

6-1981

The Intensive Archeological Survey of the Proposed Saltcrete Area of the Defense Waste Processing Facility, Savannah River Plant, Aiken County, South Carolina

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Keywords

Excavations, Defense Waste Processing Facility, Savannah River Plant, Aiken County, South Carolina, Archeology

Disciplines

Anthropology

Publisher

The South Carolina Institute of Archeology and Anthropology--University of South Carolina

Comments

In USC online Library catalog at: <http://www.sc.edu/library/>

THE INTENSIVE ARCHEOLOGICAL SURVEY
OF THE
PROPOSED SALTCRETE AREA
OF THE
DEFENSE WASTE PROCESSING FACILITY,
SAVANNAH RIVER PLANT,
AIKEN COUNTY, SOUTH CAROLINA.

by
Richard D. Brooks
Research Manuscript Series 172

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The research reported herein was conducted under Department of Energy contract number EW-78-S-09-1072 with the Institute of Archeology and Anthropology, University of South Carolina.

Prepared by the

SAVANNAH RIVER PLANT ARCHEOLOGICAL RESEARCH PROGRAM
INSTITUTE OF ARCHEOLOGY AND ANTHROPOLOGY
UNIVERSITY OF SOUTH CAROLINA

June 1981

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INTRODUCTION

During January 1981, members of the Institute of Archeology and Anthropology staff conducted an intensive archeological survey of the proposed Saltcrete (200-Z) area of the Defense Waste Processing Facility on the Savannah River Plant, Aiken County, South Carolina. The survey of the 61.5 acre tract was made by Richard Brooks, Seth Surasky and Audrey Smith as a part of the general contract with the Savannah River Operations Office, United States Department of Energy (Number EW-78-S-09-1072). To meet requirements of the National Environmental Policy Act of 1969, Executive Order 11593, the National Preservation Act of 1966, and the Archaeological and Historic Preservation Act of 1974, the Department of Energy contracted in July 1978, with the Institute of Archeology and Anthropology, University of South Carolina, to inventory and assess cultural resources within the project area and to develop a management plan to preserve and protect important data and resources. In accordance with the contract, the purpose of this research was to locate, describe and assess the archeological resources within the proposed construction area and to provide the Department of Energy with the recommendations as to the significance of the resources.

This report will present a summary of the background, methods, results and recommendations resulting from the Saltcrete area intensive survey. The purpose of this report is to present the Department of Energy with a thorough presentation of all results and conclusions so that the proposed construction in the Saltcrete area can be undertaken without adverse effect on the archeological resources. According to the Archeological Resources Protection Act of 1979, an archeological site must meet several requirements before it can be declared as eligible for inclusion in the National Register of Historic Places. By eligible we mean that the archeological resources must be of sufficient age (100 years) and be capable of yielding information important to understanding past human systems. Given our present knowledge of the Savannah River Plant and vicinity, there are no sites that can be considered as eligible within the Saltcrete area as will be seen later in this report.

The research described in this report was undertaken with the central aim of determining the types and distribution of archeological resources within the Saltcrete area. Although this goal does not pertain to any specific theoretical problem domain, the related research orientation does. In the process of determining the archeological content of the Saltcrete area an attempt will be made to relate to the general problem of sandhill utilization during prehistoric and historic periods.

The research conducted during this study was aimed at gathering information which would further our understanding of land use patterns in the upland sandhills of the Aiken Plateau. Through such a research frame the evaluation of cultural resources for historic preservation planning will be given direction. Any site encountered must meet the requirements of the Archeological Resources Protection Act of 1979 and will also be assessed in terms of its ability to contribute information about the nature of human occupation in the sandhills.

ENVIRONMENTAL SETTING

The Saltcrete area lies within the Aiken Plateau sandhills of the upper Atlantic Coastal Plain physiographic province which is composed of unconsolidated sediments of Cretaceous age or younger (Langley and Marter 1973: 17). This general area falls within the Oak-Hickory-Magnolia Forest Ecotone described by Shelford (1963: 86-88), which is characterized by a pine to scrub oak succession in xeric areas and a more stable oak-hickory sere in hydric contexts. The general climate can best be described as mild with monthly temperature averages ranging from 48°F in January to 81°F in July and a mean annual humidity of 70% (Langley and Marter 1973: 65). Precipitation extremes range from 28.8 inches to 73.5 inches per annum, with a mean annual precipitation of 47 inches.

Within the Saltcrete area the maximum relief is 20 feet, ranging from 280 feet a.s.l. to 300 feet a.s.l. on a ridgetop between McQueen Branch and Upper Three Runs Creek (Fig. 1). In terms of overall topography, the Saltcrete area can best be described as a ridgetop near two adjacent streams.

Portions of the study area have been disturbed prior to this survey. Approximately 75% of the area has been agricultural field and is now in planted pine. Vegetation in the study area consists of two different communities. The major portion is composed of immature pine plantation and is situated in the southern portion of the study area. The remaining 25% is in oak-hickory forest covering the northern and northwestern portion of the area. Aerial photographs taken in 1951 indicate that the pine plantation area was previously cultivated field.

The soils in the Saltcrete area have been described by Aydelott (n.d.) and will be only briefly summarized. The soil group throughout the study is Fuquay and Wagram soils association which is characterized by moderate productivity and is well drained. Suitability for arboreal vegetation is fair to good for pines. The soil is moderately acidic and not well suited for preservation of faunal material at archeological sites.

In summary, the soils can be seen as marginal in terms of vegetative productivity for animal and human consumption. This project area in the upland sandhills would be expected to be either a seasonal resource collection environment or an overall secondary ("back up") resource zone. The implications of this will be discussed later in the report.

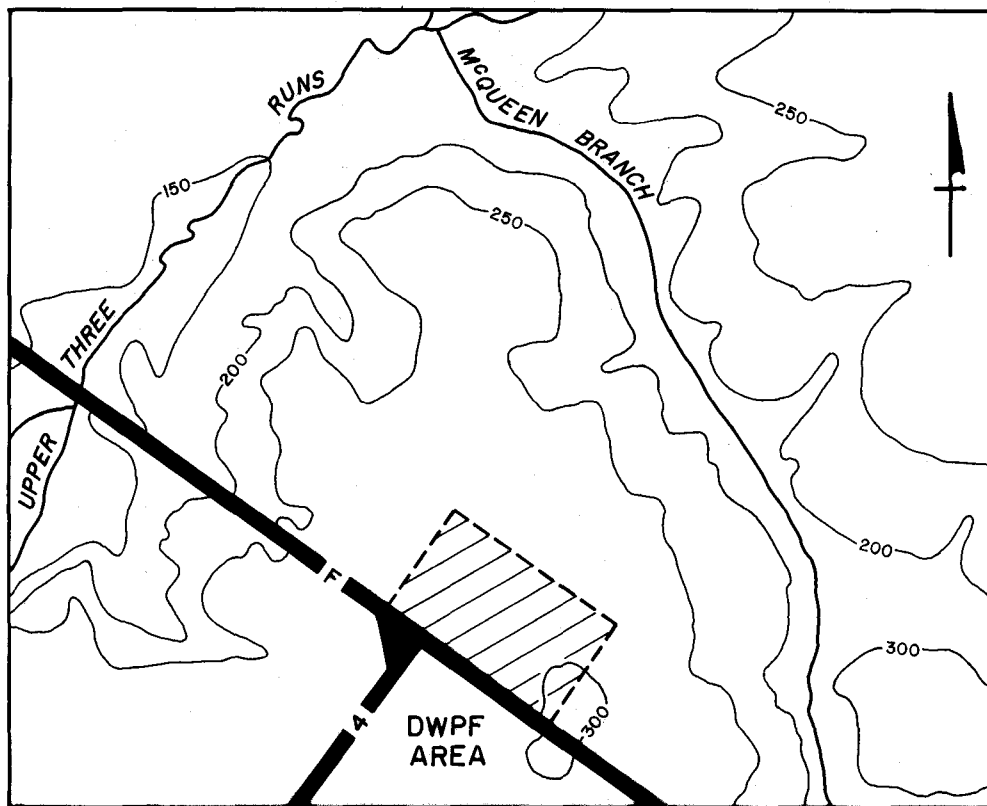


FIGURE 1: Map of the general location for Saltcrete (hatched area) and the DWPF (Defense Waste Processing Facility) area. The map indicated by 50 foot contours the topography and the relationship to the streams in the vicinity of the Saltcrete area.

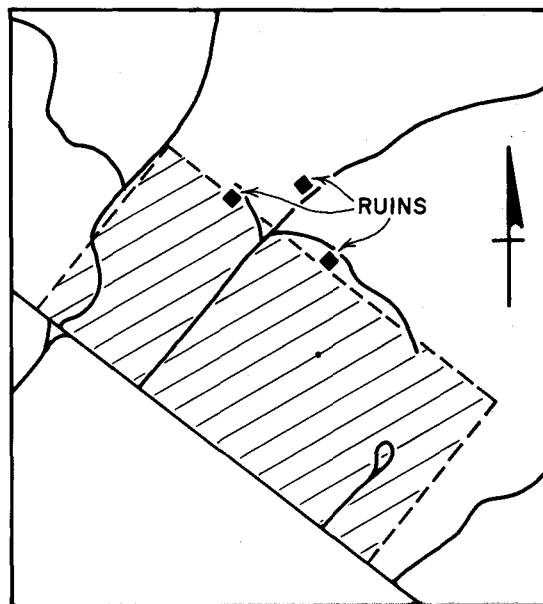


FIGURE 2: Map showing the general pattern of roads in and around the Saltcrete area, taken from the 1978 infrared aerial photographs. The map also indicates the general location of the three historic 20th century ruins.

PREHISTORIC BACKGROUND SUMMARY

Archeological evidence for prehistoric populations within the Savannah River drainage, and the Savannah River Plant in particular, has been well documented for a period in excess of 12,000 years. From the earliest times this occupation has been most commonly recognized along the main channel of the Savannah River and in association with larger tributaries. The results of archeological research on the Savannah River Plant (Hanson, Most and Anderson 1978) clearly indicate the high association existing between larger streams and prehistoric occupation sites. In contrast with sites situated in proximity to large streams, prehistoric settlement distributions within the upland sandhills of the Aiken Plateau (Siple 1967) are less patterned.

Known archeological sites in the well drained sandhill ridge system tend to be small in size and low in artifact variability. They also tend not to contain sufficient artifact information to permit chronological placement. Based on these data it has been suggested that prehistoric utilization of these upland settings was restricted to seasonal periods for purposes of specific resource procurement (Hanson, Most and Anderson 1978: 125-126). With this pattern in mind, we would expect the prehistoric archeological record within the proposed Saltcrete area to be limited to small, lithic and/or ceramic scatters indicative of brief occupational span and limited activity diversity.

This general set of expectations would seem reasonable for all time periods since the environment of upland sandhills is so low in overall resource potential. As discussed in the environmental section, the soils and associated vegetation in the uplands are dry and xeric, respectively. Such environments in the Upper Coastal Plain would never have been too productive in terms of resources for human consumption or use. They are primarily regions of mixed longleaf pine and small hardwoods which support relatively low populations of key fauna resources (whitetail deer, opossum, raccoon and small game). Floral resources within the zone are limited to red oak acorns and small hickory nuts. Such resources are known to have been used in historic times but only as supplemental resources (Canouts 1971). Thus in contrast to the rich resource zones along streams, the upland sandhills were comparatively poor. This further supports the expectation that prehistoric land use within the survey area was minimal.

In summary, prior to conducting the intensive archeological survey of the proposed Saltcrete area, an expected pattern of site occurrence was generated. We expected a very low site density within the survey area. All prehistoric sites were expected to be small in size and low in artifact diversity, indicative of limited activity structure within the area. Although these patterns were expected, the research design and survey methodology were planned to be extremely in order to locate any evidence of prehistoric activity.

HISTORIC BACKGROUND

Although the Savannah River Valley has been settled by Europeans since the early 1700s the upland sandhills have not. Settlement of this area probably did not begin until the second quarter of the nineteenth century, perhaps even later. Until advanced agricultural methods could be employed to handle the sandy and unproductive nature of the sandhills, they were not utilized for early farming. It was not until the mid to late nineteenth century that fertilizing methods were employed on the land.

By the beginning of the twentieth century timber resources became more valuable than the crops, and a number of farmers began leasing their land to timber companies for as long as they needed to clear the land of trees, sometimes up to twenty years. Saw mills were established; timber was cut and processed. The sandhills then were used for agriculture and if productive, were cultivated for years. If not, it was let back to pines for future harvesting.

During and after World War I there was a large scale migration of southern blacks from the rural south to the urban north (Kellogg 1977: 310). This migration was caused in part by the fact that southern farmland no longer could support tenant farmers. Further, emigration to the northern cities offered a promise of industrial employment. The emigration left many southern tenant farms empty and fields fallow. Timber harvesting became an even greater viable alternative to cash crops on land that was not productive and expensive to farm. Following the expiration of the timber company leases in the late 1930s and 1940s, the land apparently went back to cultivation.

INTENSIVE SURVEY

The primary goal of the intensive survey was the thorough examination of the study area using methods to assure adequate and reliable coverage. To insure adequate coverage of the survey area two specific survey strategies were employed. The first consisted of an intensive visual inspection of all the roads. There are four roads in the survey area totalling about 5,300 linear feet. The second phase involved the extensive rake testing of off road areas within the survey area. A total of 19,600 linear feet was walked and inspected using 450 rake tests of 2 by 2 meter areas on a 20 by 20 meter systematic grid. This technique for discovering sites has proved useful in the past (Hanson and Brooks 1978; Brooks and Hanson 1979); however, it did not locate any sites during the Saltcrete survey. Since sites in the sandhills of the plant were not expected to be buried under sediments due to the ridgetop situation, it was felt that the use of the rake test would be the most appropriate method of site discovery. It was during the first two phases that three modern historic ruins were discovered in the northern portion of the survey area near the proposed fence line.

The final phase of the intensive survey involved the testing of the historic ruins to determine content, extent, depth and chronological placement of the deposits. Testing included three test pits and 100 rake tests.

In summary, the intensive survey (Fig. 2) of the Saltcrete area was accomplished using several strategies. Given the dense forest litter and vegetation of the study area, the survey made an attempt to reduce sample bias by such factors and to provide thorough coverage. Approximately 80% of the total land area of the study area was examined intensively for cultural resources resulting in the discovery of three previously unrecorded historic ruins. Testing at these areas provided information about their eligibility for nomination to the National Register of Historic Places.

The three ruins located by the survey were closely examined during the field phase of the project for several reasons. First, the guide lines for Nomination to the National Register of Historic Places require that historic sites meet certain standards. The most critical for this survey is the chronological determination that the place be at least 100 years old. All artifacts recovered from the three historic ruins were at best 80 years old. These artifacts could not be placed with certainty as having been manufactured in the nineteenth century. Because of the lack of evidence as to the land owners, identity and the relatively small amount of artifacts recovered, these ruins were most likely undistinguished tenant farmer dwellings which are very common in the S.R.P. area. A conservative estimate of two thousand similar dwellings on the plant property can be made from 1940 era maps. Several have been studied and seem to contain many times the number of artifacts located here. Due to the scarcity of artifacts at these ruins in the Saltcrete area, it is most probable that these dwellings were occupied for only short periods of time during the time that they stood.

The National Register of Historic Places requires that sites to be nominated have some historical importance. Since there are no locatable records which would indicate that these ruins have local, state, or national significance, they do not meet this second major requirement.

The ruin locations indicate one that is beyond the outermost boundary of the proposed Saltcrete area, and that the other two are on the proposed fence line. The location is to the best of our knowledge of no specific historical importance to the record of sandhill occupation. The major reason for tenant residence placement was proximity to the fields for work.

From our testing of the ruins, two were determined to have no subsurface material. At the one ruin that contained subsurface material, artifacts dating prior to 1900 were not in evidence. Two of the three structural remains had a great deal of wood remaining, indicating that they were relatively young when they were abandoned and destroyed by the plant construction in the 1950s. The third dwelling apparently was moved from the plant area, although no record of its removal was located. Another possibility is that the wood was salvaged at some time after the Government obtained the land.

It is a policy of this project to adhere to the laws under which we must structure our work and reports. Our policy also includes that historic ruins are not recorded unless they can be documented to be at least 100 years old. If all 20th century historic ruins were recorded, the state files would become overwhelmed with sites that did not meet the basic requirements for eligibility for the National Register of Historic Places.

METHODS

The implementation of this survey involved the planning of appropriate field methods, the intensive inspection of all areas and analysis of artifactual material. The discussions that follow provide a thorough discussion of the methods employed.

Preliminary Work

Prior to undertaking any intensive fieldwork, certain preliminary views of the study area were gained by background research. To obtain a basic understanding of field conditions such as vegetation density, accessibility and modern landmarks, preliminary inspection of recent color infrared aerial photographs was made. This showed that the Saltcrete area was predominately covered with pine plantation. The only clear ground surfaces within the study area were dirt roads. From these observations we were able to conclude that a survey strategy was needed that would involve the removal of forest litter to gain ground surface visibility. Access to certain portions of the area would be difficult due to vegetation.

Since the Savannah River Plant was vacated by private land owners in the early 1950s, no standing structures were expected to be encountered. Therefore, inspection of the study area according to 1951 aerial photographs was necessary. This showed that there were possibly three structures to be located on the northernmost boundary of the area. These photographs also provide important information pertaining to late historic land use. Most significant was the fact that 80% of the modern pine plantation corresponds to previous agricultural fields suggesting that any sites located would be somewhat disturbed.

Using land plat and deed records dating from the S.R.P. acquisition by the Corps of Engineers, a search for land owner history was initiated at the Aiken County Record Center. Unfortunately, the property records were less complete than expected and no useful information was gained. A search for possible records at the Barnwell County Court House was initiated in order to find a plat of the area prior to the division of the counties in 1872. However, no information was gained either in the plat records or the deed records. This lack of records may indicate that the land had been the property of the Bufford Family since 1784 or earlier. A record of land belonging to the Bufford Family dated to 1784, was located adjoining McQueen Branch to the southeast.

Finally, a records check at the Institute of Archeology and Anthropology showed that no sites were located near the study area.

Based on this information and that obtained during both the general S.R.P. reconnaissance and the Intensive survey of the proposed Defense Waste Processing Facility site (Fig. 1), an expected pattern of site type and distribution was generated. Any prehistoric sites would be either small lithic scatters or

small lithic and ceramic scatters. A review of Mill's Atlas of the Barnwell District and the Stroeber map of 1873 indicated no historic sites within the survey area. This led us to believe that any historic sites encountered would probably not meet the requirements of the Archeological Resources Protection Act of 1979.

A brief field reconnaissance was conducted prior to the intensive field survey in order to verify the aerial photographic observations. Four roads located within the survey area would serve as base lines for the intensive field survey. No sites were located during the reconnaissance. In general, the reconnaissance consisted of an unsystematic walk and drive through the survey area.

CONCLUSIONS AND RECOMMENDATIONS

The results of the archeological survey of the proposed Saltcrete area were not inconsistent with the expectations for the area. Based on the findings of this study, several recommendations can be made regarding the Saltcrete area. These recommendations are presented in order to provide the Department of Energy with information for land use in the area.

- 1) Since no archeological remains were uncovered in the proposed Saltcrete burial area, it is recommended that the area be cleared for archeological purposes.
- 2) To assure preservation of any possible, but unexpected, buried sites, well beneath the present ground surface in the construction area, it is suggested that the Department of Energy arrange to have an archeologist monitor the excavation of the Saltcrete burial site. To keep the construction progress unencumbered, a process should be devised by which an archeologist can make regular checks of the soil piles and excavation profiles for archeological material.

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