who noted that a mass of meteoric iron was found upon an altar in one of the Ohio mounds in association with a serpent effigy cut from mica. As previously noted, the Cherokee Uktena appears to have been strongly associated with this type of celestial event, and although the *Aktvyahcvlke* connection within the ethnographic record is not as strong, its remarkable similarity with the Cherokee Uktena makes the same inference plausible. That Native Americans were encoding knowledge of astronomical events within monumental constructions is also consistent with information reported from other parts of the world.

The night sky prior to 1,000 BC was much more active than at the present time due to the extraordinary and persistent effects of Earth's annual passage through the debris field of the giant comet progenitor of the Taurid Complex. Clube and Napier (1982) have previously suggested that the beginnings of astronomy could probably be dated to the time when the debris field associated with the progenitor of the Taurid Complex became sufficiently dissipated to require ancient observers to create reference points in order to track its intersection with earth's orbit around the sun. There is now archaeological evidence that indicates human populations in Europe and the Levant began to keep a record of celestial events considerably further into antiquity than the date first suggested by Clube and Napier. For example, Rappenglueck (1997) has demonstrated that the Lascaux Cave paintings, dating to ca. 15,300 BC, include a star map depicting the Pleides above an image of a bull that is thought to represent the constellation Taurus. More recently, a somewhat controversial interpretation of Göbekli Tepe, a Neolithic site in Turkey, suggests that low relief carvings on pillars of the monument represent star asterisms that reference a likely cometary encounter dating to ca. 10,950 BC (Sweatman & Tsikritsis, 2017) and indicate that the Neolithic population in the Levant was actively tracking celestial events. More precisely, Pillar 2 at Göbekli Tepe has been interpreted as an observation of the track of the radiant of the Northern Taurid meteor stream, again implicating the progenitor of the Taurid Complex.

The theory of coherent catastrophism developed by Asher, Clube, Napier and Steel (1994) has rarely been considered by archaeologists working in North America, nor has the theory's utility in contributing to explanatory models for cultural change been adequately explored. This may, in part, be due to the difficulties inherent in identifying proxies for impact events, airbursts and cometary "dusting," as well as a general lack of familiarity with the pertinent literature. There is also an inherent bias towards "scientific certainty," intended to demonstrate that data supporting a claim at issue are valid, statistically significant (i.e., 95 percent or greater level of confidence) and accepted by the scientific community. However, the reality is that in both pure science and social science, there are often important gaps in knowledge. Although the common expectation is that decisions are made on the basis of "scientifically proven facts," the reality is that such decisions are almost always empirically underdetermined. Furthermore, scientific studies are inherently biased towards either one of two types of statistical errors. While levels of confidence for "Type I" errors (accepting hypotheses that are ultimately proven to be wrong) typically requires confidence levels of 95 percent or more, "Type II" errors (rejecting hypotheses that are ultimately proven to be true) rarely receive the same treatment event at 50 to 80 percent levels of confidence (Freudenburg, et al., 2008).

Clearly, the appearance within the inner solar system of an Oort Cloud object of 120 km (75 miles) in diameter ca. 24,000 years ago, that disintegrated along an earth-crossing orbit into multiple fragments, several of which were >1 km (0.6 miles) in diameter, would have been noticed by prehistoric populations worldwide. In fact, the threat of cosmic impacts from the Taurid Complex has persisted throughout the Holocene and into the present-day (Bailey, et al., 1994). In the past, multiple Tunguska-sized (regional-level) events may have occurred at intervals as brief as 300 years or less (Asher, et al., 2005). Larger (continental-level) events such as that of the proposed Younger Dryas impact hypothesis developed by Goodyear and others (2007) were predicted to have occurred by Clube's and Napier's (1982) analysis, and physical evidence of a Younger Dryas impact continues to be identified over a wide swath of Europe, the Levant and the Americas. Based on their analysis, Clube and Napier (1982) also noted that due to the orbital precession of the Taurid Complex, an enhanced risk of earth bombardment exists for a period of 500 years or so every 3,000 years into the present-day as earth encounters particularly dense segments of the debris field (Sweatman, 2017). In addition to an enhanced impact risk there is also a periodic enhanced risk for atmospheric loading of cometary dust into the stratosphere.

Current research continues to increase our understanding of the effects that such periods of enhanced risk of earth bombardment and/or atmospheric dusting posed to human populations. Analysis by Asher and Clube (1993) has indicated that within 3,000 years epochs, nodal intersections of the Taurid Complex with earth resulted in terrestrial meteor flux enhancements between ca. AD 400-600, AD 1040-1100, AD 1400-1460, AD 1500-1540, AD 1640-1680 and AD 1760-1800 that in Europe coincided with, *"periods of pronounced social and intellectual upheaval when the normal ascendancy of secular over fundamentalist views of the cosmos experienced a sharp reverse…"* The latter four (4) of these nodal intersections all occurred within the climatic episode identified as the Little Ice Age (LIA) which may have been initiated by as little as a 1 percent decline in solar constant yields. In fact, the effects of cometary dusting on climate have been shown to last much longer than terrestrial inputs such as those for volcanic emissions and ice-albedo instability models predict that even a 2 to 5 percent sustained decline in solar insolation could yield runaway glaciation (Bailey et. al, 1994). Recent observations have led Napier and others (2015) to call for a better understanding of the environmental consequences of earth encounters with a dense complex of cosmic dust and meteoroids, and to suggest that nodal intersections with the Taurid Complex which cause direct cometary dust injection into the stratosphere may have played a role in climate oscillations such as the LIA. Bailey and others (1994), have suggested that for several observed climate change intervals within the Holocene, *"severe cooling of the earth by as much as 5°C, sudden in onset and lasting several hundred years…may have an origin in relatively brief, intense dustings*."

Foster (2012) has suggested that there is now considerable evidence that climate during both the Medieval Climate Anomaly (MCA), and the LIA had a strong influence on cultural change in both Europe and the Americas. Within the Southeast, two of the nodal intersections with the Taurid Complex occurred during the LIA and periods which appear to have been significant for regional Mississippian populations. For example, Knight and Steponaitis (1998) have suggested that by A.D. 1450 the Moundville chiefdom was in decline, and by A.D. 1550 most of the secondary mound sites had been abandoned. In the Etowah Valley, the Etowah polity had collapsed and other centers throughout present-day northern Georgia were also in decline (King, 2003). Maize agriculture appears to have declined during this period and investigations have shown widespread evidence of malnutrition within the population. What role, if any, the nodal intersections with the Taurid Complex may have had in the decline has simply not been explored because most archaeological research in the Southeast remains heavily biased towards evolutionary uniformitarianism and there has been little support made available for high-resolution climate studies to adequately inform models of cultural change.

Several of the nodal intersections identified by Asher and Clube (1993) also coincide with observed changes at the CCAC-Davis Farm. The first of these (AD 400-600), coincides with an apparent occupational hiatus. The second nodal intersection (AD 1040-1100) coincides with the beginnings of maize agriculture and the third nodal intersection (AD 1400-1460) coincides with a shift to occupation of the floodplain ca. AD 1400. Of these three coincidental periods, the ca. AD 400-600 occupational hiatus appears to have been the most significant. This period also brackets well-dated historical evidence, and multi-proxy data that, beginning in AD 536, an atmospheric dust veil encircled the globe for eighteen (18) months primarily affecting the northern hemisphere (Dewing, 2005; Arjava, 2005; Graslund & Price, 2012). The potential causes of the AD 536 ACC event are complex and still debated. While extraordinary volcanism currently appears to have been the most likely source of the atmospheric dust veil, the actual impact on human populations of the AD 536 ACC event appears to have been variegated (Newfield, 2019). Nevertheless, its occurrence during a nodal intersection with the Taurid Complex and the resultant enhanced meteor flux may have caused some populations to attribute the dust veil, and subsequent multi-decadal climatic downturn to the Taurid Complex. This appears to have been the case in several regions of Europe and the Mediterranean (Newfield, 2019).

Future Research

The current investigations have produced an unprecedented amount of data that should provide the foundation for future research. This data includes the information obtained during the archival records review and reported within this volume. The current investigations have verified the efficacy of utilizing the data contained within the BLM-GLO records on pre-removal Creek towns to guide research into this particularly controversial period. The data review indicates that the existing narrative of removal is incomplete and may be further illuminated through additional scholarship that includes genealogical research to establish ancestral linkages between pre-removal towns in Alabama and post-removal towns in Oklahoma. Establishment of such linkages is necessary to begin illuminating the extent of cultural stability and transformation that may be attributed to removal. As such research would require extensive scholarship within the MCN, in 2012, REPA provided the MCN with copies of the archival records obtained from the BLM-GLO. More research on the late history of clans, such as the *Aktayahche* is also needed as is research on the oral histories and myths recorded by Gatschet and Swanton. How widespread and malleable are these myths? Do they present multiple levels of meaning, and if so, must they be interpreted literally or are they purely symbolic? The hybrid approach developed by Masse, Barber and Barber (2007) and utilized during the current investigations seems to be both prudent and productive but requires patience and cooperation between different communities with different expectations and goals.

The current investigations have produced the first high-resolution cultural chronology for northeastern Alabama that spans the last two millennia. One of the most significant findings has been that multiple pottery traditions appear to have coexisted at the CCAC-Davis Farm until the Middle Mississippi period.

Further research is needed from additional sites in the region to more fully understand the nature of this phenomenon although the dramatic rise in importance of the grit-tempered (metasiltstone) Choccolocco series pottery during the Terminal Woodland and Early Mississippi periods point towards a coalescence of disparate groups into a more cohesive community that may have been focused on control of economically important greenstone outcrops in central Alabama and northwestern Georgia. While the current investigations did not find support for earlier work that suggested the Hatchet Creek locality was the primary source of this material, it did find evidence for a cultural boundary and possible reasons for the rise in importance of Etowah due to its proximity to greenstone outcrops located near the Leake Site, a hub of exchange that had been of particular importance during the Middle Woodland period. Clearly, more research focused on the greenstone trade is needed as the same geological formations that produced the gold rush that largely precipitated pre-removal incursions into ancestral Creek lands were important for different reasons to Native American communities over a vast span of time.

Much more research is also needed on the Middle to Late Woodland transition. With the exception of the ca. AD 400-600 occupational hiatus, the archaeological record at the CCAC-Davis Farm exhibits remarkable continuity for the past two millennia. That this apparent hiatus coincides with a nodal intersection of the Taurid Complex and brackets the AD 536 ACC event warrants further research in light of the fact that there is also a general lack of evidence for occupations within the Middle and Upper Coosa Sub-Basins that produce the Cartersville Simple Stamped pottery that dates to this period. There is also evidence that around the 6th century, populations within the Middle and Upper Coosa Sub-Basins may have temporarily relocated downstream to the coastal plain (Jenkins, 2020), and possibly into the Tennessee Valley. This hypothesized movement may have occurred in response to the AD 536 ACC event as drought and reduced solar irradiance stressed the ecosystem. Both would have resulted in reduced productivity of uplands within the continental interior while shoals on large river systems would have expanded providing a resilient focus for resource extraction within discrete localities. As temperature fluctuations would have been somewhat ameliorated in coastal environments by the Gulf Stream, some populations may have sought refuge in the coastal plain. This interpretation is consistent with the currently-available low-resolution environmental data from across North America that indicates a cool period between AD 500 to AD 700 (Trouet, et al., 2013) for much of the continent while peninsular Florida experienced warmer than present winters between AD 500 to AD 550 (Wang, et al., 2013).

The importance of further research on this period is underscored by the fact that the AD 536 ACC event in North America may also be responsible for the rapid initial spread of Jacks Reef hafted bifaces, perhaps as a relatively brief, pulsed phenomenon distinct from the later widespread adoption of bow and arrow technology. This interpretation is consistent with data from the Northeast and Upper Midwest where the early appearance of the Jacks Reef horizon is further supported by an array of evidence that have prompted some researchers to suggest an Algonquian migration was triggered by the AD 536 ACC event or the abrupt warming and drought that followed in the Northeast (Fiedel, 2013). Differential adaptation rates for bow and arrow technology among neighboring groups in Illinois has been documented by Evans and Fortier (2013), who note that the arrival of the Jacks Reef horizon occurred during a relatively brief period of complex social and technological change in Illinois during the early Sponemann phase as evidenced by a calibrated date of AD 565 to AD 665 for a Jacks Reef Cluster point and an expedient flake arrow point. Evidence supporting Fiedel's (2013) hypothesized migration may also be found in recent atmospheric modelling that suggests the atmospheric dust veil associated with the AD 536 ACC event was more pronounced in northern latitudes (Toohey, et al., 2016). High-resolution climate and archaeological data from more Late Middle Woodland and Early Late Woodland sites within the Middle and Upper Coosa Sub-Basins and beyond is needed to better understand cultural change during this period. In fact, the same may be said of later periods as well.

Vast tracts within the region north of the Tallapoosa River to the Tennessee state line, in Alabama and Georgia, remain largely unexplored by professional archaeologists utilizing modern site discovery techniques. Much of our understanding of the archaeology within this region is still dominated by the initial mid-20th century "salvage" work that was conducted in support of hydroelectric projects and, as such, has been biased by those findings. The current investigations underscore the fact that Native American communities in this region understood the dangers associated with the major rivers and settled on tributaries less prone to catastrophic floods. The Choccolocco Valley, although far from immune from such flooding, was one of these preferred tributaries. As astonishing as it may seem, during the current literature and documents review, two (2) previously unidentified locations with probable earthen mounds present were identified within the Choccolocco Valley, further underscoring the need for additional archaeological survey in the region. Thus, the development of a multi-disciplinary research program focused specifically on identifying important archaeological sites could greatly increase our understanding of the history and prehistory of the region.

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