

### SU Log No. 1900 – Biomass Steam Facility

This Site Use Permit, initiated by the DOE – Infrastructure Support Division on September 24, 2007, proposed allocating a 164-acre tract for the construction of a new biomass steam facility (Figure 6). Review of the SRARP database showed four previously recorded sites (38AK424, 38AK425, 38AK829, 38AK843) in the project area. Fieldwork involved the excavation of 731 STPs (37 positive) along 82 transects on a 30-m grid across the project area. These efforts resulted in the relocation of the four previously recorded sites and the discovery of three new sites (38AK977, 38AK978, 38AK979). To accurately delineate the boundaries and assess the contextual integrity of buried deposits at these sites, further subsurface inspection was conducted as needed for site evaluation through additional STP and/or test unit excavations. The level and results of work are described for these sites individually.

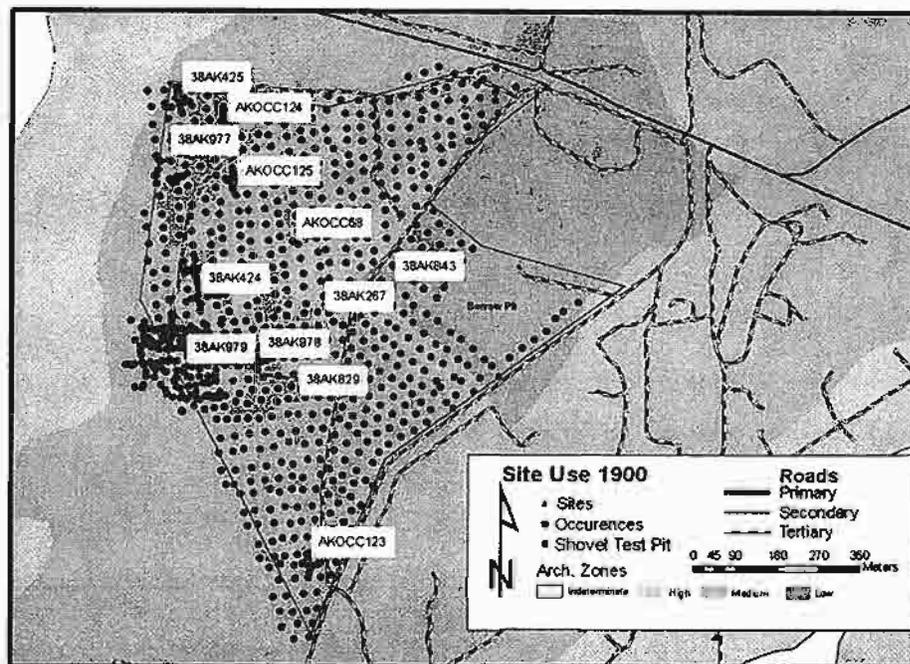


Figure 6. SU Log No. 1900 survey area.

Previous survey in 1982 and 1985 resulted in the location of site 38AK267 and 38AK424, respectively. Site 38AK267 was identified as a small (25 x 25 m) prehistoric lithic and historic artifact scatter. This site could not be relocated during the current survey project. Site 38AK424 was identified as a late-19th-century homeplace. The present condition of the site is characterized as heavily disturbed as evident in the numerous push piles and surface scatter of artifact debris, including bricks resulting from past SRS ground-altering activity. Recent testing for the current project consisted of 20 STPs (5 positive) excavated in a cruciform pattern resulting in the recovery of 7 artifacts. Due to the compromised integrity of the site and the low density of artifacts recovered, 38AK424 does not have the research potential to contribute to our knowledge of the history of the region, and no further testing was required. As such, it is not considered eligible for nomination to the NRHP.

Previous testing in 1985 at 38AK425 identified a Woodland period component on the basis of one overstamped linear check stamped and three simple stamped sherds from a surface collection. No artifacts were recovered during STP excavations. Recent testing for the current project consisted of 17 STPs (4 positive) excavated in a cruciform pattern resulting in the recovery of 4 artifacts (1 eroded sherd and 3 flakes). Due to the ephemeral nature of this small ceramic and lithic scatter, 38AK425 does not have the research potential to contribute to our knowledge of the history of the region, and no further testing was required. As such, the site is not considered eligible for nomination to the NRHP.

Previous testing in 2000 at 38AK829 identified a mid-20th-century component on the basis of three artifacts recovered from 2 of 11 STPs excavated to delineate site boundaries. Recent testing for the current project consisted of 11 STPs (1 positive) excavated in a cruciform pattern resulting in the recovery of 2 artifacts. Due to the ephemeral nature of this small ceramic and lithic scatter, 38AK829 does not have the research potential to contribute to our knowledge of the history of the region, and no further testing was required. As such, it is not considered eligible for nomination to the NRHP.

Previous testing in 2000 at 38AK843 identified a small, mid-20th-century bottle/can dump. No artifacts were recovered in the nine STPs excavated to investigate subsurface deposits; therefore, site 38AK843 could not be relocated during the recent survey for the current project. Due to the ephemeral nature of this small bottle and can surface scatter, 38AK843 does not have the research potential to contribute to our knowledge of the history of the region, and no further testing was required. As such, the site is not considered eligible for nomination to the NRHP.

Newly recorded site 38AK977 was identified as a late 19th- to mid-20th-century homeplace on the basis of several diagnostic artifacts from surface contexts. The present condition of the site is characterized as heavily disturbed evident in the numerous push piles and surface scatter of artifact debris including several brick rubble piles resulting from past SRS ground-altering activity. Testing consisted of 18 STPs (3 positive) excavated in a cruciform pattern resulting in the recovery of 1 artifact. Due to the compromised integrity of the site and the low density of artifacts recovered, 38AK977 does not have the research potential to contribute to our knowledge of the history of the region, and no further testing was required. As such, it is not considered eligible for nomination to the NRHP.

Newly recorded site 38AK978 was identified as a late 19th- to mid-20th-century homeplace on the basis of several diagnostic artifacts from surface and subsurface contexts. The present condition of the site is characterized as heavily disturbed evident in the numerous push piles and surface scatter of artifact debris resulting from past SRS ground-altering activity. Testing consisted of 9 STPs (1 positive) excavated in a cruciform pattern. Due to the compromised integrity of the site and the low density of artifacts recovered, 38AK978 does not have the research potential to contribute to our knowledge of the history of the region, and no further testing was required. As such, 38AK978 is not considered eligible for nomination to the NRHP.

Newly recorded site 38AK979 has prehistoric and historic components dating to the Late Archaic through the Mississippian periods and the mid-20th-century. On the basis of subsurface deposits, the site's dimensions are determined to be approximately 200 x 225 m, with the eastern edge of the site falling just outside of the biomass facility project boundary. Testing consisted of 171 STPs (52 positive) excavated to delineate the site boundary and determine the nature and content of subsurface deposits. Additionally, three 1 x 2-m test units have been excavated to assess the integrity of subsurface deposits, as well as to chart artifact density and spatial patterning of diagnostic materials. A total of 516 artifacts was recovered from positive transect STPs within the site boundary, as well as the test unit and STP excavations across the site. When considering site extent, the artifact density equates to about 10 artifacts per 870 m<sup>2</sup> of site area with little spatial patterning (i.e., concentration) of diagnostic artifacts. Accounting for the entire site area, there are only 50 diagnostic prehistoric sherds (out of 93 total sherds), 3 diagnostic biface lithics, and 343 fragments of lithic debitage. In concert with the low density of artifact class types, there is very little discernable spatial patterning of diagnostic types or lithic debris. However, before a determination of eligibility for nomination to the NRHP could be recommended, an amended Site Use was issued requesting use of the land adjacent to and encompassing that portion of 38AK979 lying outside the current site use boundary. Thus, further secondary testing of the site is required to fully assess NRHP eligibility. The results of this work along with a determination of eligibility will be documented in the FY09 Annual Report.

Finally, initial survey identified three isolated artifact occurrences (AK-OCC-123, AK-OCC-124, AK-OCC-125) in the project area. Each isolated artifact was defined on the basis of 16 negative STPs apiece excavated at 5-m intervals in a cruciform pattern. The three artifact occurrences, along with isolated find AK-OCC-68 consisting of a thin metal fragment located in 2001, have no research potential to contribute to an understanding of the regional prehistory. As such, there will be no adverse effect to these isolated occurrences as a result of the proposed biomass facility construction.

*SU Log No. 1902 – Land Addition for Process Sewer Line Installation*

This Site Use Permit, initiated on October 9, 2007 by the Westinghouse Savannah River Corporation (WSRC), requested land located in F-Area for the MOX project process sewer lines. Review of the SRARP database showed no previously recorded sites in the project area. Field reconnaissance determined that the proposed project area had been impacted from past construction activities related to the E-Area waste burial facilities. No further archaeological work was required.

*SU Log No. 1905 – New Powerline through R-Area*

This Site Use Permit, issued on November 29, 2007 by Savannah River Nuclear Solutions (SRNS) Site Decommission and Demolition (D&D), proposed the construction of a high voltage powerline connecting P-Area to R-Area. The powerline corridor project area lies in the R-Area complex just outside the restricted portion of this facility. Review of the SRARP database showed no previously recorded sites in the project area. Field

reconnaissance determined that the proposed project area had been impacted from past construction activities, including a dirt road and buried cable lines. No further archaeological work was required.

*SU Log No. 1907 – Tinker Creek Resource USFS-SR Management Plan*

This Site Use Permit, initiated on December 18, 2007 by the USFS-SR, proposed the construction of a new logging road in Timber Compartments 25 and 26 (Figure 7). Review of the SRARP database showed no previously recorded sites in the project area. Fieldwork consisted of 38 STPs (4 positive) excavated at 30-m intervals along 3 transects. One newly discovered site (38AK976) and two isolated artifact occurrences (AK-OCC-121, AK-OCC-122) were recorded during survey. A total of 26 STPs (10 positive) was excavated in a cruciform pattern to define the site boundary for 38AK976. Consultation with the USFS-SR resulted in the redirection of the proposed logging road so that site 38AK976 will be completely avoided during logging road construction. In all, 14 STPs (0 positive) were excavated in cruciform patterns to delineate the isolated artifacts. These artifact occurrences have no research potential to contribute to an understanding of the regional prehistory. As such, there will be no adverse effect to these isolated occurrences as a result of the proposed logging road construction.

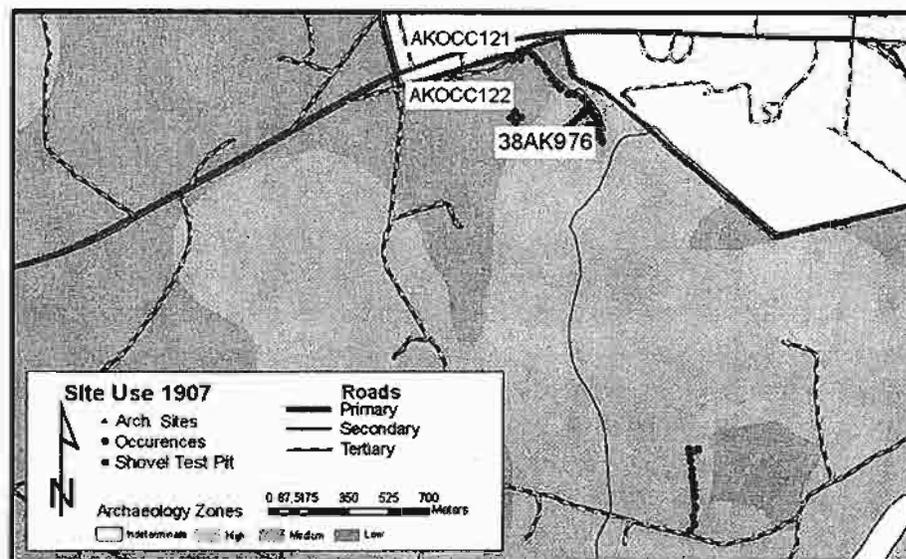


Figure 7. SU Log No. 1907 survey area.

*SU Log No. 1911 – The NPDES H-12 Outfall Corrective Action Project*

This Site Use Permit, initiated on February 19, 2008 by the Project Design and Construction Services (PD&CS), proposed the installation of Humic Acid storage tanks and pumps in the H-Area complex. Review of the SRARP database showed no previously recorded sites in the project area. Field reconnaissance determined that the proposed project area had been impacted from past construction activities related to the H-Area parking lot construction. No further archaeological work was required.

*SU Log No. 1912 – SREL Amphibian Study Area Drift Fence Installation*

This Site Use Permit, initiated on February 26, 2008 by the Savannah River Ecology Laboratory (SREL), proposed the installation of partial drift fences to monitor amphibian use of interriverine wetland habitat (Figure 8). The actual area of impact lies within a 1-acre tract centered in a broader project footprint comprising the amphibian study habitat, which is not subject to any proposed ground disturbing activities. Review of the SRARP database showed no previously recorded sites in the project footprint. Fieldwork consisted of 8 STPs (0 positive) excavated at 30-m intervals along the length of each drift fence location. As all STPs were negative, no further archaeological work was required for the proposed project.

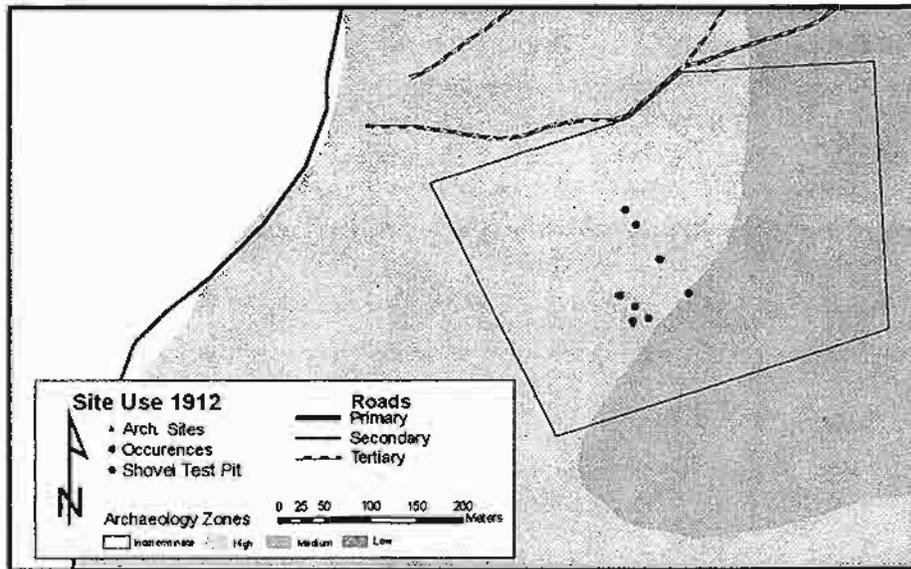


Figure 8. SU Log No. 1912 survey area.

*SU Log No. 1914 – Relocation of the H-007A Stormwater Outfall*

This Site Use Permit, initiated on February April 22, 2008 by the Effluent Treatment Project (EPT) Engineering, proposed the relocation of the H-007A Stormwater Outfall to a downstream tributary of Fourmile Branch near H-Area. Review of the SRARP database showed no previously recorded sites in the project area. During field reconnaissance of the project area, soil contamination signs were noted. Due to the potential of encountering contaminated soils, SRARP management decided that archaeological survey would not be appropriate for safety reasons.

*SU Log No. 1916 – Extension of Domestic Water Site Loop to K-Area*

This Site Use Permit, initiated on May 5, 2008 by the Infrastructure and Services (I&S) Site Utilities Engineering, proposed the installation of about three miles of pipeline from C-Area to K-Area. The original Site Use called for installing the waterline along existing hard surface road right-of-ways; however, the current Site Use amendment proposed an alternate route along a powerline corridor (Figure 9). Review of the SRARP

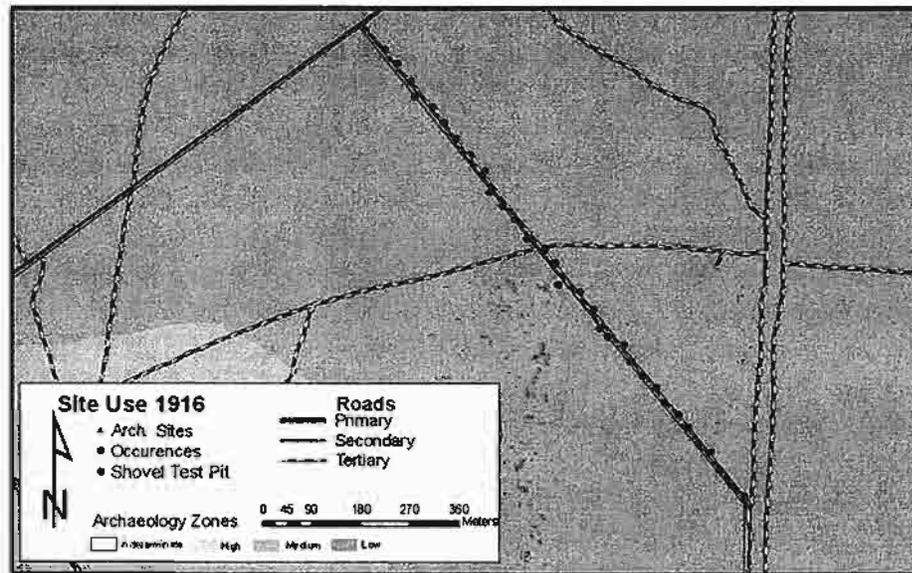


Figure 9. SU Log No. 1916 survey area.

database showed no previously recorded sites in the project area. Fieldwork consisted of 32 STPs (0 positive) excavated at 30-m intervals along the length of the alternate waterline route. As all STPs were negative, no further archaeological work was required for the proposed project.

*SU Log No. 1917 – M-Area Chemical Oxidation Technology Demonstration Project*

This Site Use Permit, initiated on May 27, 2008 by the SRNS Site Soil & Groundwater, proposed the installation of groundwater monitoring wells in an approximate 800 m<sup>2</sup> tract (Figure 10). Review of the SRARP database showed no previously recorded sites in the project area. Fieldwork consisted of 4 STPs (0 positive) excavated at the approximate location for each groundwater well. As all STPs were negative, no further archaeological work was required for the proposed project.

*SU Log No. 1918 – PDCF Construction Support Area (Laydown Yard)*

This Site Use Permit, initiated on May 28, 2008 by the Pit Disassembly and Conversion Facility (PDCF) Operations and Maintenance, requested the use of 75 acres near the F-Area complex as a PDCF construction support area (laydown yard). Previous archaeological inspection in the current project area occurred in 1993-1994 (Cabak et al. 1996) and consisted of a survey strategy that targeted specific topographic areas as opposed to intensive survey of the entire landform. This early survey documented five archaeological sites (38AK557, 38AK558, 38AK559, 38AK560, 38AK561) within or immediately adjacent to the current Site Use project area. Based on the results of their testing efforts, Cabak and colleagues submitted recommendations for these sites in their report as follows: site 38AK557 is potentially eligible for nomination to the NRHP; site

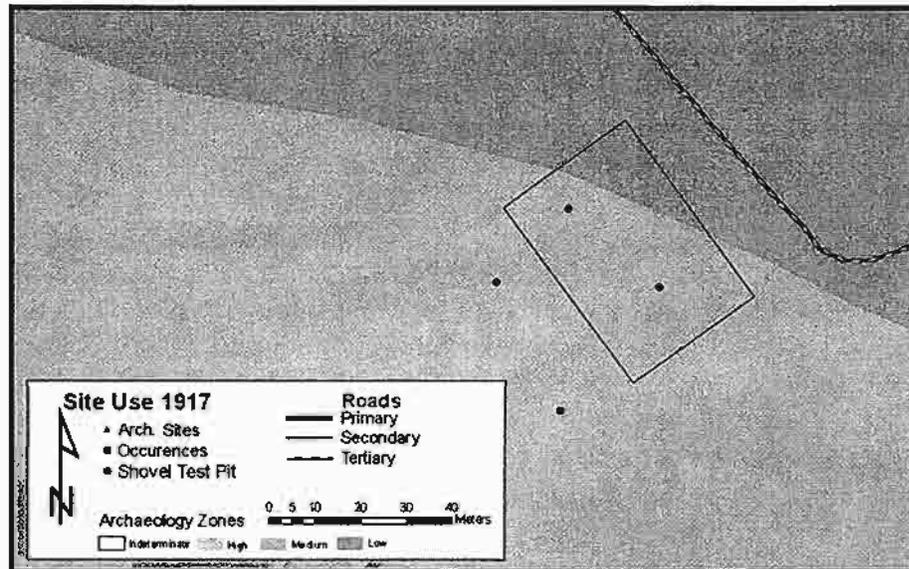


Figure 10. SU Log No. 1917 survey area.

38AK558 is not eligible for nomination to the NRHP; site 38AK559 is not eligible for nomination to the NRHP; site 38AK560 is not considered eligible for nomination to the NRHP; site 38AK561 is considered potentially eligible for nomination to the NRHP. The proposed land use for this portion of the larger project area surveyed in 1993-1994 was delayed, and these sites have remained intact to date.

The current Site Use request prompted an intensive survey of the project area to relocate all previously recorded sites, as well as to locate any additional sites that may have been missed during the earlier survey. Fieldwork consisted of 366 STPs (11 positive) excavated on a 30-m grid across the entire project area. These efforts resulted in the relocation of the five previously recorded sites, as well as the discovery of one new site and five isolated artifact occurrences. Initial testing of the sites considered potentially eligible by Cabak et al. 1996 and the one newly discovered site is ongoing at the time of this annual report, and the results of work for this Site Use project will be included in the FY09 report.

#### *SU Log No. 1921 – Amended Site Use for USFS-SR Helispots*

This Site Use Permit, initiated on June 16, 2008 by the USFS-SR, proposed the maintenance of existing helispots and the addition of nine helispots for aircraft during fire emergencies and prescribed burns. Potential ground disturbing activities consisted of vegetation removal and clearing. Review of the SRARP database showed no previously recorded sites in any of the project areas. Field reconnaissance revealed that all project areas had been cleared of vegetation and root raked prior to our visit. To assess any impact to cultural resources, fieldwork consisted of systematic pedestrian coverage. Light scatters of mid-20th-century artifacts were noted at two of the proposed helispots, but these historic period deposits had been disturbed previously from early 1951 land altering activities on the SRS. No further archaeological work was required. Information

concerning land disturbance by the USFS-SR prior to concurrence by the SRARP and formal Site Use approval was forwarded to Dennis Ryan, DOE.

*SU Log No. 1922 – Monitoring Project Involving Native Plant Communities*

This Site Use Permit, initiated on June 17, 2008 by the USFS-SR, requested approximately one acre for the proposed installation of fencing to prevent herbivore browsing of native plant community study plots (Figure 11). Field reconnaissance revealed that the proposed plots were already established and demarcated with rebar and fencing. Fieldwork proceeded with the excavation of 12 STPs (0 positive) at 30-m intervals along 2 transects. As all STPs were negative, no further archaeological work was required. Information concerning land disturbance by the USFS-SR prior to concurrence by the SRARP and formal Site Use approval was forwarded to Dennis Ryan, DOE.

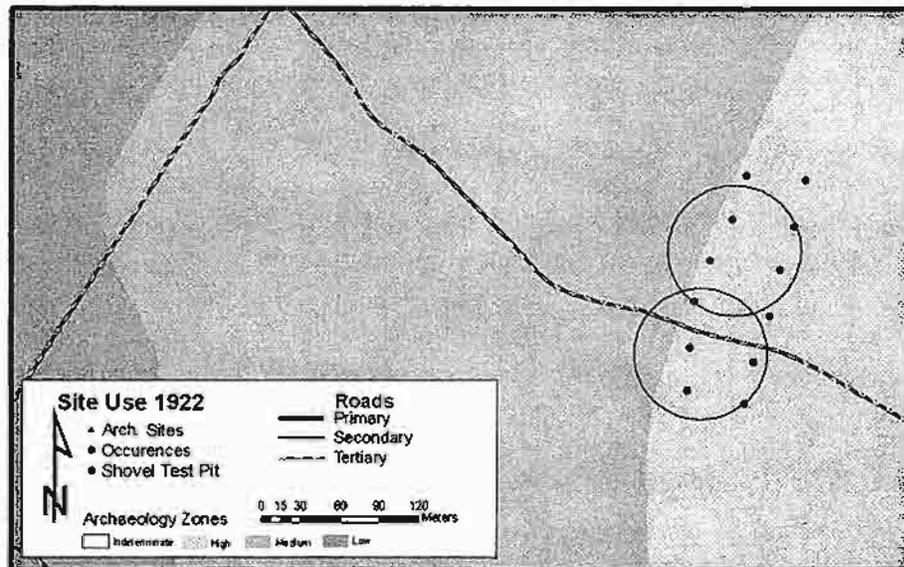


Figure 11. SU Log No. 1922 survey area.

*SU Log No. 1923 – A & M Areas Basal Tertiary/Upper Cretaceous Data Gap Study*

This Site Use Permit, initiated on June 18, 2008 by SRNS Site Soil & Groundwater, proposed installation of two groundwater monitoring wells, along with the construction of two access roads. Field reconnaissance revealed that the groundwater well locations had been established and the access roads nearly completed. As a result of these activities, the project area ground surface and subsurface was completely disturbed. Pedestrian coverage of all exposed surface area was conducted. No artifacts were recovered during this inspection. Information concerning land disturbance prior to concurrence by the SRARP and formal Site Use approval was forwarded to Dennis Ryan, DOE.

### Timber Compartment Prescriptions

The USFS-SR is the most extensive land user on the SRS, as this agency's primary function is one of research and forest management in support of silvicultural practices. Each year, the USFS-SR issues its list of Timber Compartment Prescriptions indicating those areas on the SRS where timber management activities are scheduled to occur. As a policy, the USFS-SR issues this list two to three years before the planned thinning or harvesting is scheduled. Using these yearly prescriptions, the SRARP identifies areas that must be surveyed prior to any land use activities. Because of the lead-time provided by this process, the SRARP has the opportunity to locate and evaluate all resources within the area of proposed land use at least one year in advance. Finally, the USFS-SR, in consultation with the SRARP, insures that all archeological sites deemed significant for research potential are avoided completely during the development of secondary roads and timber loading decks. Additionally, all historic sites with potential research significance are avoided completely during harvesting activities. As a result, all adverse effects to historic properties are mitigated through avoidance.

The SRARP management reviews each Timber Compartment Prescription to determine the level of survey required for each Timber Stand slated for timbering. The review process involves determining the potential for archaeological resources in each Timber Stand. This is accomplished by applying the predictive locational model of site discovery developed by the SRARP for management of cultural resources on the SRS (SRARP 1989). Information from the SRS site files, previous survey records, and historic documentation are also incorporated into the review process to insure that all resources are located and previous survey efforts are not duplicated.

The following summaries describe Timber Compartment projects and survey results during FY08. Surveys of Log Decks and Timber Stands were conducted in 16 Timber Compartments, which involved 1,419 acres (85.3%) of the total survey area coverage in FY08. Table 6 provides a listing by Timber Compartment of all sites investigated.

Certain aspects of archaeological work were standard for all projects. Upon completion of each survey project, point data for all new and previously recorded sites, as well as all isolated artifact occurrences, were recorded using GPS equipment. Prior to all fieldwork, a review of 1951 aerial photographs was conducted to identify standing historic structures at the time of federal acquisition. The SRARP site files were consulted to identify previously recorded cultural resources. All STPs measured 35 x 35 cm and were excavated to a depth of at least 80 cmbs, unless a gravel or clay substratum was encountered first. Exceptions to this fieldwork procedure included historic site locations identified from 1951 aerial photographs that were situated in low-probability areas for prehistoric sites (see discussion of Archaeological Sensitivity Zones in SRARP 1989). At these locations, STPs were excavated to just below the plowzone (usually between 20 - 40 cmbs). The reduced depth of STPs on historic sites is justified because late-period historic sites generally lack thick, stratified deposits (Cabak and Inkrot 1997:29-31). The soil from the STPs was sifted through 0.25-in. wire mesh, and artifacts were collected and bagged by provenience.

Table 6. Tabulation of Timber Compartment Prescription Survey Results, FY08.

PROJECT	PROJECT STPs	PROJECT AREA SURVEYED (ac)	NEW SITES	SITE REVISITS
Timber Comp. 7				
Stand 38	27	3		
TOTAL	27	3		
Timber Comp. 12				
Stand 5	9	1		
Stand 19	6	1		
Stand 56	9	1		
TOTALS	24	3		
Timber Comp. 39				
Stand 11	6	1		
Stand 36	8	1		
Stand 40	6	1		
Stand 66	7	1		
TOTALS	27	4		
Timber Comp. 45				
Stand 13	6	1		
Stand 31	9	1		
TOTALS	15	2		
Timber Comp 48				
Stand 28	16	43		
Stand 66	15	24		
TOTALS	31	67		
Timber Comp 50				
Stand 60	15	18		
TOTAL	15	18		
Timber Comp 55				
Stand 16	22	39		38BR241
TOTALS	22	39		1
Timber Comp 56				
Stand 7	16	17		
TOTALS	16	17		
Timber Comp 64				
Stand 11	23	27		
Stand 15	32	30	38BR1213	
Stand 27	26	29		38BR813
Stand 36	14	18		
TOTALS	95	104	1	1
Timber Comp 65				
Stand 10	27	56	38BR1216 38BR1218 38BR1219	
Stand 31	45	83		
Stand 79	61	83	38BR1214 38BR1215	
TOTALS	133	222	5	
Timber Comp 66				
Stand 8	48	57		
TOTALS	48	57		
Timber Comp 67				
Stand 14	28	26		
Stand 16	50	69	38BR1207	38BR1008
Stand 52	12	14		
Stand 98	26	28		38AK975
Stand 100	18	14		
Stand 108	6	4		
TOTALS	140	155	1	2

Table 6. Tabulation of Timber Compartment Prescription Survey Results, FY08 (continued).

PROJECT	PROJECT STPs	PROJECT AREA SURVEYED (ac)	NEW SITES	SITE REVISITS
Timber Comp 68				
Stand 2	37	53	38BR1220 38BR1221 38BR1217	
Stand 13/82	35	19		
Stand 19	36	59		
Stand 22	10	19		
Stand 26	30	25		
Stand 46	8	4		
Stand 87	9	1		
Stand 114	14	6		
TOTALS	179	186	3	
Timber Comp 70				
Stand 1	12	16		
Stand 4	53	2	38BR1222 38BR1224 38BR1225 38BR1226 38BR1223	
Stand 6	14	101		
Stand 47	18	14		
Stand 83	12	46		
Stand 91	22	53		
TOTALS	131	232	5	
Timber Comp 72				
Stand 11	23	39		
Stand 15	9	8		
Stand 16	10	54		
Stand 33	31	35	38BR1209 38BR1212	
Stand 112	18	58		38BR1025
Stand 113	24	38	38BR1208	
TOTALS	115	232	3	1
Timber Comp 73				
Stand 7	32	78	38BR1227 38BR1228	
TOTALS	32	78	2	
TOTALS	1050	1419	20	5

### Timber Compartment 7

Archaeological survey involved the subsurface inspection of three proposed Log Decks totaling 1 acre each in extent (Figure 12). Review of the SRARP database showed

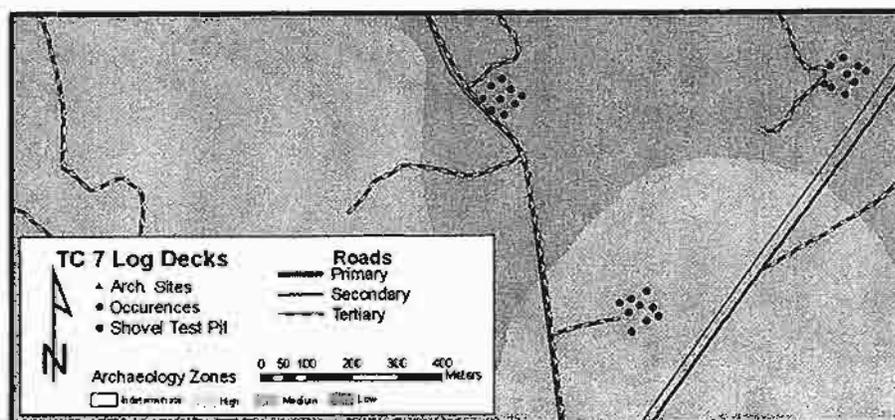


Figure 12. Timber Compartment 7 survey area.

no previously recorded sites in the project area. Fieldwork consisted of 27 STPs (0 positive) excavated on a 30-meter grid at each Log Deck location. As these efforts resulted in only negative STPs, no further archaeological work was required.

### *Timber Compartment 12*

Archaeological survey involved the subsurface inspection of three proposed Log Decks totaling 1 acre each in extent (Figure 13). Review of the SRARP database showed no previously recorded sites in the project area. Fieldwork consisted of 24 STPs (0 positive) excavated on a 30-meter grid at each Log Deck location. As these efforts resulted in only negative STPs, no further archaeological work was required.

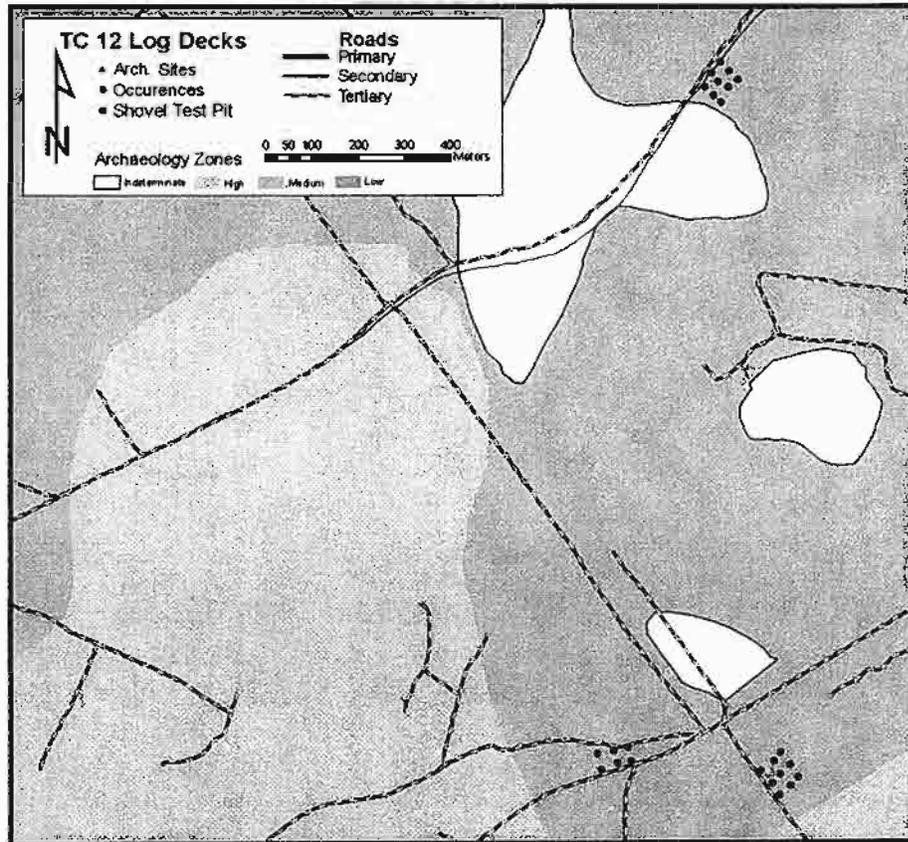


Figure 13. Timber Compartment 12 survey area.

### *Timber Compartment 39*

Archaeological survey involved the subsurface inspection of four proposed Log Decks totaling 1 acre each in extent (Figure 14). Review of the SRARP database showed no previously recorded sites in the project area. Fieldwork consisted of 31 STPs (0 positive) excavated on a 30-meter grid at each Log Deck location. As these efforts resulted in only negative STPs, no further archaeological work was required.

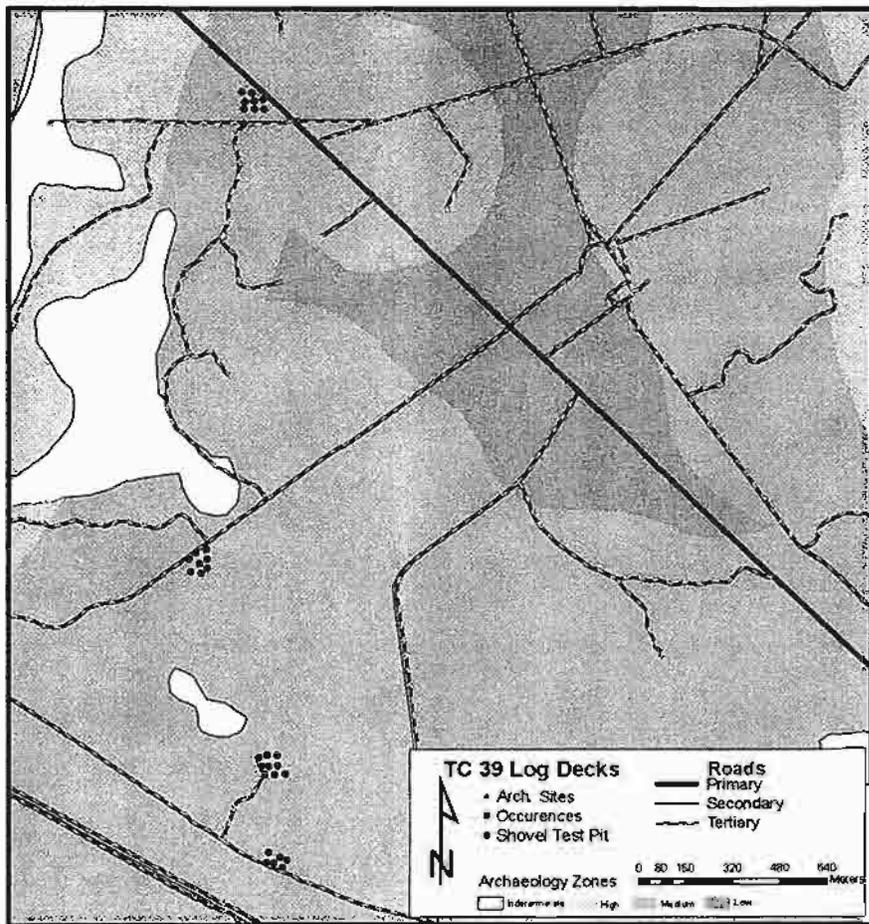


Figure 14. Timber Compartment 39 survey area.

*Timber Compartment 45*

Archaeological survey involved the subsurface inspection of two proposed Log Decks totaling 1 acre each in extent (Figure 15). Review of the SRARP database

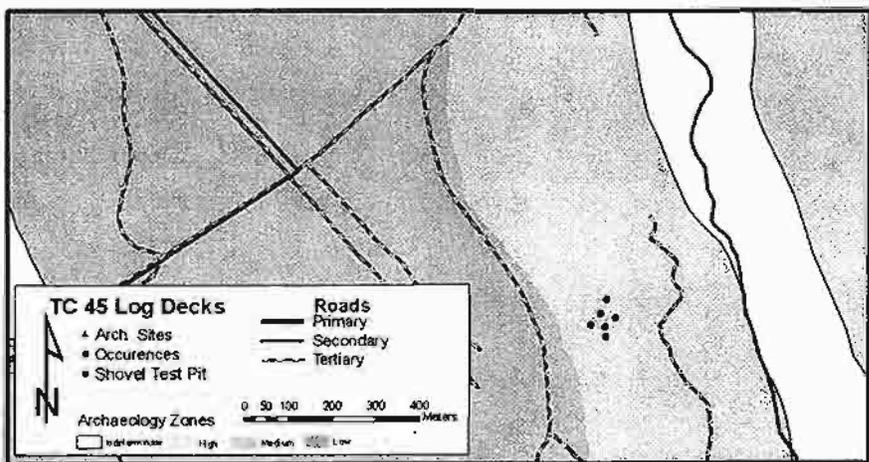


Figure 15. Timber Compartment 45 survey area.

showed no previously recorded sites in the project area. Fieldwork consisted of 15 STPs (0 positive) excavated on a 30-meter grid at each Log Deck location (one Log Deck consisted of 9 STPs that were not recorded with GPS equipment). As these efforts resulted in only negative STPs, no further archaeological work was required.

### *Timber Compartment 48*

Archaeological survey involved the subsurface inspection of Timber Stands 28 and 66 totaling 67 acres slated for clearcutting (Figures 16 - 17). Review of the SRARP database showed no previously recorded sites in the project area. Fieldwork consisted of 31 STPs (1 positive) excavated at 30-m intervals along 3 transects. These efforts resulted in the recovery of one isolated artifact (BR-OCC-252), which was delineated with 8 STPs (0 positive) excavated in a cruciform pattern. This artifact occurrence has no research potential to contribute to an understanding of the regional prehistory. As such, there will be no adverse effect to this isolated occurrence as a result of the proposed timbering activities.

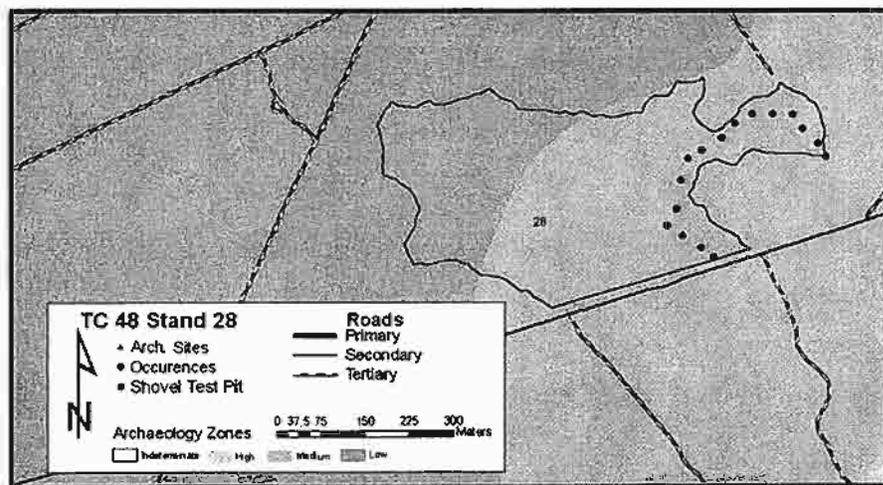


Figure 16. Timber Compartment 48, Stand 28 survey area.

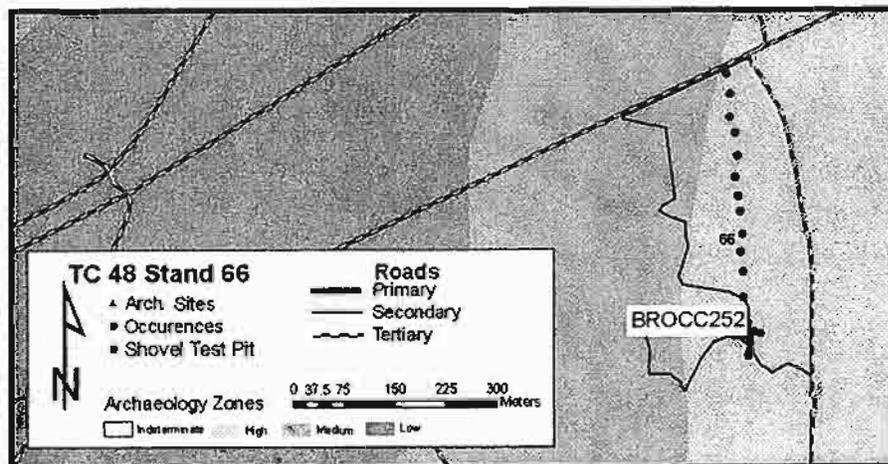


Figure 17. Timber Compartment 48, Stand 66 survey area.

### Timber Compartment 50

Archaeological survey involved the subsurface inspection of Timber Stand 60 with a total of 18 acres slated for clearcutting (Figure 18). Review of the SRARP database showed no previously recorded sites in the project area. Fieldwork consisted of 15 STPs (0 positive) excavated at 30-m intervals along 1 transect. As these efforts resulted in only negative STPs, no further archaeological work was required.

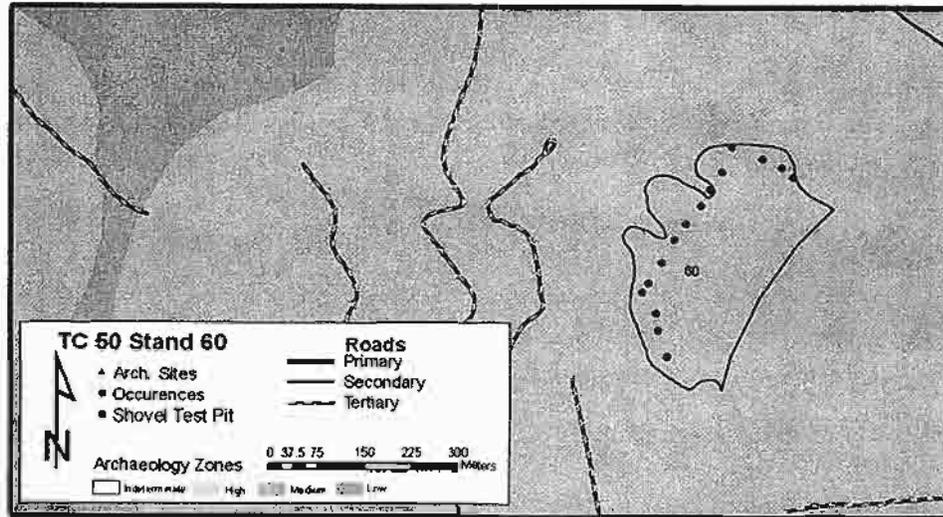


Figure 18. Timber Compartment 50, Stand 60 survey area.

### Timber Compartment 55

Archaeological survey involved the subsurface inspection of Timber Stand 16 with a total of 39 acres slated for clearcutting (Figure 19). Review of the SRARP database showed one previously recorded site (38BR241) in the project area. Fieldwork consisted of 22 STPs (2 positive) excavated at 30-m intervals along 1 transect. These

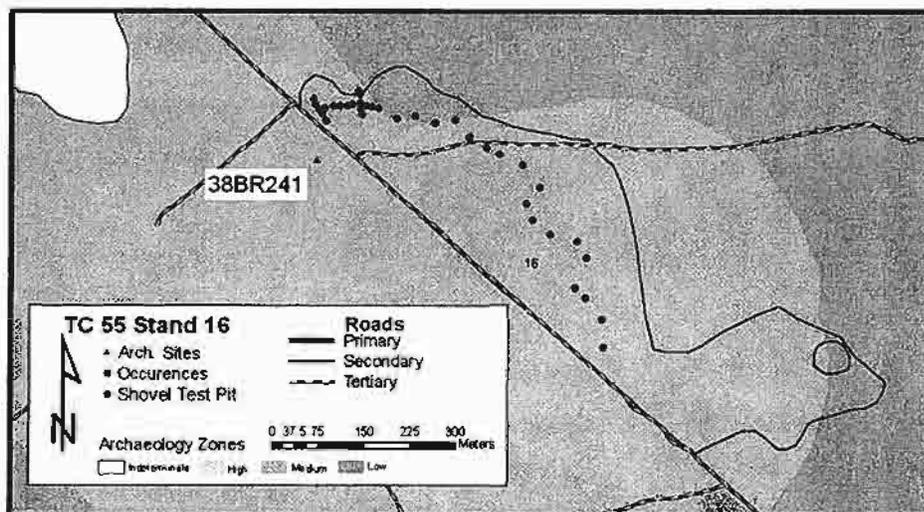


Figure 19. Timber Compartment 55, Stand 16 survey area.

efforts resulted in the relocation of 38BR241. A total of 17 STPs (2 positive) was excavated in a cruciform pattern to delineate the extent of subsurface deposits. Site 38BR241 will be avoided during current USFS-SR timbering activities. Thus, there will be no adverse effect to this site.

#### *Timber Compartment 56*

Archaeological survey involved the subsurface inspection of Timber Stand 7 with a total of 17 acres slated for clearcutting (Figure 20). Review of the SRARP database showed no previously recorded sites in the project area. Fieldwork consisted of 16 STPs (0 positive) excavated at 30-m intervals along 1 transect. As these efforts resulted in only negative STPs, no further archaeological work was required in the project area.

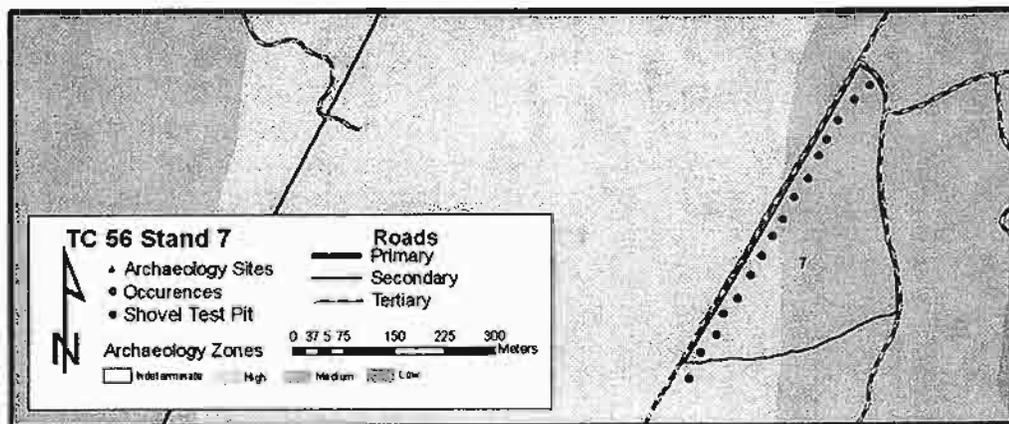


Figure 20. Timber Compartment 56, Stand 7 survey area.

#### *Timber Compartment 64*

Archaeological survey involved the subsurface inspection of Timber Stands 11, 15, 27, and 36 totaling 104 acres slated for clearcutting (Figures 21, 22, and 23). Review of the SRARP database showed one previously recorded site (38BR813) in the project area. Fieldwork consisted of 95 STPs (10 positive) excavated at 30-m intervals along 28 transects. These efforts resulted in the discovery of one new site (38BR1213) and previously recorded site (38BR813), as well as three isolated artifact occurrences (BR-OCC-235, BR-OCC-236, BR-OCC-237). Although previous work at 38BR813 adequately documented the site, recent work consisted of 7 STPs (5 positive) to re-delineate site boundaries. A total of 20 STPs (8 positive) was excavated to delineate 38BR1213. Both 38BR813 and 38BR1213 will be avoided during current USFS-SR timbering activities. Thus, there will be no adverse effect to either site. A total of 24 STPs (0 positive) was excavated in cruciform patterns during the delineation of the isolated artifacts. These artifact occurrences have no research potential to contribute to an understanding of the regional prehistory. As such, the proposed timbering activities will produce no adverse effect to these isolated occurrences.

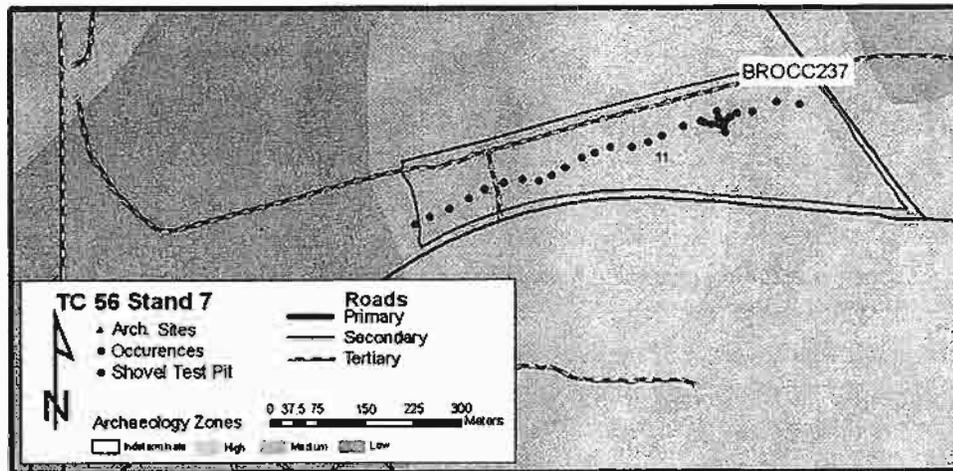


Figure 21. Timber Compartment 64, Stand 11 survey area.

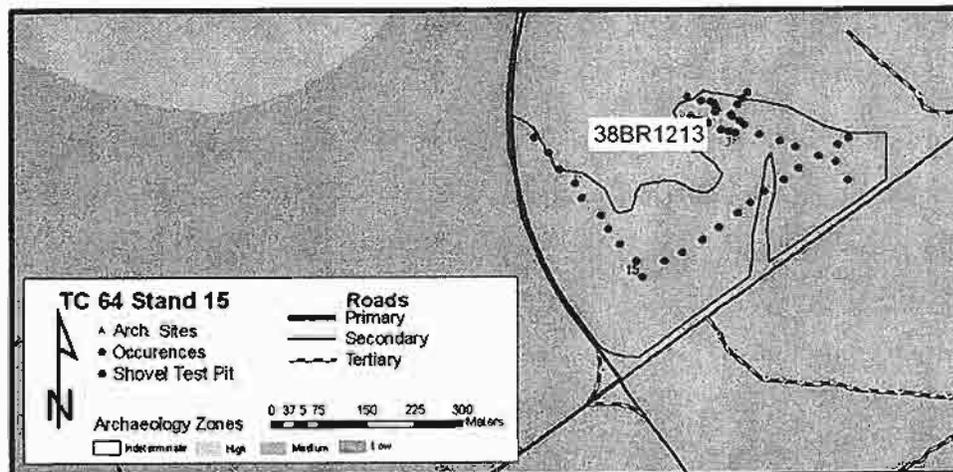


Figure 22. Timber Compartment 64, Stand 15 survey area.

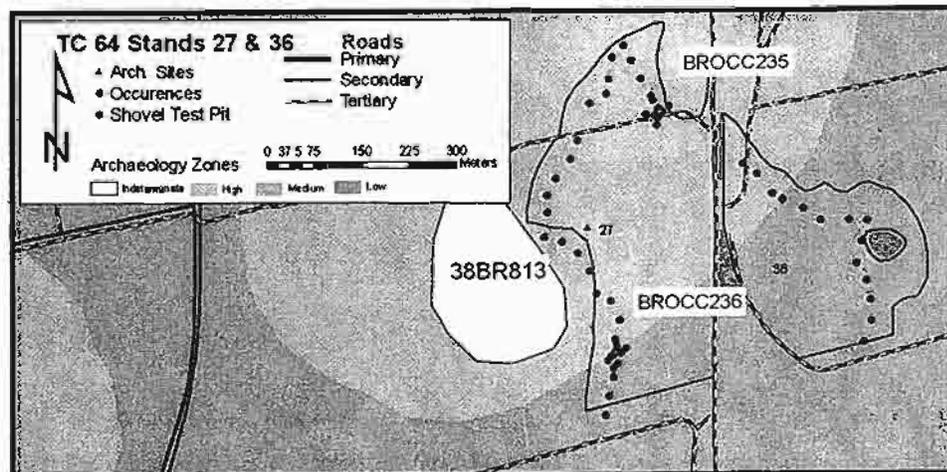


Figure 23. Timber Compartment 64, Stands 27 and 36 survey area.

*Timber Compartment 65*

Archaeological survey involved the subsurface inspection of Timber Stands 10, 31, and 79 totaling 222 acres slated for clearcutting (Figures 24 - 26). Review of the SRARP database showed no previously recorded sites in the project area. Fieldwork consisted of 133 STPs (6 positive) excavated at 30-m intervals along 10 transects. Five newly discovered sites (38BR1214, 38BR1215, 38BR1216, 38BR1218, 38BR1219) and one isolated artifact occurrence (BR-OCC-239) were located during survey. No additional subsurface inspections were conducted at site 38BR1218 as posted soil

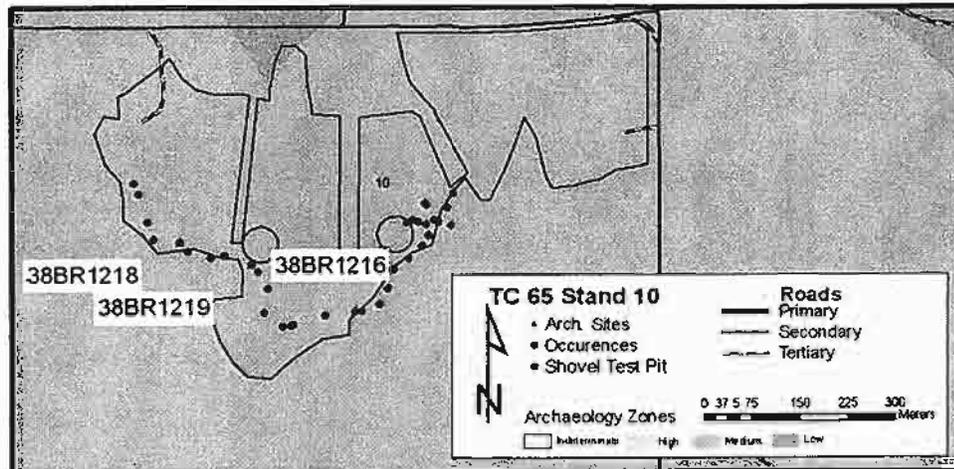


Figure 24. Timber Compartment 65, Stand 10 survey area.

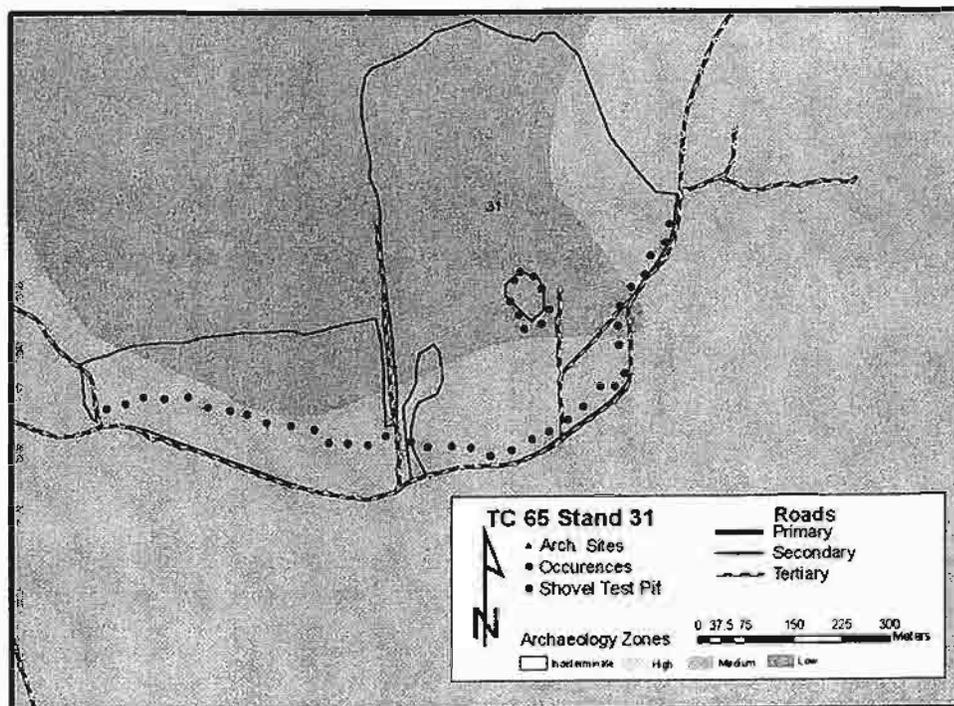


Figure 25. Timber Compartment 65, Stand 31 survey area.

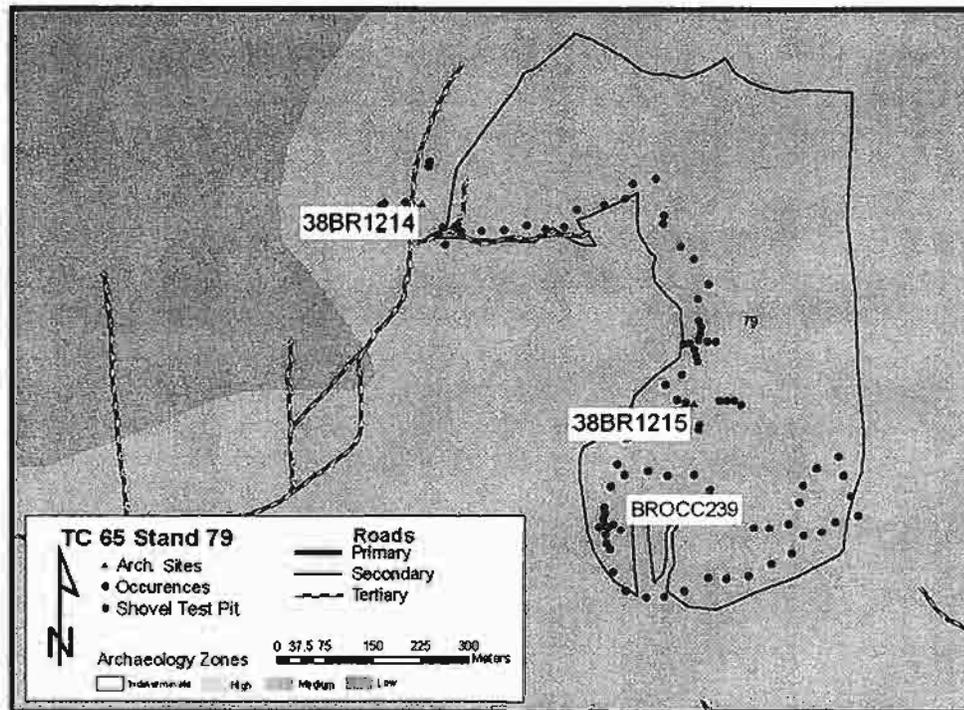


Figure 26. Timber Compartment 65, Stand 79 survey area.

contamination signs were noted in the vicinity after transect survey was completed. A total of 40 STPs (10 positive) was excavated in cruciform patterns to delineate site boundaries at 38BR1214, 38BR1215, 38BR1216, and 38BR1219. All five sites will be avoided during current USFS-SR timbering activities. Thus, there will be no adverse effect to these sites. A total of 8 STPs (0 positive) was excavated in a cruciform pattern to delineate the isolated artifact. This artifact occurrence has no research potential to contribute to an understanding of the regional prehistory. As such, there will be no adverse effect to this isolated occurrence as a result of the proposed timbering activities.

#### *Timber Compartment 66*

Archaeological survey involved the subsurface inspection of Timber Stand 8 with a total of 57 acres slated for clearcutting (Figure 27). Review of the SRARP database showed two previously recorded sites (38BR251, 38BR835) in the project area. Fieldwork consisted of 48 STPs (2 positive) excavated at 30-m intervals along 1 transect. No subsurface evidence of the two previously recorded sites could be relocated. Survey efforts resulted in the recovery of two isolated artifacts (BR-OCC-240, BR-OCC-241), which were delineated with a total of 16 negative STPs excavated in cruciform patterns. The artifact occurrences have no research potential to contribute to an understanding of the regional prehistory. As such, there will be no adverse effect to these isolated occurrences as a result of the proposed timbering activities.

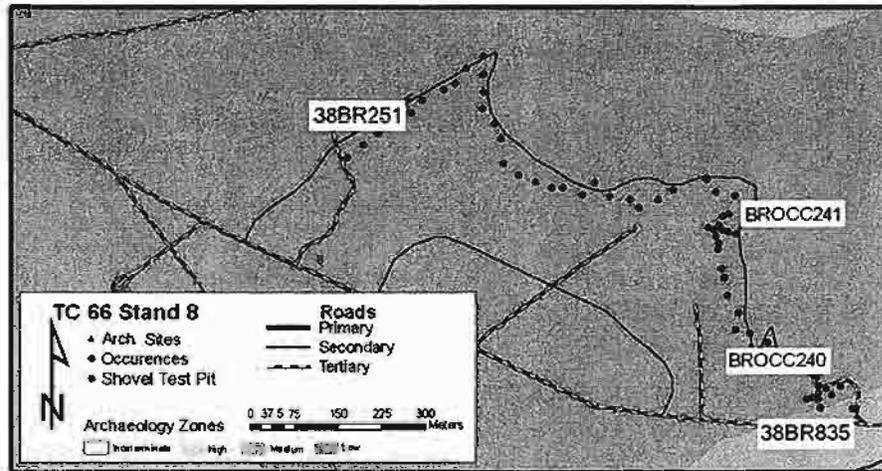


Figure 27. Timber Compartment 66, Stand 8 survey area.

### Timber Compartment 67

Archaeological survey involved the subsurface inspection of Timber Stands 14, 16, 52, 98, 100, and 108 totaling 155 acres slated for clearcutting (Figures 28 - 31). Review of the SRARP database showed one previously recorded site (38BR1008) in the project area. Fieldwork consisted of 140 STPs (4 positive) excavated at 30-m intervals along 8 transects. These efforts resulted in the discovery of two new sites (38AK975, 38BR1207) and the relocation of previously recorded site 38BR1008, as well as one isolated artifact occurrence (BR-OCC-238). Altogether, 32 STPs (8 positive) were excavated in cruciform patterns to delineate the site boundaries for 38AK975, 38BR1008, and 38BR1207. All sites will be avoided during current USFS-SR timbering activities. Thus, there will be no adverse effect to these sites. A total of 8 STPs (0 positive) were excavated in a cruciform pattern to delineate the isolated artifact. This artifact occurrence has no research potential to contribute to an understanding of the regional prehistory. As such, there will be no adverse effect to this isolated occurrence as a result of the proposed timbering activities.

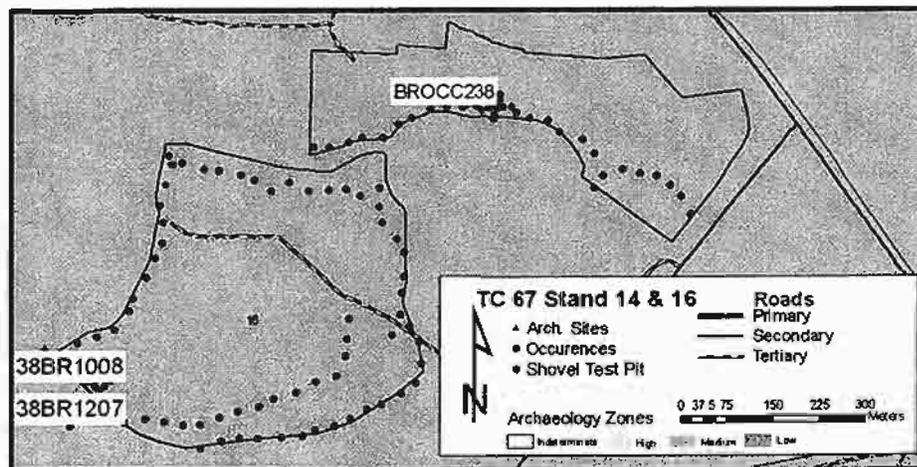


Figure 28. Timber Compartment 67, Stands 14 and 16 survey area.

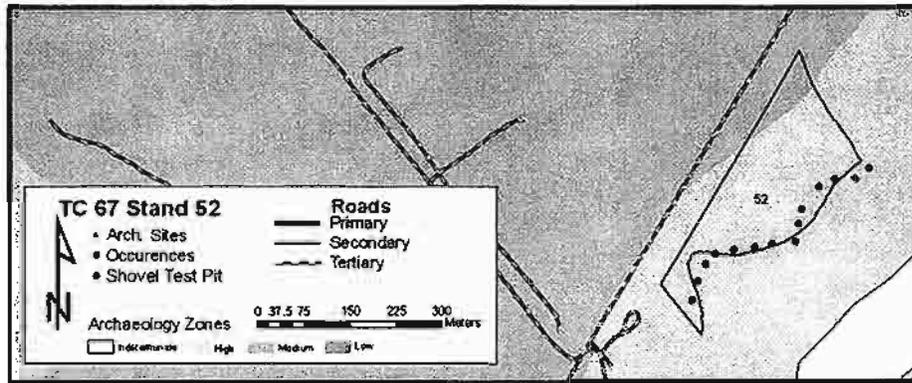


Figure 29. Timber Compartment 67, Stand 52 survey area.

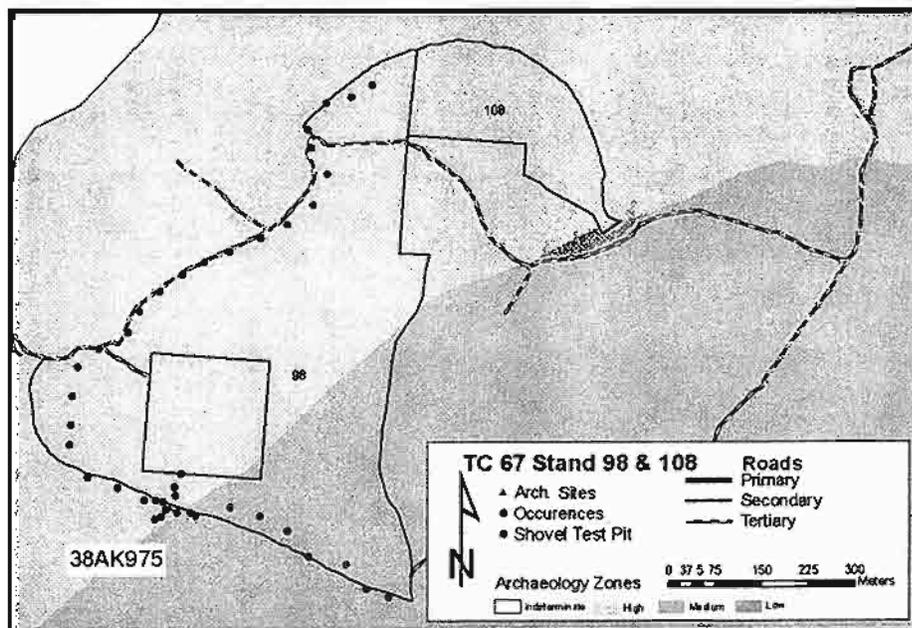


Figure 30. Timber Compartment 67, Stands 98 and 108 survey area.

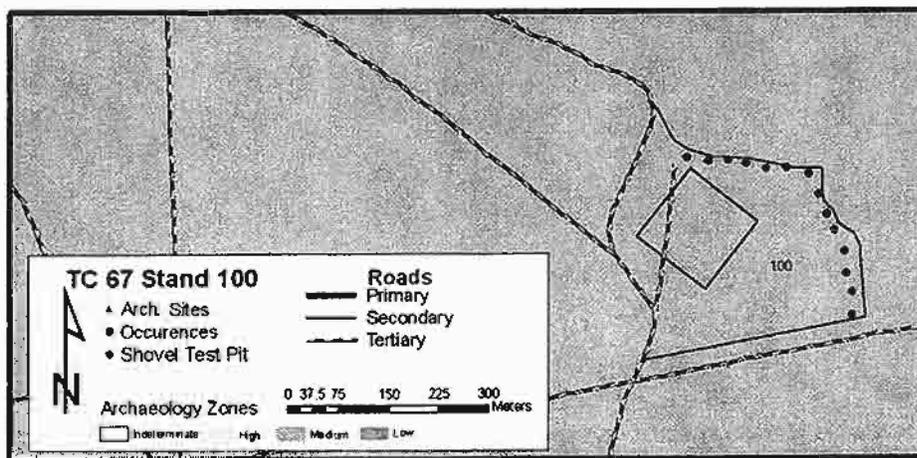


Figure 31. Timber Compartment 67, Stand 100 survey area.

*Timber Compartment 68*

Archaeological survey involved the subsurface inspection of Timber Stands 2, 13, 19, 22, 26, 46, 82, 87, and 114 totaling 186 acres slated for clearcutting (Figures 32 - 38).

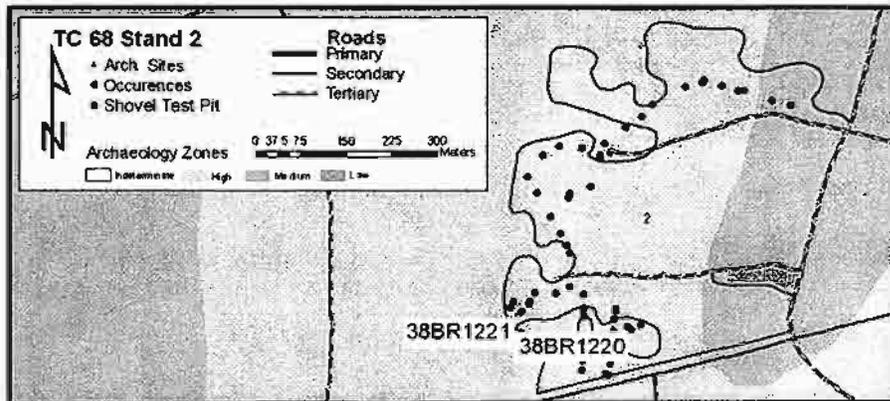


Figure 32. Timber Compartment 68, Stand 2 survey area.

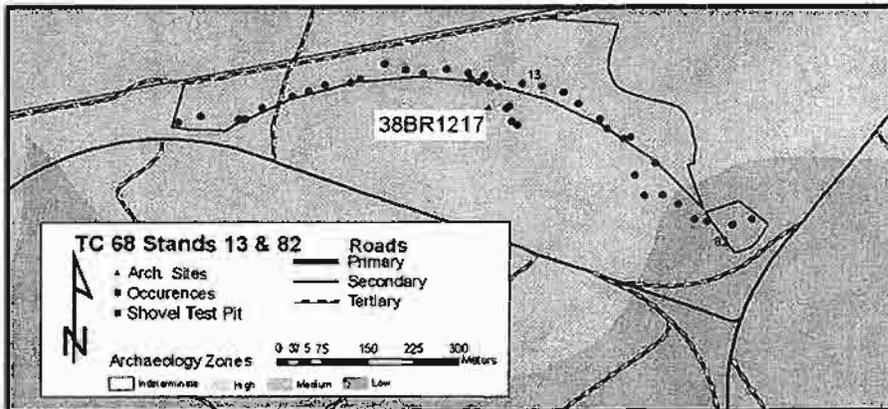


Figure 33. Timber Compartment 68, Stands 13 and 82 survey area.

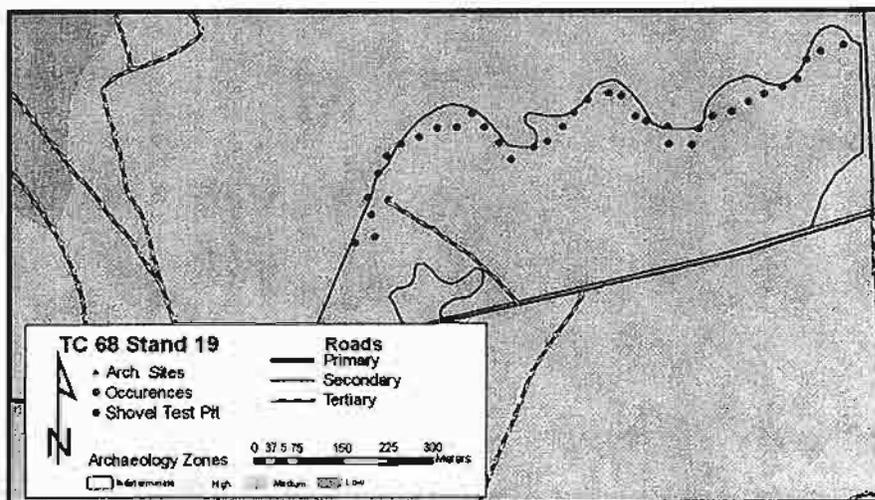


Figure 34. Timber Compartment 68, Stand 19 survey area.

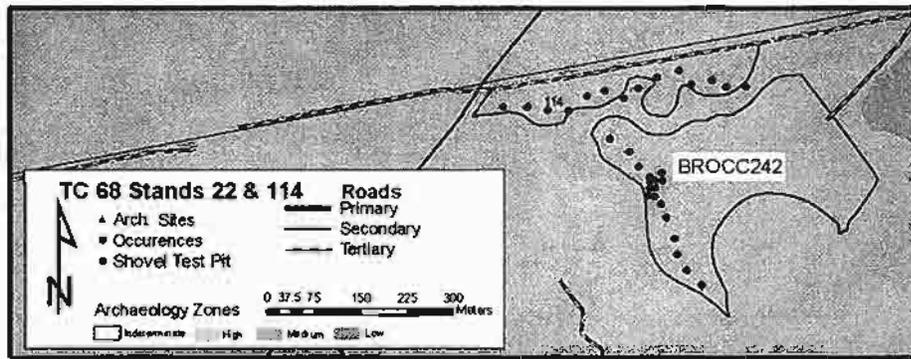


Figure 35. Timber Compartment 68, Stands 22 and 114 survey area.

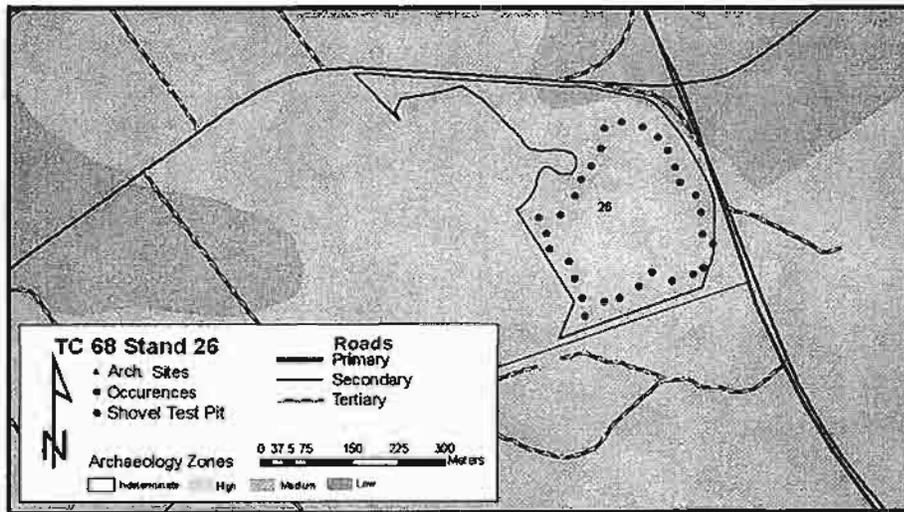


Figure 36. Timber Compartment 68, Stand 26 survey area.

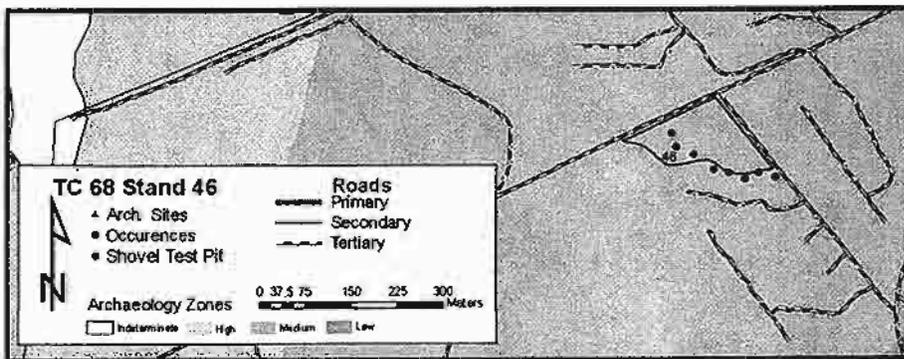


Figure 37. Timber Compartment 68, Stand 46 survey area.

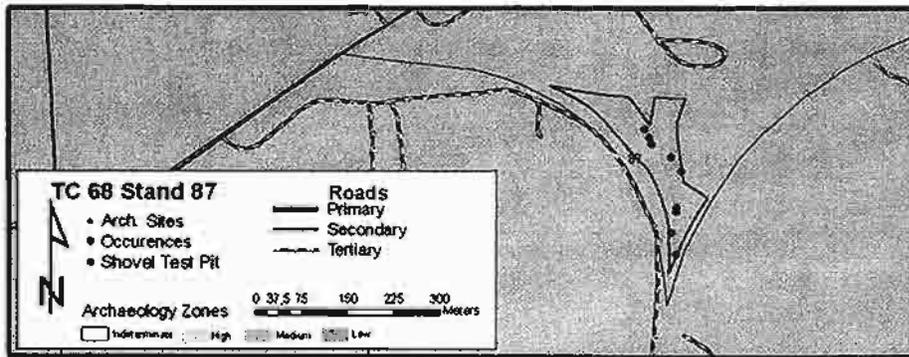


Figure 38. Timber Compartment 68, Stand 87 survey area.

Review of the SRARP database showed no previously recorded sites in the project area. Fieldwork consisted of 179 STPs (5 positive) excavated at 30-m intervals along 11 transects. These efforts resulted in the discovery of three new sites (38BR1217, 38BR1220, 38BR1221) and one isolated artifact occurrence (BR-OCC-242). A total of 34 STPs (9 positive) was excavated in cruciform patterns to delineate site boundaries. All sites will be avoided during current USFS-SR timbering activities. Thus, there will be no adverse effect to these sites. A total of 8 STPs (0 positive) was excavated in a cruciform pattern to delineate the isolated artifact. This artifact occurrence has no research potential to contribute to an understanding of the regional prehistory. As such, there will be no adverse effect to this isolated occurrence as a result of the proposed timbering activities.

#### *Timber Compartment 70*

Archaeological survey involved the subsurface inspection of Timber Stands 1, 4, 6, 47, 83, and 91 totaling 232 acres slated for clearcutting (Figures 39 - 43). Review of the SRARP database showed one previously recorded site (38BR67) in the project area. Fieldwork consisted of 131 STPs (5 positive) excavated at 30-m intervals along 7 transects. These efforts resulted in the discovery of five new sites (38BR1222, 38BR1223, 38BR1224, 38BR1225, 38BR1226). The previously recorded site 38BR67 could not be relocated during initial survey. A total of 51 STPs (13 positive) was excavated in

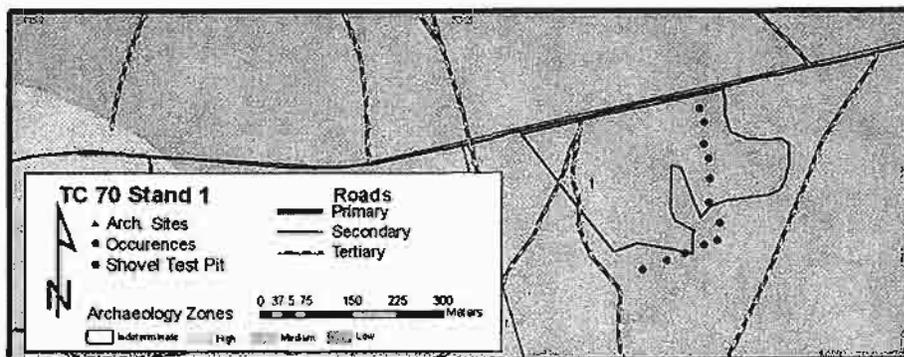


Figure 39. Timber Compartment 70, Stand 1 survey area.

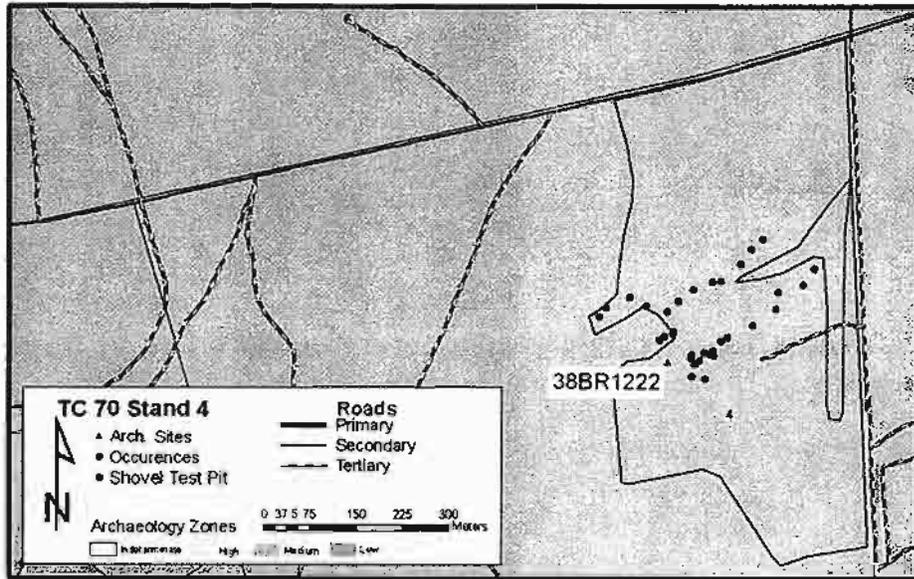


Figure 40. Timber Compartment 70, Stand 4 survey area.

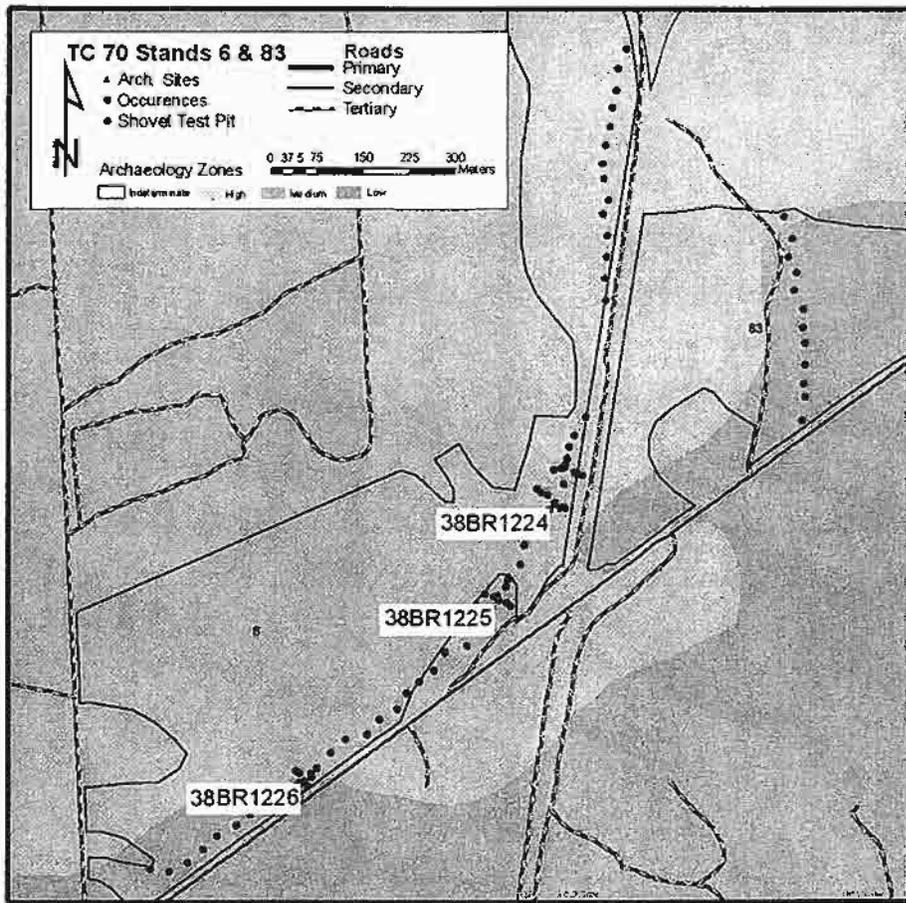


Figure 41. Timber Compartment 70, Stands 6 and 83 survey area.

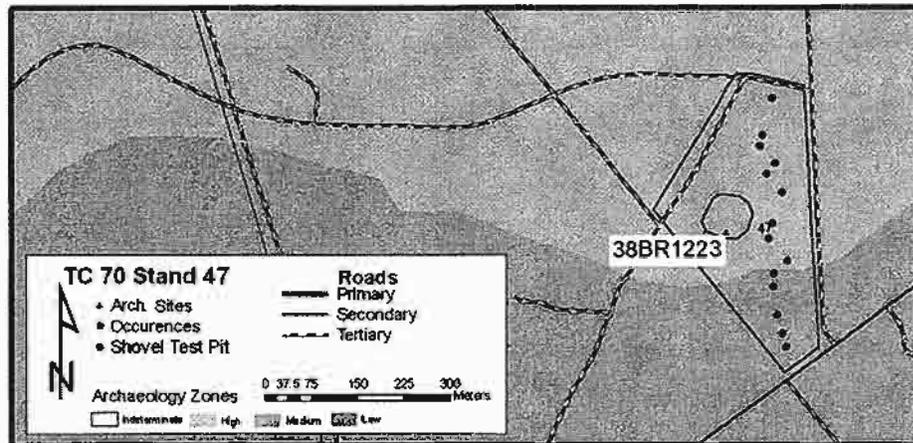


Figure 42. Timber Compartment 70, Stand 47 survey area.

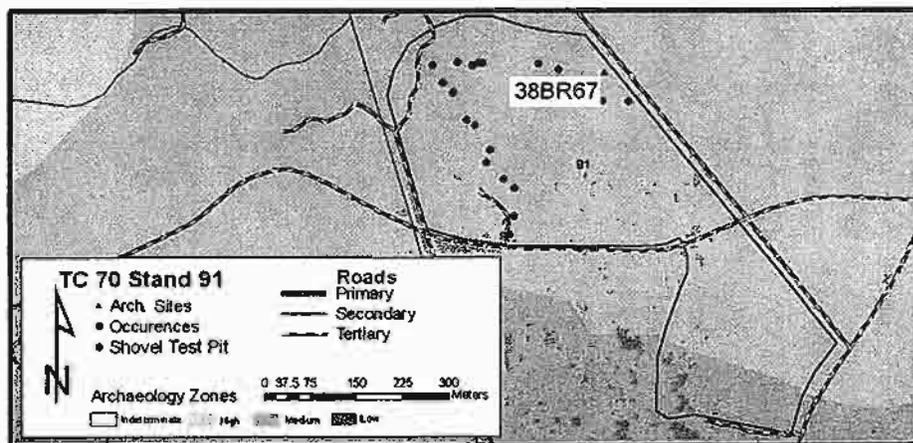


Figure 43. Timber Compartment 70, Stand 91 survey area.

cruciform patterns to delineate site boundaries. All sites will be avoided during current USFS-SR timbering activities. Thus, there will be no adverse effect to these sites. A total of 8 STPs (0 positive) was excavated in a cruciform pattern to delineate the isolated artifact. This artifact occurrence has no research potential to contribute to an understanding of the regional prehistory. As such, there will be no adverse effect to this isolated occurrence as a result of the proposed timbering activities.

### *Timber Compartment 72*

Archaeological survey involved the subsurface inspection of Timber Stands 11, 15, 16, 33, 112, and 113 totaling 232 acres slated for clearcutting (Figures 44 - 48). Review of the SRARP database showed one previously recorded site (38BR1025) in the project area. Fieldwork consisted of 115 STPs (10 positive) excavated at 30-m intervals along 7 transects. These efforts resulted in the discovery of three new sites (38BR1208,

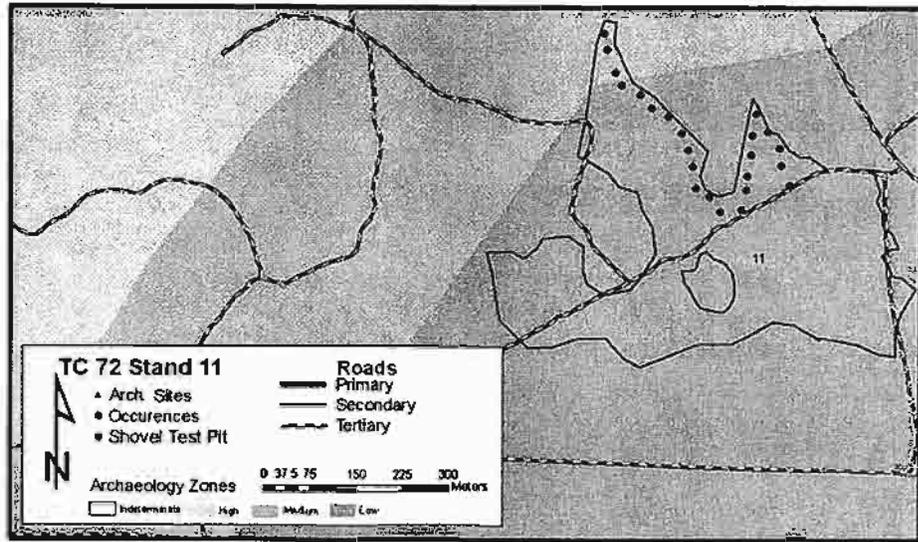


Figure 44. Timber Compartment 72, Stand 11 survey area.

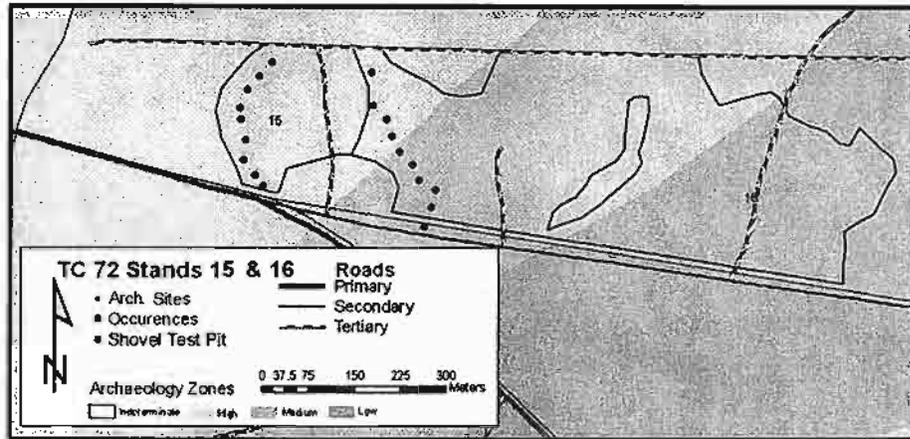


Figure 45. Timber Compartment 72, Stands 15 and 16 survey area.

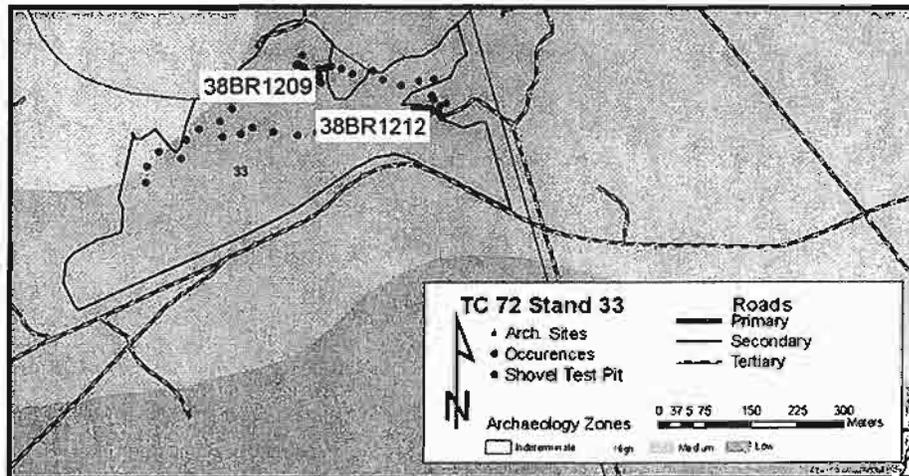


Figure 46. Timber Compartment 72, Stand 33 survey area.

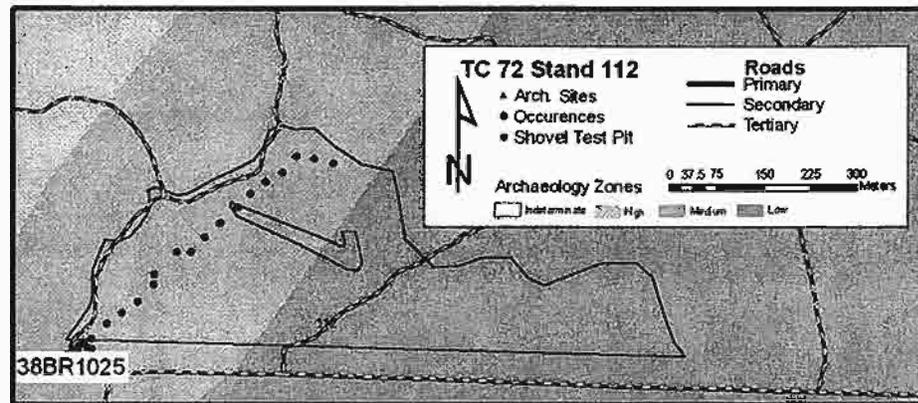


Figure 47. Timber Compartment 72, Stand 112 survey area.

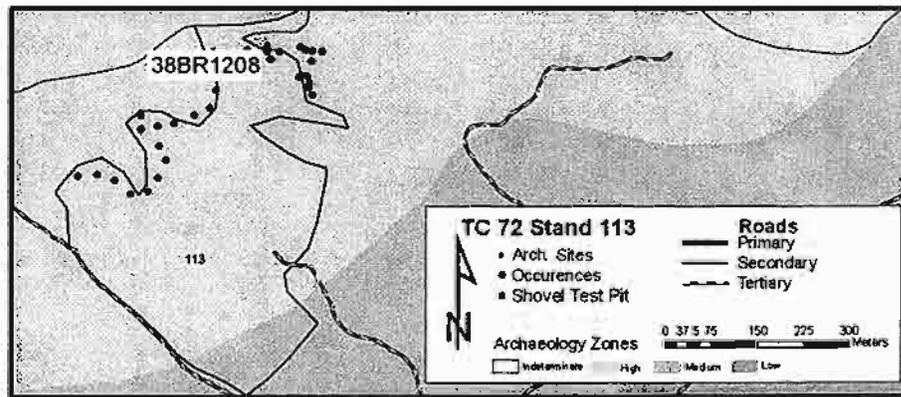


Figure 48. Timber Compartment 72, Stand 113 survey area.

38BR1209, 38BR1212) and the relocation of 38BR1025. A total of 52 STPs (17 positive) was excavated in cruciform patterns to delineate site boundaries. All sites will be avoided during current USFS-SR timbering activities. Thus, there will be no adverse effect to these sites.

### *Timber Compartment 73*

Archaeological survey involved the subsurface inspection of Timber Stand 7 totaling 78 acres slated for clearcutting (Figures 49). Review of the SRARP database showed no previously recorded sites in the project area. Fieldwork consisted of 32 STPs (3 positive) excavated at 30-m intervals along 1 transect. These efforts resulted in the discovery of two new sites (38BR1227, 38BR1228). A total of 55 STPs (22 positive) was excavated in cruciform patterns to delineate site boundaries. The two sites will be avoided during current USFS-SR timbering activities. Thus, there will be no adverse effect to these sites.

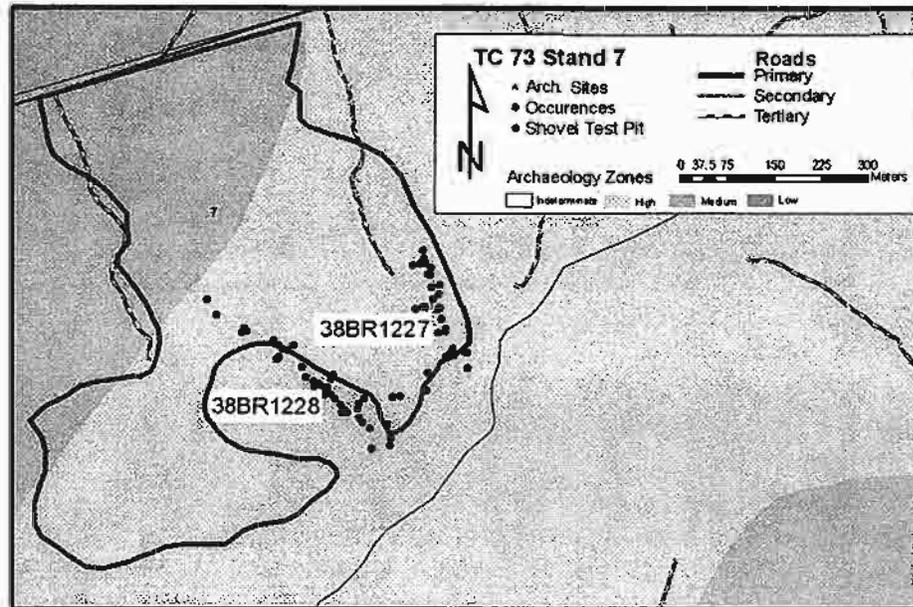


Figure 49. Timber Compartment 73, Stand 7 survey area.

### Survey Results

Table 7 summarizes the results of FY08 compliance survey. Altogether, the SRARP investigated 34 archaeological sites this fiscal year. Twenty-five of these are newly recorded, and nine are revisits to previously recorded sites. Additionally, five previously recorded sites (38AK267, 38AK843, 38BR67, 38BR251, 38BR835) could not be relocated during FY08 surveys. Also, one previously recorded site (38AK827) was not resurveyed in FY08 due to its ineligible status for inclusion in the NRHP (SRARP 2001:13-14). Of the total sites investigated during FY08, five are considered not eligible for inclusion in the NRHP. The remaining 29 sites have been assigned an indeterminate status, and each will be avoided by DOE contractors. In the event that any of these sites are threatened, further testing will be conducted to make a determination of eligibility. Fourteen isolated artifact occurrences were also recorded during FY08. Isolated finds are considered to hold low research potential. As such, there will be no adverse effects to these ephemeral resources through DOE related activities. Summary data for new and existing sites are provided in Tables 1 and 2. Evaluations of these sites are provided in Table 3. Finally, a tabulation of isolated artifact occurrences by project type is provided in Table 4.

The SRARP surveyed a total of 1,664 acres in FY08 for 16 Site Use Permits and 16 Timber Compartment Prescriptions. Two hundred forty-five acres (14.7%) of the total area surveyed involved Site Use Permit projects. An additional 1,419 acres (85.3%) of the total area surveyed for all projects in FY08 involved Timber Compartment Stands slated for harvesting or Log Deck use. Altogether, 2,823 STPs were excavated during FY08 surveys with 196 of these producing artifacts.

Section 110 of the Regulatory process requires an inventory of all cultural resources on public lands. As of this report, the SRARP has surveyed approximately 61,404 acres (31.8%) out of a total of 193,276 (97.4%) of SRS acreage suitable for survey (i.e., excluding SRS wetlands and developed areas, which altogether comprise 198,344 acres or 310 sq. mi.). These efforts have resulted in the inventory of 1,822 sites (894 prehistoric, 469 historic, and 459 with both prehistoric/historic components) recorded to date.

Table 7. Summary of FY08 Survey Results.

	FY08
Site Use Application Surveys	16
Timber Compartment Prescription Surveys	16
Total STPs Excavated	2823
Total Positive STPs Excavated	196
Total Area Surveyed (acres)	1664
New Sites	25
Site Revisits	9
Isolated Artifact Occurrences	14

#### CURATION COMPLIANCE ACTIVITIES

As a result of the analysis of artifacts recovered through daily compliance activities and the analysis of artifacts recovered during Phase III investigations of 38AK155, as well as research conducted at 38AK469, 2,901 artifacts have been curated over the course of the past fiscal year. Compliance related excavations conducted throughout the year account for 1,701 of these artifacts. A multi-component prehistoric site, 38AK155, was excavated during the end of FY04 and continued into FY05 in preparation for the proposed construction of the Surplus Plutonium Disposition Facilities (SPDF). Through the efforts of Volunteer Jill Trefz, the primary analysis of the artifacts recovered from 38AK155 totaled 350 this fiscal year. Analysis of artifacts from 38AK469, also known as Flamingo Bay, totaled 850 artifacts.

Staff members continued data entry for the Master Baseline Database (MBD), which houses the artifact summary sheets recorded for each provenience and level assigned; however, there is still a backlog of data to be entered. Due to this fact, an accurate count of the number of artifacts housed in the Central Curation Facility cannot be given but is rather estimated to be very close to 1.5 million. The SRARP contracted with Environmental Systems Research Institute, Inc. (ESRI) to create a database integrating the compliance, curation, and GIS/GPS data into one efficient package to better aid the SRARP in future management issues; however, we are still struggling with ESRI to obtain a working product devoid of computer glitches.

#### THE SRARP ARCHAEOLOGICAL GEOGRAPHIC INFORMATION SYSTEM

Enhancement of the SRARP archaeological Geographic Information System (GIS) in FY08 included a transition from ArcGIS 9.1 to ArcGIS 9.2. The archaeological point coverage was updated, and errors from previous records were corrected. The site-

wide survey coverage and associated database were added to the list of GIS resources with assistance from SRARP staff. The SRARP staff continues updating the curation and site files databases as new data are collected from the field. Ongoing interaction with the greater SRS-GIS community through the Environmental and Geographical Information System (E&GIS) Committee enabled us to update many SRS data layers that are maintained by other groups and agencies. The Database Integration Committee (DIC) continued the integration of the compliance, curation, and GIS/GPS data into the system.

### MANAGEMENT OF COLD WAR-ERA CULTURAL RESOURCES

The SRARP continued its involvement with the SRS Cold War Artifact Selection Team. Members occasionally meet to discuss ongoing activities that relate to the legacy of SRS from the Cold War. We have also worked closely with the SRS Heritage Foundation on the development of an historic walking trail through the old town of Ellenton. The Heritage Foundation has spearheaded the drive to make the former town of Ellenton available for public tours. While the SRARP occasionally conducts tours of Ellenton, the Heritage Foundation seeks to establish either a guided or self-guided tour of the site, as well as regular hours that the area would be available for public access. Additionally, the Heritage Foundation is seeking grant funding for site preparation, trail markers, and signage along the tour route.

### DOE COMPLIANCE SHORTFALLS AND FUTURE REQUIREMENTS

Overall, the DOE's record of compliance with CRM legislation has been excellent with the expert technical guidance of the SRARP. There is, however, one exception to this which concerns the curation of DOE archaeological collections. Because of the nature of the facilities provided by DOE, full compliance with 36CFR79 has never been achieved. This regulation requires that all federally-owned archaeological collections and associated documents be housed in a facility that has sufficient space for extant collections and meets stated requirements for security, environmental controls, and fire suppression. As was reported in the SRARP Annual Reports for FY93 through FY07, as well as in the SRARP appraisal of 1994 (DOE 1994) and the SRARP report to DOE (Brooks and Forehand 2002), Building 760-11G, which houses the SRARP, continues to be out of compliance with 36CFR79. Areas of DOE noncompliance include dedicated curation space, security, and environmental controls required by 36CFR79. The curation space, as it is currently configured, is not large enough to house existing artifact and document collections and cannot accommodate future additions that will be created by ongoing CRM activities.

For the DOE to be in compliance with 36CFR79 and meet growing space needs for the archaeological collection, the SRARP needs access to a facility with at least 3,500 sq. ft. of floor area that meets established regulatory requirements for security, climate control, and fire suppression. Because easy access to artifact and document collections is essential for efficient long-term management of SRS cultural resources, it is imperative that this facility be located in close proximity to the SRARP administrative offices. Not only will the dedication of appropriate facilities bring DOE into compliance with federal

regulations, it will also insure that DOE's extensive investment in its archaeological collection is protected. DOE made a concerted effort to address this problem in FY05 by conducting a study to select an existing building on the SRS to house not only the SRARP and DOE's archaeological artifacts, but also the Cold War Era artifacts and associated curation staff.

On 1 June 2006, the *Building 315-M Modification Scope of Work* was signed. This document outlines two scenarios for converting Building 315-M into the SRS Curation Facility. Case A converts building 315-M into a 36CFR79 compliant facility by providing 3,600 sq. ft. of artifact storage for SRARP artifacts and 12,200 sq. ft. for Cold War artifacts. Three offices and an analysis area/working curation room would be incorporated to house personnel associated with the Cold War History Program, while offices for the SRARP personnel would continue to be housed in Building 760-11G. In addition to the aforementioned arrangement, Case B would provide housing and work areas for SRARP personnel, including a primary analysis area, a file/map storage area, equipment storage and maintenance areas, 2 secondary analysis areas, 2 wet labs, and 12 new offices. Engineers and design teams are still in the process of determining design elements and cost estimates regarding both scenarios.

#### SAFETY COMPLIANCE

During FY08, the SRARP continued compliance with federal and state regulations governing human health and safety. As Director of Safety, George Wingard shared with the staff a variety of topics pertaining to their health and safety at meetings held throughout the year. The topics included:

2007	September	<i>Hazardous Communication</i>
	October	<i>Cold and Flu</i>
	November	<i>Holiday Safety</i>
2008	January	<i>Hypothermia</i>
	February	<i>General Safety Topics</i>
	March	<i>Cumulative Trauma Disorder</i>
	April	<i>SRARP Safety Video</i>
	May	<i>Lyme Disease</i>
	June	<i>Lightning</i>
	July	<i>Home Safety/Prowler</i>

In June, SRARP staff members participated in the SRS Safety Conference held at the USC-Aiken campus. The SRARP presented a display on the archaeology of the Savannah River Site, as well as documents based on archaeological safety. While attending the conference, SRARP personnel also had the opportunity to visit the other displays regarding safety at work and home.

**PART II. RESEARCH****RESEARCH ABSTRACTS***Geoarchaeological Investigations of Stratified Holocene Aeolian Deposits along the Tar River in North Carolina*

Christopher Moore, Randolph Daniel, Jr., Keith Seramur, David Mallinson, and Michael O'Driscoll

Poster presented at the 57th Annual Meeting of the Geological Society of America, Charlotte, NC

Recent geoarchaeological investigations along the Tar River in North Carolina have focused on identifying the geologic context for site burial and stratification through aeolian processes. Subsequent archaeological survey and testing revealed numerous sites with stratified Early Archaic through Woodland occupations. Geophysical, archaeostratigraphic and sedimentological analysis along with chronometric dating (OSL) of source-bordering aeolian sediments along the Tar River in North Carolina indicate dune drapes (> 1 meter) accreted episodically throughout much of the Holocene. Combined radiocarbon and OSL ages from Barber Creek (31Pt259) and Squires Ridge (31Ed365) indicate initiation of dune deposition during the Younger Dryas stadial (ca. 12,900-11,500 CALYBP). At these sites, aeolian sediments directly overlie relict fluvial braid-bar deposits making up the lower paleo-braidplain of the Tar River. Thus far, Early Archaic (ca. 11,450-8,900 CALYBP) occupations mark the earliest known cultural horizon within lower paleo-braidplain sites and appear at the base of aeolian deposits determined through sedimentology. Prior to the Younger Dryas, lower paleo-braidplain sites appear to have been dominated by fluvial deposition of braided river sediments. Evidence from Barber Creek and Squires Ridge suggests braided river conditions ceased just prior to the Younger Dryas with fluvial incision of the Tar River into the lower paleo-braidplain. Exposed sand-bar and floodplain sediments provided a source for aeolian deposition on relict braid-bars bordering the incised modern river channel. If confirmed, this could explain the apparent absence of early Paleoindian occupations along the lower paleo-braidplain of the Tar River. Alternatively, Pleistocene-age archaeological sites may have been scoured from the lower paleo-braidplain by high magnitude floods during or just prior to incision of the Tar River and initiation of dune deposits during the Younger Dryas. This research has demonstrated the potential for identifying stratified early Holocene sites that provide linkages between climate and cultural change and provide a framework for illuminating prehistoric hunter-gatherer settlement along the Tar River.

*Pioneer Kids Camp: Combining Archaeology and Ecology to Teach About Conservation*

Robert Moon and Anne Bohnet

Poster presented at the 64th Annual Meeting of the Southeastern Archaeology Conference, Knoxville, TN

For many years archaeologists from the SRARP have worked with ecologists from the Ruth Patrick Center at USC-Aiken to conduct joint public outreach programs for students in the Central Savannah River Area. During the 2007 Coca-Cola Kids Camp at the Silver Bluff Audubon Center and Sanctuary, SRARP and STEP educators used historical and ecological lessons in an effort to show campers how history can provide us with useful lessons for conservation today. This poster summarizes the week long camp with an emphasis on integrating ecological, historical, and archaeological education.

*Paleoindian Research in the Southeast: Examples Using PIDBA (Paleoindian Database of the Americas)*

David G. Anderson, J. Christopher Gillam, D. Shane Miller, and Erik Johanson

Paper presented at the 64th Annual Meeting of the Southeastern Archaeological Conference, Knoxville, TN

The Paleoindian Database of the Americas (PIDBA) represents nearly twenty years of collaborative research. The most detailed information in the database is from the southeastern United States, and includes attribute and county-level or better locational data on over 10,000 projectile points. Using GIS, statistical, and other forms of analysis, these data are being used to explore Paleoindian settlement patterns, group ranges, population change, and ecological associations of early sites, and the morphological and typological variability within projectile point forms. The database is a work in progress and researchers are encouraged to participate in the project and access the data online from the PIDBA website.

*Compiling Midwestern Paleoindian Artifact Data: Lessons from PIDBA (Paleoindian Database of the Americas)*

David G. Anderson, J. Christopher Gillam, D. Shane Miller, and Stephen J. Yerka

Paper presented at the Great Lakes Paleoindian Workshop titled "Early Paleoindian Colonization of the North American Midcontinent," University of Illinois at Urbana-Champaign, IL

Several thousand Paleoindian projectile points from the Midwestern United States and adjoining areas of Canada have been recorded by avocational and professional archaeologists over the past half century. While these and other Paleoindian artifactual data are useful to evaluating questions of Paleoindian land use, archaeologist's typologies, and modern collection practices, artifact recording projects tend to be intermittent and publication and reporting standards somewhat uneven. The strengths of existing recording projects in the region and beyond are highlighted, together with examples of the types of analyses that can be done with locational and attribute data.

*SAA Forum titled "Modeling Paleoindian Sites and Assemblages: PIDBA (Paleoindian Database of the Americas) and Other Approaches"*

David G. Anderson, Jose Luis Lanata, J. Christopher Gillam, and Arleen Garcia-Herbst  
(organizers)

Forum held at the 73rd Annual Meeting of the Society for American Archaeology, Vancouver, BC

This forum explores how researchers exploring Paleoindian archaeology in the Americas can present and share data electronically, and examines the kinds of analyses that can be conducted using large datasets. The Paleoindian Database of the Americas (PIDBA) is one online example that involves researchers from across the hemisphere compiling locational and attribute data on Paleoindian sites and artifacts. These data have been used to explore Paleoindian settlement patterns, group ranges, population change, and the ecological associations of early sites, as well as morphological and typological variability within early assemblages.

*Modeling Cultural Landscapes: Examples from East Asia and the Americas*

J. Christopher Gillam

Invited paper for the panel, "Prehistoric Landscape Shifts in the East Asian Inland Seas," at the 4th worldwide conference of the Society for East Asian Archaeology, Beijing, China

and

*Prospectus on Archaeological Geographic Information System (GIS) Applications in the Japanese Sea Basin*

J. Christopher Gillam

Invited paper for the International Archaeological Conference, "Neolithic and Neolithisation in the Japanese Sea Basin," in honor of the 100th birthday of academician Alexei P. Okladnikov, Far Eastern National University, Vladivostok, Russia

and

*Prospectus on Archaeological Geographic Information System (GIS) Applications and Modeling in the Japanese Sea Basin*

J. Christopher Gillam

In *Neolithic and Neolithisation in the Japanese Sea Basin: Individual and the Historical Landscape*, Far East National University, Vladivostok. Pp. 57-63

Advancements in the design and implementation of archaeological databases, geographic information systems (GIS), and cartographic modeling enable archaeologists today to construct empirical models of past cultural landscapes at a variety of scales. The goals of this paper are to explore critical considerations in the resolution and accuracy of archaeological and GIS datasets, to highlight useful environmental GIS datasets distributed freely on the internet, and to discuss techniques for modeling prehistoric cultural landscapes using examples from East Asia and the Americas. These techniques

include prediction, caloric-cost modeling, least-cost path analyses, and territorial modeling.

*Pleistocene Crossroad of the Western Hemisphere: The Isthmus of Tehuantepec and Mesoamerica's Role in the Peopling of the Americas*

J. Christopher Gillam

Paper presented at the 3rd Annual Southeast Conference on Mesoamerican Archaeology and Ethnohistory, Columbia, SC

Although best known for its complex societies of the later Holocene, Mesoamerica also played a significant role in the peopling of the Americas during the late Pleistocene. The Isthmus of Tehuantepec, in particular, is a likely crossroad for early cultures moving between the Pacific and Gulf coasts. Recognized as a pathway for the peopling of South America from the north, it may also be an early point of entry for the peopling of eastern North America. When interpreted from a coastal migration perspective, recent hemispheric-scale geographic analyses lend support to this hypothesis. The significance of this region to understanding the initial peopling of the Americas increases further as growing support for a coastal migration from eastern Asia is evidenced in recent Paleoindian studies.

*The Pleistocene-Holocene Transition in Uruguay*

J. Christopher Gillam and Rafael Suárez

Paper presented at the 73rd Annual Meeting of the Society for American Archaeology, Vancouver, BC

Archaeological survey of the Pleistocene-Holocene transition in Uruguay has revealed many new discoveries. Characterized by two early point types, Fishtail and Pay Paso, and by uniface tools, early hunter-gatherers exploited the temperate grass- and shrub-lands of the interior and their corresponding deciduous forests along stream margins dissecting the rolling hills of the region. Little is known about coastal adaptations of the period as the coastal zone is now submerged 100 kilometers east of the modern Atlantic coastline. Lithic studies and GIS modeling techniques are being used to further examine the technology, settlement, and ecological niches of these early hunter-gatherers.

*2007 Cult Bringers, Copper Plates, Twins, and Etowah*

Adam King

Paper presented at the 64th Annual Meeting of the Southeastern Archaeological Conference, Knoxville, TN

and

Paper presented at the 4th Annual Southeast Indian Studies Conference, University of North Carolina at Pembroke, NC

American anthropologists often shy away from using the sacred narratives of Native Americans of the Southeast to help understand the material record their ancestors left behind. In this paper, I build upon the work of other scholars who have gone against this tradition, such as Antonio Waring, Robert Hall, and James Brown. In it, I link Creek beliefs about the Cult Bringers, the Raptor, and the Twins to the history of the Etowah site and the famous Birdman copper plates found in 1884 by John Rogan. What is produced is an argument connecting the Classic Braden style copper plates, the Twins, Etowah, and the Cult Bringers.

*Copper Styles of Etowah*

Adam King

Paper presented at the Texas State Mississippian Iconography Workshop, San Marcos, TX

Recent work by Jim Brown and colleagues has shown that the famous Rogan copper plates recovered from Etowah's Mound C were made in the Classic Braden style, which was made in the environs of Cahokia. Jon Leader's work has shown that despite the presence of non-local copper objects at Etowah, residents of the site also cut and embossed copper. In this paper, I examine all copper artifacts found at Etowah and attempt to identify and describe the Etowah copper style.

*Cult Bearers and Sacred Bundles: The Imagery of Ritual in Mississippian Art*

Adam King and F. Kent Reilly, III

Paper presented at the 64th Annual Meeting of the Southeastern Archaeological Conference, Knoxville, TN

Iconographic investigations of works of art from various Mississippian stylistic regions in combination with current ethnographic studies reveal dramatic evidence of those Mississippian cults that were shared by these several stylistic regions. Several of these works of art depict specific and now identifiable supernatural entities. Concurrently, ethnographic investigations reveal the power-imbued stories that explain the origin of these cults. Displaying such cult objects identified elite ritualists as individuals authorized to hold high office in their polities because of their close association with the preternatural forces of the cosmos. The heirlooming and ultimate burial deposition of such art objects also suggests a further linkage between specific elite offices and explicit episodes contained within ancient stories and that were publicly visualized through ritual activity.

*Crafting the Sacred: Mississippian "Talleres" and the Acquisition of Esoteric Knowledge*

F. Kent Reilly, III and Adam King

Paper presented at the 64th Annual Meeting of the Southeastern Archaeological Conference, Knoxville, TN

Mississippian elites visualized their status by displaying well-crafted art objects. Undoubtedly, these tangible objects embodied intangible powers for both possessor and viewer. The quality of execution and the stylistic differences among these objects argue for the existence of craft workshops or "Talleres," led by a master. Such masters not only crafted beautiful objects, but also trained apprentice artisans in the techniques of production. The exchange of these objects, and perhaps the movement of skilled artisans, supports the idea of an elite exchange network based on the acquisition of well-crafted objects and the preternatural power these objects embody.

*Archaeo-Geophysics at Etowah Indian Mounds State Park: Results 2007 Field Season*

Duncan P. McKinnon, Chester P. Walker, and Adam King

Poster presented at the 64th Annual Meeting of the Southeastern Archaeological Conference, Knoxville, TN

The use of geophysical survey methods at Etowah Indian Mounds has become a critical tool in the exploration and subsequent mapping of sub-surface features. For the past three seasons, the use of multiple geophysical instrumentation and methods has proven to be successful in numerous focus areas. During the 2007 field season, a large-scale magnetometer survey was added to the current project and resulted in the coverage of 10 hectares. This large-scale magnetometer survey has greatly contributed to the interpretation of intrasite settlement activities and has led to the discovery of several previously unknown buried structures. A large-scale magnetometer survey is planned to expand the geographic extent in 2008 along with the continued use of additional geophysical methods in focus areas. This combination of methods and coverage areas has proven to be very successful at the Etowah Indian Mounds State Park.

*Archaeogeophysics at Etowah Indian Mounds State Park*

Chester Walker, Adam King, Duncan McKinnon, and Christopher Thornock

Poster presented at the 73rd Annual Meeting of the Society of American Archaeology, Vancouver, BC

The use of geophysical survey methods at Etowah Indian Mounds Historic Site, located in northwestern Georgia, has become a critical tool in the exploration and subsequent mapping of sub-surface features. For the past three seasons, the use of multiple geophysical instrumentation and methods has proven to be successful in numerous focus areas. During the 2007 field season, a large-scale magnetometer survey was added to the current project. This magnetometer survey has greatly contributed to the interpretation of intrasite settlement activities and has led to the discovery of several previously unknown buried structures.

*Middle Swift Creek/Weeden Island I Ceremonialism in the Interior Coastal Plain of Georgia*

Keith Stephenson and Karen Y. Smith

Poster presented at the 73rd Annual Meeting of the Society for American Archaeology, Vancouver, BC

The Shelly Mound, located on a bluff overlooking the Ocmulgee River, represents the most northerly expression of Weeden Island ceremonialism in the Southeast. The mound contained several centrally located burials and a cache of over 50 "killed" vessels on its eastern margin. We briefly describe the archaeological work at Shelly, but our primary aim is to place Shelly in its proper chronological and social context. To accomplish the former, we employ frequency seriation, AMS dating, and inter-site Swift Creek design motif contacts. We also explore connections between Shelly and better-known sites, such as Kolomoki, closer to the Weeden Island heartland.

*Analysis of the Ceramic Cache from the 1972 Shelly Mound Excavations,  
Pulaski County, Georgia*

Karen Y. Smith and Keith Stephenson

Paper presented at the Annual Conference on Georgia Coastal Plain Archaeology, Douglas, GA

In 1972, salvage excavations were conducted at the Shelly Mound in Pulaski County, Georgia by personnel at the Southeastern Archaeological Center and the University of Georgia. Upon completion, the artifact collection, which consists most notably of over 50 partial and complete vessels recovered from a cache-like concentration on the east side of the mound, was sent to the Antonio J. Waring Lab in Carrollton, Georgia for permanent storage. Unfortunately, a description of the work at Shelly was never published, and knowledge of the Shelly Mound has remained largely legend as an interior Weeden Island mortuary mound. In this paper, we reconstruct the 1972 salvage work, revisit the interpretation of Shelly as an interior coastal plain Weeden Island site, and attempt to place the mound in its proper chronological position using the occurrence of certain ceramic wares and the cross-dating of designs from other sites.

## RESEARCH NOTES

*Geoarchaeological and Paleoenvironmental Research in FY08*

Mark J. Brooks and Barbara E. Taylor

Geoarchaeological and paleoenvironmental research continued in FY08 on the SRS and beyond. The year witnessed greater involvement with graduate student research, grant proposals in support of research, and consulting with colleagues on a wide range of projects. Writing projects continued as well.

At Flamingo Bay, a Carolina bay on the SRS, artifact and sedimentological analyses are continuing on materials recovered from an 11 m<sup>2</sup> block excavation that was completed in FY06 at site 38AK469, situated on the bay's east-central sand rim (Brooks and Taylor 2006). The block was initiated in FY04 (Brooks and Taylor 2004) by Brooks and volunteer Adrienne DeBiase as a part-time project conducted as time permitted. The proximate goal was to obtain detailed artifact assemblage and spatial data from one of several Early Archaic activity areas, or possibly discrete, small-scale occupations. These areas were identified earlier through systematic, close-interval testing (Brooks and Taylor

2003); the testing was on a 10 m grid, subsequently reduced to 5 m, and consisted of .50 x .50 m units excavated in 5 cm arbitrary levels to a depth of 80 cm below surface. The distal goal is to derive a better understanding of site activities and how these small-scale, Early Archaic hunter-gatherer societies were organized, in this case with respect to the use of Carolina bays. To that end, for comparative purposes, the other use areas identified will be examined in the future.

In the realm of graduate student research, Brooks continued on Christopher R. Moore's graduate committee in FY08. Chris is in the Coastal Resource Management Ph.D. Program at East Carolina University in Greenville, NC. His dissertation research area is the Coastal Plain portion of the Tar River in North Carolina. The research focuses on linkages between archaeological site formation processes and climate change, as manifested by shifts in fluvial and eolian depositional environments. Chris, who is ABD and will be finishing his dissertation shortly, came to work at the SRARP in June 2008. Approximately half of his time is spent coordinating the program's outreach efforts, which include building a volunteer program in support of SRARP's various research initiatives. The remainder of his time is spent conducting research in direct support of SRARP compliance activities. Chris' research areas include geoarchaeology, hunter-gatherer archaeology, lithic analysis, GIS, and remote sensing.

In addition, Brooks agreed to serve on David Rigtrup's graduate committee. David started in the Masters' Program in the Anthropology Department at the University of South Carolina in the fall 2008. His interests include hunter-gatherers and lithic analysis. Accordingly, his thesis research will involve analyses of lithic assemblages from Early Archaic sites on the SRS. With the emphasis on gaining a better understanding of Early Archaic social and technological organization, analyses of a wide range of cultural and environmental variables will be conducted. These include lithic techno-functional, intra-site spatial, and site locational analyses. As a departure from the norm, the lithic analyses will emphasize debitage and expedient tools. These assemblage categories are more likely to be discarded in areas of tool production, use, or maintenance, and therefore should be more indicative of site-level activities and organization than formal, curated tools; formal tools tend to "move through the system" and may or may not be discarded where used or maintained. The thesis proposal, or research design, draws heavily upon the general hunter-gatherer literature and, at the Southeastern US regional level, literature on the Early Archaic, ethnohistory, and wildlife ecology.

Involvement with grant proposals in support of research included a submittal to the National Science Foundation's (NSF) Integrated Graduate Education and Research Training (IGERT) Program. Charles R. Cobb, SCIAA's Director, is PI, and Dwayne E. Porter, Baruch Institute, is Co-PI. The proposal, titled Hemispherical Approaches to the Historical Ecology of Wetlands Management, was submitted in April 2008, and the review results were received in late July. The proposed research and training program was not funded but, taking reviewer comments to heart, the proposal will likely be revised and resubmitted in 2009. Had the proposal been funded, Brooks and Taylor, as participants, would have been involved with teaching Historical Ecology of Wetlands,

Field Methods in Paleo-Wetlands Ecology, and Field Methods in Modern Wetlands Ecology.

Also submitted was a proposal to the National Geographic Society. Adam King, SRARP-SCIAA, is PI, and Brooks is Co-PI. The pre-application was approved in April 2008. The full proposal, titled Environmental and Cultural History of the Congaree Floodplain, Congaree National Park, SC was submitted in August 2008, and is under review. As a key participant, Taylor will be involved with obtaining and analyzing core data from the floodplain, as well as with geomorphic and settlement modeling. Because the Congaree National Park and the SRS are both located on Piedmont-draining rivers in the Upper Coastal Plain, work conducted by Brooks and Taylor on the SRS and in the Savannah River floodplain will provide a comparative basis for generating expectations (predictions) for the Congaree floodplain. If the timing of similar fluvial changes is synchronous in the two widely separated floodplains, then external control (i.e., regional climate) on the fluvial systems is implicated. In this event, it is expected that the two systems will also exhibit synchronous ecological changes with corresponding changes in human adaptation (e.g., settlement shifts).

The consulting front involved a diversity of topics. These included: erosional and depositional processes on the eolian sand sheet partially burying Big Bay, a 3 x 5 km Carolina bay in Sumter County; floodplain geomorphology and settlement modeling in Congaree National Park; data recovery report review for Mathis Lake, a Carolina bay in NW Aiken County; data recovery plan review for a deeply buried, stratified site on the Saluda River in Lexington County; strategies for excavating low artifact density hunter-gatherer sites, with specific reference to Plant Vogtle across the Savannah River from the SRS; Savannah River fluvial system dynamics relative to Mississippian period site formation processes and human paleoecology; and, the paleohydrology of two Carolina bays on the SRS inferred from GPR and archaeological data. The names and affiliations of the colleagues requesting assistance are presented below in the Consulting sub-section.

Two writing projects are in progress. The first is a contributed chapter titled Carolina Bays: Time Capsules of Culture and Climate Change by Mark J. Brooks, Barbara E. Taylor, and Andrew H. Ivester. The chapter will appear in *South Carolina Archaeology*, a volume edited by Adam King and published by USC Press. A draft of the volume is scheduled to be sent out for peer review in November 2008.

The second writing project is an article titled Paleoenvironmental and Geoarchaeological Investigations at a South Carolina Sandhill Site, Fort Jackson, South Carolina by Fredrick J. Rich, Mark J. Brooks, Barbara E. Taylor, Andrew H. Ivester, and Christopher O. Clement. The article, based on an 18 ka <sup>14</sup>C yr B.P. sediment core from a streamhead basin (Taylor et al. 2003; Brooks and Taylor 2004, 2005, 2006, 2007; Brooks et al. 2005), will be submitted to *Southeastern Geology*.

*Geoarchaeological Research in FY08*

Christopher R. Moore

Recent geoarchaeological investigations along the Tar River in North Carolina have focused on identifying the geologic context for site burial and stratification through aeolian processes. Subsequent archaeological survey and testing revealed numerous sites with stratified Early Archaic through Woodland occupations (Figure 50).

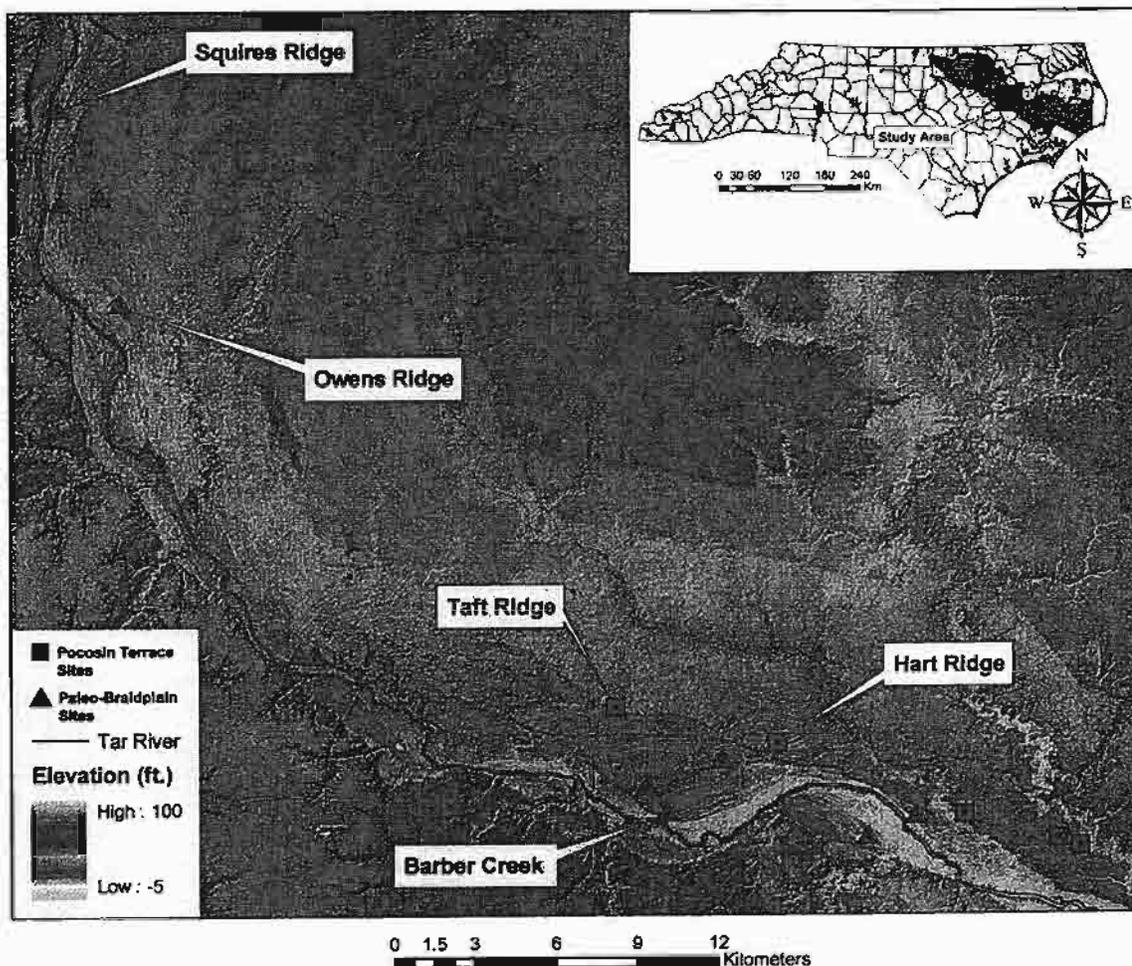


Figure 50. LiDAR image showing the general location of stratified archaeological sites identified along the Tar River in North Carolina.

#### Barber Creek (31PT259) and Squires Ridge (31ED365)

Combined archaeological, geophysical, grain size, and OSL data indicate “source-bordering” dune and dune drapes along the Tar River accreted episodically throughout the Holocene. Analysis of cultural and sedimentological data recovered from the Barber Creek and Squires Ridge sites reveals approximately one meter of aeolian sand overlying lower paleo-braidplain (T1) scarps and relict braid-bars adjacent to the incised modern river channel and floodplain (Figure 51). Close-interval grain size data, chronometric

dating along with temporally stratified artifact assemblages suggest at least six major periods of accretion followed by periods of stability (Figure 52). Several periods of landform stability are evident at Barber Creek and Squires Ridge with vertical separation between early, middle, and late Holocene archaeological components. Depositional events may reflect Holocene millennial-scale global climatic cyclicity (e.g., Bond et al. 1997) and its related effects on the fluvial system—providing a source of sand for aeolian transport onto adjacent braidplain scarps.

At several sites along the Tar River, artifacts diagnostic of the Early Holocene (i.e., Palmer and Kirk Corner-Notched points) were recovered near the base of dune deposits and above fluvial braidplain sediments. Although evidence for Paleoindian occupations may yet be found (ca. 13,500-11,500 CALYBP), the presence of buried Early Holocene-age (i.e., Early Archaic) artifacts immediately above or within the fluvial to

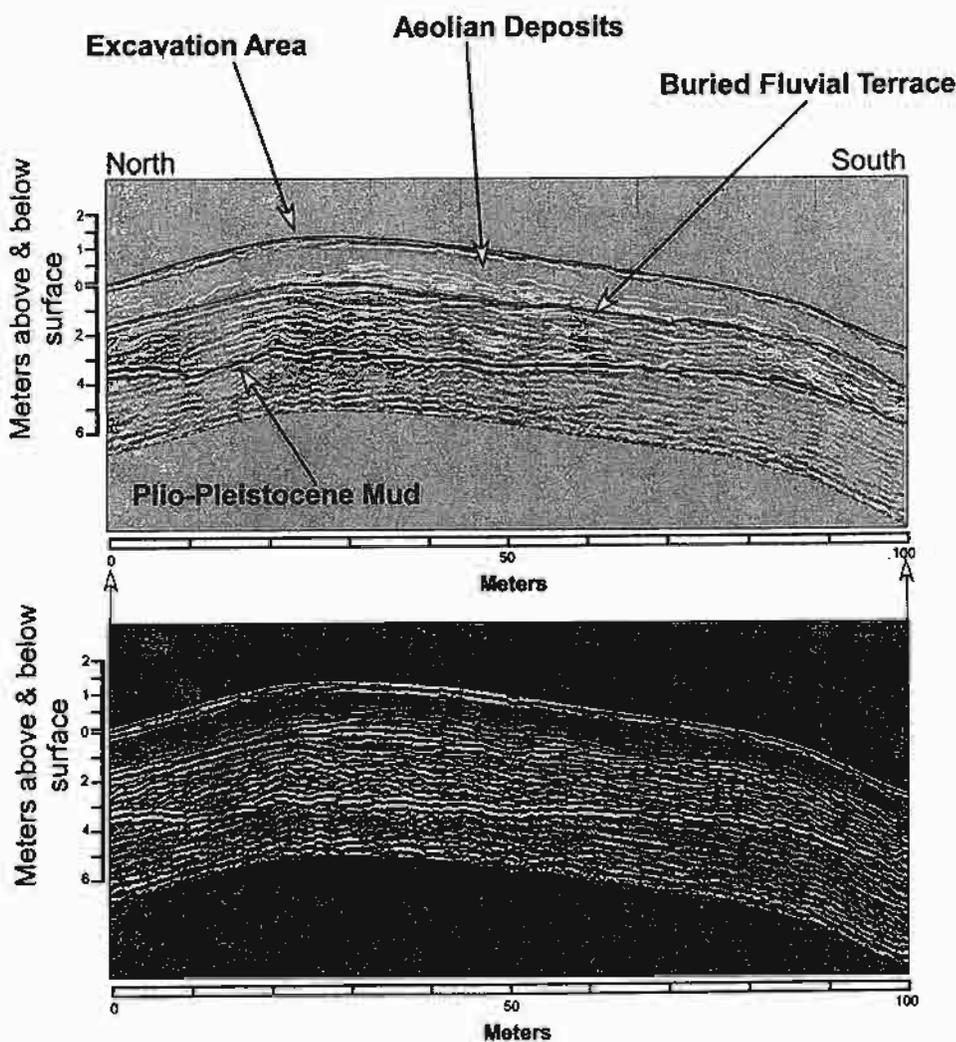


Figure 51. Ground penetrating radar cross-sectional profile of the Barber Creek site with interpreted facies.

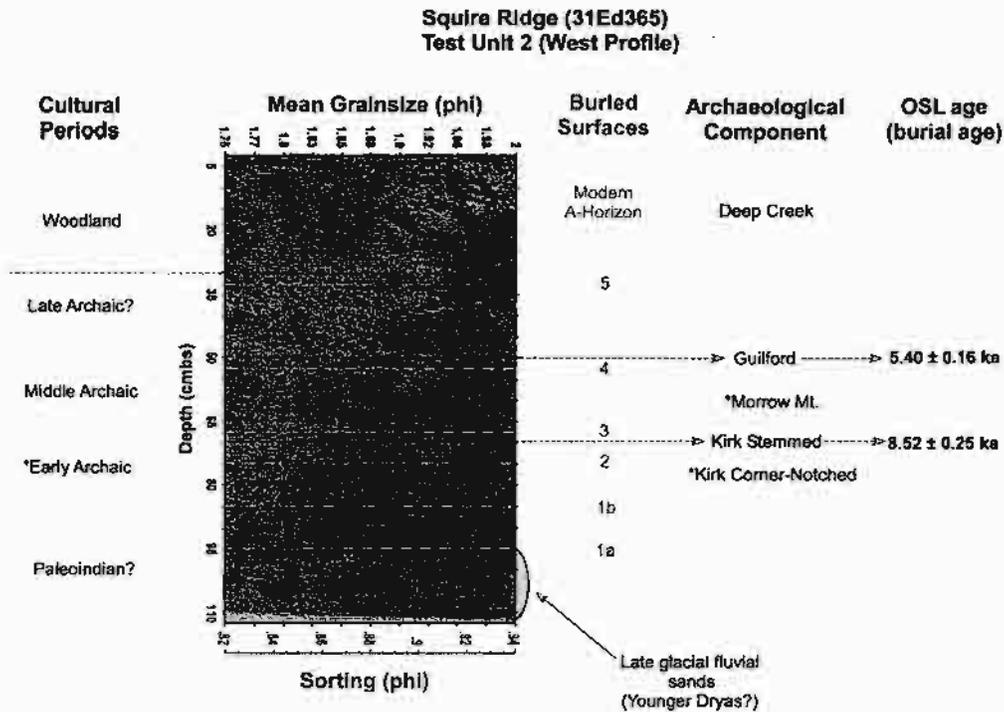


Figure 52. Luminescence geochronology and geoarchaeology at the Squires Ridge site (31ED365).

aeolian transition at lower paleo-braidplain sites suggests braided river conditions may have continued as late as ca. 13,500 calendar years B.P. (cf. Leigh 2006). OSL and C14 ages collected near the base of aeolian and cultural deposits also suggest fluvial sedimentation on the lower paleo-braidplain ceased just before or during the Younger Dryas stadial. This was followed by initiation of aeolian accretion and cultural occupation that continued episodically through much of the Holocene. Alternatively, Pleistocene-age archaeological sites may have been scoured from the lower paleo-braidplain during Early Holocene meandering. LiDAR data, however, reveal an obvious lack of paleo-meander channels within the study area with significant preservation of former braided terraces to the east and north of the river. Instead, the lower Tar River is characterized by slight down-cutting and incision—transitioning directly from braided to a very weakly meandering and incised or “locked-in” fluvial system (cf., Leigh 2008). This stands in sharp contrast to the highly meandering nature of the Tar River further northeast from Tarboro east along the Fall Line. Thus, braided conditions may have transitioned earlier to meandering upstream, while continuing long enough to prevent occupation or erase evidence of Paleoindian occupations along the lower paleo-braidplain of the Tar River (i.e., Younger Dryas).

Luminescence samples ( $n = 3$ ) collected this summer from the Barber Creek site will be dated by Jim Feathers at the University of Washington Luminescence Dating Laboratory using the more accurate single-grain technique. These age estimates should

help to constrain the timing of fluvial incision of the lower paleo-braidplain by the Tar River and onset of aeolian deposition and site burial at the Barber Creek site.

#### Owens Ridge Site (31ED369)

The Owens Ridge site (31ED369) is located within the upper paleo-braidplain of the Tar River. Although generally recognizable with high resolution LiDAR elevation imagery, the upper paleo-braidplain is only marginally higher in elevation and vertical relief than the lower paleo-braidplain and is characterized by larger relict braided and sandy scroll bars and larger and more numerous source-bordering dunes (Figure 53). The Owens Ridge site represents one of the largest sand ridges within the upper paleo-braidplain and was targeted for shovel test survey based on its proximity to paleo stream channels, as well as its likely origin as a large source-bordering dune.

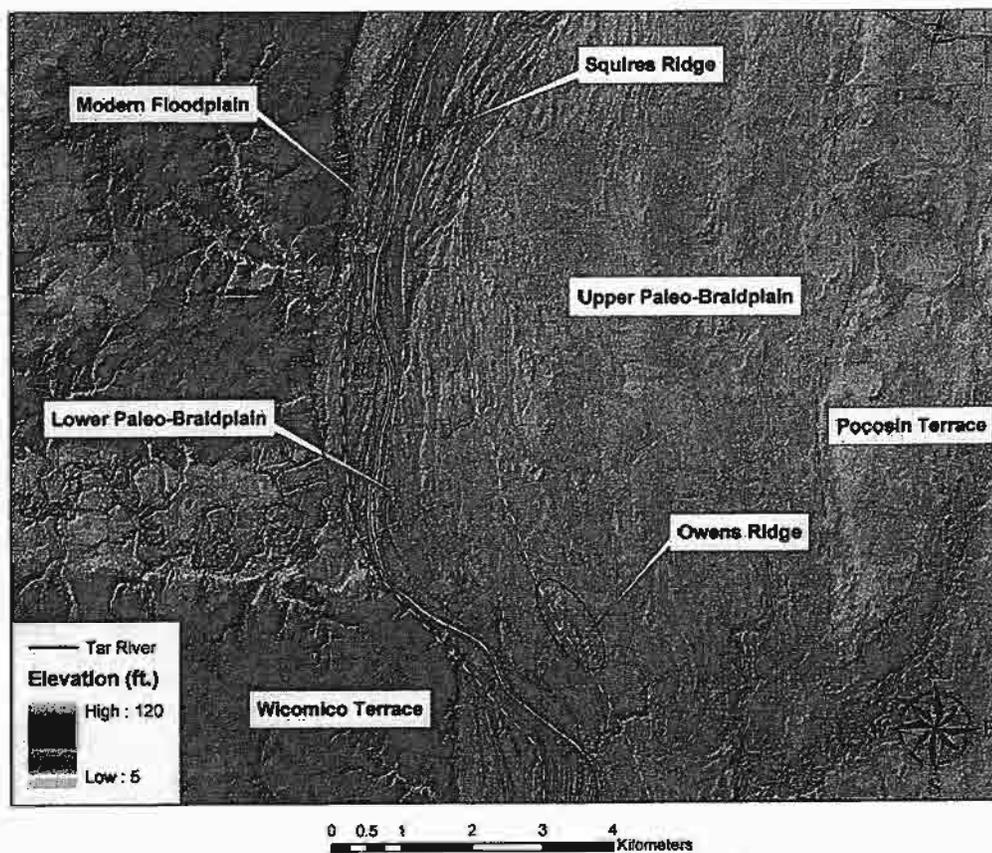


Figure 53. LiDAR image showing the upper and lower paleo-braidplain and the location of Squires Ridge (31ED365) and Owens Ridge (31ED369).

Limited shovel testing of Owens Ridge revealed buried archaeological deposits located along the highest section of the landform or crest of the sand ridge. Test unit excavations were conducted along the relatively narrow crest of the landform as it gently rises in elevation from west to east (representing the relict stoss dune surface). Excavations of two (2 x 2 m) test units produced buried archaeological deposits, including one diagnostic Early Archaic projectile point base, a formal endscraper, and debitage frequencies suggestive of stratification to a depth of 80-90 cmbs.

In addition to a concentration of lithic artifacts, significant amounts of wood charcoal and charred hickory nut were recovered from Level 8 (Test Unit 2). A single AMS radiocarbon date ( $9,750 \pm 40$  B.P.) was obtained from a piece of charred wood recovered from general Level 8 fill. The two sigma calibration for this conventional AMS age is 11,230-11,150 Cal B.P. This calibrated age range is consistent with the archaeology at Owens Ridge and indicates the presence of a very early Early Archaic or very late Paleoindian occupation. Although no obvious features (soil stains or pits) were observed, the presence of a large amount of lithic debitage in a single level with associated "float" charcoal can be considered a feature in the sense that the cultural event responsible was likely a single flint-knapping episode occurring over a very short time period. Thus, while randomly selected "float" charcoal is generally not appropriate or desirable in most instances; its use here was justified and returned results not unexpected given its stratigraphic position below Palmer.

Single-aliquot luminescence (OSL) age estimates for Owens Ridge are broadly consistent with late Pleistocene and Holocene burial events. Although weighted mean OSL age estimates returned Holocene ages (as expected) for Test Unit 1 at 40 cmbs ( $7.0 \pm 1.2$  ka) and Test Unit 2 at 55 cmbs ( $9.31 \pm 1.05$  ka), a single weighted mean OSL age from Test Unit 1 at 80 cmbs returned a late Pleistocene age ( $16.6 \pm 3.4$  ka). This age is inconsistent with the presence of buried archaeological deposits and with the radiocarbon date from Test Unit 2, Level 8. Examination of paleodose distribution for the older OSL age estimate suggests a minimum-age model may be appropriate (e.g., Feathers 2006). Differences in thickness of Holocene-age aeolian deposits between test units may also be a factor.

Future work at Owens Ridge will focus on understanding site formation processes with the use of close-interval grain size and single grain luminescence dating. Single grain OSL is more accurate than single-aliquot and should help to resolve questions of geochronology and buried occupation surfaces at the site. Given its location on the upper paleo-braidplain, Owens Ridge also holds promise for producing buried Paleoindian occupations.

Note: Luminescence ages were determined by Shannon Mahan (USGS Luminescence Dating Laboratory in Denver, CO) and George Brook (University of Georgia).

#### *Student Research at the Barber Creek Site*

Christopher R. Moore

In addition to my own research of relict source-bordering dunes, I am also serving on the thesis committee of Paulette McFadden. Paulette is working on her master's thesis in the Department of Anthropology at East Carolina University looking at site formation and archaeostratigraphy at the Barber Creek site (31PT259). Following my own geoarchaeological investigations at the site, Paulette is examining other areas of the landform and is using very close interval (2.5 cm) grain size sampling to look for

evidence of buried occupation surfaces. In addition, Paulette is reconstructing the shallow surficial geomorphology of the Barber Creek landform by collecting a series of auger samples from across the landform. Preliminary results suggest Barber Creek is draped by approximately one meter of aeolian sand overlying variably fine to coarse fluvial braided river or sandy scroll-bar deposits.

### *Carolina Bay Research*

Christopher R. Moore

As part of our efforts to integrate public education/outreach and research, plans are underway for a long-term geoarchaeological research investigation of Carolina bays. Research proposed here will build on previous studies of Carolina bays on and near the SRS (e.g., Brooks et al. 1996; 2001; Eberhard et al. 1994). This goal will be achieved through an intensive study of a single Carolina bay (i.e., Flamingo Bay) with more limited reconnaissance-level studies of other bays identified throughout the region. The proposed research of Carolina bays involves utilizing dedicated avocational archaeologists, collectors, and the interested public in an on-going and systematic study of Carolina bay archaeology, geoarchaeology, and geomorphology. Both specific site level research and more general, regional-level studies of Carolina bays will provide high-resolution archaeological and geological data from a single bay and provide a comparative database for regional bay variability. Specifically, combined regional and site level bay studies will provide data for understanding bay basin formation and evolution, geomorphology, and geochronology of bay basins and rims, site formation processes, archaeostratigraphy, human occupation, and occupation intensity. More intensive block excavations at Flamingo Bay will allow for spatial analyses of archaeological activity areas and permit inferences about site use and site structure of occupations on Carolina bay sand rims.

This research is significant because it will address questions of bay basin and sand rim formation and chronology and will provide evidence of buried surfaces associated with human occupation of bay rims. Furthermore, this work will explicitly link depositional events (sedimentological packages) and human occupations to late Pleistocene and Holocene climatic variability. In so doing, we will provide a framework for interpreting cultural change and hunter-gatherer adaptation to an ever changing and dynamic post-glacial climate system. Last, but not least, this research will integrate our mission of public outreach, compliance, and research.

### *Geoarchaeological Research and OSL Dating on Roanoke Island*

Christopher R. Moore

In May of 2008, Christopher Moore, Keith Seramur (Appalachian State University), and Paul Hanson (University of Nebraska-Lincoln) began geoarchaeological consulting work with the First Colony Foundation at Fort Raleigh National Historic Site

on Roanoke Island, North Carolina. Excavations have revealed 16th-century artifacts and copper plates possibly associated with early English colonists. Historic artifacts at the site are found within a buried A-horizon nearly a meter below sterile overwash or dune sands along the heavily eroded north end of the island. Soil samples for grain size analysis and luminescence (OSL) samples were collected to characterize the geomorphology and site formation processes at the site. Paul Hanson will provide single-grain analysis of the OSL samples, and Keith Seramur will perform microscopy of sand grains in order to understand depositional processes. In addition, grain size analysis will be performed to distinguish stratigraphic boundaries.

*SRS Cemetery Survey*

George L. Wingard

The SRS Cemetery Survey continued this year. The cemeteries were last surveyed in the early 1980s, and the SRARP felt the time had come to reassess them. The remnant cemeteries have been revisited, photographed, and catalogued with GPS technology being used to document the location of each of the newly visited cemeteries. The survey is nearing completion, and an updated GIS data layer will be created to better help locate and protect this important cultural resource. A report on the condition, location, and genealogical information will be forthcoming.

*SRS Historic Land Plat Project*

George L. Wingard

All of the 1,800 ca. 1950 Atomic Energy Commission (AEC) land-plats have been photocopied and nearly 80% of the photos have been scanned for curation at the SRARP offices. These early acquisition records are vital in aiding the SRARP in their daily compliance related activities, as well as creating the potential for further research projects.

*Former Churches of the SRS*

George L. Wingard

During the Atomic Energy Commission's removal of the former towns and residents of the SRS, nearly fifty churches were either moved or disbanded. Using historic land-plats and period photographs, the SRARP is developing a technical/popular documentary volume about the former churches of the SRS. The report will focus on the history of the churches, their denominations, pertinent photos, and in some cases where the structures were relocated off-site.

*Underwater Explorations at the Mississippian Period Mason's Plantation Site*

Christopher Thornock

During the week of July 21 through 25, 2008, a team of archaeologists from SRARP and SCIAA/Maritime Research Division collected data at the Middle Mississippian site of Mason's Plantation (38AK15) on the Savannah River. Chris Thornock, having conducted intermittent terrestrial research at the site since 2005, received a grant from the Archaeological Society of South Carolina to conduct research on the underwater portion of the site. The Maritime Research Division of SCIAA, consisting of Chris Amer (State Underwater Archaeologist), James Spirek, Joe Beatty, Lora Holland, and Carl Naylor, was enlisted to assist in the project. The research objectives were to establish the underwater boundaries of the site, to collect sonar data from the underwater portion of the site, to assess the quality and provenience of the site's underwater artifacts, and to accurately date the Mississippian component at the site. Each of these goals was met.

Based on the site boundaries established from previous terrestrial work, continuous sonar data was collected in concert with GPS data from the entire underwater portion of the site, along with adjacent portions of the river both upstream and downstream from the site. The boat was anchored at five different GPS-point locations along the river's edge where teams of divers explored the site and collected all the prehistoric artifacts lying on the floor of the river. A total of 210 prehistoric sherds was collected from the river bottom, and very few sherds were seen either upstream or downstream of the site's terrestrial boundaries, indicating that the artifacts were eroding out of the rivers edge and not being carried in from sites further upstream. Twenty two percent of the sherds were complicated paddle stamped (N=47), 16% were check stamped (N=33), five of the sherds had punctated rims, and only one sherd was incised. This is similar to the pottery collections made on land and is consistent with what one would expect to find at Middle Mississippian sites on the central Savannah River. Soot deposits on two of the complicated stamped sherds were sampled and submitted for AMS radiometric dating. Analysis revealed that these sherds date between A.D. 1270 and A.D. 1400 indicating that they were used during the Middle Mississippian period (Table 8). The results from this project are the best evidence yet supporting the location of Mason's Plantation, where historical sources report six mounds that may have all eroded into the river by the late 19th century. As a Hollywood phase site, Mason's Plantation is contemporaneous with other mound centers (Hollywood, Lawton, Red Lake, and Spring Lake) in the Middle Savannah River valley.

Table 8. AMS Radiometric Dates for the Mason's Plantation Site.

Sample No.	Measured Age RCY BP	<sup>13</sup> C/ <sup>12</sup> C	Conventional Age RCY BP	Calibrated 1 sigma	Calibrated 1 sigma
Beta-248330	640±40	-22.8	680±40	A.D. 1280 to 1380	A.D. 1270 to 1390
Beta-248331	600±40	-22.8	640±40	A.D. 1290 to 1390	A.D. 1280 to 1400

*Excavation of the Lawton Site Palisade*

Keith Stephenson, Adam King, and Christopher Thornock

As part of an ongoing effort to place SRS Mississippian sites in a broader and more meaningful context, field research continued at the Lawton site (38AL11), a small Mississippian mound center in Allendale County, south of the SRS. Lawton is an 3-acre site situated in the floodplain along the bank of a backwater slough approximately 250 meters east of the Savannah River. The most prominent cultural features at Lawton include two platform mounds that are each about three meters in height and referred to as the North and South mounds (Figure 54). Preserved on the site's northeastern edge is the borrow pit for mound fill. An intact fortification ditch 5 m wide and 1 m deep encircles the site. An earthen embankment is present along the outer perimeter of the ditch.

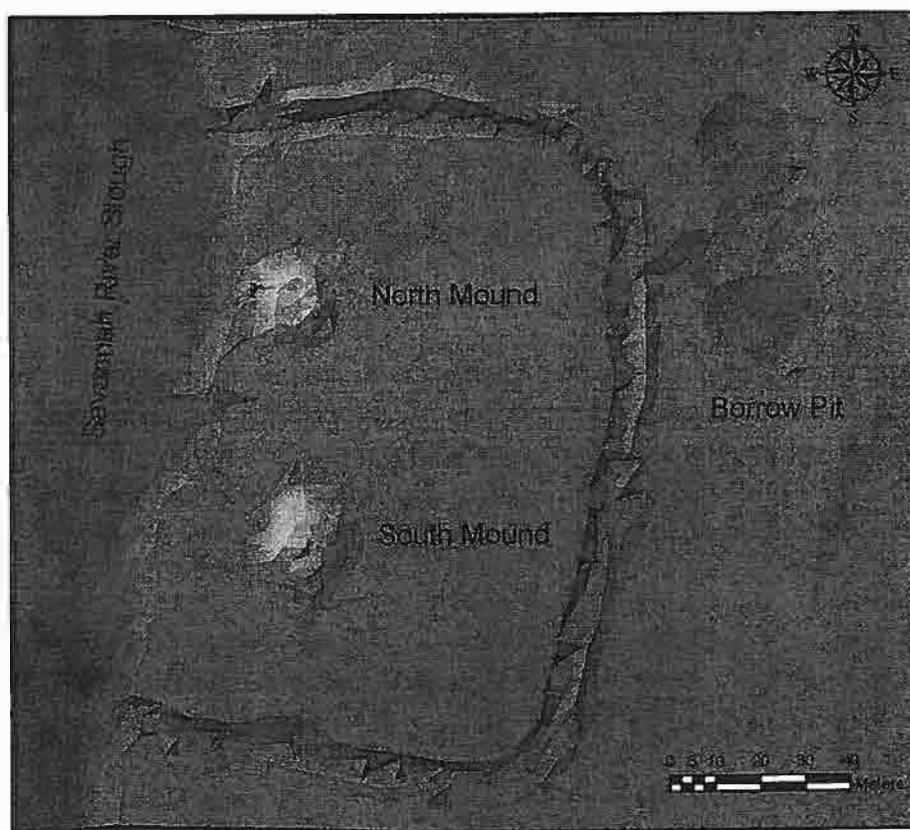


Figure 54. Isometric view of Lawton site showing visible features.

During FY08, fieldwork at Lawton focused on a portion of the remains of a burned and collapsed palisade surrounding the site. We initially suspected the presence of a burned enclosure in 1999 when concentrations of fired daub were detected through systematic shovel testing along the interior edge of the fortification ditch, as well as the terrace edge (Figure 55). In 2007, Chet Walker of Archaeo-Geophysical Associates, LLC conducted limited remote sensing surveys at both Lawton (38AL11) and Red Lake (9SN4). The goal was to determine whether remote sensing techniques could provide more information on the structure of Middle Savannah River mound centers (see SRARP

2007:55-64). In particular, these testing efforts at Lawton revealed clear anomaly patterns on the southern, eastern, and northern interior margins of the fortification ditch. These highly magnetic burned daub concentrations confirmed the presence of what we had interpreted as a palisade wall collapse (Figure 56).

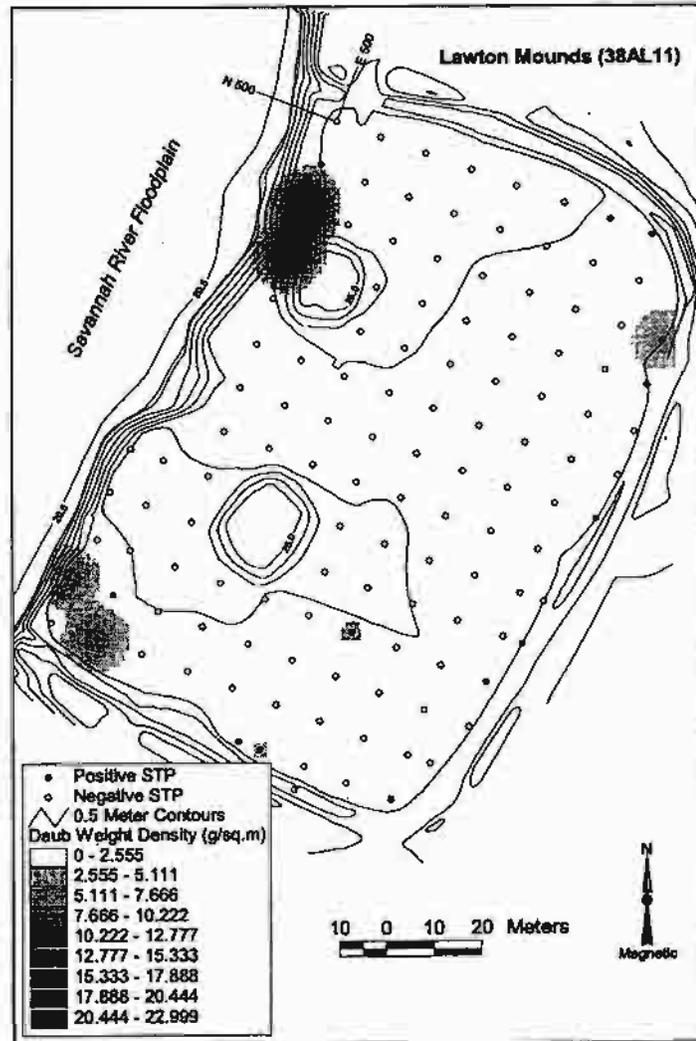


Figure 55. Positive shovel tests containing daub showing density distribution by weight.

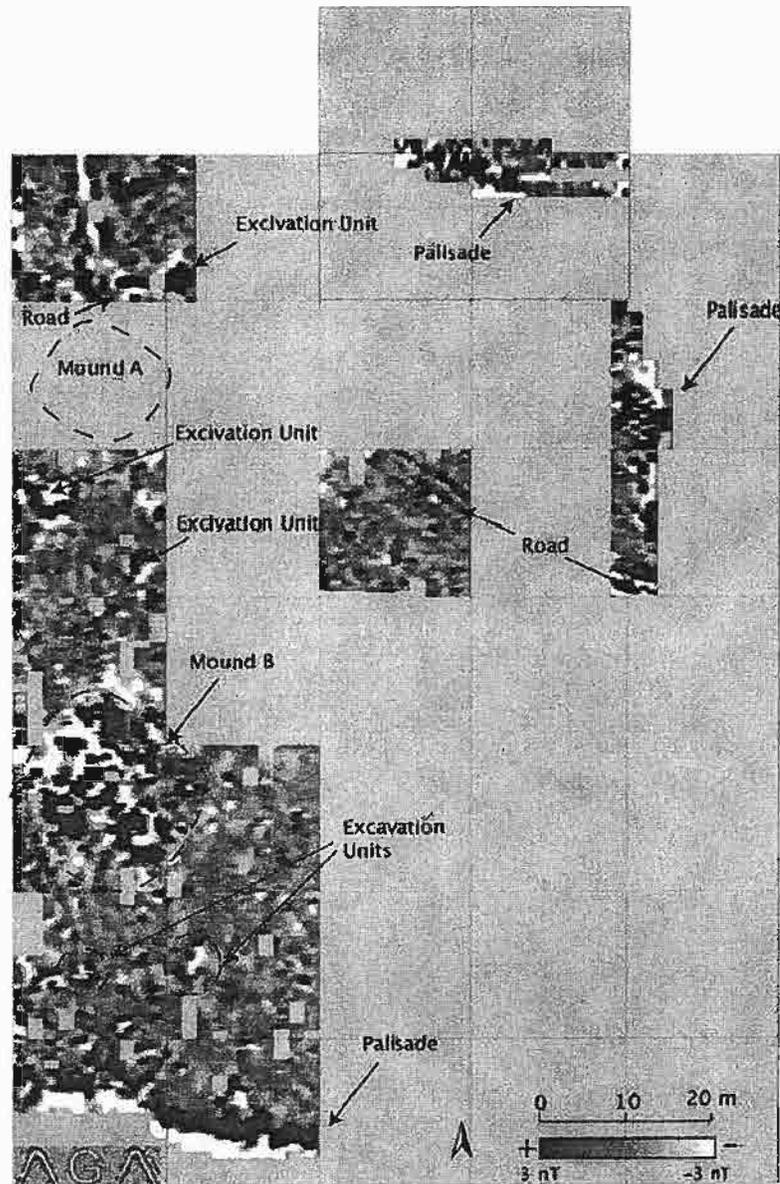


Figure 56. Interpretation of magnetometer data from the Lawton site.

To investigate the nature of the palisade feature, we excavated a 2 x 4-m block adjacent to the bluff edge where a high density of burned daub had been identified during systematic shovel testing. Our objective was to verify the presence of a palisade line underlying the daub feature by confirming the presence of patterned postmolds as has been noted at numerous other Mississippian period sites of this time period (ca. A.D. 1250 to 1350).

In general, the soil matrix consists of clay alluvium, a result of overbank flooding, which directly overlies midden deposits. Excavation data show little evidence of damage to the Mississippian component at Lawton due to fluvial processes. Characterized stratigraphically, the uppermost soil stratum is represented by a 20-cm thick layer of

alluvial clay resulting from Historic period agricultural practices and subsequent erosion in the Piedmont. Substantial concentrations of burned daub were present in the lower zone of this alluvial deposit. The underlying midden consists of two strata: a 10-cm layer of lighter colored mottled sandy-silt overlying a homogenous darker colored layer of sandy-silt extending into the base of the block excavation at 40 cmbs.

The block excavation consisted of eight 1 x 1-m units (Proveniences 132, 133, 188, 205, 206, 207, 208, and 209) excavated in five arbitrarily defined levels, with Levels A – C dug in 10-cm levels and D and E dug in 5-cm levels. All soil was screened through ¼-in. mesh, except for the upper portions of the alluvial layer due to its redeposition from an upstream source. The excavation of Level A proceeded with the removal of the upper 10 cm of clay alluvium. The lower 10 cm of clay alluvium (Level B) contained burned daub concentrations, which were exposed and recorded with scaled drawings. Midden deposits lay directly below the daub concentration. As noted, the midden was a 20-cm thick layer (Levels C, D, and E). Removal of this layer revealed a wall trench feature 30 to 40 cm in width running the length of the block excavation (Figure 57). The wall trench was evident as a tan-colored soil feature in a surrounding light brown submidden matrix. Post molds were difficult to discern in the wall trench, but were perceptible as amorphous light brown stains. The absence of charcoal in the post molds indicates that the wall posts did not burn completely to the ground surface.



Figure 57. Palisade trench feature at the Lawton site.

To better understand the nature of the wall trench construction, a 70-cm wide slot-trench excavation was excavated along the south block profile. Eventually, we extended this slot trench 1.5 m northward across the block unit in an attempt to more fully expose the postmolds in plan. In profile, the wall trench extended approximately 80 cm into the subsoil from the base of the alluvial layer. At this depth, the wall trench narrowed from a width of 40 cm to about 20 cm, where it continued into the base of the slot-trench.

At the base of the slot-trench (110 cmbs), five post molds were exposed in plan, and were identifiable only as splotchy white-colored soil stains devoid of organics in a tan soil matrix (Figure 58). The postmolds were 20 to 30 cm in diameter, which in actuality may be postholes rather than molds with their organic signature having leached through the sandy substrate. These postmolds (or holes) were spaced 15 to 25 cm apart and extended to a depth of 20 cm from the base of the wall trench. It is noteworthy that the wall trench cuts through the midden, rather than the midden having formed after the palisade was erected. Evidence for this assumption lies in the fact that the midden on the interior side of the palisade had two layers, one consisting of mottled soil with artifacts overlying a more homogenous dark brown midden. The upper layer appears to be midden and subsoil excavated from the wall trench at the time of its construction. If the palisade had been planned and built at the time Lawton was first occupied, then the substrate backfill of the wall trench should be found below a homogenous artifact laden and organic rich midden.

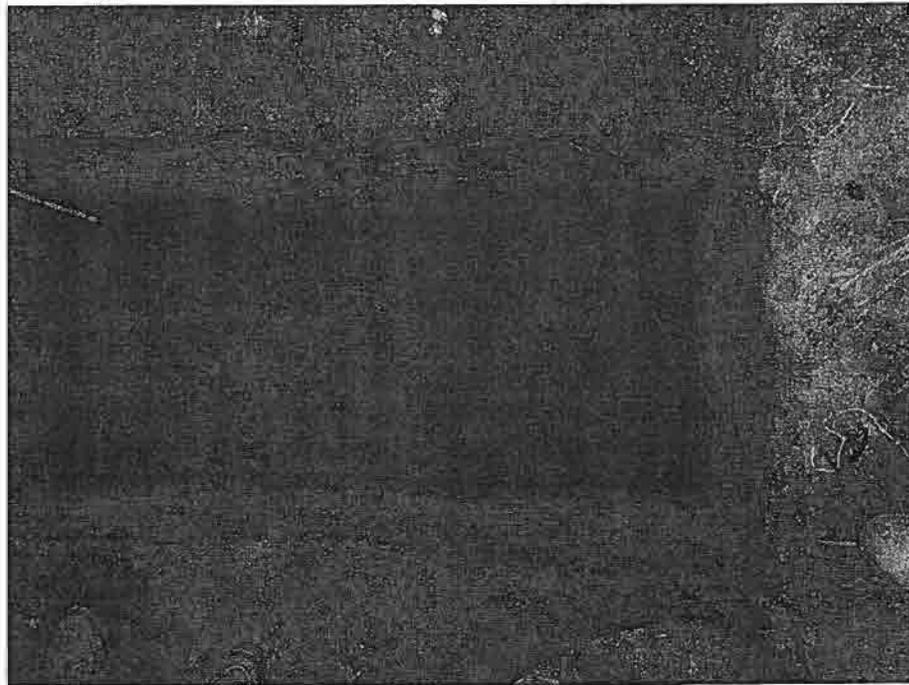


Figure 58. Plan view of palisade postholes at the Lawton site.

In sum, daub concentrations that encircled the Lawton mound site on the interior edge of the fortification ditch were detected through systematic shovel testing and magnetometer survey. The dense concentrations of daub were indicative of a constructed

log palisade plastered with clay, which eventually burned. Recent excavations confirmed the presence of a palisade evidenced by postmolds or postholes set within a wall trench. Most important is the fact that the wall trench appears to have been built after the site had been occupied for some time. By extension, the fortification ditch may also have been constructed after initial occupation of the site. A possible explanation for the post-occupation construction of the palisade, and possibly the fortification ditch, may have been the impending threat of warfare in the Savannah valley. Additional evidence suggesting the possibility of conflict in the Savannah valley after ca. A.D. 1300 comes from the Piedmont. Anderson (1994:219-225) notes that of the two temporally and spatially distinct village occupations at the Rucker's Bottom site, the later community, occupied during the Rembert phase (ca. A.D. 1350 to 1450) was fortified with a ditch and stockade enclosure, whereas the earlier Beaverdam phase (ca. A.D. 1200 to 1300) village remained unfortified throughout its occupation.

Other lines of evidence certainly need to be considered regarding the function of the palisade at Lawton. Was this indeed a stockade for protection against enemy attack, or rather a symbolic partition separating the chiefly and religious elite at a small ceremonial/administrative center from the secular and profane? Finally, when extrapolated from the five palisade postmolds documented through excavation with an average of 2.5 posts per meter, there would have been about 1,032 posts used in construction of the 413 m-long enclosure at Lawton given a single post construction pattern for the entire log wall. Anderson (1994:223) cites a 1674 observation by Henry Woodward who described a palisaded native village north of Augusta along the Savannah River. Woodward noted that the palisade consisted of a single line along the riverbank and double defensive lines to the inland. As only a small portion of the Lawton palisade wall trench was sampled this year on the terrace edge of the floodplain swamp, future fieldwork should target other sections of the palisade along the ditch perimeter to determine any variation in palisade construction.