

Late Archaic Landscapes: A Geographic Information Systems Approach to the Late Archaic Landscape of the Savannah River Valley, Georgia and South Carolina. STEPHEN HOWARD SAVAGE. Anthropological Studies 8. South Carolina Institute of Archaeology and Anthropology, University of South Carolina, Columbia, 1989. vii + 121 pp., tables, figures. \$8.00 (paper).

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This study represents much that is bad and very little that is good about the way prehistoric archaeology has been conducted in some circles in the United States in recent years. Potentially a state-of-the-art analysis, linking the latest archaeological theoretical frameworks with computerized geographical information systems procedures, the report is so riddled with scholarly errors of commission and omission that its analytical conclusions are thoroughly discredited. This is unfortunate, for the author has presented an innovative research strategy, landscape archaeology, that has considerable explanatory power. It is to this theoretical framework that readers will have to draw inspiration, and not to the archaeological example used in its demonstration. As such, the report illustrates an all-too-common problem in American archaeology, the failure to properly apply theoretical arguments to the archaeological record they are designed to explore.

While this study is an analysis of Late Archaic occupation in the upper Savannah River based on data from the Richard B. Russell Reservoir, none of the recent monographic treatments on the subject (much less any of the many shorter papers or studies) are referenced or, indeed, even acknowledged. Thus, there is no mention of Michael Alerman's 1987 dissertation *A Reassessment of Late Archaic Settlement and Subsistence Along the Upper Savannah River Valley: A View from the Richard B. Russell Reservoir*, which synthesizes Late Archaic research in the reservoir. Equally absent is mention of Anderson and Schuldenrein's 1985 monograph on *Prehistoric Human Ecology Along the Upper Savannah River: Excavations at the Rucker's Bottom, Abbeville, and Bullard Site Groups*, which documents major Late Archaic assemblages at three sites (9EB91, 38AB91, and 38AB288). Wood, Elliott, Rudolph, and Blanton's (1986) study of *Prehistory in the Richard B. Russell Reservoir: The Archaic and Woodland Periods of*

the Upper Savannah River is likewise omitted, even though dense Late Archaic middens, one providing some of the best evidence for Late Archaic structures ever found in the Southeast, were documented at two sites (9EB21 and 38AN29). Likewise Sassaman's recent synthetic research on Late Archaic occupations in the Savannah River basin is ignored, as are shorter contributions such as Elliott's work with Late Archaic soapstone utilization in the upper basin, or Tippitt and Marquardt's work at the deeply stratified Gregg Shoals site, which documented changes in technological organization during this period. These studies document major Late Archaic assemblages from the Russell Reservoir area, providing a basis for identifying and subdividing local assemblages by ca. 500 or 1000 year intervals. Several of these studies advance sophisticated and provocative diachronic settlement models incorporating a range of social and ecological factors. None warrant total, inexplicable dismissal.

The only mention of a work from the Russell study area post-dating 1983, a brief citation from Anderson and Joseph's 1988 technical synthesis of work in the reservoir, *Prehistory and History Along the Upper Savannah River*, offers a possible explanation for the scholarly void that singularly characterizes this work. This quotation, from a preliminary draft of the synthesis (even though the final was printed and widely distributed in 1988), addressed questions of adaptation and ecology, specifically the absence of extralocal raw materials, or evidence for shellfish utilization, in pre-ceramic Late Archaic assemblages in Piedmont portions of the drainage. This was apparently too much for Savage, who proceeded to state that the ca. twelve years of work in the reservoir, and specifically the emphasis on subsistence and adaptation reflected in the quote (one paragraph from a 60 page section on the Late Archaic), did little more than highlight a "stagnation of research in southeastern Late Archaic studies (p. 20)." Instead, geographically-based research encompassing the patterns of information flow, decision-making, and patterns of social interaction that existed in the past, Savage argued, have to be considered if we are ever to understand the complexity of these cultural systems. Thus, the only explanation the report provides as to why the voluminous recent literature is ignored is, apparently, that it had little to offer from a theoretical or analytical perspective.

Unfortunately, the very authors Savage ignores or disparages address at considerable length the very issues he advocates. To offer one example, Wood and his colleagues in 1986

advanced a diachronic model of Late Archaic settlement and land use in the upper Savannah, subsequently refined by the current author and discussed at length in the reservoir synthesis, that examines aggregation and interaction at several levels of spatial and social integration. In particular, during the earlier part of the Late Archaic, from ca. 3000-2000 B.C., spatially circumscribed territories, probably restricted to specific segments of the drainage, were inferred. This inference was based on the incidence and diversity of tool forms on local sites, data that indicated a logically-based technological organization, and because these assemblages were dominated by local lithic raw materials. The presence of semi-permanent or permanent occupations on floodplain levees in close proximity to the river during this period, documented by extensive excavations at 9EB21, 38AB91, and 38AN29, were interpreted as the year-round residences of small family or extended family groups, and possibly shorter duration camps occupied by larger groups. Social solidarity within local territorial kin-based groupings was thought to have been reinforced through periodic aggregation, facilitated by the presence of periodic resource abundances such as anadromous fish. During the latter part of the Late Archaic, in contrast, there is evidence for greater social interaction throughout the region, based on increased lithic raw material diversity on sites. Large scale aggregation at sites such as Stallings Island, for the purpose of alliance development and maintenance, resource and information exchange, and the generation of social solidarity through shared ritual were all inferred. The level of social complexity within the region was linked to ceramic design element complexity, specifically the tendency for complex designs to occur at larger midden sites. Increased design element diversity was thought to reflect greater social diversity, signaling concepts such as vessel ownership or group affiliation. The presence of comparatively simple decorative elements, like those noted on the sites within the Russell Reservoir and the inner piedmont in general, were thought to reflect a low level of social complexity in this area. These kinds of observations and analyses are also present in the works of Alterman, Sassaman, and other scholars, and indicate that recent local research on the Late Archaic has hardly been in a state of stagnation. Such an inference, in the absence of an attempt to evaluate or even consider recent research, is both arrogant and unfounded.

What, then, is present in this study, so much being lacking? *Late Archaic Landscapes* purports to demonstrate that Late Archaic populations in the

upper Savannah drainage occupied geographically limited 'minimal band-level' subsistence territories and much larger 'maximal band-level' social, territories. While the theoretical foundations of the study are innovative and the conclusion seemingly supported by many sophisticated computer graphics, the very data the analysis is based upon and, to a lesser extent, the linking arguments between the theory and the data, are grievously flawed. The analysis thus fails because it is built upon sand.

Savage's argument, basically, is as follows. If clusters composed of a variety of site types can be demonstrated to exist in the upper Savannah Late Archaic landscape, then these clusters represent minimal band habitual use areas or subsistence territories. Where minimal bands exist, maximal or reproductive bands must also be present for these populations to maintain themselves through time. Therefore, if site clusters are present, minimal and maximal bands must have been present. This, needless to say, is tautological, a classic example of circular reasoning. Indeed, the fundamental assumption that social organization during the vibrant Late Archaic period was restricted to simple band/macrobands constructs is also suspect, as is the unstated assumption that there was no change or evolution in socio-political organization over its two thousand year span, precluding the need for diachronic analyses. This is unfortunate given the strong call for studies directed to political and social phenomena in the introductory sections of the report, a call that was reinforced by a condemnation of the work and theoretical underpinnings of local researchers. There are sufficient problems with the analysis itself, however, as to obviate the need for an extended discussion of factors shaping the southeastern Late Archaic socio-political landscape. Interested researchers are, however, urged to examine recent works by Alterman, Anderson, Sassaman, Wood, and others, for their views on these matters.

Late Archaic Landscapes focuses on surface collections from 51 Late Archaic sites found in the Richard B. Russell reservoir area, data that were gathered during two intensive survey projects conducted in the late 1970s. Artifacts from these sites, specifically tool and raw material categories, were used to generate simple diversity indices which, when combined with estimates of site surface area, were used to define eight site types, essentially large and small base camps or extraction stations occupied for long or short periods of time. The distribution of these site types within the reservoir was then examined, first.

using a nearest neighbor analysis to examine their distribution, which was found to be weakly clustered. Least-cost catchments were then calculated about each base camp in the sample, taking into consideration factors of slope and hydrology. Six clusters of base camps/catchments were evident within the study region. Using Thiessen polygons, these clusters were separated, creating zones which were assumed to represent possible minimal band habitual use areas. The size of each cluster was determined and, using contemporary hunter-gatherer population density values (# persons/km²), possible prehistoric population levels were calculated. These fell comfortably within values expected of minimal bands (ca. 20-120 people) and the six territories taken together yielded a population value in conformity with that expected of a maximum band, between ca. 200 and 600 people. To further test this assumption, the diversity of site types inside each zone was examined and, a range of site types being present, self-contained territories were inferred. The occurrence of logistic and extractive sites in boundary areas between habitual use areas was inferred to represent evidence for intergroup cooperation, offering a valuable method by which concepts such as territoriality and interaction can be studied. Final analyses examined the extent to which sites occurred along drainages in the study area, using calculated distance to water measures, and the extent to which ridgeline divides or other topographic features corresponded to group boundaries. Not surprisingly, sites were found to occur along drainages and, interestingly, drainage features and not ridge divides were found to be most closely associated with territorial boundaries.

This is an exciting and promising research strategy, offering procedures by which group territories and intergroup interaction may be studied. It is equally evident, however, that the entire analysis hinges on how site clusters are defined. It is here that things fall apart. The 51 Late Archaic assemblages that form the foundation for the entire analysis effort were derived from surface collections made at an early stage of the reservoir investigations. Site size estimates, raw material values, and tool categories were taken from the published appendices accompanying these reports. These data, in light of subsequent research, have been shown to be a clearly limited and unrepresentative sample of reservoir Late Archaic assemblages. Unfortunately, no effort was made to control for the fact that many of these assemblages were from multicomponent sites, nor to incorporate later survey and excavation data gathered from the reservoir. The fact that three probable base settlements that were the subject of

major excavation programs (at sites 9EB21, 38AB91, and 38AN29) were not incorporated into the analysis is particularly unfortunate because these site types were used by Savage to define his habitual use territories.

No primary data examination was undertaken, we are told, because the artifacts were "in Alabama, and so were unavailable for analysis" (p. 48). The Russell Reservoir collections, curated at Mound State Monument, it should be noted, are excellently maintained and organized, and a comfortable trailer is available (free of charge) next to the curatorial facility expressly for the use of visiting scholars. Access to the collections must be requested in advance, but is readily granted to any serious researcher. Over a four week period in 1988, as part of my own research, I personally examined all of the survey collections from the reservoir, recording the presence of temporally diagnostic artifacts. The results of this analysis were presented in the Russell Reservoir technical synthesis where, it should be noted, diagnostic Late Archaic Savannah River Stemmed projectile points were reported at 79 sites, while Stallings or Thom's Creek pottery was reported at 11 sites. These data were then and remain to this date available to all interested researchers, as was specified in the report. *Late Archaic Landscapes* thus represents an analysis based on little more than half the locational and assemblage data that was available at the time it was undertaken. Worse, it ignores excavation reports on major base camps, as well as assemblage data that could have provided a diachronic element to the analysis.

Much more serious than the incompleteness of the data, however, is its representativeness. The assemblages used to define the eight Late Archaic site categories are surface data from multicomponent sites. This is clearly evident in the appendices accompanying the original survey reports, from which Savage drew his data. Using the data base prepared during the production of the technical synthesis, the degree of this multicomponency is readily apparent (Table 1). Even where evidence for only a single Late Archaic component is present, the possibility that other components were missed can only rarely be excluded. To claim that tools and raw material types from the surfaces of sites such as these can be unambiguously assigned a Late Archaic age is simply preposterous. Unfortunately, this surface assemblage data is precisely what Savage uses to generate his base camp/extraction station categories, the focus of his locational analyses. He compounds this error even further by dismissing later analyses, specifically those by White and

Table 1. Prehistoric Components Actually Present on Savage's 51 "Late Archaic" Sites in the Richard B. Russell Reservoir Area.

SITE NUMBER	PROJECTILE POINT DATA										CERAMIC DATA									
	PALEO INDIAN	EARLY ARCHAIC	MIDDLE ARCHAIC	LATER ARCHAIC	WOODLAND	MISS. S.F.T.	W.S.	MISSISSIPPIAN	UNK. PIS.	UNK. E.L.	UNK. ET.	UNK. CER.	TOTAL # COMP.	Savage Site Type						
	1	1	1	1	1	1	1	1	1	1	1	1	4	Extraction Area						
38AN005													2	Extraction Area						
9EB276													3	Extraction Area						
9EB395													3	Base Camp						
9EB261													3	Extraction Locus						
9EB283													3	Extraction Locus						
9EB286													3	Extraction Locus						
9EB300													3	Extraction Locus						
9EB418													1	Extraction Locus						
9EB291													1	Extraction Locus						
9EB281													4	Extraction Locus						
9EB285													3	Logistical Camp						
9EB388													2	Logistical Camp						
38AB089	1	1	1	1	1	1	1	1	1	1	1	1	5	Base Camp						
38AB114													3	Base Camp						
38AB119													1	Extraction Locus						
38AB133													2	Logistical Camp						
38AB136													1	Extraction Area						
38AB274													8	Logistical Camp						
9EB366													5	Logistical Camp						
9EB058													3	Logistical Camp						
9EB063													3	Extraction Area						
9EB315													2	Extraction Locus						
9EB328													1	Extraction Area						
9EB056													4	Base Camp						
9EB057													13	Base Camp						
9EB327	1	1	1	1	1	1	1	1	1	1	1	1	1	Extraction Locus						
38AB239													3	Extraction Locus						
38AB077													1	Extraction Area						
38AB288	1	1	1	1	1	1	1	1	1	1	1	1	1	Base Camp						
38AB078													12	Base Camp						
9EB320													15	Logistical Camp						
9EB340													3	Logistical Camp						
9EB351													10	Base Camp						
9EB219	1	1	1	1	1	1	1	1	1	1	1	1	1	Extraction Area						
9EB092													5	Logistical Camp						
9EB218													5	Logistical Camp						
9EB208	1	1	1	1	1	1	1	1	1	1	1	1	2	Extraction Area						
9EB076													4	Base Camp						
9EB204													2	Base Camp						
9EB255													2	Base Camp						
9EB045	1												1	Base Camp						
38AB174													2	Base Camp						
38AB010													1	Base Camp						
38AB126													1	Extraction Locus						
38AB122	1	1	1	1	1	1	1	1	1	1	1	1	2	Logistical Camp						
38AB172													2	Logistical Camp						
38AB130													6	Logistical Camp						
38AB100													6	Logistical Camp						
38AB101													6	Logistical Camp						
38AB129													6	Logistical Camp						
38AB126													6	Logistical Camp						
38AB213													6	Logistical Camp						
38AB149	5	13	29	46	14	3	0	6	7	4	0	0	6	188						

KEY TO ABBREVIATIONS: MISS.: Mississippian; S.F.T.: Stalling & Fiber-tempered; T.C.: Thom's Creek; DUN: Dunbar; DPT: Depford; CTV: Carterville; CON: Conestee; CER: Ceranee; COMP: Components. WS.: Woodstock; UNK: Unknown; ET: Elowah; SAV: Savannah; EL: Early Lamar; PIS: Pisgah; L.L.: Late Lamar; CER: Ceranee; COMP: Components. VWS: Vicksburg; CTV: Carterville; CON: Conestee; CER: Ceranee; COMP: Components.

Sassaman in their 1982 and 1983 M.A. theses, that attempted to delimit the Late Archaic artifacts in these very collections. Given this failure of the empirical foundation, all of the subsequent analyses must be viewed as a methodological exercise, and not in any way indicative of Late Archaic land use in the upper Savannah River.

While there is much of value in the method of GIS-based landscape analysis that is presented, some technical problems are present, resulting from the very nature of the study universe, that should have been acknowledged and controlled. The reservoir assemblage, a trident-shaped clustering of several hundred prehistoric sites, while an impressive database, occupies only a small and unrepresentative portion of the piedmont landscape, even in its immediate vicinity (Figure 1). The intervening areas between the forks of the trident, quite simply, have never been examined, and the nature of Late Archaic site use in these areas remains unknown. The fact that the nearest neighbor analysis yielded a weakly clustered Late Archaic site distribution is thus not surprising, given the fact that the total reservoir prehistoric site assemblage is itself clustered within the ca. 20 x 13 km rectangular sampling frame Savage chose to employ in his calculations. Parenthetically, the

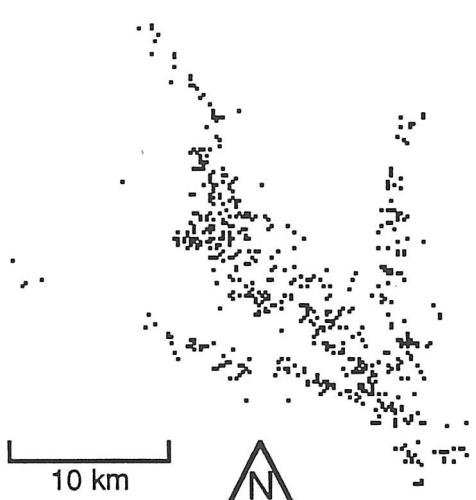


Figure 1. Distribution of archaeological sites within the Richard B. Russell Reservoir Area reflects the trident-shaped configuration of the survey tract.

fact that the size of this sampling frame would also predetermine resulting Late Archaic population levels, given the way they were calculated, was also apparently not considered. Within the reservoir, inspection of the site distributions in Figure 1 indicates, survey coverage was uneven, adding to the clustering effect. The site assemblage Savage examined, furthermore, came from a highly circumscribed portion of the Piedmont landscape, specifically the reservoir floodpool and immediately adjoining upland areas. Given this, it is hardly surprising that most sites were found to occur close to water. Using site data from such a partial sample of the landscape, in conjunction with the use of only a partial sample of the Late Archaic record actually known to be present in the reservoir, cannot be expected to yield meaningful interpretations. This is unfortunate because the method advanced is powerful and, when applied to appropriate data, could yield important results.

There are few technical problems with the manuscript, which is well written and remarkably free of typos. Unfortunately, a critical production failure occurred in several key graphics, where the symbols giving the distribution of the eight defined site types are too small and are hence illegible. The primary data and analyses are responsibly detailed in the text, however, and in a series of appendices, making this reviewer's re-analysis of the data straightforward. For all my criticism, Savage has made his arguments explicit, and attempted to base his conclusions on reasoned analysis. This is all too rare in archaeology, where interpretations are often presented independent of linkages to the data on which they are based.

In conclusion, *Late Archaic Landscapes* is an interesting theoretical and methodological contribution brought low by poor use of **data**. That it ignored a decade of research, and the opportunity to employ more current and appropriate data from the very **area** it focused on, however, is both inexplicable and inexcusable. Its production in this condition is unfortunate, and reflects poorly both on the author and on those who reviewed the manuscript for publication. It is obvious that if the draft report had seen examination by someone familiar with recent work in the upper Savannah River many of its deficiencies could have been reduced or eliminated. As a piece of research, it highlights through misexample the need for proper linkages between theory and data in archaeological research, and the problems that can occur when these linkages are not effectively drawn.