Archaeological Survey of Multiple Trail Locations at the Kettle Creek Battlefield

Wilkes County, Georgia

New South Associates

Archaeological Survey of Multiple Trail Locations at the Kettle Creek Battlefield

Wilkes County, Georgia

Report submitted to:

Sam Moore, Chair, Wilkes County Board of Commissioners • 23 Court Street, Room 222 • Washington, Georgia 30673
And
Walker Chewning, President, Kettle Creek Battlefield Association, Inc. • P.O. Box 729 • Washington, Georgia 30673

Report prepared by:

New South Associates • 6150 East Ponce de Leon Avenue • Stone Mountain, Georgia 30083
And
New South Associates • 408-B Blandwood Avenue • Greensboro, North Carolina 27401

Shawn M. Patch, MA, RPA – Principal Investigator

Shawn M. Patch – Archaeologist and Author

July 5, 2016 • Revised Draft Report
New South Associates Technical Report 2577

ABSTRACT

New South Associates, Inc., conducted a systematic, intensive metal detector survey of multiple trail alignments at the Kettle Creek Battlefield in Wilkes County, Georgia. This survey satisfies the federal and state standards for a Phase I/II Archaeological Survey as outlined in the Georgia Council of Professional Archaeologists' updated Standards for Archaeological Survey and was conducted with pre-qualified National Park Service registered staff. Principal Investigator and Senior Archaeologist Shawn Patch, of New South Associates, Inc., supervised the survey and prepared the Phase I/II Archaeological Survey report. All work complies with State of Georgia and U.S. Secretary of the Interior standards for field recordation, lab analysis, and reporting of archaeological projects.

The study was conducted on behalf of the Wilkes County Board of Commissioners and the Kettle Creek Battlefield Association, Inc. (KCBA). The Archaeological Survey Phase I/II is intended to satisfy environmental commitments prior to construction of the "War Hill Trail – 1779 Battle of Kettle Creek." Wilkes County received a 2014 Georgia Department of Natural Resources, Recreational Trails Grant for trail construction to build a pedestrian-use walking, jogging, and interpretive trail. The primary goal was to locate and identify battle-related artifacts and features within the proposed trail corridors.

Archaeological investigations yielded a small number of battle-related artifacts. No features archaeological were identified. The frequency and types of artifacts resemble those collected during prior investigation of the site by the LAMAR Institute (Elliott 2008). The results and interpretations of the present survey also conform well with the findings of LAMAR Institute. In particular, there is strong evidence for fighting around War Hill.

New South recommends that no additional archaeological work be undertaken for the trail locations as currently proposed. The recovery of battle-related artifacts and corresponding data during the current archaeological and metal detector survey has mitigated any potential adverse effects from trail construction. However, if new discoveries are made that may indicate significant archaeological resources are present, they should be considered during future planning.

ACKNOWLEDGMENTS

Dr. Joseph Harris, Chairman, and Walker Chewning, President of the Kettle Creek Battlefield Association, provided logistics support and met our metal detecting team in the field. We appreciate their assistance and enthusiasm for the project. Anne Floyd, Director of Local Government Services/Regional Historic Preservation Planner and Martin Laws, Director of Planning, with the Central Savannah River Area Regional Commission provided GIS data and the current Master Plan. The CSRA Regional Commission is providing the Recreational Trails Grant program administration for Wilkes County. Patrick Severts and Ray Talley conducted the archaeological survey for New South Associates.

TABLE OF CONTENTS

LIST OF FIGURES

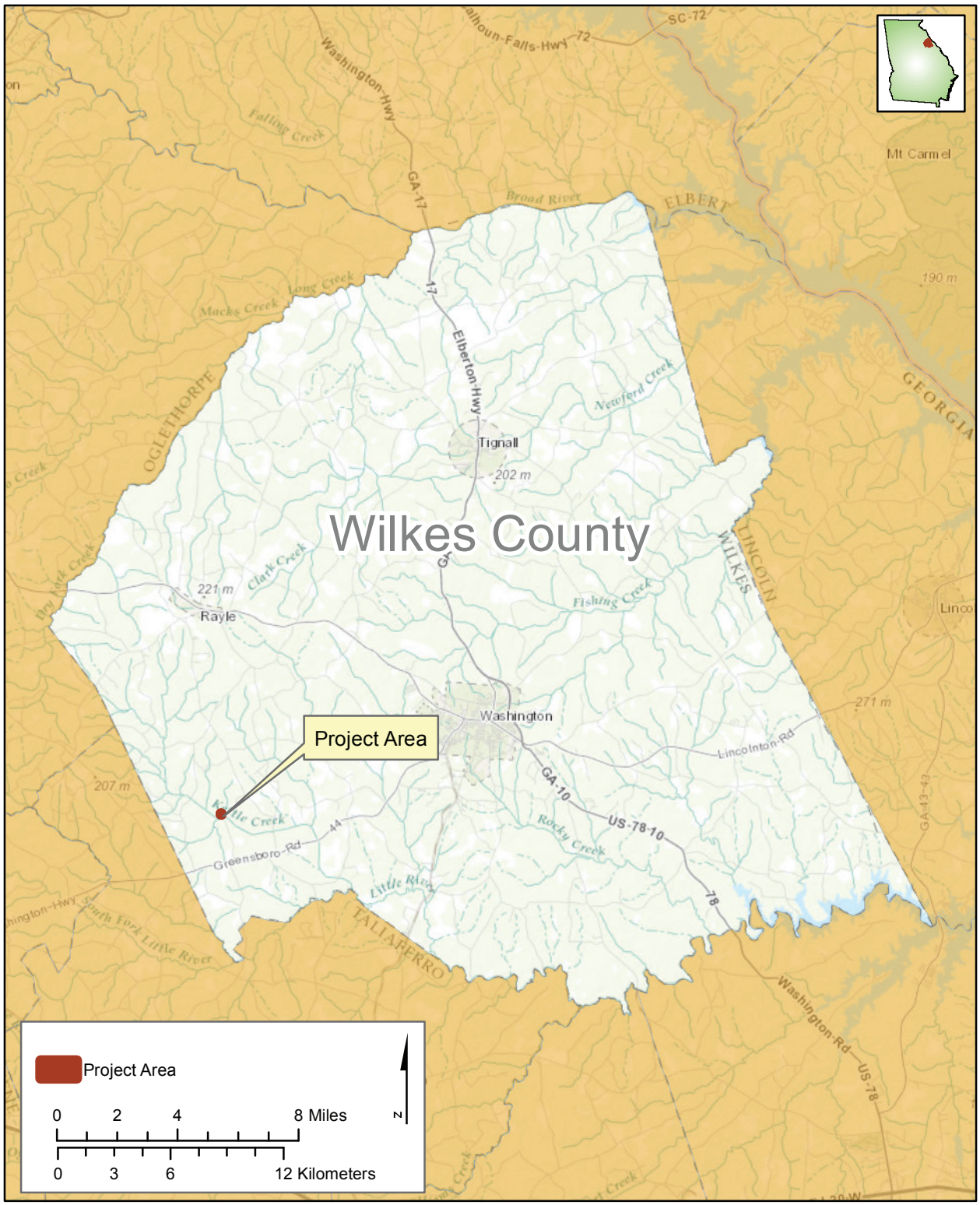
LIST OF TABLES

I. INTRODUCTION

New South Associates, Inc., conducted a systematic, intensive metal detector survey of four proposed trail alignments at the Revolutionary War Kettle Creek Battlefield in Wilkes County, Georgia (Figure 1). The Phase I/II Archaeological Survey was conducted on behalf of the Wilkes County Board of Commissioners and the Kettle Creek Battlefield Association, Inc. (KCBA) to satisfy environmental commitments for a Georgia Department of Natural Resources (DNR), Recreational Trails Grant. The Battle of Kettle Creek took place in February 1779 and involved Patriot militias from South Carolina and Georgia on one side and Loyalist troops on the other. The battlefield was listed in the National Register of Historic Places (NRHP) in 1975 at the national level of significance. An archaeological component of the battlefield was identified as site 9WS370 (Elliott 2008) and the Georgia Historic Preservation Division (HPD) has previously determined it is eligible for the NRHP. The present archaeological study was intended to locate and identify battle related artifacts and features along four proposed trails. The survey was conducted in response to HPD's concern that construction of wheelchair-accessible paved or asphalt trails could have adverse effects on archaeological resources associated with the battlefield.

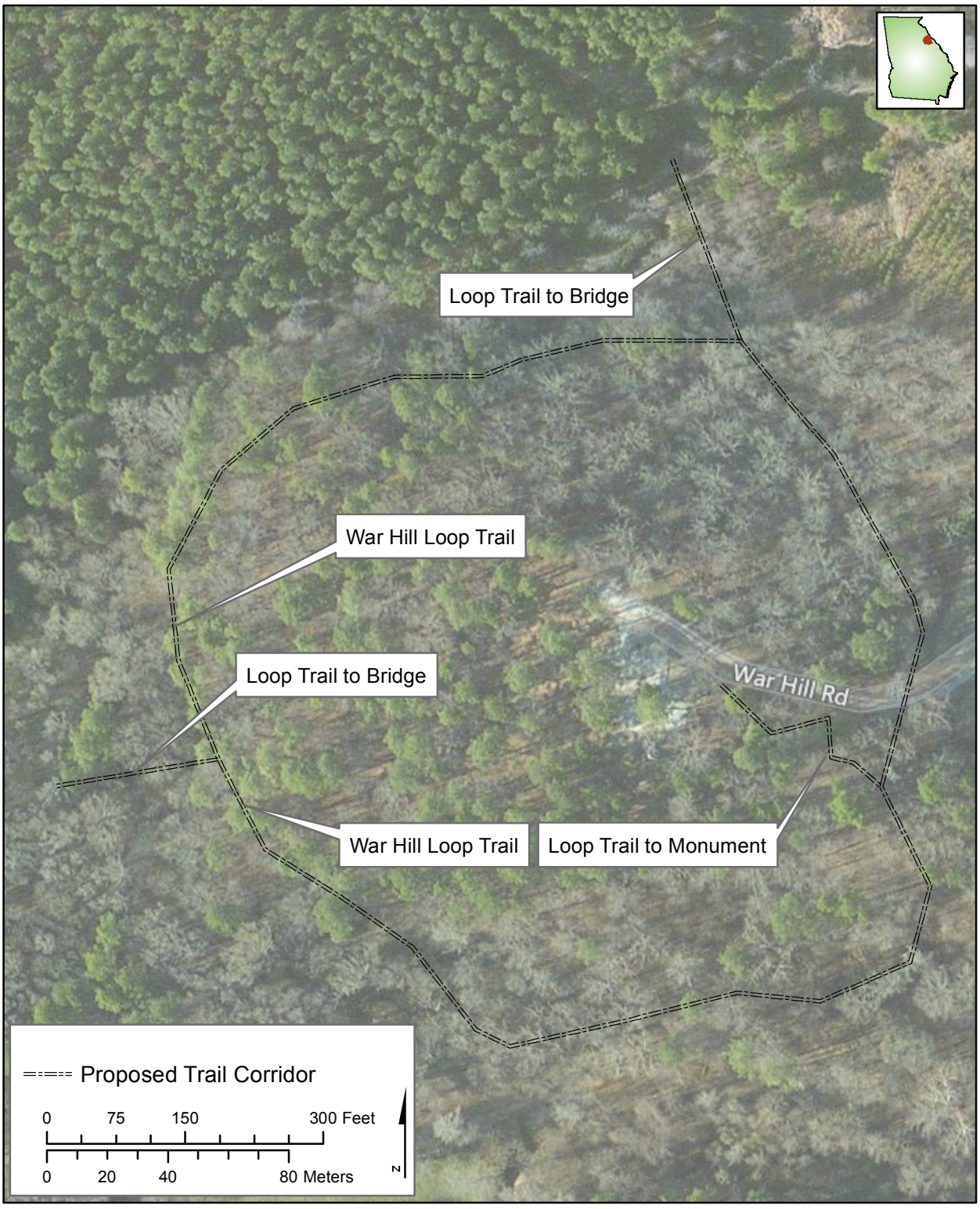
The alignments, lengths, and specifications of the proposed interpretive trails are described in the Kettle Creek Battlefield Park Master Plan (Central Savannah River Area Regional Commission 2013). The trails covered by this archaeological survey include the War Hill Loop Trail (measuring 2,599 ft.), the Loop Trail to Monument Roadway (248 ft.), and two Loop Trail to Bridge paths (210 and 180 ft., respectively) (Figure 2). These would be built within a 14.5-acre section of the battlefield immediately surrounding War Hill, a promontory where the battle's key action took place and which is owned by Wilkes County. The larger battlefield "core area," as defined by the American Battlefield Protection Program (ABPP), contains approximately 179 acres of privately owned land. Subsequent studies have shown the area to contain over 300 acres of privately owned land. At present, the 14.5-acre public property contains no official trails, but battlefield advocates have created an informal path around the base of War Hill. A critical step for short-term improvements is the development of formal trails (Central Savannah River Area Regional Commission 2013). The four trail routes examined during this survey reflect these first efforts at better preserving the battlefield and enhancing visitor experiences.

Figure 1.
Study Area Location in Wilkes County, Georgia



Source: ESRI Resource Data

Figure 2.
Proposed Trail Corridors



Source: ESRI Resource Data

The present archaeological study included a pedestrian walkover of the entire study area, systematic intensive metal detecting, and systematic shovel testing. The remainder of this report is organized as follows: Chapter II discusses the environmental context, and Chapter III discusses the battle and prior investigations of the site. Chapter IV presents the survey methods and Chapter V provides conclusions and recommendations. Appendix A contains an inventory of recovered artifacts.

II. ENVIRONMENTAL CONTEXT

Wilkes County is located in the eastern Piedmont Physiographic province. The Piedmont consists of a mix of Precambrian and Paleozoic metamorphic and igneous rocks with landforms of moderately dissected irregular plains and some hills. Wilkes County is more precisely located in the Southern Outer Piedmont ecoregion, a zone with lower elevations and relief. Underlying bedrock is mostly gneiss, schist, and granite, while soils are deep saprolite. Forest is dominated by loblolly shortleaf pine, with minor proportions of oak-hickory and oak-pine communities (Griffith et al. 2001; Lawton 1977)

Topography in the survey area vicinity consists of eroded ridges, incised drainages, and relatively wide valley bottoms along major creeks. War Hill is the dominant topographic feature of the project vicinity. This hill consists of a northeast-southwest trending landform extending from a dissected ridgeline to the northwest. It rises approximately 80 feet above the adjacent bottomlands to a peak of 528 feet above sea level (asl). The main feature of the Battle of Kettle Creek was a constricted knoll separated by a swale from the main crest of War Hill to the east. Relatively steep slopes on the north, south, and west flank the knoll. Vegetation at the time of the survey was successional forest with young hardwood trees dominating and a light understory (Figures 3 and 4).

Kettle Creek, a tributary to Little River, is a mid-order stream in the project vicinity and bounds War Hill on the south and west. A low-order tributary forms the north boundary. Kettle Creek occupies a relatively wide valley in the project vicinity with low terraces that occasionally flood.

The most common soil types in the study area around War Hill are Rion-Ashlar-Wake complex, Toccoa loam, and Shellbluff silt loam. Rion-Ashlar-Wake complex, 10-25 percent slopes. This soil association is located on shoulders, back slopes, and side slopes, is well drained, and has parent material of weathered granite and gneiss. A typical profile consists of fine gravelly sandy loam (0-10 in.), fine gravelly sandy clay loam (10-23 in.), and fine gravelly sandy loam (23-60 in.). Toccoa loam and Shellbluff silt loam, occasionally flooded, are on floodplains. They are moderately well drained and have parent material of alluvium with a water table depth of 30-60 inches. A typical profile consists of loam (0-7 in.) and sandy loam (7-60 in.) (George 2006).

Figure 3.
General Conditions in the Study Area, 1 of 2

A. War Hill Loop Trail on the West Side of War Hill, Facing North

B. Loop Trail to Bridge on the West Side of War Hill, Facing West

Figure 4.
General Conditions in the Study Area, 2 of 2

A. War Hill Loop Trail on the Southeast Side of War Hill, Facing West

B. Loop Trail to Monument from Bottom of War Hill, Facing Northwest

III. HISTORICAL CONTEXT AND PREVIOUS RESEARCH

BATTLE OF KETTLE CREEK

The Battle of Kettle Creek took place on February 14, 1779. The British had enlisted Loyalist South Carolinian John Boyd to raise a loyal militia that could support their occupation of the Georgia and South Carolina backcountry. While en route to Augusta, Colonel Boyd and a troop of about 600 men camped atop a hill overlooking the creek. Here they came under attack by a combined force of South Carolina and Georgia militia commanded by Colonel Andrew Pickens and Colonel John Dooly. Pickens' South Carolina militia charged the Loyalist line from the north, while Dooly and Elijah Clarke's Georgia men circled to the south to attack from the creek.

Had the plan worked, the Rebel militias would have surprised the Loyalist camp with a frontal assault accompanied by attacks on both flanks. However, both groups of Georgians became entangled in the swampy cane breaks along the creek. Meanwhile, premature firing from Pickens' advance guard alerted the Loyalists to the danger, allowing them to mount a more effective defense. Despite the Rebels' poor execution and having approximately twice as large a force, the Loyalists could not repulse the attack. A detachment from Clarke's command became lost, but finally emerged among the Loyalists. Firing on Boyd, they mortally wounded him and caused his men to panic and abandon their camp and much of their equipment.

Patriot forces pursued the retreating Loyalists across Kettle Creek and a second firefight developed. After a short fight, the Loyalists retreated toward the British forces between Savannah and Augusta. The Patriots won the battle, with 32 casualties, including nine killed and 23 wounded. Loyalist losses were much more severe, with 40-70 killed and 75 wounded or taken prisoner, including their commander, John Boyd, who died from his wounds that same day. The remaining Loyalists scattered in different directions and only 250 of the original 800 men ultimately joined the British Army (Davis 2003; Kettle Creek Battlefield Association 2016).

PREVIOUS RESEARCH

Dan Elliott of the LAMAR Institute conducted a reconnaissance metal detector survey of portions of the Kettle Creek Battlefield under a Preserve America Grant obtained through the City of Washington, Georgia (Elliott 2008). Elliott's (2008) study is comprehensive, with detailed descriptions of the Patriot and Loyalist forces, order of battle, and overall battle

narrative, and provided an excellent resource for understanding overall historical and archaeological context. Elliott's work included examination of primary documents, published histories, maps, and genealogies. He also conducted extensive fieldwork in large portions of the battlefield, including War Hill, the flood plain and lower ridges south of a monument on Kettle Creek, and other areas east of the monument.

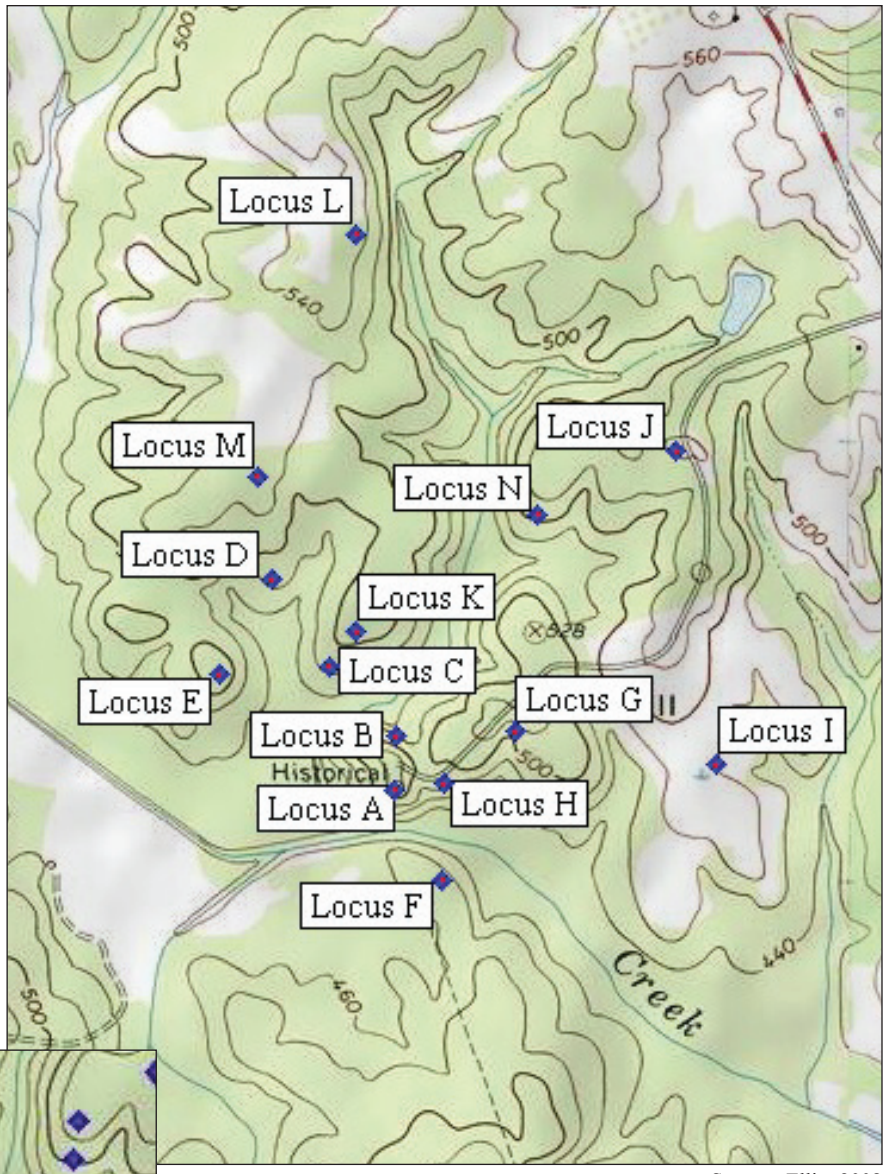
Elliott conducted metal detector survey at either a reconnaissance or systematic/intensive level, depending on location and results. Preliminary reconnaissance focused on identifying areas of interest because no previously defined archaeological sites were present in the study area. Landscape clues such as roads, fences, distinctive vegetation, and surface artifacts were used to suggest likely investigation areas. Many late nineteenth and twentieth century home sites were identified, but because of the extensive metal debris scatters, they were eliminated from additional work. More intensive survey involved a larger group of detectorists who investigated areas where known or suspected battle-related artifacts had been identified.

The survey identified 14 historic loci (designated A-N) that included War Hill and its immediate surroundings, several early house sites, a possible animal pen, and an old road trace. A single prehistoric locus (O) was also found (Figure 5). Each locus contained artifacts that typically reflected the Arms Group, such as lead balls (n=65) and rifle and musket parts. Locus A encompassed War Hill and only one lead ball was recovered here. Locus B was the northern slope leading away from War Hill, which yielded 14 artifacts from the Arms Group. Locus C was the ridge north of War Hill. Shovel testing here recovered eighteenth-century pearlware and creamware ceramics as well as indirect evidence of a former building. Metal detecting yielded several eighteenth-century buttons and only three bullets. These factors led Elliott (2008:109) to suggest the possibility of a field hospital. Locus D was identified on a minor ridge between the two main ridges of the battle and is important because it contains the remains of an old road trace and dwelling that likely date to the eighteenth century. Metal detecting produced several lead balls and a trigger guard, which Elliott (2008:110) interpreted as being fired by the defending Loyalists against the Rebel attack from the north. Locus F, on the south side of Kettle Creek, produced the highest concentration of military artifacts (n=26). This area represented the final stage of the battle as the Patriots scattered the retreating Loyalists.

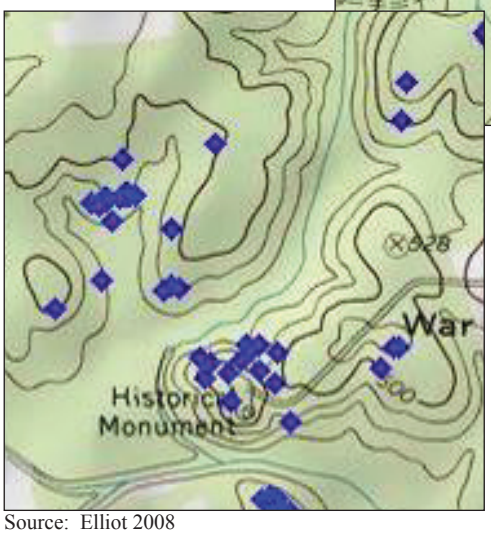
Elliott (2008:123) developed two methods for estimating the total number of rounds that might have been fired during the battle. His calculations suggested a low of 13,000 to a high of 54,000 rounds, while his archaeological recovery rate was less than one-half of one-percent for either extreme. Reasons Elliott gave for the low recovery rate include intensive collecting activities over the past few decades, and the possibility that artifacts buried in the Kettle Creek floodplain are beyond detector range.

Figure 5.
Elliott's Map of Archaeological Loci at Kettle Creek Battlefield

A. Distribution of Activity Loci, Kettle Creek Battlefield



Source: Elliot 2008



Source: Elliot 2008

B. Distribution of Arms Group Artifacts, Kettle Creek Battlefield

Collectors have removed an unknown number of artifacts from the battlefield over the past several decades, including muskets, bayonets, musket balls, and dishes (Elliott 2008:121). These activities have resulted in a significant loss of information. Elliott's attempts to contact a few individuals and document their collections were unsuccessful.

Elliott (2008) noted that previous discussions of the battle did not have the benefit of archaeological evidence. The data provided by Elliott's (2008) survey helped refine interpretations of the battle, particularly with respect to troop placements and movements, and allowed for confirmation of the battlefield site that was not possible from historical sources alone. The archaeological work also enabled Elliott (2008:133–137) to provide a fairly accurate description of battle activities and defining features.

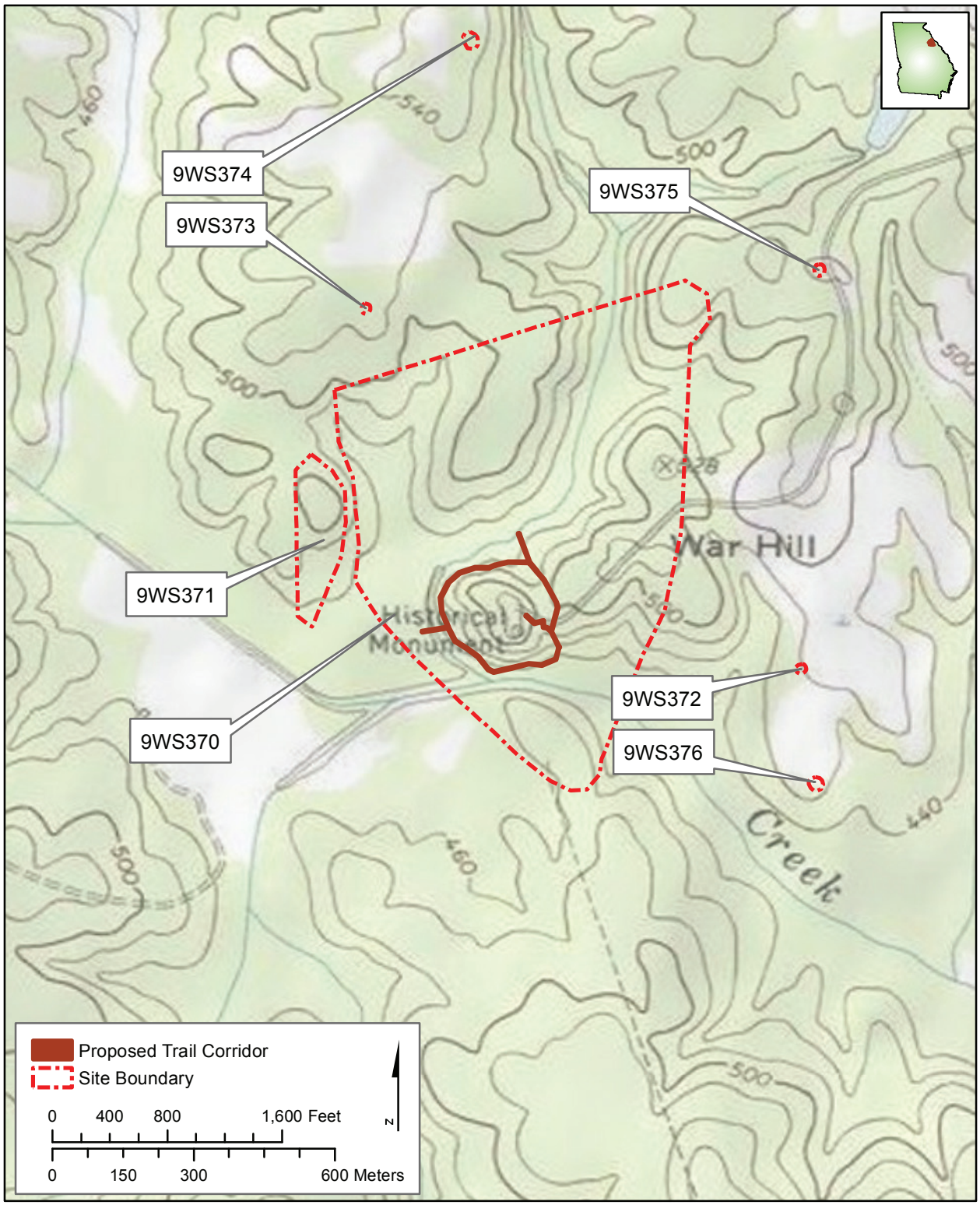
The significance of the Battle of Kettle Creek relates to the aftermath and the broader British strategy at that point in the war. Although a small battle, the Rebel victory demonstrated the tenuous hold the British had on the southern backcountry and showed the British that their expectation of strong Loyalist support would not materialize. Ultimately, they were forced to abandon their campaign to subdue the southern colonies. Kettle Creek Battlefield was listed in the NRHP in 1975.

ARCHAEOLOGICAL CONTEXT

Additional background research for the current project was conducted at the Georgia Archaeological Site File (GASF) and GNARGHIS. Although the Kettle Creek Battlefield is listed in the NRHP, an archaeological component was not recorded until Elliott's (2008) survey, which resulted in its designation as Site 9WS370 (Figure 6).

Six other sites are present within 1.0 kilometer (0.6 mi.) of the study area. All of these were recorded by Elliott during his work at the Kettle Creek Battlefield, including 9WS371, 9WS372, 9WS373, 9WS374, 9WS375, and 9WS376. None of these sites have been evaluated for the NRHP.

Figure 6.
Previously Recorded Archaeological Sites Within 1.0 Kilometer of the Study Area



Source: 1981 USGS Philomath, Georgia Quadrangle

IV. METHODS

METAL DETECTING AT MILITARY ARCHAEOLOGICAL SITES

Systematic metal detecting has been shown to be the best method for investigating battlefields and other military sites (Balicki and Espenshade 2010; Scott and Fox 1987; Scott et al. 1989). Metal detector surveys depend on a variety of factors, including operator experience, survey intensity, types of detectors used, ground cover, environment (soil conditions and moisture), sampling, and extent of previous relic hunting (Conner and Scott 1998; Jolley 2007, 2008, 2009; Scott and Fox 1987; Scott et al. 1989).

In 1984, Scott began archaeological investigations of the Little Big Horn/Custer Battlefield site (Conner and Scott 1998; Scott and Fox 1987; Scott et al. 1989). He implemented a field strategy that utilized controlled metal-detector survey, mapping of all finds, and forensic study of munitions and other artifacts. Detailed analyses of munitions at Little Big Horn allowed archaeology to refine and revise battle reconstructions that were based on archival records and oral history. Since that time, this approach has become the standard for all systematic investigations of military sites. There are five major characteristics of this approach:

1) *The method depends on careful review of the archival record and oral history to identify potential search areas*. The field methods associated with this approach are labor intensive, and a careful review of the written record and oral history is important in defining search areas. Scott recognized that the archival record is not always perfect, yet it provides starting points.

2) *The method relies on intensive metal detector survey to locate metal military artifacts*. Scott realized that the nature of military sites often precludes their discovery and meaningful interpretation through standard survey and testing methods. Military sites may have a low artifact density over a broad area, which reduces the potential that shovel testing would discover them. The majority of surviving artifacts from military sites, especially battles, will be metallic. The method thus matches the recovery technique to the nature of the deposits.

3) *The method relies on the use of instruments well suited to local conditions and operators with significant expertise in the use of such devices*. Scott recognized early in his research that there were few professional archaeologists with expertise in metal detecting. Likewise, there were few

consulting firms or research units that had invested in quality metal detectors. Scott's solutions were two-fold. First, he used volunteer detectorists with many years of experience and quality devices. Second, he began to build staff expertise and purchase instruments within his department.

4) *The method requires careful mapping of all individual finds*. Spatial analysis is a key goal and requires careful mapping of all finds. Instead, spatial distributions and artifact identifications are used in tandem to interpret the actions at a site.

5) *The method utilizes detailed analysis of dropped and fired munitions and other artifacts diagnostic of a specific army or regiment to reconstruct locations and movements within a battle*. The crux of the method is the analysis of the recovered material, the consideration of spatial distributions, and the interpretations gleaned from those distributions.

SAMPLING AND INSTRUMENTATION

There are no guidelines as to what constitutes an intensive metal detector survey. Archaeologists generally agree that 100-percent recovery of all metal artifacts within detection range cannot be expected. Heckman (2004) created an experimental battlefield site and then conducted metal detecting (and other geophysical methods of prospecting). She found that although metal detecting yielded the highest discovery rates, only about half of the buried artifacts were discovered with this method. With this limitation in mind, conducting metal detector survey of an area in at least one direction is considered intensive, and this approach was adopted for the present study.

Proposed trail locations were flagged prior to beginning fieldwork. Because the survey was conducted in early Spring, most of the locations were open and free of surface obstacles. Metal detector survey took place within 2.0-meter (6.6-ft.) wide survey lanes. Each trail location was covered by two transects for a total width of approximately 4.0 meters (13.0 ft.).

Specific instruments used for this survey included a Fisher Labs F-75 and a Minelab 30-30, both of which are high quality instruments capable of greater depths and discrimination. Two Garrett pin-pointers were used to refine identification when excavating targets.

As potential targets were identified, they were marked with a nylon-shaft pin-flag and then excavated. If the item was battle-related or historic, it was assigned a Metal Detector Find (MDF) number, and the flag and bag were marked accordingly. Modern finds were not collected. All MDF locations were recorded with a Trimble GeoXT handheld GPS unit with sub-meter accuracy and these data were incorporated into GIS for analysis and reporting.

SHOVEL TESTING

Systematic shovel tests were excavated at 30-meter intervals in each trail corridor to identify potential non-military sites. A single transect was necessary for each corridor. All shovel tests measured approximately 30 centimeters in diameter and were excavated until sterile subsoil or the water table was reached, or to a maximum depth of 75 centimeters (2.5 ft.). Positive shovel tests were assigned coordinates of 500N 500E and radial tests were excavated at 15-meter intervals along cardinal directions from the initial find to identify the horizontal extent of the archaeological deposits. Stratigraphy was recorded for each test and notes were made on depositional context and possible disturbance. Artifacts were collected and bagged according to provenience.

In addition to shovel testing, visual inspection of the surface was conducted to identify archaeological features such as house foundations, outbuildings, or artifact deposits.

GIS DATA INTEGRATION

Metal detector and shovel test data were integrated with other spatial data in ArcGIS 10. MDFs were also plotted using their X/Y coordinates. These data were used to create interpretive maps.

LABORATORY ANALYSIS

HISTORIC ARTIFACTS

Analysis of historic artifacts was based on methods outlined by South (1977) for pattern analysis. Although South's system was intended for Colonial-era British sites it was been widely adopted and modified for use on other historic sites. For purposes of this project artifacts were classified only as a way to organize the data into meaningful analytic units and to provide consistency with previous studies. Other analytical schemes were also used to supplement this information (Orser et al. 1987). Artifacts were sorted into functional groups that included Kitchen (ceramics, glassware, cooking utensils, medicinal containers, etc.), Architecture (brick, mortar, stone, nails, window glass, construction hardware, roofing material, etc.), Furniture (knobs, pulls, bed parts, etc.), Arms (rifle parts, bullets, shotgun shells, cartridges, etc.), Clothing (buttons, snaps, buckles, pins, beads, etc.), Personal (coins, keys, combs, eyeglasses, etc.), Activities (farm tools, toys, fishing gear, etc.), and Miscellaneous (unidentified metal, etc.).

Artifacts were also identified by material type, function, and presumed date range following standard sources such as Noel-Hume (1970), Miller (2000), and Toulouse (2001). Specific attention was paid to establishing the chronology of historic sites by providing date ranges for all artifacts to the best extent possible, although in most cases, the historic assemblages were too small to provide reliable data.

PREHISTORIC ARTIFACTS

Analysis of prehistoric artifacts was conducted using standard terminology and the New South laboratory manual. In addition to the basic classification, debitage analyzed for this project received special treatment. Platform remnant morphology was added to the standard list of lithic attributes. Lithic tools were described and typed, if possible.

CURATION

The project artifacts and records are temporarily being curated at the Stone Mountain facility of New South Associates. Artifacts will be prepared for curation according to standards at the Antonio J. Waring Laboratory at the University of West Georgia. A full inventory of the recovered cultural material is presented in Appendix A.

V. RESULTS AND RECOMMENDATIONS

ARCHAEOLOGICAL SURVEY

Archaeological survey was conducted to locate and identify non-military sites. Twenty-seven shovel test locations were investigated (Figure 7). Shovel tests on and around War Hill were generally shallow because of the topographic setting. A typical profile, indicated by ST 1, consisted of dark brown (10YR 3/3) sandy loam from 0-15 centimeters below surface (cmbs), reddish brown (5YR 4/4) sandy clay loam from 15-20 cmbs, and clay subsoil from 20-25 cmbs. Shovel tests along the flood plain of Kettle Creek were deeper because of the alluvial setting. A representative shovel test profile in this area, ST 10, included brown (10YR 4/3) silty clay loam from 0-70 cmbs, and pale brown (10YR 6/3) sand from 70-100 cmbs. A large spoil pile was noted on the north side of Kettle Creek, and this is likely a remnant of historic dredging that occurred between 1918 and 1922 (Elliott 2008:104).

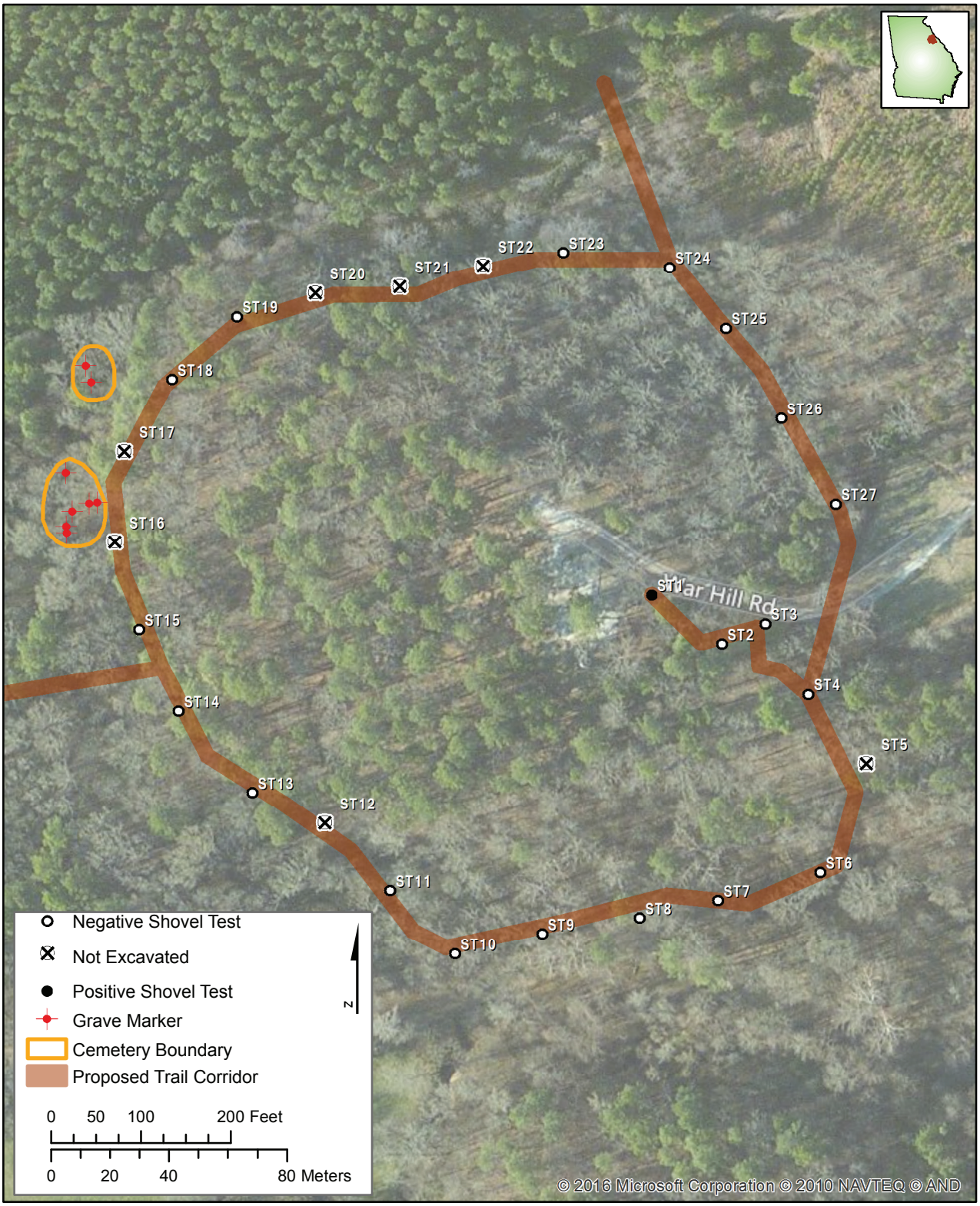
Shovel testing yielded a single quartz projectile point fragment. This item, recovered from ST 1, could not be identified as to type or chronology. Radial shovel tests excavated at 15-meter (50-ft.) intervals were all negative and this artifact is considered an isolated find.

No other artifacts were recovered through shovel testing. Moreover, visual inspection of the project area did not identify any surface features or archaeological deposits.

METAL DETECTING

Metal detector survey generated 36 metal artifacts that were sorted into the Activities (n=7), Architecture (n=6), Arms (=15), Furniture (n=1), Miscellaneous (n=6), and Personal (n=1) Functional groups (Tables 1 and 2; Figure 8). MDFs 3, 4, 8, 10, 12, 16, 22, 26, 27, and 28 appear to reflect military/battle-related artifacts (Figure 9). This group includes seven lead balls, all exhibiting evidence of being fired, one piece of flattened lead that was likely a projectile, one piece of canister shot, one rosehead nail and one wrought nail (Figure 10). At least two of the balls appear to have rifling, suggesting they were fired from Patriot firearms (Elliott 2008). These finds occurred in three loosely defined concentrations: MDFs 10, 12, and 26 on the northeast side of War Hill, MDFs 3, 4, 8, 16, 27, and 28 on the southeast side of War Hill, and MDF 22 on the south side of War Hill.

Figure 7.
Shovel Test Locations and Results



Source: ESRI Resource Data

Figure 8.
Map Showing MDF Locations

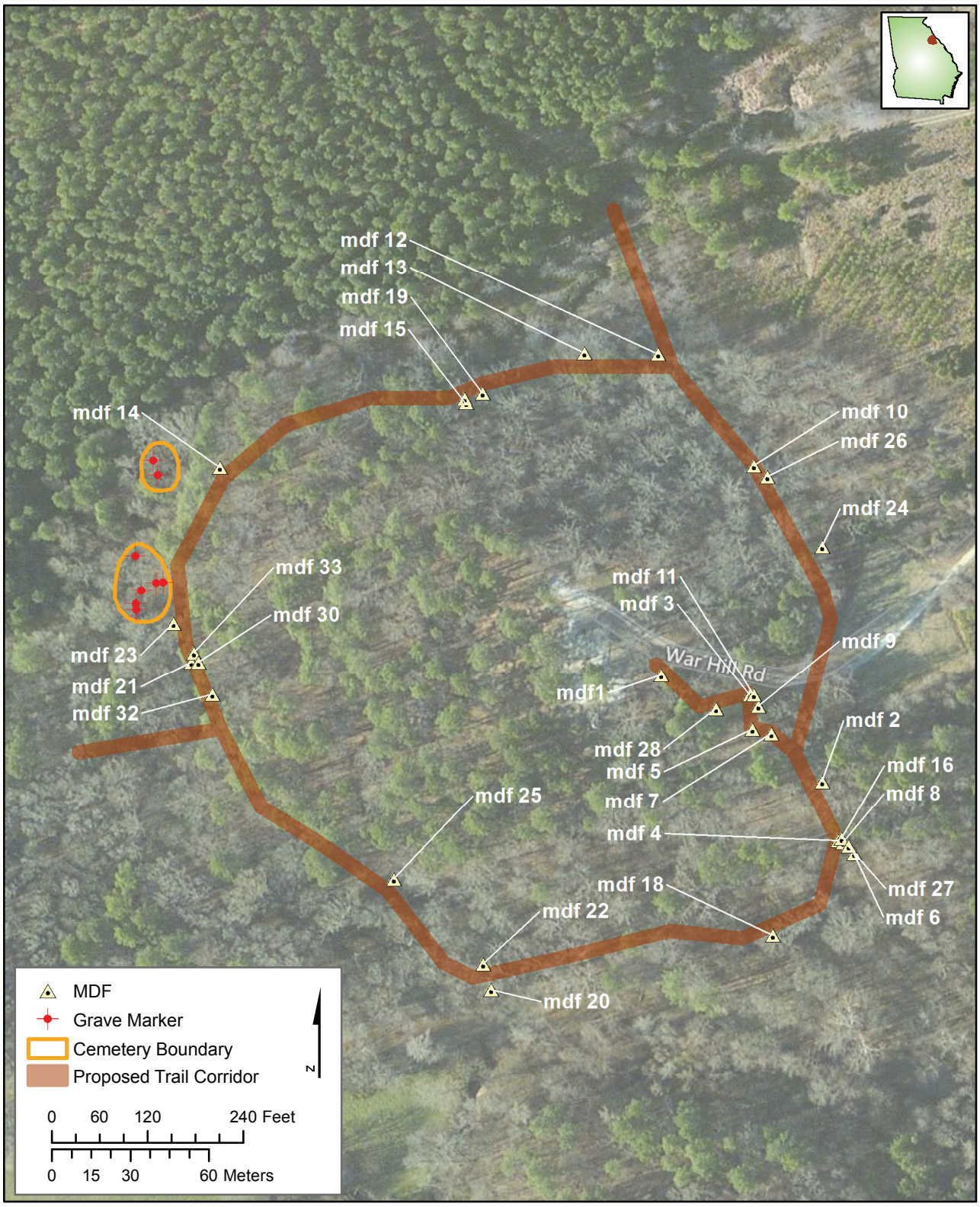


Figure 9.
Map Showing Probable Battle-Related Artifacts

Figure 10.
Photographs of Arms Group Artifacts

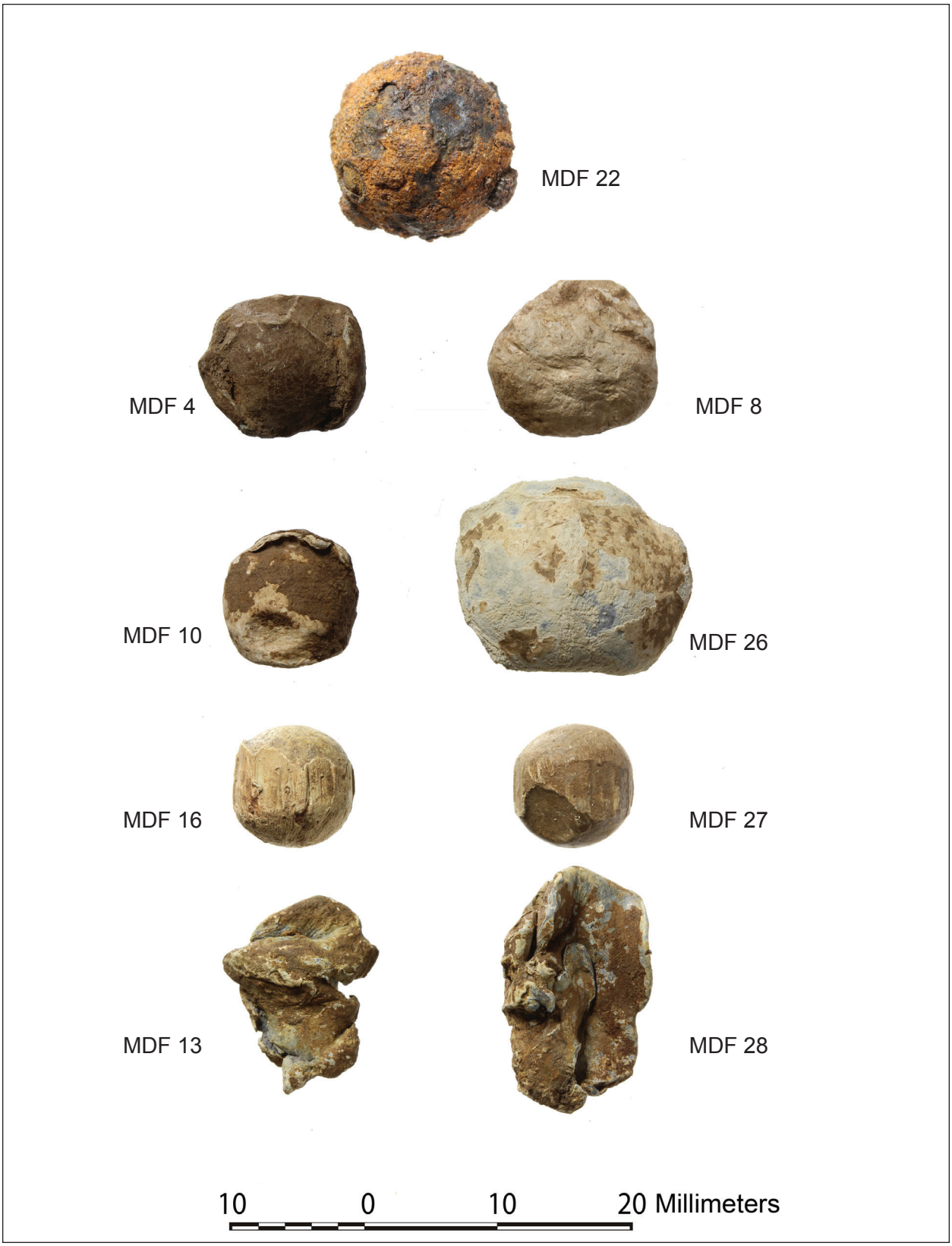


Table 1. Summary of Metal Detector Finds (MDF)

MDF	Weight	Artifact Description	Notes	Battle Related
MDF1	9.2	Machine Pin Iron/steel	Iron/steel	
MDF2	24	Nail, Cut Common		
MDF3	2.4	Nail, Unidentified Cut or Wrought,		Yes
MDF3	1.4	Nail, Wire Common		
MDF4	4.9	Lead Ball Fired/impacted	Fired/impacted	Yes
MDF5	2.5	Brass, Unidentified	1x1 sheet, bent in middle	
MDF6	10.4	Nuts square, iron/steel	Square, iron/steel	
MDF7	0.1	Buck Shot Lead	Lead	
MDF8	3.6	Lead Ball Fired/impacted	Fired/impacted	Yes
MDF9	0.6	Brass, Unidentified		
MDF10	3.3	Lead Ball Fired/impacted	Fired/impacted	Yes
MDF11	1.3	Nail, Wire Common		
MDF12	18.9	Lead, Unidentified	3/4 wide sheet of lead, rolled	
MDF13	3.3	Unidentified Lead Projectile	Fired	
MDF14	0.4	Tack, Brass Upholstery		
MDF15	1.5	Bullet Lead .22 caliber	Lead .22 caliber	
MDF16	5	Musket Ball Lead	Lead, rifled, 7 lands, fired	Yes
MDF17	2.2	Bullet Lead, .22 caliber	Lead, .22 caliber	
MDF18	150.7	Iron/ Steel Metal Rod	Bent in middle at 90 degrees	
MDF19	2.5	Bullet Lead, .22 caliber	Lead, .22 caliber	
MDF20	43.6	Bullet Lead	Lead, .32 caliber embedded in wood	
MDF21	287.8	Unidentified Machine Part	Iron/steel strap with nut and bolt	
MDF22	8.4	Canister Shot Iron	Iron	Yes
MDF23	5.4	Brass Umbrella Part		
MDF23	64.1	Padlock	Iron, heart-shaped face, no keyhole cover	
MDF24	12.7	Nail, Rosehead		
MDF25	173.4	Unidentified Machine Part	Iron/steel, hitch	
MDF26	10.3	Lead Ball Fired	Fired	Yes
MDF27	5	Musket Ball Lead	Rifled, 7 lands, fired	Yes
MDF28	6.4	Unidentified Lead Projectile	Fired	Yes
MDF29	0	Nail, Unidentified	Discarded in field	
MDF30	0.8	Iron/ Steel, Unidentified/ Corroded	Flat, round disc, 21.22mm diameter	
MDF31	0	Iron/ Steel, Unidentified/ Corroded	Discarded in field	
MDF32	89.6	Plow Part	Cast iron bracket	
MDF33	8.2	Iron/ Steel Plate	Curved, elongated oval with fixture holes	

Table 2. Summary of Metal Detector Finds and Functional groups.

Artifact Description	Total
Activities	7
Iron/ Steel Metal Rod Bent in middle at 90 degrees	1
Machine Pin Iron/steel	1
Nuts square, iron/steel	1
Padlock Iron, heart-shaped face, no keyhole cover	1
Plow Part Cast iron bracket	1
Unidentified Machine Part Iron/steel strap with nut and bolt	1
Unidentified Machine Part Iron/steel, hitch	1
Architecture	6
Nail, Cut Common, Unmeasured	1
Nail, Rosehead, Unmeasured	1
Nail, Unidentified Cut or Wrought, Fragment	1
Nail, Unidentified, Unmeasured Discarded in field	1
Nail, Wire Common, Unmeasured	2
Arms	15
Buck Shot Lead	1
Bullet Lead .22 caliber	1
Bullet Lead, .22 caliber	2
Bullet Lead, .32 caliber imbedded in piece of wood	2
Canister Shot Iron	1
Lead Ball, Fired	1
Lead Ball, Fired/impacted	3
Musket Ball Lead, rifled, 7 lands, fired	2
Unidentified Lead Projectile, Fired	2
Furniture	1
Tack, Brass Upholstery	1
Miscellaneous	6
Brass, Unidentified	1
Brass, Unidentified 1x1 sheet, bent in middle	1
Iron/ Steel Plate Curved, elongated oval with fixture holes	1
Personal	1
Brass Umbrella Part	1
Grand Total	36

The historic artifact assemblage also includes wire nails, machine parts, miscellaneous brass, and several bullets that post-date the battle. These indicate various activities that took place throughout the nineteenth and twentieth centuries.

Looking at only the battle-related artifacts, the overall density is light, but the presence of fired balls near War Hill is consistent with a military engagement there. Also, the frequency of artifacts recovered from the rather narrow trail corridors and overall confined survey area indicates the site retains significant information potential despite previous collecting.

Among the artifacts, the canister shot (MDF 22) is particularly interesting because it offers direct evidence for artillery, which Elliott (2008) noted was not documented in any of the archival sources. This artifact was recovered between War Hill and Kettle Creek. Elliott also recovered one piece of grapeshot, but from the area south of Kettle Creek. He interpreted this find as being fired by Rebel forces during the final stages of the battle. Elliott also reported several anecdotes about cannons and cannonballs being recovered after the battle. The location of MDF 22 supports Elliott's interpretation concerning the use of artillery in the attack.

Elliott's (2008:122, Figure 35) analysis of the distribution of Arms Group artifacts shows two concentrations, especially around War Hill and the ridge south of Kettle Creek that correspond to the most intense battle activities (see Figure 5B). Arms Group artifacts from the present survey are restricted to the area around War Hill, but do provide additional data supporting the interpretation of a significant engagement in this area.

Two distinct groups of grave markers are present on the northwest side of War Hill (Figure 11). The northern group contains two marked graves and the southern cluster has five. In December 2015, Bigman Geophysical conducted a study of part of the battlefield using cadaver dogs and ground-penetrating radar (GPR) (Bigman 2015). The Bigman study resulted in the discovery of 12 gravesites of Revolutionary War-era soldiers who died during the Battle of Kettle Creek and are buried at various locations within the battlefield. The KCBA President Walker Chewning and his grandson marked the locations of the graves with white crosses in January 2016. The areas of the marked gravesites correspond to the findings of the LAMAR Institute study of the distribution of Arms Groups in 2008 (Elliott 2008). A DNR/Historic Preservation Division, Certified Local Government (CLG) grant has been awarded in 2016 to the City of Washington (as the CLG) to conduct an expanded study of the Kettle Creek Battlefield with cadaver dogs to search for additional grave sites in the larger area of the battlefield. The cemetery on top of War Hill contains a cenotaph of soldiers who are buried elsewhere. Elliott's (2008) study used GPR on the site with negative results for any grave sites.

RECOMMENDATIONS

The archaeological and metal detector survey identified a small number of artifacts associated with the Battle of Kettle Creek, as well as one prehistoric stone tool fragment and historic artifacts that post-date the battle. Battle-related artifacts are consistent with those identified by Elliott (2008) with respect to locations and types, and support his interpretations of significant fighting around War Hill.

Figure 11.
Grave Markers on the Northwest Side of War Hill

The archaeological and metal detector survey recovered artifacts and data that would mitigate potential adverse effects from trail construction. New South recommends that no additional archaeological work be undertaken for the trail locations as currently proposed. However, if new discoveries are made that may indicate significant archaeological resources are present, those should be considered in future planning efforts.

REFERENCES CITED

Balicki, Joseph, and Christopher T. Espenshade

2010 Doug Scott Military Archaeology, Eastern Style: Status 2010. *Journal of Middle Atlantic Archaeology* 26: 1–6.

Central Savannah River Area Regional Commission

2013 *The Kettle Creek Battlefield Park Master Plan*. Central Savannah River Area Regional Commission, Augusta, Georgia.

Conner, Melissa, and Douglass D. Scott

1998 Metal Detector Use in Archaeology: An Introduction. *Historical Archaeology* 32:76–85.

Davis, Robert S.

2003 Battle of Kettle Creek. *New Georgia Encyclopedia*. Electronic document, http://www.georgiaencyclopedia.org/articles/history-archaeology/battle-kettle-creek, accessed May 18, 2016.

Elliott, Daniel T.

2008 *Stirring Up a Hornet's Nest: The Kettle Creek Battlefield Survey*. LAMAR Institute Publication Series. LAMAR Institute, Savannah, Georgia.

George, Walter G.

2006 *Soils Survey of Lincoln and Wilkes Counties, Georgia.* Unpublished Soil Survey. U.S. Department of Agriculture, Washington, D.C.

Griffith, Glenn E., James M. Omernik, Jeffrey A. Comstock, Steve Lawrence, and Trish Foster

2001 *Ecoregions of Georgia*. Unpublished Map. U.S. Environmental Protection Agency, Corvallis, Oregon.

Heckman, Elsa

2004 Geophysical Methodologies and Test Site for Battlefield Archaeology. Unpublished Master's Thesis, University of Arkansas, Fayetteville, Arkansas.

Jolley, Robert L.

2007 An Archaeological Survey of the Confederate Left Flank, Third Battle of Winchester, Virginia, September 19, 1864. *Quarterly Bulletin of the Archaeological Society of Virginia* 62(4): 190–229.

2008 An Archaeological Survey of an 1864 Union Civil War Earthwork and Encampment (44FK111), Frederick County, Virginia. *Quarterly Bulletin of the Archaeological Society of Virginia* 63(1): 18–40.

2009 An Archaeological Survey of Rutherford's Farm, the Site of Two Civil War Battles and a Field Hospital (44FK624), Frederick County, Virginia. *Quarterly Bulletin of the Archaeological Society of Virginia* 64(2): 63–92.

Kettle Creek Battlefield Association

2016 The Battle of Kettle Creek. *Kettle Creek Battlefield Association, Inc. Website*. Electronic document, http://www.kettlecreekbattlefield.org/id18.html, accessed May 18, 2016.

Lawton, David E.

1977 Geologic Map of Georgia. Unpublished Map. Georgia Department of Natural Resources, Atlanta, Georgia.

Miller, George L.

2000 Telling Time for Archaeologists. *Northeast Historical Archaeology* 29:1–22.

Noel-Hume, Ivor

1970 *A Guide to Artifacts of Colonial America*. Alfred A. Knopf, New York, New York.

Orser, Charles E., Jr., Annette M. Nedola, and James L. Roark

1987 *Exploring the Rustic Life: Multidisciplinary Research at Millwood Plantation, A Large Piedmont Plantation in Abbeville County, South Carolina, and Ebert County, Georgia*. Report Prepared for Archeological Services Division, National Park Service, Southeast Region, Atlanta, Georgia, by Mid-America Research Center, Loyola University, of Chicago, Chicago, Illinois.

Scott, Douglass D., and R.A. Fox Jr.

1987 *Archaeological Insights into the Custer Battle: An Assessment of the 1984 Field Season.* University of Oklahoma Press, Norman, Oklahoma.

Scott, Douglass D., R.A. Fox Jr., Melissa A. Conner, and D. Harmon

1989 *Archaeological Perspective on the Little Big Horn.* University of Oklahoma Press, Norman, Oklahoma.

South, Stanley A.

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

Toulouse, Julian

2001 *Bottle Makers and Their Marks*. Blackburn Press, Caldwell, New Jersey.

APPENDIX A: ARTIFACT CATALOG

Draft Catalog

County: Wilkes
State: Georgia
Project: Kettle Creek Battlefield

Field Bag #	Vertical Location	MDF #	Count/ Weight	Artifact Description	Field Date
1	0-10 cm	MDF1	1 (9.2g)	Machine Pin, Iron/steel	4/6/16
2	5-10 cm	MDF2	1 (24g)	Nail, Cut Common, Unmeasured	4/6/16
3	0-10 cm	MDF3	1 (2.4g)	Nail, Unidentified Cut Or Wrought, Fragment	4/6/16
3	0-10 cm	MDF3	1 (1.4g)	Nail, Wire Common, Unmeasured	4/6/16
4	0-10 cm	MDF4	1 (4.9g)	Lead Ball, Fired/impacted	4/6/16
5	0-10 cm	MDF5	1 (2.5g)	Brass, Unidentified, 1x1' sheet, bent in middle	4/6/16
6	8 cm	MDF6	1 (10.4g)	Nuts, square, iron/steel	4/6/16
7	0-10 cm	MDF7	1 (0.1g)	Buck Shot, Lead	4/6/16
8	0-10 cm	MDF8	1 (3.6g)	Lead Ball, Fired/impacted	4/6/16
9	0-10 cm	MDF9	1 (0.6g)	Brass, Unidentified	4/6/16
10	0-10 cm	MDF10	1 (3.3g)	Lead Ball, Fired/impacted	4/6/16
11	10-15 cm	MDF11	1 (1.3g)	Nail, Wire Common, Unmeasured	4/6/16
12	10-15 cm	MDF12	1 (18.9g)	Lead, Unidentified , 3/4' wide sheet of lead, rolled up	4/6/16
13	0-10 cm	MDF13	1 (3.3g)	Unidentified Lead Projectile, Fired	4/5/16
14	0-5	MDF14	1 (0.4g)	Tack, Brass Upholstery	4/5/16
15	0-10 cm	MDF15	1 (1.5g)	Bullet, Lead .22 caliber	4/5/16
16	0-5	MDF16	1 (5g)	Musket Ball, Lead, rifled, 7 lands, fired	4/5/16
17	0-10 cm	MDF17	1 (2.2g)	Bullet, Lead, .22 caliber	4/5/16
18	15-20	MDF18	1 (150.7g)	Iron/ Steel Metal Rod, Bent in middle at 90 degrees	4/5/16
19	0-10 cm	MDF19	1 (2.5g)	Bullet, Lead, .22 caliber	4/5/16
20	0-5	MDF20	2 (43.6g)	Bullet, Lead, .32 caliber imbedded in piece of wood	4/6/16
21	0-10 cm	MDF21	1 (287.8g)	Unidentified Machine Part, Iron/steel strap with nut and bolt	4/6/16
22	10-15 cm	MDF22	1 (8.4g)	Canister Shot, Iron	4/6/16
23	0-10	MDF23	1 (64.1g)	Padlock, Iron, heart-shaped face, no keyhole cover	4/5/16
23	0-10	MDF23	1 (5.4g)	Brass Umbrella Part	4/5/16
24	10-15 cm	MDF24	1 (12.7g)	Nail, Rosehead, Unmeasured	4/5/16
25	10-20 cm	MDF25	1 (173.4g)	Unidentified Machine Part, Iron/steel, hitch	4/6/16
26	10-15 cm	MDF26	1 (10.3g)	Lead Ball, Fired	4/6/16
27	20-30	MDF26	1 (5g)	Musket Ball, Lead, rifled, 7 lands, fired	4/6/16
28	0-5	MDF28	1 (6.4g)	Unidentified Lead Projectile, Fired	4/6/16
29		MDF29	1	Nail, Unidentified, Unmeasured, Discarded in field	4/6/16
30	5-10 cm	MDF30	1 (0.8g)	Iron/ Steel, Unidentified/ Corroded, Flat, round disc, 21.22mm diameter	4/7/16
31		MDF31	1	Iron/ Steel, Unidentified/ Corroded, Didscareded in field	4/7/16
32	10 cm	MDF32	1 (89.6g)	Plow Part, Cast iron bracket	4/7/16
33	0-10 cm	MDF33	1 (8.2g)	Iron/ Steel Plate, Curved, elongated oval with fixture holes	4/7/16
34		MDF34	1 (7.5g)	Quartz, Projectile Point/Knife, Fragment-Distal	4/7/16

New South Associates, Inc.
6150 E. Ponce de Leon Avenue
Stone Mountain, GA 30083